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CONSTRUCTIVISM IN THE ELEMENTARY SCHOOL CURRICULA

İLKÖĞRETİM PROGRAMLARINDA OLUŞTURMACILIK

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ABSTRACT

The aim of this study was to examine whether the 5th grade elementary school curricula of Turkish, English, Mathematics, and Science and Technology courses were congruent with the principles and standards of the constructivist education. Qualitative research methods were used in this small-scale case study which was conducted in a private elementary school in Ankara. The data were gathered through semi-structured interviews and document analyses in the academic year of 2007-2008. The population of interest consisted of 2 school directors, 1 Turkish teacher, 3 English teachers, 4 Mathematics teachers, and 3 Science and Technology teachers. Descriptive analytical framework was employed for the analysis of the interviews. A rubric and a list of standards were used so as to provide a set of criteria for the analyses of the data. The findings indicate that the performances of the curricula under investigation are congruent with the principles of the constructivist education. Similarly, the stated and unstated intents of the curricula are congruent with their performances and the standards of the constructivist education. However, in-depth analyses of the findings signify that in certain areas of the curricula such as the contents, learning processes, evaluation processes, the use of the information technology, and the other resources are marked by some difficulties and ambiguity.

Key Words: Education, elementary school curricula, constructivism, constructivist approach.

ÖZ

Bu çalışmanın amacı, ilköğretim beşinci sınıf İngilizce, Türkçe, Matematik, Fen ve Teknoloji programlarının oluşturmacı yaklaşımın ilkelerine ve standartlarına uygunluğunu incelemektir. Ankara'da bir özel ilköğretim okulunda gerçekleştirilen bu küçük ölçekli durum çalışmasında nitel araştırma yöntemi kullanılmıştır. Veriler 2007-2008 eğitim yılı güz döneminde görüşmeler ve belge analizi yoluyla toplanmıştır. Araştırmaya 2 yönetici, 1 Türkçe Öğretmeni, 3 İngilizce Öğretmeni, 4 Matematik Öğretmeni, 3 Fen ve Teknoloji Öğretmeni katılmıştır. Görüşmelerden elde edilen verilerin analizinde betimsel analiz tekniği kullanılmıştır. Karşılaştırma ölçütü olarak oluşturmacı eğitim ilkelerinin değerlendirilmesi için geliştirilmiş bir puanlama anahtarı ve bir oluşturmacı eğitim standartları listesinden yararlanılmıştır. Elde edilen bulgulara göre; 1) araştırma konusu olan programlarda uygulananlarla, oluşturmacı eğitim ilkelerinin uyumlu olduğunu; 2) öngörülen ya da öngörülmeyen (örtük) kazanımlarla, programlarda uygulananlar ve oluşturmacı eğitim standartlarının uyumlu olduğunu söylemek mümkündür. Ancak, elde edilen bulguların ayrıntısına inildiğinde; araştırma konusu olan programlarda içerik, öğrenme süreçleri, değerlendirme süreçleri ve kaynak kullanımına ilişkin bazı sorunlar ve belirsizlikler dikkat çekmektedir.

Anahtar Sözcükler: Eğitim, ilköğretim programları, oluşturmacılık, oluşturmacı yaklaşım.

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INTRODUCTION

In today's world, knowledge is produced, shaped and communicated so rapidly that it has become a key priority of economic policies with its ever-changing dynamic structure and a basic feature of prosperous societies. It is a common belief that traditional teacher-centred education falls short of providing individuals with skills to cope with the changing world. In this setting, where the simple recitation of knowledge is not regarded as meaningful, constructivist approach that allows for reformulation and re-construction of knowledge is increasingly gaining popularity in many countries, dominating all levels of national curricula. Having adopted a constructivist perspective on its educational policy, the European Commission (European Commission, 1997) aims at transforming European countries into information society, providing individuals with skills by which they can have access to, reformulate, and create knowledge. In such a context, the Turkish Ministry of National Education, the National Education Board introduced nationwide elementary school curricula based on the constructivist approach in the academic year of 2005-2006, following a pilot study in 2004-2005.

Though a relatively new approach in education, learning theories of constructivism had their roots in the philosophical thinking of the Enlightenment in the 18th century (Wikipedia, 2008). However, the constructivist perspective owes its mature form to Piaget's ideas (1973) on psychological development of children. According to Piaget, to understand the concepts requires discovery or reconstruction through re-discovery. Bruner (1990) describes learning as an active process through which the learner constructs new knowledge, building on his already existing knowledge or ideas. This is a process in which the learner finds ways to relate the lesson content to his existing knowledge. Hutchinson (1988) and Vygotsky (1978) argue that children construct their conceptual understanding, drawing on the concepts presented by adults and their own experiences in the daily life, thus shifting the focus from cognitive aspect of learning to social context. Viewed from this perspective, knowledge is not simply communicated by the teacher, but it is something constructed in the process of social interaction. Thus, the knowledge constructed as the outcome of such a process is an original one, rather than being a totality of personal understanding of each individual involved in the interaction (Austin and Baldwin 1991). In this view, constructivist learning environment is learner-centred, which is mainly based on problem-solving and hands on activities that require active engagement of cognitive processes. Pair work or group work that serves as a tool for interaction and communication between students is an important component of this perspective that supports the process of knowledge construction.

This perception calls to mind several new approaches in education that share their basic assumptions with constructivism. All these approaches are learner-centred and converge in the view that each student should be actively

engaged in learning activities, taking account of individual differences. Some new approaches such as active learning and problem-based learning give the impression that they are actual practices of the constructivist classroom. Similarly, the integrated approach, which mainly draws on constructivism, seems to be a prerequisite for the constructivist classroom practices. Since the external world as the subject to be perceived by the student is vitally integrated, integrated curriculum then helps the students acquire knowledge and skills they may need in making sense of the world (Saunders, 1992). Thus, curricula that rest on the constructivist view should take into consideration inter-disciplinary connections. Studies concentrating on the relation between neuropsychological and educational approaches clearly identify that the constructivist and integrated learning environments are congruent with the way that the knowledge is processed by the brain. Caine and Caine (1991) argue that internalizing meaning and making connections are the main functions of the brain, whereas brain may show resistance to learn concepts that are presented in isolation. Some other research studies support this view (Coward, 1990; Edelman, 1992; Kotulak, 1996).

Educators may feel impressed by the powerful influence that constructivist thinking has exerted in a broad context, when they see that the above identified overlap and connection between new approaches to education is grounded in a single source, which is the constructivist background. However, the theoretical developments in the field remind us that there is no single source from which an educational system can derive its theoretical input. The approaches in education are not separate entities. Given that every new theory has reacted to and drawn inspiration from those preceding it, one should turn a critical eye to curricula based on a single approach or the same view of learning. 'The Final Declaration of Elementary School 1st-5th Grade Curricula Assessment Meeting by the Board of Professors on Curriculum Development (Eğitim Programları ve Öğretim Alanı Profesörler Kurulu: 2006) voiced this concern in addition to other important issues. Renewed curricula deserve a more detailed scrutiny, given the facts that prior curriculum development efforts have been disregarded and that studies on the relevance of renewed curricula in the Turkish context or its successful adaptation to Turkey's conditions have been insufficient and that the whole process have been squeezed into a very short span of time. The adopted approaches should be shaped in congruence with the context in which they will be employed, no matter how effective they are and this fact alone increases the concerns over the renewed curricula. Rogan and Grayson (2003) point out those educational reforms are highly likely to fail unless specific adaptation is made based on an analysis of socio-cultural factors. The fact that the constructivist approach offers more than a single model certifies why the context should shape the learning approach. Watts and Bentley (1991) talk about sound and weak applications of constructivism in education. When practiced effectively,

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constructivist education enables students to create new knowledge, going far beyond the mere acquiring of knowledge. In its weak applications, they end up with lower thinking skills with the help of the teacher who considerably lifts the burden of learning off the students. Additionally Black and McClintock (1996) offer a framework for the stages in the constructivist learning, underlining processes rather than the use of resources. Hodgins (2000) puts particular emphasis on the rapid learning in the workplace, while Howard et al. advocate that constructivist learning should take place incrementally. It was only Fogarty (1991) that offers ten models, each with its pros and cons, that provides guidance on how cognitive skills and concepts can be inter-connected or overlapped, in a fashion that calls to mind the hierarchical classification of Bloom (1956; cited in Demirel 1997, 117). In this context, it is important to have a clear understanding of successful and unsuccessful educational reforms based on the constructivist view both in the Turkish context and in other countries.

Daniels (2002) states that students make significant improvement in their language skills and in deep understanding and analytical abilities when they are exposed to discussion in which they exchange opinions with their peers and thus re-formulate meaning they have extracted from a written material. Findings of Flores (2005) on how the renewed Elementary School Curricula in Portugal were perceived by the teachers revealed that the new curricula generally yielded positive results for teachers and students. Teachers shared the view that the new curricula allowed for a more effective learning by helping the students correlate the knowledge acquired in a class with what they learnt in other classes. However students paradoxically concentrated on the lesson at hand, since they lacked the ability to correlate what they learn in different lessons. Teachers described their professional position as ambiguous when deficiencies in their resources, knowledge and education with regard to renewed curricula were added together. Pourdavood, Lawrence and Cowen (2005) examined elementary school fourth grade maths curriculum based on a social constructivist view and reported positive outcomes for African-American students, while drawing attention to the missing data on the availability of resources, teacher training, and to what extent the school directors had faith in the new approach. Most importantly, they put emphasis on the limitations brought to a teacher's creativity and effectiveness in a system that predetermines every component including teacher's handbooks and textbooks. Information Technologies are among the important factors that have a bearing on the effectiveness of the constructivist approach. However, findings of the literature review covering western countries reveal that information technologies cannot be effectively employed in elementary schools due to some setbacks, with the teacher being the major factor (Bitner and Bitner, 2002; Vannatta, 2000).

Scarcity of studies on the curricula change in the Turkish elementary education due to its recent introduction prevents us from making an in-depth analysis of new curricula. Yet, the existing ones give important hints on the actual implementation of the curricula and the stakeholder perception. Gelen and Beyazıt (2007) after comparing former and new elementary school curricula, conclude that teachers, students, school inspectors, and directors perceive the new curricula in a positive light. Findings by Şahin (2007) reveal that the new curricula have to a great extent fulfilled the expectations and that it is congruent with the standards of the constructivist approach. In a study conducted by Bulut (2007) on the maths curricula, teachers stated that the new curricula allowed room for the students to learn through hands on activities, and once the students grasped the relevance of the lesson, they were capable of relating the knowledge they acquired in the classroom to the real life situations. Respondents in the same study however pointed out the problems stemming from infrastructural shortcomings. Ercan and Akbaba Altun (2005) state that the 4th and 5th grade Science and Technology teachers had positive views of the curricula since it was learner-centred and encouraged inquiry-oriented learning environment for the students. However, lack of clear instructions on the use of alternative measurement and evaluation tools have been identified as a problem.

The Report on the Study and Evaluation of New Curricula (2006) draws attention to some ambiguities in the curricula that were piloted in 120 schools in nine provinces during the academic year of 2004 – 2005. Other identified problems include deficiencies in art and aesthetic education, weak emphasis on the links between different courses and insufficient instruction on how to employ information technologies. Umay, Akkuş and Duatepe (2006) think that 1st-5th grade maths curriculum is successfully designed to leave no room for rote memorization, encourage students to improve their intellectual skills and to reflect global changes. Nevertheless, they observe that some skills that need to be improved are disregarded. The neglected skills include activities that enable students to investigate the results when they put the geometric shapes together, take the shapes apart as well as geometric transformation and to have insight into congruence and similarities and to be able to make inferences about geometric features and relations. After studying the 6th grade science and technology textbooks in the light of the constructivist learning theory, Küçüközer et al. (2008) argued that though textbooks are in general congruent with the constructivist perspective, they have certain shortcomings, one of which is insufficiency in activities designed to detect and remove misconceptions.

According to one survey conducted by the Turkish Education Board (2007), 51% of teachers responded that they faced difficulties in project development and implementation, while 75% of them expressed the need for an expert assistance on measurement and evaluation and curriculum

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improvement. In a survey; Gözütok, Akgün and Karacaoğlu (2005) reported that the field in which the teachers feel themselves the least competent is measurement and evaluation. These results can be interpreted such that the constructivist approach is generally viewed positively by the stakeholders, whereas certain practical problems need to be addressed. In such a setting, this small scale study is anticipated to contribute to the evaluation of the renewed curricula, as one of the preliminary studies to be followed by a series of comprehensive studies.

AIM

This small scale case study aims to explore whether the 5th grade elementary school curricula of English, Turkish, Mathematics and Science and Technology courses are congruent with the principles and standards of the constructivist education. In this framework, it examines the congruence between 1) the performances of the curricula under investigation and the principles of the constructivist education, and 2) the stated and unstated intents of the curricula and their performances and the standards of the constructivist education.

The present study also aims to produce findings that would lay the foundations for the subsequent studies. It intends to be a preliminary study preceding a series of studies evaluating the new elementary school curricula. It chooses the 5th grade curricula as its main focus since it is this grade that has the longest experience under the new curricula. The reason why aforementioned courses are the centre of attention is that their curricula is so interrelated with each other that they can be instrumental in developing a model under the constructivist approach from an integrated perspective. It was conducted in a private school rather than a state school, and since it is believed that infrastructural superiority of private schools allows them to better accommodate the renewed curricula.

METHOD

Though this evaluation study makes use of the Stake's (1990) two countenance model based on the description and the judgement, it is not a literal application of it. Stake's model do not fully fit the needs of this study in that the model entails an in-depth analysis of a great number of data in three categories -namely; antecedents, transactions and outcomes of the program- unlike the present study which aims to give an overview rather than tackling subtle details pertaining to specific disciplines. Furthermore, Stake's model fails to identify an evaluation tool that would help us reach a judgement by drawing upon various data which are put under so detailed scrutiny, as Worthen (1990) rightly criticised. So peculiar evaluation criteria have been developed for the purpose of this study (Evaluation Criteria for Constructivist Curriculum Principles: ECCCP). The congruence between the curriculum

performances and principles has been evaluated in line with ECCCP. In this study, 'principles' refer to the perspectives incorporated in an educational curriculum in terms of acquisitions, content, learning processes, evaluation and use of resources. The term 'performances' refers to all details incorporated in ECCCP that influence the operation of curricula under investigation. The term 'intents' stands for 'acquisitions'. In his model, Stake used 'intents' in replacement of 'acquisitions' in order to make reference to dynamic/flexible curricula (Stake, 1990). Another reason why he used the term 'intents' is that he apparently wanted to avoid confusion that may arise from the frequent use of 'acquisitions' to denote to outcomes under the curriculum. Efforts were made to set the standards under ECCCP, which are the most critical principle of an educational perspective. In this respect, it is hoped that ECCCP reinforces the reliability of this study, which is basically an evaluation based on judgement. In conclusion, the Stake model revisited from the perspective of Worthen (1990) constitutes the background for this evaluation study in which different techniques are used to fit its purposes better. The study is of qualitative nature since the data were gathered through interviews and document analysis. It rested a triangulation limited to data obtained in two different ways, and strived to arrive at a judgement on the congruence of the curricula in question with the principles and standards of the constructivist approach. The fact that the research methods and techniques did not rest on classroom observations, and quantitative data collection tools constitute the major limitations of this study.

Participants

The population of interest consisted of 2 school directors and 11 teachers- 1 Turkish teacher, 3 English teachers, 4 Mathematics teachers and 3 Science and Technology teachers. The school directors have been practicing their profession for 27 years at average. The teachers' professional experience varies between 5 to 30 years.

Data Collection and Analyses Strategies

Interviews:

Two semi-structured interview forms were developed for the school directors and the teachers in line with the purpose of the study and data derived from the literature review. The interview forms were mainly based on ECCCP. In order to ensure detailed data collection, questions that would support the data pertaining to ECCCP were also asked. To assess reliability, the draft forms of the interviews which were designed in collaboration with three field experts and two teachers employed by the institution where the study took place were piloted on a sample of study participants (n=4). The final versions of the interviews were designed after wording of the items was improved after the piloting stage.

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Interview Form for School Directors:
1-What do you think of the renewed curricula in general?
2-What actions do you take to find out the individual differences among students?
3-What actions do you take to determine the student background knowledge and skills, in order that the desired acquisitions can be warranted?
4-What actions do you take in order to provide the necessary resources?
5-Do you have any other remarks to make?
Interview Form for Teachers:
1-What do you think of the renewed curricula in general?
2-What do you think of the acquisitions of the renewed curricula?
3-What do you think of the content of the renewed curricula?
4-What do you think of the educational processes of the renewed curricula?
5-What do you think of the evaluation methods of the renewed curricula?
6-What do you think of the resources used/recommended in the renewed curricula?
7-In your opinion, what are the features of the renewed curricula that improve your courses?
8-In your opinion, what are the features of the renewed curricula that have an adverse effect on your courses?
9-How does the renewed curricula influence your class management?
10-How does the renewed curricula influence your relations with parents?
11-What kind of a role do you think that the renewed curricula gives to parents?
12-What kind of a role do you think that the renewed curricula gives to students?
13-What problems do you face with regard to the renewed curricula?
14-What solutions do you propose with regard to the renewed curricula?
15-Do you have any other remarks to make?

Certain actions were taken to increase the validity and reliability of the research. Special care was taken to address the respondents with exactly the same words and with an intonation that would connote the same meaning, when asking the question contained in the interviews. Tape recordings of interviews with two school directors and eleven teachers were contained in 7 cassettes, lasting a total of 7 hours. Data were collected between 3- 28 December 2007. Data obtained from interviews were analysed using the descriptive analysis technique. First of all, the 7 hours tape recordings of the interviews were fully transcribed. Following the reduction of the collected data for relevance, all data derived from the answers to items in the interview form were sorted into categories under ECCCP. Excerpts from interviews were taken in order to have a powerful presentation of participants' views. Moreover, a field expert read the research report independently and evaluated

whether the curricula under investigation in accordance with ECCCP are congruent with the principles of constructivist teaching. Finally, three teachers who took part in data collection were asked to read the report. These teachers confirmed the accuracy of the data. Thus, necessary measures were taken to provide the reliability of the collected data (Yıldırım and Şimşek, 2003).

Documents:

The Guide on the Renewed Elementary School Curricula (Directorate General for Elementary Education), Turkish, Mathematics, Science and Technology teacher's handbooks (Kapulu and Karaca 2005; Aktaş et al, 2006; Yılmaz et al, 2006) developed under the supervision of the National Education Board, and the annual course plans were reviewed. Since English language teaching started as early as the kindergarten of the private school where the research took place, the 5th graders were studying "Energy" (Parsons, 2004) at the time. Following the education reform introduced by the European Commission (1997), foreign language course books drew on the constructivist learning perspective and spiral model and they were in a way congruent with the renewed curricula. It corresponded to A2 level (basic user) according to Common European Frame of Reference adopted by the European Commission. At this level of English, students can exchange information about themselves, their families, and neighbourhood, etc. and have an understanding of simple and short messages (Demirel, 1992). In the assessment of English language curriculum against the standards and principles of the constructivist approach, English language proficiency level of the students was taken into consideration.

Evaluation Criteria:

An evaluation judgement was reached after all the data obtained from interviews and document analysis were compiled together in the frame of the Evaluation Criteria for Constructivist Curriculum Principles (ECCCP) (Appendix 1) and the standards determined under ECCCP. For this purpose, a rubric (Maine rubric, 2007) was adapted and developed for use in the evaluation of the constructivist curriculum principles. The adaptation of the rubric was based on a number of data compiled from the literature review and in particular from Gruba's and Lincoln's (2001) constructivist evaluation directives and checklists. The constructivist curriculum development criteria took its final form after consultations were made with three field experts (Appendix 2).

FINDINGS

This section outlines the findings obtained first from interviews and then from document analysis.

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Interviews

Firstly, views of the school directors, and then those of the teachers were revealed. Where teachers were quoted, they were assigned codes instead of identifying their names for privacy reasons as follows: Turkish Teacher: (TT); English Teacher: ET; Mathematics Teacher: MT; Science and Technology Teacher: STT. Each code is used with a number.

Interviews with the School Directors:

Interviews with the school teachers reveal that they think highly of the constructivist approach and in particular, are happy with the results obtained from the early stages of elementary education (grades up to 5th). As far as the later stages (grades 6th-8th) are concerned, they mentioned the chaos caused by parents' lack of understanding about the Level Assessment Exam (LAE) (a kind of summative evaluation to choose students to study in Anatolian High Schools, and the like) and students' increased tendency to go to private institutions to supplement their formal courses and complained that this created a tiresome burden, making the things worse for everyone. Though they appreciate that LAE strives to test critical thinking skills rather than memorized knowledge, they nevertheless are concerned that it hampers the new system. They relied on the support from the 'Measurement and Evaluation Unit' and the 'Psychological Counselling and Guidance' (PCG) centre of the school when testing individual differences among the students. Self-assessment checklists, attitude scales, rubrics, etc. developed by these school units in cooperation with the teachers were in use. Information regarding the students is exchanged in the process of interaction between the teachers, though no system exists to keep regular records of acquisition of each student.

Interviews with the Teachers:

Teachers' views on questions contained in the interview form are classified in five sub-headings -Acquisitions, Content, Learning Processes, Assessment Strategies and Instructional Resources. For each sub-heading, teachers' views are first outlined in two categories according to their being positive or negative, and this is followed by excerpts from the statements of them.

1-Acquisitions

The Turkish Language Teacher did not comment on the issue. Other teachers did not make negative comments, stating that the new curricula help the students acquire intellectual skills such as increased awareness, ability to make inferences and transfer the knowledge, to relate their learning to the real life situations, to think critically, to classify, to read graphical information, and to expand on their ideas. Below are the excerpts from the statements made by six teachers.

"It is enormously important that the student is aware of his merits and limitations. This approach enables it." ET1
"I think their awareness increased since they learn by doing and experiencing. I am happy with the new system." ET2
"Prediction has a very important place in this curriculum. If a student cannot predict how long one meter is or how long this room is, then what is the use of teaching him the units of measurements. This curriculum gives the student that skill. Take for example decametre or hectometre as units of measurement taught in the past. Who knows where exactly they are used? Decametre is used to measure the area of a field, corresponding to acre. The new curriculum comes to the rescue of the students in such things. It tries to create a visual picture in the student's mind. Efforts are all for that…. Three apples, each 1 lira; and then they cost 3 liras. The child gets it right away….but unable to transfer this knowledge to other areas. In the present curricula, 'how can a child spend his money at the greengrocer's' is the kind of questions we focus on. What is learnt in the classroom is used in the real life situations. Believe me. Children are more successful now." MT1
"Of course, I appreciate the new curriculum. Establishing relations and critical thinking are its outstanding features. For instance, we used to work on tables only where the program so prescribed, and finished with it once and for all at the end of the class. However in the present curriculum, almost all subjects were explained with the help of tables or we have a graphic reading or graphic development tasks. These are really important. Children are getting used to this sort of thinking." MT3
"Sir, what on earth is it for? Students abandoned this kind of questions. Now teachers ask 'where to use it in the daily life?' The student then come to realise "what it is used for' There is an increased awareness." STT2
"In other words, we are happy. We make them discover…we try to elicit the answers from students. We demand examples from them. In the old curriculum, you would directly present the information…The present one gives more room for elaborating on ideas." STT1

2. Content:

Table 1. Teachers' Views on the Curricula Content

TEACHER	CONTENT	
	Positive Views	**Negative Views**
TT1		Erroneous, incomplete. Fail to ensure in-dept learning
ET1 ET2 ET3	Spiral content ensures effective learning	-
MT1 MT2 MT3 MT4	Spiral content is better than linear content	LAE hinders establishing proper relations between the curriculum and the further stages of the education. Because of the fewer teaching points, students feel that their learning is inadequate It fails to deep learning
STT1 STT2 STT3	Spiral content is better than linear content	LAE hinders establishing proper relations between the curriculum and the further stages of the education There are problems in the development of spiral content It fails to ensure deep learning

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Below are the excerpts from the statements of six teachers:

"In particular, grammar points are ignored. They are implicit. But there is no way a student can learn even English without mastering the fundamental rules of grammar… In this age, you cannot approach the child with a poem on fires. It is absurd to ask the students to write a poem on fires using such vocabulary as fire engine, fire brigade. That is no way to give Turkish language education." "…it gives the impression that the curriculum is relieved of excessive workload only to create a mass of activities with unnecessarily repetitive task. This should be done with fewer and better texts". TT1

"No matter how often he repeats, a child of this age inevitably makes mistakes because he does not come across sufficient number of math problems. There are so many activities and we have little time to spare for math problems. Then this puts the children in a disadvantaged position in our system overloaded with exams…Parents resent this situations. "Our kids keep studying the same topics they have already learnt in the 4th grade." they complain and ask when their kids will start to make real progress. We have faced such problems." MT3

"…Teacher has other roles to play, like guiding the students. After the 5th grade, things are never the same. It is a paradox to expose the kids to multiple choice tests when preparing them for LAE. I think this is one of the acute problems in Turkey" MT4

'Course topics are dealt with superficially. Teaching points are very general…Students have a good grasp of the things, though. But when you get into details, then you see the gap, leaving many things unanswered…"STT1

"In the beginning, we were very enthusiastic about the renewed curricula. But I have come to realize that it has some gaps or aspects that want refinement. It is a good idea that the curricula is composed of parts interrelated with each other in a sequence. Under the old curricula, kids in the 6th grade did not come across what they were taught in the 5th grade…However; there are some problems in the formation of this process. Take for example, teaching unit on electricity in the 5th grade. I don't like skipping some essential information. I don't think it is good to finish with the unit on electricity with only superficial knowledge, leaving the remaining part unexplored. In my opinion, one should be flexible in the face of students' questions. The new curricula aims at urging the students to think for themselves anyway…It seems to be overloaded with activities, but the learning environments are not suitable for that. It is not possible to execute all tasks in the classroom. And the time spared for all these is limited… There is also LAE as the fact of life. It is the nightmare of parents and students …After the fifth grade, things change. Kids feel inadequate if you do not include supplementary tasks or tests designed for the exam. And parents share the same concern. They feel uneasy, worrying if their learning is adequate" STT2

3) Learning Processes:

Table 2. Teachers' Views on the Learning Processes of the Curricula

TEACHER	LEARNING PROCESSES	
	Positive Views	**Negative Views**
TT1	Learner-centred	Overloaded with activities and too much repetition
ET1 ET2 ET 3	Motivating. Learner-centred and constructivist. It gives the students choice and employs processes based on learning by doing and experiencing. Relates the teaching points to real life, establishes relations between the courses	
MT1 MT2 MT3 MT4 STT1 STT2 STT3	Motivating. Learner-centred and constructivist. It employs processes based on learning by doing and experiencing. Relates the teaching points to real life, establishes relations between the courses. Allows parents to provide positive input to the learning process	Activities may sometimes cause loss of time

Below are the excerpts from the statements of four teachers.

"…Thus it gives the impression that the curriculum is relieved of excessive workload only to create a mass of activities with unnecessarily repetitive tasks. Each text contains words frequently repeated and sentence formation tasks. A fifth grader will be fed up with using every word in a sentence. Activities should not be so tedious. What will a clever teacher do? I am proud to say he will become eclectic, merging the new and old methods and will make the things work." TT1

"In fact, we have been using the constructivist approach for the last five years… We never introduce the grammatical points without involving student. That is to say we don't simply present the rules and ask the students to answer questions or form sentences on the basis of these rules… Our teaching is spontaneous. So we practise different activities in different classes. There may be significant gaps between the classes… Moreover individual work, pair or group work is extremely important for us. Some students learn better when they work individually, but others have a better grasp of the things when they find themselves in a teaching game…It is student-centred, a process guided by the students (manage the direction of activities). I mean, our teaching practice is not based on mere instruction, but we teach through activities and games. What is more, since this kind of teaching is achieved through letting the students learn by doing, we try to give them as much freedom as possible. It is the student who decides what he will add to his portfolio. 'I want to put this assignment in my portfolio.' he says…" ET1

"So many activities in a limited time may be challenging. I guess it could better be achieved in a teaching environment that provides opportunities for working with the students on individual basis… But, there are certainly good things about this system. I mean if a parent works in a nuclear energy centre, he helps us organize a study visit to

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his workplace. Or doctor parents make presentations in the classroom on the medical practice. This creates much more meaningful learning environments for us." STT3

"We manage to cope with the problems. But I couldn't keep up with the pace of the curriculum. I am simply two themes behind, but will make up for it in the second semester." MT3

4. Assessment Strategies:

Table 3. Teachers' Views on the Evaluation Methods in the Curricula

TEACHER	EVALUATION	
	Positive Views	Negative Views
TT1	-	There are too many evaluation tools. Parents sometimes adversely affect the measurement and evaluation process.
ET1 **ET2** **ET3**	Raises awareness through the learning process	-
MT1 **MT2** **MT3** **MT4** **STT1** **STTÖ2** **STT3**	Motives and raises the awareness of the student.	There are too many evaluation tools. In actual practice, it results in loss of time Parents sometimes adversely affect the measurement and evaluation process.

Below are the excerpts from the statements of six teachers on the subject.

"…it prescribes too many measurement tools. I think it would be better to have fewer but more precise measurement tools that would give more accurate results..." "Parents have biases towards the new system. They simply have yet to adapt to the curriculum. The idea in the minds of parents is that; if I could demonstrate that my kid is more successful than he really is, I would help him more. So this curriculum imposes on us the task of educating both the students and the parents. In my opinion, there should be a meeting to brief the parents every weekend." TT1

"At the end of the day, measurement and evaluation come onto the scene. In foreign language teaching, this is done in much a different way. The most important of all is performance and project assignments. At this point, the process proves very important again, in other words the student learns by doing and assesses his knowledge, with the teacher monitoring the student's progress on an individual basis throughout the whole process." ET1

"As science teachers, we are really enthusiastic about performance evaluation tools. In the past, all the students cared about was to get a full mark. Nowadays this is not so much of a concern. They are now more in control and aware of their learning. We really want to have measurement tool. They really help the students a lot." STT1…

"We've had problems with performance or project assignments that require the involvement of parents. As I said, I think parents are not fully aware of the consequences of their attitudes. They interfere with the progress of the assignment too

much, in order to make sure that their kids get a high mark. But our goal is to equip students with analytical thinking skills. That is why we constantly remind the parents to step back. They should be convinced about it." STT2

"At initial stages, we have faced difficulties in evaluation. We were forced to make evaluations too often. Peer evaluation, inter-group evaluation, teacher's evaluation. This took too much time. Things are quicker now." MT3

"The problem is that we have to cope with too many evaluation materials and as I said, we have limited time. On the other hand, there is a mass of knowledge we have to get across to students. So we have to find a midway. During the term, we engage students in evaluation activities so that they can get used to such methods. When each activity involves evaluation, then these results in an enormous loss of time and the students give us the same feedback. They say 'Sir, let's do it quicker' or "let's skip it' they just want to ignore it and go on. They are fed up with the tasks being repeated over and over again. I wish we could find a midway to engage the students in learning and evaluation tasks together, without making them bored." STT 3

5. Instructional Resources:

The Turkish language Teacher and English Teachers did not make comments on the supplementary reference materials. Mathematics and Science and Technology Teachers stated that use of supplementary resources other than the course books is inadequate. Here is the excerpt from the statements of the three teachers on the subject.

"We may have problems about resource books. Of course, textbooks provided by the Ministry of National Education contain a great number of activities. But where they fall short of meeting the needs, we have to supplement them with additional material." MT2

"I wish I could get assistance on the projects. We face difficulties in developing projects. Though we have internet access, we have no time for that. I wish there were more resources and materials available to us." MT3

"I can say I don't find internet use very meaningful for research tasks, because you are bombarded with information. Students tend to believe that all information found in internet is correct. But it is not always possible to verify information in the internet." STT2

Document Analysis

Document analysis was confined to teacher's handbooks for four courses and Guide on the Renewed Elementary School Curricula (Directorate General for Elementary Education). Since the initial examination revealed that annual lesson plans merely contained weekly and monthly distribution of the learning components such as acquisitions, content, learning processes and evaluation as set out in the textbook, there were excluded out of the scope of analysis. So, the framework of our analysis covers findings to determine first whether the curriculum performances are congruent with the principles of the constructivist education and then whether intents of the curriculum are

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congruent with its performances and standards of the constructivist perspectives.

Findings relating to the congruence between the performances and principles of the constructivist education are as follows:

1-The acquisitions of the curriculum are congruent with the principles of the constructivist education.

2-Care has been taken to ensure that lesson contents based on the spiral model and the different courses are appropriately inter-related.

3-Learning processes and the methods of measurement-evaluation are congruent with the other components of the curriculum.

4-Curricula fail to support students to an adequate degree in terms of supplementary teaching materials/recommended resources.

As for the congruence between the intents and performances of the curricula:

As provided for in Stake's model, intents are one of the components for comparison. Intents set out in the Guide on the Renewed Elementary School Curricula from a constructivist perspective are based on 'Targeted Basic Skills To Be Acquired by Students'. Such skills also include those related to the proper use of the Turkish language. However these were not included in the list of intents (Appendix 3) in consultation with the two field experts, in view of the fact that these skills are peculiar to a specific discipline, rather than being the general standards of the constructivist approach. In this framework, it seemed that intents of the curricula are congruent with the performances, as the analysis of teacher's handbooks for the four courses revealed.

Congruence between the intents of the curricula and the standards of the constructivist education:

The intents of the Renewed Elementary School Curricula seem to be congruent with standards within the framework of ECCCP, though classification and concepts are put in a different way. Furthermore, the intents which took place in the teacher's handbooks for the four courses under investigation, though not identified in the guide were taken into consideration in our evaluation. For instance, acquisitions under the title Science-Technology-Society-Environment (STSE) (p.27) that are identified in the 'Teacher's Handbook for Science and Technology 5' are congruent with the standards of the constructivist education, though classification and concepts are put in a different way. Similarly, intents that entail the acquisition of such skills as the protection of personal/public health and consumers' rights which are congruent with the standards of the constructivist education are observed in the content of Science and Technology Course, even though the guide says nothing about them. Consequently, one can say that the intents of the elementary education curricula are in congruence with the standards of the constructivist education.

CONCLUSION AND DISCUSSION

In view of the findings obtained from the interviews and document analysis, and after making sure that evaluations that the researcher and a field expert made under ECCCP independently from each other overlapped, the following judgement was made (Appendix 1). It is possible to say that the performances of the curricula under investigation are congruent with the principles of the constructivist education. Similarly, the findings of the research demonstrate the congruence between the intents and performance of the curricula and the standards of the constructivist education.

The private school chosen as the venue of the research can be said to embody ideal conditions for the practice of the renewed elementary school curricula, given that it has a measurement and evaluation centre and qualified teaching staff to implement the new curricula. In this respect, the results summarized above give a pretty good idea about the feasibility of the renewed elementary school curricula under convenient circumstances.

However, a more penetrating look into the results obtained brings onto surface some ambiguities with regard to content, learning processes, evaluation processes and the use of resources. As far as content is concerned, three problems - superficial treatment of learning subjects, dynamism/flexibility of the curricula and interrupted continuity of the curricula - come to the fore (Table 1). How to best achieve incremental repetition of knowledge and skills in a spiral model congruent with the constructivist education principles and information processing modes of the human mind? This question seems to be unresolved in the case of the former two problems. Being dynamic and flexible is one of the essential principles of the constructivist approach. This may entail to go where the students' questions take the teacher to. In such a case, the question is how far can a teacher venture to proceed? The teachers interviewed expressed their concern over leaving the students' questions unanswered relating to teaching points treated superficially only to get back to and expand on them when the curriculum demands so. It is another uncertainty how such a course of action will result in later. Another matter that is shrouded in mystery is how the implicit teaching method adopted for every concept and all students and amid a vast number of activities will affect the deep learning throughout the process. One of the principles of ECCCP is that the curricula practices should be properly related to the subsequent education process. However, the teachers considered that LAE is a factor that interrupts the continuity of the curricula. The curricula lose its continuity and effectiveness when students start to study at private education institutions after the 5th grade. Though LAE is an exam that tests the analytical thinking in congruence with the renewed curricula, parents are concerned over the individual competition. The fact that this exam assumes that the constructivist approach is implemented uniformly all over Turkey creates another question mark in respect of the basic principles of the

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constructivist approach. How this will affect the learning processes through which each student is expected to proceed to his target and at his own pace is a matter that requires attention.

The learning processes and evaluation processes overloaded with activities cause loss of time in actual practice. Another problem that may impede the implementation of the curricula is that parents intervene too much in the performance assignments in pursuit of higher marks for their kids. Furthermore, deficiencies in effective and proper use of resources including the information technology may diminish the benefits of the curricula. To reach a more balanced number of activities in the curricula and to raise the awareness of parents or prevent their excessive interference are the problems that can be resolved more easily. However more serious and detailed studies to tackle the shortcomings in the use of information technologies and resources and to gain insight into the other problems discussed above may be needed. Some of these problems could be peculiar to Turkey's specific conditions while others may be inherent in the constructivist approach as its implementation in other countries signifies.

The results of this small-scale study have certain limitations due to the limited number of data sources and participants. In spite of this, it is thought that its results may provide important insight into the details of the renewed curricula and contribute to further research. This having been said, any further study should take into consideration the above discussed problems and accordingly decide which aspects of the constructivist approach should be the focus of attention or identify any incoherencies in the context. In this way, the present study may well contribute to the identification of the sources and resolution of the problems. Therefore, it is important that studies are conducted both in private schools and public schools so that the results obtained from qualitative studies could be tested through quantitative ones.

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Appendix 1.

Evaluation Criteria for the Principles of the Constructivist Curricula (and Evaluation Results for the Curricula under Investigation)

The components	Details of the Evaluation Rubric	Meets	Partially Meets	Does not Meet
The processes and the tools for assessing individual differences among the students that:	Provide a way for the students to self-assess their learning styles.	X		
	Include strategies to guide the students in taking responsibility for their learning.	X		
	Include strategies to guide the students in participating actively in the classroom activities.	X		
	Inform learning and instruction.		X	
The processes and the tools for assessing background of the students that:	Include a list of specifically defined pre-requisite skills.		X	
	Include one or more assessments of current knowledge and skills needed for the specific content area.		X	
The learning outcomes that:	Address constructivist learning standards (Accountability) (See Appendix 1).	X		
	Include cognitive learning domains.	X		
	Specify how the learning will be demonstrated and under what conditions.	X		
	Are tied to appropriate assessment strategies.	X		
The content outline that:	Is transparent.	X		
	Is cross-curricular.		X	
	Provides topics that afford student choice and flexibility.	X		
	Anticipates the requirements of post-primary pursuits.		X	
The learning processes that:	Are based on student goals.	X		
	Are learner-cantered and constructivist.	X		
	Are cross-curricular.		X	
	Address the various learning levels.	X		
	Allow for choice and flexibility.	X		
	Articulate meta-cognitive activities.	X		
	Include learner reflection and feedback.	X		
	Are multi-sensory.	X		
	Are based on research and practice.	X		
	Include combinations of individual, small group, and large group instruction.	X		
	Incorporate technology.			X
The assessment strategies that:	Are transparent.	X		
	Are formative and summative.	X		
	Inform instruction and evaluation.	X		
	Allow the learner to demonstrate his/her knowledge and skills in various ways and varying contexts.	X		
	Provide opportunity for the students' involvement and self-assessment.	X		
	Documents and certifies the students' achievement.	X		
The instructional resources that:	Contain an annotated resource list with contact information.			X
	Are screened for accuracy and authenticity.			X
	Are relevant to the curriculum.			X
	Are rich and varied.			X
	Are age and skill-level appropriate.			X
	Are multi-sensory.			X

Appendix 2.

Standards of the Constructivist Education

1. Standards with regard to citizenship:

a. He is ready to take responsibility for enjoying his rights and respecting the rights of others under the Constitution of the Republic of Turkey and in accordance with democratic principles and international conventions.
b. He recognizes individual and social problems and commits to take appropriate action where needed.
c. He contributes to his own development, his family, the society and the environment and where relevant, devises effective solutions to the existing problems.
d. He is competent in improving and employing his knowledge and skills in the protection of personal and public health.
e. He is competent in improving and employing his knowledge and skills to contribute to the economic and social development of the nation.
f. As a consumer, he recognizes and protects his rights.

2. Standards relating to the ability to gain autonomy in the process of life-long learning.

a. He determines his learning goals and makes informed decisions.
b. He decides what to learn and what to re-learn and what to eliminate as irrelevant in his learning process.
c. He defines the knowledge and skills that he need to have in order to attain his goals; he identifies and evaluates the resources.
d. He decides and implements the methods he should employ to attain his goals.
e. He evaluates and manages his learning process and maintains his personal development by identifying new goals throughout the process of lifelong learning.

3. Standards relating to high-level thinking skills:

a. He analyses and merges the knowledge he derives from different sources
b. He establishes relations between subject-matters, courses, disciplines or real life situations and adapts the knowledge to different circumstances.
c. He defines the relations and interaction between the parts of a system and evaluates the effects that the operation of the system has on the outcome.
d. He processes the existing knowledge and creates new knowledge.

4. Standards relating to problem-solving skills:

a. He makes observations and evaluations in order to define the problems.
b. He makes inferences and asks questions in order to determine his strategies for data gathering and analysing.

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c. He defines the relations, tendencies or patterns that the solutions of the problems may require.
d. He evaluates and employs all the resources such as information, technology in the solution of the problems.
e. He devises alternative solutions and makes analytical evaluations in order to determine the most effective solution.

5. Standards relating to communication skills:

a. He clearly puts forward and supports his goals in written and verbal communication.
b. He is an active listener/speaker that gives/receives feedback.
c. He actively uses non-verbal communication tools such as body language.
d. He makes effective use of communication skills when arguing his ideas, agreeing or disagreeing with counter-arguments.
e. By means of empathy, he manages the conditions of negotiation and confrontation.

Appendix 3

Basic Skills that Students Are Supposed to Acquire, As Laid Down by the Directorate General for Elementary Education. (Intents of the Constructivist Elementary School Curricula)

The skills listed below have been adopted as common skills that students are supposed to acquire under the renewed elementary school (Grades 1-5) curricula. In order to ensure the acquisition of these skills, each course program encompasses various acquisitions and activities.

1. Critical Thinking Skills

Skills that enable one to reflect upon judge and make a decision on a given subject and that entail a questioning attitude based on scepticism.

Some of the sub skills of critical thinking include discerning cause-effect relationship, recognizing similarities and differences by looking into details, sequencing by the use of various criteria, judging the acceptability and validity of, analysing, evaluating, making sense of the given information and making inferences.

2. Creative Thinking Skills

Skills that enable students to alter a basic assumption or product, converge or re-apply it to unusual domains or to generate original and new products and ideas based solely on his mental abilities, to have a different perspective of the events and to make inventions even if the novelty involved is modest.

Some of the subskills of creative thinking include generating sophisticated ideas or elaborating on them,

Devising ingenious solutions to problems, putting forward ideas and solutions that were not conceived of before, having multiple perspectives or integrated picture of an idea or product.

3. Communication Skills

Communication skills entail effective use of verbal language that involves speaking, listening, writing and of non-verbal communication such as body language and sign language in a manner appropriate to the setting.

They include such sub-skills as adopting a manner of speaking that is appropriate to the circumstances concerned, addressing in a proper way, using the body language in a manner and to the extent that the circumstances demand, listening actively, letting others have a say, actively interacting with peers in the group, efficient reading at a reasonable speed, comprehending and critically evaluating what one reads, adopting a proper way of address to the target audience in writing and speaking and having a critical view of his or others' writings.

4. Research-Inquiry Skills

Research-inquiry skills enable one to discern and grasp a problem by putting forward correct and meaningful questions, to plan research that would help him decide what to do and how to do it, to predict the results, to be able to foresee the problems that are likely to occur, to be able to test the result and generate ideas.

It includes such sub-skills as;

Making meaningful predictions, deciding on a relevant research domain, identifying what kind of evidence he needs and to what extent he should collect them;

Planning the research on the basis of a scientific approach, determining how to make observations and comparisons,

putting to use relevant tools and instruments, being able to make accurate and precise measurements, determining the methods to be used in presenting the results; judging whether the results need to be reviewed, being able to relate the finding to the issue at hand, putting forward findings in an appropriate way; judging whether the existing data are sufficient to support the derived results; deciding whether the findings are congruent with the initial expectations.

5. Problem-Solving Skills

These are the skills that help students find solutions to problems they face throughout their lives. Related sub-skills include;

Understanding a problem and getting to the bottom of the problem or identifying the source of the problem;

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Making appropriate plans to find suitable solutions to the problem, modifying strategies and plans where the task involves observations; testing the methods, evaluating data and information on the way to solution; judging whether the solution adopted is meaningful and effective and discerning any other problems that are likely to emerge.

6. Skills in Making Use of Information Technology.

These are the skills in putting to use technology when searching for, attaining, processing, presenting and evaluating the knowledge. Some related sub-skills include;

Making the right decisions on the appropriate use of information technologies, properly planning the use of information technologies; having the necessary competence in putting to use these technologies, having access to information; discerning the relevance the information scanned, sorting out and analysing the information, selecting and evaluating the relevant information, making judgements; presenting the results in an appropriate way and putting them to use in new fields.

7. Entrepreneurial Skills

Entrepreneurship entails skills needed to take appropriate actions in a right time frame in social relations, communication, and business world and in other similar domains; or to establish a novel system in order to efficiently produce or market a product or service that is likely to be sought after.

Some related sub-skills include;

Entrepreneurship, ability to empathize and to relate to others in social interactions; ability to make appropriate planning and to put the plans into action; to take risks; to discern any potential need for a product in a given field, to make appropriate planning for the product; to manufacture and market the products; to make market surveys