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TEACHER PROFESSIONALISM AND CURRICULUM CHANGE: PRIMARY SCHOOL TEACHERS' VIEWS OF THE NEW SCIENCE CURRICULUM

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ABSTRACT

The purpose of this study is to explore primary school teachers' views of change put on the agenda by the recent change in the National Curriculum for science. As Turkish society in a process of constantly change and development, education is also expected to change. For this, the Ministry of National Education introduced and imposed a new curriculum for primary science through related legislation. This is one side which seems to be easy. But, there is another side of this on which this study focuses. That is, teachers' implementation of the curriculum in their own conditions and contexts. The study was conducted by semi-structured interviews with 15 primary school teachers from four different schools. It reveals that implementation of the new curriculum in a designed way by the current conditions and context of schools seems to be rather unrealistic.

***Key words**: Teacher professionalism, curriculum change, primary school teachers.*

ÖZET

Bu araştırmanın amacı, sınıf öğretmenlerinin, yeni fen bilgisi programındaki değişiklik aracılığıyla değişim hakkındaki düşüncelerini ortaya

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koymaktadır. Türk toplumu sürekli olarak bir değişim ve gelişim içerisinde olduğundan, eğitimin de değişmesi beklenmektedir. Bunun için, Milli Eğitim Bakanlığı ilgili yönetmelikle yeni bir ilköğretim sınıf öğretmenliği fen bilgisi programı tanıtıp bunu uygulamaya koymuştur. Bu durum, bir boyut olup, kolay gözükmekte. Fakat, bunun diğer bir boyutu olan ve bu çalışmanın yoğunlaştığı konu ise, öğretmenlerin kendi şartlarına ve durumlarına bu programı uygulamalarıdır. Bu araştırma yarı-yapılandırılmış görüşme tekniğiyle dört farklı okuldan 15 sınıf öğretmeni ile görüşme yoluyla yürütülmüştür. Araştırma, yeni programın istenilen bir seviyede okulların sahip oldukları şart ve durumlarla uygulanmasının oldukça gerçekçi olmadığını göstermektedir.

***Anahtar Kelimeler**: Öğretmen profesyonelliği, program değişimi, sınıf öğretmenleri.*

INTRODUCTION

Since the late 1990's a range of school reform and teacher professional development activities through in-service teacher education course (INSET) have been implemented across Turkey in response to wide ranging social, cultural, political and technological conditions that have had direct impact upon the level of primary education. Teachers now have to respond to a variety of challenges at the structural, cultural and individual level. Structurally, teachers face to deliver more economical and efficient curriculum; culturally, they have to prepare pupils for what the society needs; individually, they need to have sufficient skills and knowledge prescribed by others to be able to practice their roles in a pre-determined way, and if any problems occur in practice, then they have to solve these so that they can provide the pupils with equal learning opportunities by which their pupils can be educated in relation to the needs of the country.

During this time, top-down initiatives, one of which new curriculum for primary science has been prepared and forced to be implemented in the teachers' work. Theoretically, this curriculum is a contemporary one simply because it has the parallel components to the ones that most literature on primary science support to, and most developed countries have in their own practice (see Ekiz, 2001a). However, before the implementation of the curriculum, the teachers' current conditions and contexts under which they operate their teaching roles are to be well known. If only is implementation desired without any consideration to their current situations then it seems very clear that their professionalism is at stake.

'If educational change is to happen, it will require that teachers understand themselves and be understood by others' (Fullan, 1991, p.117). The study described here provides an example of what change means and how it is experienced by teachers via the implementation of the new science curriculum in their work. It is designed to explore their views of how they manage the current change which has very much impact upon their practice. 'How they are understood by others' is the rational behind undertaking this small study. In the study, the literature on teacher professionalism is briefly reviewed, and then is linked with change process created by the new science curriculum for primary school.

TEACHER PROFESSIONALISM

Over the last two decades or more teacher professionalism has received an ever-increasing attention by scholars across the countries, particularly the UK, USA, Canada, and Australia. As a result of this attention, many forms and characteristics of teacher professionalism have been generated. Each scholar has conceptualized it in relation to his/her countries. It has been conceptualized as 'postmodern professionalism' (A. Hargreaves & Goodson, 1996), 'the new professionalism' (D. Hargreaves, 1994), and others have just provided some of its characteristics (e.g. Einsenmann, 1991; Englund, 1996; Helsby, 1995; Helsby, 2000; Helsby & McCulloch, 1996; Sockett, 1993; Sachs, 2000).

There is a wide range of perspectives provided in the literature that have attempted to conceptualise teacher professionalism (e.g. Hoyle, 1974; 1995; A. Hargreaves & Goodson, 1996; D. Hargreaves, 1994). Each perspective represents a different view of the nature of teachers' work and recognition of the value of that work. Widely recognized an analytical tool to conceptualise teacher professionalism is offered by A. Hargreaves and Goodson (1996) more comprehensively, drawing an extensive literature on teacher professionalism, alongside with their own point of view. They argue that there are at least six different and often 'overlapping discourses which carry different connotations of what it means for teachers to be professionals' (A. Hargreaves & Goodson, 1996, p. 4). These discourses in forms have been characterized and summarized here as follows:

> *Classical professionalism*: traditional claims to professional status; *flexible professionalism*: viewing professionalism as local professional communities which can set standards of practice and professional knowledge that 'replaces principles of *scientific certainty* with ones of *situated certainty'*; *practical professionalism*: treating professionalism as dignity and status in

> accordance with teacher's practical knowledge, judgments and skills; extended professionalism: viewing teacher professionalism as extended rather than restricted, and that professionalism involves various aspects going beyond the classroom; *complex professionalism*: teacher professionalism is based on the argument that professionals should be judged on the basis of complexity of work tasks; *postmodern professionalism*: A new form proposed by A. Hargreaves and Goodson (1996), which encompasses seven principles: 'increased opportunity and responsibility to exercise *discretionary judgment'*, commitment for collaborative way of working with colleagues, 'occupational *heteronomy* rather than self-protective *autonomy'*, a professionalism involves emotional, cognitive dimensions of teaching, commitment for *continuous learning*, and 'the creation and recognition of high task *complexity'* (see, p. 4-21).

In similar vein, D. Hargreaves (1994) also proposes a conceptualization for teacher professionalism by observing the consequences of legislation in England and Wales, that is, he terms 'the new professionalism'. For him, at the center of the philosophy of the new professionalism lies a new synthesis of professional development and institutional development. He expresses this synthesis as integration of two theoretical propositions; first, *'there is little significant school development without teacher development'*, and second, *'there is little significant teacher development without school development'* (original italic, p. 435-436).

Thus far, forms and structures of teacher professionalism presented here reflect teachers' conditions and contexts in the most developed countries. How about the Turkish teachers' situations are. Teacher professionalism is also conceptualised through an empirical case studies in Turkey as 'constrained professionalism'. It represents that teachers are constrained from various directions such as the implementation of the national curriculum step-by-step manner whatever the conditions and contexts are, pressure put by inspectors, available limited time and resources opportunities, overcrowded classrooms, limited professional learning and development opportunities (Ekiz, 2001b).

It is often assumed that there is a close link between teacher professionalism and their control over the curriculum (Helsby & McCuloch, 1996). It can also be assumed that there is a link between teacher professionalism and curriculum change in the sense that they should have 'voice' on it and have ready for it.

CURRICULUM CHANGE

Change is a complex process for teachers if they are not ready for it. However, it certainly depends upon them. Fullan (1991) well argues that '[e]ducational change depends on what teachers do and think-it's as simple and as complex as that' (p. 117). It is simple because it is the teachers who reflect on change, absorbing and manipulating new ideas. It is complex because it is the teachers who consider whether change is possible in reference to their own conditions and contexts. Teachers have their own practical view and experience of their own work and of the school where they work. It has been well argued that attempts to impose change, whatever its nature, on teachers and their practice of teaching have not often been successful (Acker, 1997; Elliott, 1998; Fullan, 1991, 1992; Hargreaves, 1994). This is so, in every imposed change 'there is the implementation of simplified technological solutions to curriculum change (Hargreaves, 1994, p. 119).

Fullan (1992) points out that '[c]hanging structures are easier to bring about than changes in values, beliefs, behaviour' (p. 114). Restructuring is easy because it is done by top-down initiative, often in an imposed manner. Those who are in 'top-position' often do not or do not want to recognise this. Curriculum change requires taking teachers beliefs, views, and behaviours into account. Change involves both altering practice and individual perceptions of their roles and responsibilities (Bennett, Crawford & Riches, 1992). Important though these considerations are, however, there is also a wider issue taking place about the conditions and contexts where curriculum change is to be implemented. Working conditions and contexts is the crucial theme in any considerations of any change because it is these that change is experienced, realised and mediated. It is well exemplified that teachers' working conditions and contexts effect what they can or able to do (e.g. Ekiz, 2001b; Nias, 1989). In Britain, for example, Nias's (1989) early work shows that teachers face many difficulties in managing with adequate recourses and in inappropriate accommodation. In Turkey, recent research by Ekiz (2001b), among others, into the conditions and context under which teachers' work too demonstrates that teachers have inadequate recourses, over-crowded classrooms and limited opportunities for professional development to deliver the national curriculum in a desired way. These poor conditions and contexts impede change to be implemented in practice.

Change also depends upon teachers' professional development. In the change literature there is a widely recognised view that the success of the curriculum change and accordingly innovation is contingent upon the professional development of teachers (Blenkin, Edwards & Kelly, 1997).

This view is rightly put by Stenhouse (1975) more than 25 years in relation to the innovation attempts during the 1960s and 70s in the UK, there can be no curriculum development without teacher development. In similar vein, I would say that there can be no curriculum implementation without teacher development.

CONTEXT OF THE STUDY

Turkish society is in a process of rapid change in almost every part of institutions. Recently, Turkey has experienced rapid educational change, largely seems to aim at improving the quality of pupils' education. At the epicentre of these changes seem to be the effects of Western developments in educational systems, the current globalisation of the economic order, and a rapid increase in information and knowledge exchange. Within the scope of these changes Turkey has undertaken many top-down educational initiatives- e.g. expanding compulsory education, restructuring initial teacher education, introducing new curricula-. These initiatives can be seen 'technically simple and socially complex (Fullan, 1991, p. 47). Beneath the rhetoric and assumptions of these initiatives seem to be that the quality of education of pupils can be improved by imposing change through legislations, perhaps without recognising whether conditions and contexts are available to do so.

One of several initiatives has come from the Ministry of National Education (MEB) via introducing new curriculum for primary science covering grade four and five classes (age group 10-11). The primary science is core subject in school. The aim of it is generally prescribed as twofold in the intellectual sense; to enhance pupils' conceptual understanding, and to develop their capacity to enhance their procedural understanding (Ekiz, 2001a).

Looking at a brief history of primary science curriculum may help us understand its scope and change better. The first curriculum was introduced in 1893 in the Ottoman Empire era, and it was practised until 1924. This curriculum had several changes in 1926, 1936, 1948, 1968 and 1977 in both contents and structures. Until 1992 no major changes had been made (Güçüm & Kaptan, 1995). In the 1992-dated curriculum, the aims were prescribed or predetermined under twenty-two attainment targets. These targets were more prescribed by 264 objectives for the fourth grade, and 251 objectives for the fifth grade. Teachers were expected to cover all of these objectives as pupils' observable learning outcomes. However, the new curriculum dated-2000 and which has been implemented in 2001 seems to be more manageable for the teachers, because, there is a considerable reduction in the number of attainment targets from 22 to 10. The targets prescribed as

observable learning outcomes are now 97 for the fourth grade, and 203 for the fifth grade. What these new curriculum for primary teachers and how they see the change process are the issues this study is more concerned with (Ekiz, 2001b).

METHOD OF THE STUDY

The research presented in this study provides insights into primary school teachers' views of change process and the new curriculum for science. It is prompted by what Fullan's (1991, p.117) well observation in change literature that 'educational change depends on what teachers do and think-it's as simple and as complex as that'. The participants of the study were 15 primary school teachers whose experience are ranging from 14 to 20 years. The data were gathered through 'qualitative interviews' (e.g. Bogdan & Biklen, 1992; Bryman, 1988; Cohen, Manion & Morrison, 2000; Lincoln & Guba, 1985). These interviews help to have an access into the teachers' minds. The following specific questions formed the basis of the study:

- How do they view the change process?
- What do they think of the aim of primary science?
- How do they compare the previous and the new curriculum?
- What are their views of the new curriculum?
- What are their conditions and contexts to implement the new curriculum?

Aiming to find out their views about these questions, teachers in four different primary schools in the city of Trabzon where is in Black-sea region of Turkey were interviewed. The idea behind selecting the teachers from different schools is to reach a sort of 'naturalistic generalizability' (Lincoln & Guba, 1985). Each interview took place approximately one and half-hour. The interviews were semi-structured and open-ended in nature. All interviews were audio-taped and transcribed. Analysis is processed in reference to the forms of structures of semi-structured questions. Cross-case analysis is made to arrive generic themes (Miles & Huberman, 1994; Stake, 1995; Yin, 1994). Analysis reveals that similarities in the teachers' views are in common. The presentations of interview extracts are here made in reference to the best illustrative views of the teachers.

FINDINGS AND DISCUSSIONS

Findings are presented here under five categories in relation to the specific questions formed in the study. These are; perceptions of change

process, aims of science, the previous versus the new curriculum, views of the new curriculum, views of presenting the lesson, conditions and contexts.

Perception of Change Process

Changing teachers is a complex and unpredictable event as well as a process. This is so, it depends upon their 'past experience, willingness, abilities, social conditions and instructional support' (Day, 1999, p. 15). The change is perceived by the teachers is not a matter of problem; rather is a matter of being created enough opportunity to do so. Common remarks are, as follows:

> It was not difficult to accept the new curriculum. But, there should have been preparation process in which teachers should have been consulted about it, and there should have been seminars about how to work with it.

Change also requires teachers for new ways of working with what is imposed to. What the teachers believe is that it creates a problem, which is connected with their readiness:

> The new curriculum forced teachers to leave traditional teaching methods in a corner. This created a problem for me, because, I had to change myself. Before the new curriculum has been put in practice, there should have been transitional period.
>
> I didn't face much difficulty to adapt the change. But, before the implementation of it, it should have been consulted with teachers.

The teachers believe that change via implementation of the new curriculum is not a difficult process for them, and yet, they are not ready for it. Rather it happened in *ad hoc manner*. It has taken place when it is not expected. That is the reason why they point out that there should be a transitional period by which they can be adapted to it, and it can be assimilated by them.

Aims of science

Science is a core subject, which aims to help pupils understand what is going on in the physical world around them. The teachers all believe that primary science is a means by which the pupils can develop their problem solving abilities through which they can manage to live with the physical word in a desired way. They repeatedly put emphasis on 'teaching pupils to think'. Some comments:

> The aim of science is to teach pupils to think and to acquire problem solving, and introduce them to the nature.
>
> The aim of science teaching is to get pupils to think like a scientist, and to get them to acquire problem solving abilities.
>
> Children prepare themselves for real life by science lesson. They learn by doing and experiencing… Basically they learn life… Its aim is to teach the children to think, I mean, to develop their problem solving abilities, and to prepare them for the life.

They all share the common aim of science teaching and learning. Their understanding of science is in parallel with what the literature shows in this domain (see, Ekiz, 2001a).

The Previous versus the New Curriculum

The teachers compare the curriculum dated 1992 with the curriculum dated 2000. They all believe that the previous curriculum was teacher-centred by which they had to present the topics in a 'rush way'. By contrast, the new curriculum is pupil-centred by which pupils have great opportunities to think about through science and to develop their problem solving abilities. Some common remarks are, as follows:

> The previous curriculum was teacher-centred. The new curriculum is pupil-centred. While the previous one aimed to give only scientific facts, the new one aims to teach how to think, and to develop their problem solving abilities. The previous one had too many objectives and eight units to be met, and so teachers were under heavy burdens. It was impossible for a teacher to complete all of the units in time. For this reason, it was difficult to get pupils to reach the targets. The new curriculum has removed these difficulties
>
> The new curriculum is more suitable than the previous one to the level of pupils. The reduction of unit numbers has decreased the heavy burden importantly which was on teachers. The pupils now have an opportunity to learn the topics by doing in a long period. They are released from being the 'knowledge-carrier'.

In principle, they all criticise the previous curriculum on the basis that it is an outdated one and does not prepare pupils for what they need, rather it assumes the pupils as an empty vessel to be filled up by knowledge, which often cannot be utilised actively in the daily life. The teachers all support the new curriculum on the basis that it is a contemporary one and

prepares the pupils for the real life, giving them adequate opportunities to think like a scientist, and to develop their problem solving abilities.

Views of the New Curriculum

The teachers emphasise that it is not the existence of the new national curriculum by itself that they are concerned with, but the way in which how to implement it. As the new curriculum is much more flexible and giving adequate time for the pupils to assimilate the scientific facts and so to understand the procedural science, the teachers believe that it will be both productive and effective. Some typical remarks:

> I believe that the new curriculum will be effective both for teachers and pupils. It will help the pupils acquire investigation and problem solving abilities. For this reason, I see the new curriculum as useful.
>
> The new curriculum involves what needs are in contemporary science. Creativity is important which is in place in the new curriculum.

The new curriculum is viewed as much more suitable to the technological, social and cultural developments of Turkish society. They believe that it helps pupils use knowledge and skills they will gain from it effectively, creatively and confidently in the solving of practical problems of daily lives.

Views of presenting the lesson

The teachers point out that presentations of any science lessons should be in a way that which should provide opportunities with pupils to use procedural skills such as investigations and experiment in the exploration of any scientific topics. This way of presenting the lessons is viewed as pupil-centred approach, which may enable the pupils to use and to develop their scientific skills as well as to reach their own occlusions by gathering evidence. Some common comments are:

> Science lesson should be pupil-centred. A teacher should be a guide to pupils. With the conditions available the teacher should guide the pupils to investigation and experiment.
>
> Science lesson should be presented on the principle of ‘doing and experiencing’. Rote learning should be avoided by the practice of observation, experiment and application.

> It should be run by pupil-centred approach. Pupils should reach the knowledge by individual or group work. The emphasis should be on the teaching methods of experiment, research and observation.

Teachers view that science lessons are to be run by providing opportunities with the pupils by individual work and by small group discussions so that they can share their ideas, listen to their peers, explain their ideas of what they are doing and what they have done. With the process of scientific skills such as experimentation and observation in a group work, alternative ways of considering and approaching scientific topics is possible for them. These in turn would help pupils learn meaningfully, rather than relying on memorization of scientific facts.

Conditions and contexts

The change is desirable, but seems to be not 'implementable' (Fullan, 1997). This is so, the requirement to implement for the new national curriculum for science is believed in fundamental dilemma with the current conditions of schools. The conditions are mainly related to the limited resources of schools, inadequate library facilities, which are suppose to enable pupils to learn procedural knowledge of science. As adequate conditions and contexts are not available, teachers repeatedly express their concerns of how to implement the new curriculum in practice. Some common remarks are:

> Majority of teachers are not ready for teaching and learning activities created by the new curriculum.
>
> Because of both limited resource conditions of school and of our limited knowledge about how to use teaching methods which will help to work with the new curriculum, this will effect to meet its requirement negatively.
>
> Enough conditions and contexts should have been created. Schools should have had necessary equipment. Basically, the new curriculum should have been prepared in relation to the situations of the schools and their environments.
>
> The conditions of schools for making this new curriculum successful are not enough. The pupils need enough laboratory equipment to work individually. The curriculum can only be effective and successful if the enough conditions are created. Besides, the teachers should have gone through an INSET course before the new curriculum has been implemented. For me, from time to time, I have faced with difficulties in applying the new

> curriculum. My difficulties are mainly how to utilise teaching strategies of pupil-centred instruction and discovery-based learning.

The conditions are also related with the development of teachers. Teachers' development is processed by the traditional approach (INSET) where an outsider provides what is necessary with the teachers. There is neither school-based in-service education tradition relying on individual needs or individual choice nor any attempt to establish career-long differentiated support for the development of teachers in Turkey (Ekiz, 2003, in progress). The teachers believe that before the implementation of the new curriculum, which requires entirely new ways of working with pupils, they need to have an understanding of it and to know how to work through it. They also believe that there is a time pressure on them in meeting its requirements:

> Teachers should have been provided with seminars and INSET course about the contents and teaching methods of the new curriculum. Because, they are not good enough at these. Besides, the lesson time should be increased. The new curriculum should have not been implemented without creating the conditions.

Implementation of the new curriculum by the current conditions and contexts in their practice in a way it is designed and aimed is viewed as rather more unrealistic. If science is to be practical work by the new curriculum, then it should be necessary conditions and contexts to do so. Otherwise, the pupils can learn science by reading and by watching their teachers to conduct demonstrations. If there are no adequate conditions and contexts, then changing the curriculum does not make much difference by only changing its structure, simply because, by the new curriculum, the old practice will highly probably continue.

RECOMMENDATIONS and CONCLUSIONS

There is a close relationship between teacher professionalism and curriculum change. Whenever a curriculum is changed then teacher professionalism is affected by it. Change requires new ways of working with the practice, which often brings extra work to teachers. The teachers view that they welcome the change, which often is perceived as a very difficult process in the related literature (e.g. Fullan, 1991).

This study reveals that, among others, the new curriculum is viewed by the teachers as a contemporary one, which aims to teach pupils to think with science and to acquire problem solving abilities by which they would

have a means for social, cultural and technological needs of the Turkish society. However, the current conditions and contexts under which the teachers operate their professionalism impede the requirements of the new curriculum. Schools where they work have not adequate resources and they practice their work in appropriate conditions to attain its requirements. In this sense, changing curriculum is easier to bring about than changes in implementation, and in views, because change requires altering practice in a desired way. Teacher professionalism by the requirements of the new curriculum is still at stake, because, they mainly do not know how to meet its attainment targets. There cannot be curriculum implementation in a way in which it is desired without teacher development. 'Any significant innovation, it is to result in change, requires individual implementers to work out their own meaning' (Fullan, 1997, p. 212). As such, in order to make teachers to work out their own meaning for implementation, technical assistance or stimulation from outside is a must.

The new curriculum seeks the need for new teaching and learning approaches, such as learning by 'experimentation and investigation' (Ekiz, 1997) by pupils, and new roles to stimulate the pupils by teachers. Infrastructure is one of key in any attempt to change in this sense. What is needed is to create adequate contexts (e.g. labs, equipment) by which the teachers accommodate its requirements.

Implementation of the new curriculum in a desired way by the current conditions and contexts of teachers and schools seem to be rather unrealistic. In this sense, teachers are seen as constrained professionals that prevent them from being attentive to the requirements of the new curriculum, and they appear to be unable to prepare pupils for by science the society in a process of constantly change.

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