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### Başlık: The Effect of Professional Development Programs on Teachers' Self-Efficacy Beliefs in Science Teaching: A Meta-Analysis Study

**Yazar(lar):**

E-posta: \* Corresponding Author: Yunus Emre baysal, y.emrebaysal@gmail.com

**Yunus Emre BAYSAL**
İNÖNÜ ÜNİVERSİTESİ
[0000-0001-6125-3165](https://orcid.org/0000-0001-6125-3165)
Türkiye

**Fatma MUTLU** (Sorumlu Yazar)
İnönü Üniversitesi
[0000-0002-8643-1236](https://orcid.org/0000-0002-8643-1236)
Türkiye

**Öz:**

**Anahtar Kelimeler:**

**Kaynakça:**

**Kaynak Göster:**

### The Effect of Professional Development Programs on Teachers' Self-Efficacy Beliefs in Science Teaching: A Meta-Analysis Study

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### Öz

The aim of this study is to investigate the effect size of professional development programs on teachers’ science teaching self-efficacy using meta-analysis method. For this purpose, literature review was made on existing national and international studies. In this context, master’s thesis, doctoral dissertation and articles that were conducted between 1990 and 2019, were appropriate for the research problem and had statistical data to be included in the meta-analysis study were reviewed and investigated in Turkish and English from national and international databases. As a result of the literature review, 1072 national and international related studies were reached. Among these studies, it was determined that 14 studies (N=969) met the inclusion criteria. The effect sizes and the combined effect size of the studies were calculated using “Comprehensive Meta Analysis v2.0 (CMA) Statistical Package Program”. In the studies combined under the random effects model, the effect size of professional development programs on teachers’ science teaching self-efficacy beliefs was determined as 0.652 (95% CI, SE=0.146). This value was a “moderate” effect level according to the effect size classification of Cohen, Manion & Morrison (2007). As a result of the heterogeneity test, it was concluded that there was a high level of heterogeneity in the study (Q=90.679; χ²=22.362; I²=85.664). Moderator analysis was performed in order to determine the sources of high levels of heterogeneity between studies. As a result of the ANOVA similarity analysis conducted for the publication type and branch categorical moderators, it was determined that the effect sizes of teachers’ science teaching self-efficacy beliefs differed significantly according to the branch variable. As a result of the meta-regression analysis performed for the publication year, sample size and application period which were assessed as continuous variables, it was determined that the publication year (Z=-5.46504, p<0.05) and sample size (Z=2.70837, p<0.05) moderators caused significant differences on the effect sizes of the teachers’ science teaching self-efficacy beliefs. Some recommendations were made in line with the study results.

### Anahtar Kelimeler

[Professional development programs](http://ijcer.net/tr/search?q=%22Professional+development+programs%22), [Science teaching self-efficacy Beliefs](http://ijcer.net/tr/search?q=%22Science+teaching+self-efficacy+Beliefs%22), [Self-efficacy,](http://ijcer.net/tr/search?q=%22Self-efficacy%2C%22), [Effect size,](http://ijcer.net/tr/search?q=%22Effect+size%2C%22), [Meta-analysis,](http://ijcer.net/tr/search?q=%22Meta-analysis%2C%22)

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### Ayrıntılar

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| **Bölüm** | Articles |
| **Yazarlar** | **Yunus Emre BAYSAL**İNÖNÜ ÜNİVERSİTESİ[0000-0001-6125-3165](https://orcid.org/0000-0001-6125-3165)Türkiye**Fatma MUTLU** (Sorumlu Yazar)İnönü Üniversitesi[0000-0002-8643-1236](https://orcid.org/0000-0002-8643-1236)Türkiye |
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