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## Chemistry Teacher's in-Service Training Needs in Turkey

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### Abstract

It's important for teachers to get education and training before and in service. The form of the education to be given should be chosen according to needs and problems faced. In this regard, researches about chemistry teachers' education in service in Turkey have been analyzed. The results gathered tell us that teachers need in-service training about classroom management, teaching methods and techniques, knowledge of general teaching field, evaluation of learning products, recognition of curriculum and using coursebooks essentially.

### 1. Introduction

Training of educators has always been above all important topics. In this regard, many different politics of education of teachers come on agenda in every country. Different applications take place and varieties occur in forms of teacher upbringing from time to time, also in Turkey. In Turkey, teachers are educated in education faculties in universities. In 1997, YOK (Board of Higher Education) needed to revise their politics in teacher education. In the process of re-configuration, "3,5+1,5 years" became a prerequisite for upbringing middle-schooling teachers. Along with this, also students at faculty of science and literature can be middle-school teacher by getting formation education.

Solely, education of teachers should be taken as a whole; knowledge of field, pedagogic field and general culture should adequately be instructed to them. In this regard, teachers' needs in service time should be singled out to have such related activities before service time. The classification below can be listed, when the problems faced in teaching chemistry in Turkey are analyzed:

- Teaching methods and techniques
- Field Knowledge
- Managing discipline in class
- Evaluating products of learning
- Recognition of teaching program
- Usage of coursebooks



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## 2. Aim of the Research

In this research, initial and in-service training of science teachers in Turkey are analyzed, problems are pointed out, information about subjects that teachers need in service education and things that can be done are included.

## 3. Method

Descriptive survey method was used in this research. This method includes applications that allow us to analyze current situation. Especially the problems about the training of science teachers and possible solution recommendations are reviewed in this regard.

## 4. Findings

### 4.1. Findings related to in-class discipline

It's important to have a disciplined environment in education area for subjects to be understood clearly. The notion of discipline describes rules and provisions for a group of people, that have gathered for a common purpose, to live in order and precautions that need to be taken in this regard [1]. We shouldn't perceive the notion that tells students should sit silently and listen to the teacher when we speak of the term "discipline". For an effective education, all factors should be put in the educational environment, therefore real discipline and classroom management can be provided. In one of their studies, Tezcan and Demir analyzed the discipline behaviours of high school chemistry teachers during lesson[2].

In this regard, they gathered opinions of 43 high school chemistry teachers. It's emphasized that chemistry teachers have classroom management, hold their exams in a secure environment; that female students are more successful and first years are more difficult for teachers to manage their classes.

Hence, teacher candidates should be trained that they can easily manage their classes *in their first years*.

### 4.2. Findings regarding teaching methods and techniques

One of the crucial points in continuation of education environment well is the act of guiding education and the way of being educated. In this sense, teachers should be able to pick and apply the education method in which students can be more effectively educated. Teachers should know their education methods and consider their students' approach in learning [3].

Bilgin, Uzuntiryaki and Geban showed in their study that student oriented activities affect student motivation in a positive way [3]. In this process, students learn not the information itself but how to reach them. Within this regard, their thoughts change in a positive way, because they learn in action. Conclusions of a study of Tekin and Ayas show us that chemistry teachers show a positive approach to education in service and need courses that ground on new teaching method and approaches at most [4].





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#### 4.3. Findings regarding field knowledge

Field knowledge of teachers and their ability to use them effectively should be taken as an important point. Ones that have adequate field knowledge and ability to use them won't have any difficulty in procuring effective education. Özden made his evaluation with 72 chemistry teachers' observations and using different measurement tools[5]. Result of the study showed that the education that teachers take in universities is not adequate to teach and they lack in knowledge about current curriculum. Besides, inadequacy of physical environments, negative effects of students' test anxiety and class books' being inadequate are explained as obstacles in teaching chemistry.

In this context, teachers must have a level of knowledge that allows them to be dominant in their branch as they're upbrought. Besides, they should be able to apply methods to present their knowledge effectively.

#### 4.4. Findings regarding evaluation of learning products

Teachers' evaluation of learning products is important for us to understand how education is. In this aspect, teachers must have adequacy in evaluation method and techniques and the ability in using them, before graduation. In addition, teachers should be instructed about innovations in evaluation, in their service time. Demircioğlu and Demircioğlu examined whether the questions that chemistry teachers ask in their exams are appropriate for targeted behaviours in their study[6]. 389 questionnaires are gathered and analyzed in the end of study. They found out that teachers do not prepare their exam questions in line with targeted behaviour and they lack in evaluation and measurement. Thus, educating teachers about evaluation and measurement is emphasized. Another study pointed out that middle school physics teachers lack in information about the criteria they should follow in question preparation[7].

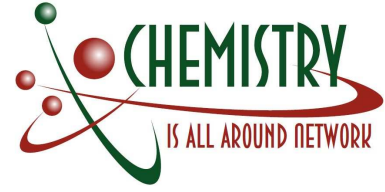
#### 4.5. Findings regarding recognition of teaching program

Science curriculum changed in time and programs that include new approaches are prepared. Science teaching programs that are grounded on student activism and learning by living, are practiced in Turkey in 2005. In 2013, science teaching programs are updated by bringing research and argumentation to forefront. Hence, teachers must be instructed about these teaching programs. In his study, Ercan took teachers' opinions about application of teaching program[8]. He pointed out that they lacked in evaluation and measurement and had suggestions about how teaching program can be more adequately told. Yadigaroglu and Demircioğlu revised problems faced in application of chemistry teaching program in their study[9]. Their study showed that teachers need education in service in order to apply teaching program.

#### 4.6. Findings regarding usage of coursebooks

The sources that are prepared along with teaching program need to be put to use effectively by teachers. One of those sources are course books. Effective usage of course books will secure education in intended level. Nakiboğlu analyzed the chemistry teachers' usage of course books [10]. The study showed that teachers do





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not take course books as how they should and they only give place to evaluation questions. In this regard, teachers' need in service education in how they could use classroom tools. Tekin and Ayas reviewed chemistry teachers' in service needs[11]. The study was held on 30 teachers and the results showed that teachers are not adequate enough about the methods in which teachers evaluate students in an active environment and they need in-service courses about this subject.

## 5. Results and Commentary

Teachers professionalism in their field can be accomplished by integrating in-service and pre-service educational activities [12]. In this context, in Turkey, chemistry teachers' needs in in-service education tell us that they want to learn and be able to apply teaching methods and techniques that include especially new approaches. Along with this, field knowledge of teachers is needed to be enhanced. Teachers generally do not have difficulties about classroom management but this can be a problem in their first years. It's also pointed out that adequate support should be given about how should learning products be evaluated, recognition of teaching program, effective using of class books.

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