

# Effects of Online Learning on Student Moral Development: A Meta-analysis Based on 42 Experimental and Quasi-experimental Studies

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**Abstract:** *The widespread practices of online learning have sparked increasing interest in its educational efficacy. The effects of online learning on learners' moral development remain contentious in existing research. The purpose of this meta-analysis was to ascertain how online learning impact students' moral development. It included 42 experimental and quasi-experimental studies with an aggregate sample of 5303 learners after the processes of literature screening, data extraction, and risk of bias assessment. Analytical results revealed that online learning had positive effects on student moral understanding and reasoning, but no significant impact on student moral emotions and behavior. Subgroup analyses by student type, course type, online learning pattern, and involvement of interactive activity showed that there were disparities in the effect size between all subgroups and that only the moderating effect of student type on student moral reasoning was statistically significant.*

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## **Introduction**

Online learning is a paradigm of learning that is partially or completely internet-based and electronic communication device-dependent. Despite the significance of online learning for moral education being widely acknowledged, there is a lack of agreement on how online learning affects moral development among researchers. Therefore, it is necessary to conduct a meta-analysis that includes a wide range of relevant studies in order to obtain accurate and timely research findings.

## **Data and Methods**

This meta-analysis adopted the methods proposed in Cochrane Handbook for Systematic Reviews of Interventions for data treatment (Higgins et al., 2022) and defined the reporting items according to *The PRISMA 2020 Statement* (Page et al., 2020).

## ***Inclusion and Exclusion Criteria***

The present study established literature inclusion and exclusion criteria according to the framework of PICOS:

- Subjects: students exercising online learning.
- Interventions: solely online learning and blended learning.
- Outcome indicator: scores by student moral understanding, reasoning, emotion, and behavior development scales.
- Research design: experimental or quasi-experimental study
- Exclusion criteria: using patients suffering from specific diseases as subjects; electronic games as interventions; information or data on outcomes missing; systematic reviews; republished literature; articles with complete text unavailable.

## ***Literature Search Method***

The present study collected empirical studies on the impact of online learning on student moral development by searching databases including CNKI, Wanfang Data, PubMed, Web of Science, EBSCO, ERIC, Taylor & Francis, ProQuest, and Wiley Online Library. Targeted studies were those published before September 2022.

## ***Literature Screening and Data Extraction***

This study engaged two researchers in screening literature and extracting data independently as well as performing cross-checking. Discrepancies in screening and extraction results were resolved through discussion or consultation with a third party.

## ***Risk of Bias Assessment***

Studies included in this analysis comprised randomized controlled trials and non-randomized studies.

## **Research Results**

### ***Literature Screening Procedure and Results***

With the prescribed literature search method, the present study obtained 6230 pieces of literature, of which 6,222 were attained through database retrieval and 8 through manual tracing. Eventually, 42 studies were included in the meta-analysis according to inclusion and exclusion criteria.

### ***Basic Features of the Studies Included***

There were 7 randomized controlled trials and 35 non-randomized trials, with a sample of 5303 learners included in the analysis. Among them, 20 studies were published after 2020, accounting for 47.62% of the total included literature and contributing the latest research findings on this topic. The 42 studies encompassed participants (subjects) from 15 countries around the world with three of them focusing on students from China. College students constituted the samples of 33 of the studies, in-service personnel such as teachers, nurses, and managers were the participants of eight of them, and primary school students made up the sample of one of them. Online learning courses entailed in these studies included both specialized moral education courses and non-moral education courses. Solely online learning and blended learning were the two main forms of online learning adopted. In terms of the effects of online learning on student moral development, 16 studies reported outcomes of student moral understanding, 9 studies reported outcomes of student moral reasoning, 15 studies reported outcomes of student moral emotions, and 11 studies reported those of student moral behavior.

### ***Meta-analytical Results***

Online learning could moderately and positively impact student moral understanding and positively but slightly affect student moral reasoning, whereas it had no significant effects on student moral emotions or moral behavior.

### ***Moderating Effect Analysis***

School students could make greater progress in moral understanding through online learning, while in-service learners could benefit more from online learning in moral reasoning, moral emotions, and moral behavior. Specialized moral education courses had greater effects on students' moral understanding improvement, while non-moral education courses had more significant effects on students' moral emotion development. Solely online learning was more favorable to students' moral reasoning and emotion development, whereas blended learning was more beneficial for students' moral understanding advancement. Online courses with teacher guidance and peer interplays contributed to students' moral understanding and emotion elevation, while online self-study courses without interactions had positive effects on students' moral reasoning development.

## Reference

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