## Book Review: The Factors Effecting Student Achievement: Meta-Analysis of Empirical Studies

**Cahit Erdem**

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*The Factors Effecting Student Achievement:*
*Meta-Analysis of Empirical Studies, 1st ed. (2017)*
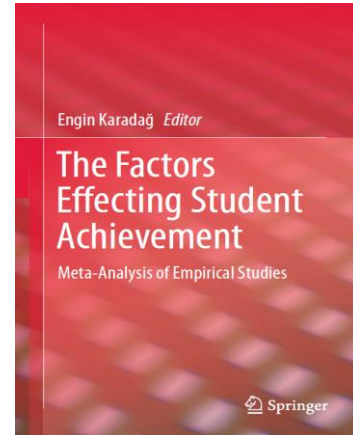
**Cahit Erdem**[1] (iD)
Dr., Afyon Kocatepe University, School of Foreign Languages, TURKEY

[1] Corresponding Author (✉ cerdem@aku.edu.tr)

Pooling the findings of independently conducted individual scientific studies and analyzing them as a whole enable more valid assessments as to the subject being researched. Meta-analysis is a way of doing this since it produces results representing immense populations by synthesizing the findings of individual studies. In accordance with this notion, The factors effecting student achievement: Meta-analysis of empirical studies (ISBN: 978-3-319-56082-3), edited by Engin Karadağ, was published in 2017. Student achievement is an intensively addressed issue in the literature with respect to a number of variables. This book examines the impact level of the predictors of student achievement by analyzing the relationship between student achievement and 18 variables. To this end, 2138 correlational research studies consisting of publications available on ScienceDirect, ProQuest and EBSCO academic databases, and dissertations from American and Canadian universities, were included in the analysis, representing a sample of 2.292.720 people. The book consists of 20 chapters, 18 of which report the relationship between student achievement and various variables.

The first chapter, the introduction part, offers a detailed explanation of meta-analysis. In this chapter, meta-analysis is clarified with historical background and information as to the main concepts of meta-analysis, including effect size and types, effect size in dichotomous data, average effect size between groups for continuous data, correlational effect size for continuous data, choice of model, publication bias, sub-group analysis and moderator analysis, is provided with examples. These explanations endow readers with a base to understand the analysis methods and processes in the following chapters.

The following chapters, written by 16 different authors from Turkey, cover the analysis results regarding the effects of educational leadership, motivation, attitude, anxiety, self-efficacy, self-concept, self-regulation, locus of control, socioeconomic status, school culture, school climate, collective teacher efficacy, expectation, self-esteem, social adjustment, parent involvement, goal orientation, learning types/styles on student achievement respectively. These chapters are formed in line with a well-defined structure, which includes introduction with explanations as to the related variable based on a brief literature review and hypotheses to be tested as well as method, findings and conclusion sections. The method section contains study design, review strategy and criteria for inclusion /exclusion, coding process, statistical processes, moderator variables and publication bias. Based on the findings section, the results of the meta-analysis are discussed with other studies in the conclusion section.

Following the 18 chapters reporting the effects of the variables on student achievement elaborately, the conclusion chapter summarizes the results of the analyses in a holistic manner but offers a table featuring specific results of correlations as well. Analysis of moderator variables such as type of publication, year of publication, the culture in which the study was conducted, the course subjects examined in the study, the level of school in which the study was conducted is also provided in this chapter as well as limitations of the study.

It was found out in the meta-analyses that the variables which have low impact on student achievement are motivation, self-regulation, anxiety, parent involvement, goal orientation, learning types/styles and self-esteem; the variables which have moderate impact on student achievement are self-efficacy, attitude, school climate, school culture, self-concept, expectations, the leadership behaviors of school principals and collective teacher efficacy; the variable which has high impact on student achievement is socio economic status. It was also

found out that anxiety has a negative impact on student achievement while social adjustment and locus of control have no impact on student achievement (Karadağ, 2017, p. 325).

This book is a worthy source for both researchers and practitioners. For researchers, it offers a wide literature review regarding student achievement and related variables, and puts forth the correlations between them, which enables readers to scrutinize the literature on student achievement. Furthermore, it clearly defines the predictors of students achievement in terms of their correlation level and this asset of the book has the potential to guide future research on student achievement. Researchers may plan their studies based on the findings presented in this book. Additionally, the book also serves as a reference guide for novice researchers regarding meta-analysis. Beside the introduction section informing readers on meta-analysis, the following chapters exemplify the process of meta-analyis, which poses a model for researchers.

The book also addresses practitioners in the education sector in that it provides readers with clear-cut results as to the predictors of student achievement based on extensive literature. Individual research studies may not mean a lot to practitioners as they are swamped with conflicting results of research studies and they do not have the chance to access, read, analyze and comment on the results of countless individual studies. Herein, practitioners have the chance to make use of the overall results of the studies on student achievement, which is the main goal to achieve for practitioners. They can reflect on the variables that have moderate or high impact on student achivement and try to implicate them in their teaching practices, for instance. In addition, practitioners can focus on a variable of their interest and dwell on detailed findings and discussion in the related chapter.

Despite being a reference guide for both researchers and practitioners, the book has also limitations just like any other scientific study. The research studies available on certain databases and  dissertations in certain countries were included in the meta-analyses based on inclusion criteria and they are all in English, which may yield cultural bias and publication bias. Therefore, more meta-analyses on this issue are needed with different samples, which can lead to a meta-synthesis and put forth more valid and comprehensive results.