

Causal Modeling of Specific Learning Difficulties Based on Self-Control with the Mediating Role of Disobedience among Sixth-Grade Students in Urmia

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1. Round 1

1.1. Reviewer 1

Reviewer:

The Introduction discusses reading, writing, spelling, and mathematics difficulties, but the outcome variable is subsequently treated as a single global construct. The authors should clarify in the paragraph beginning “Specific learning difficulties constitute a major group of neurodevelopmental and educational problems” whether the study conceptualizes learning difficulties as a unidimensional latent construct or as a multidimensional construct composed of reading, mathematics, social cognition, social anxiety, and spatial functioning. The latter domains are heterogeneous and include emotional and social features that extend beyond conventional definitions of specific learning disorder. A stronger conceptual justification is needed for combining these dimensions into one outcome score.

The paragraph beginning “Self-control is one of the central psychological capacities involved in the regulation of learning and behavior” provides a broad definition of self-control but does not sufficiently distinguish self-control from related constructs such as executive functioning, inhibitory control, effortful control, self-regulated learning, and emotion regulation. These constructs overlap but are not conceptually identical. The authors should define the precise level of analysis represented by the Tangney Brief Self-Control Scale and explain why trait self-control is expected to predict parent-reported learning

difficulties. A more precise conceptual differentiation would strengthen the theoretical rationale and reduce construct ambiguity.

The mediating role of defiance requires a more explicit theoretical mechanism. In the paragraph beginning “Defiance is another behavioral construct that may be particularly important,” the manuscript proposes that defiance may reflect avoidance of failure, emotional distress, or resistance to academic demands. However, these possibilities are presented descriptively rather than as a clearly specified mediation process. The authors should explain why lower self-control would precede greater defiance and why greater defiance would subsequently be associated with more severe learning difficulties. The temporal and behavioral sequence should be articulated before the hypotheses are introduced, and plausible alternative pathways, including learning difficulties leading to frustration and defiance, should be acknowledged.

In the Method section, the sentence “Based on Kline’s recommendations, the sample size was set at 250 participants” is insufficient as a sample-size justification. Kline’s general guidance does not replace an analysis based on model complexity, statistical power, expected effect sizes, number of indicators, and estimation method. The authors should report the number of latent variables, observed indicators, and structural paths included in the model and provide either an a priori power analysis or a recognized PLS-SEM sample-size calculation. The commonly used “10-times rule,” if applied, should not be presented as the sole justification because it may substantially underestimate the required sample size.

The description of purposive sampling in the Method section is incomplete. The sentence “The statistical population consisted of all sixth-grade elementary school students in Urmia during the 2024–2025 academic year” should be followed by a detailed explanation of how schools, classrooms, students, parents, and teachers were approached. The manuscript should state the number of schools involved, whether schools were public or private, the geographic distribution of the sample, recruitment procedures, response rate, and reasons for nonparticipation. Without this information, the representativeness of the sample and the potential for selection bias cannot be evaluated.

The paragraph reporting the Kolmogorov–Smirnov test contains an apparent inconsistency: “the significance levels for most variables, except for the conflict subscale, were below 0.05.” No conflict subscale is included in the study or in Table 2. This appears to be text carried over from another manuscript and should be corrected. In addition, the authors should avoid presenting nonnormality as the sole reason for using PLS-SEM. The choice between covariance-based SEM and PLS-SEM should be based on the study’s predictive purpose, model complexity, measurement characteristics, and distributional conditions rather than only the results of a normality test.

Table 1 contains values that require verification. The text states that the mean specific learning-difficulties score was 41.25 and below the theoretical midpoint of 44, yet the reported possible range of the 20-item questionnaire rated from 1 to 5 should be 20 to 100, not the observed minimum of 20 and maximum of 68. The authors should distinguish clearly between the theoretical score range, observed range, and theoretical midpoint. Similar verification is required for the self-control and defiance scales. The term “theoretical midpoint” should be calculated from the full possible score range rather than inferred from the observed data.

Response: Revised and uploaded the manuscript.

1.2. Reviewer 2

Reviewer:

The manuscript does not provide explicit inclusion and exclusion criteria. In the paragraph describing the population and sample, the authors should specify whether participants were required to have a formal diagnosis of specific learning disorder, elevated scores on the Colorado Learning Difficulties Questionnaire, documented academic underachievement, or simply enrollment in the sixth grade. Exclusion criteria should address intellectual disability, neurological disorders, uncorrected sensory impairments, major psychiatric conditions, inadequate language proficiency, and incomplete questionnaire data. This information is essential because the title implies a population characterized by specific learning difficulties, whereas the Method section currently appears to include general sixth-grade students.

The ethical procedures are not reported. The Method section should include the approving institutional ethics committee, ethics approval code, procedures for obtaining parental informed consent and child assent, guarantees of confidentiality, and participants' right to withdraw. Because the study involves minors and collects parent- or teacher-reported behavioral data, the manuscript should also explain how privacy was protected and whether questionnaire responses were shared with schools or families. The absence of an ethics statement is a major methodological omission that must be corrected before publication.

The description of the Colorado Learning Difficulties Questionnaire requires substantial revision. The sentence "It conceptualizes learning difficulties as comprising five principal factors: reading, mathematics, social cognition, social anxiety, and spatial functioning" should be accompanied by the number of items in each subscale, scoring procedure, possible total and subscale score ranges, interpretation of higher scores, and the specific version used. The authors should also explain whether the questionnaire was completed by one parent, both parents, or another caregiver. More importantly, they should justify why the instrument's social cognition and social anxiety dimensions were included in a global learning-difficulties outcome and report whether the validated Persian version supports the same factor structure.

The reliability discussion for the Colorado Learning Difficulties Questionnaire relies extensively on previous studies but does not report the reliability obtained in the present sample. The paragraph stating that "Cronbach's alpha coefficients for the CLDQ and all its components exceeded 0.70" appears to refer to an earlier validation study rather than the current research. Reliability is sample-dependent, and the authors must report Cronbach's alpha, composite reliability, and preferably omega coefficients for the total scale and each subscale in the present sample. If only a total score was modeled, the rationale for aggregating the subscales should be supported by factor-analytic evidence.

The measurement procedure for defiance is unclear. The instrument is introduced as the "Golmakani Children's Defiance Questionnaire, Parent and Teacher Forms," but the manuscript does not indicate whether both forms were administered, whether parent and teacher scores were averaged, whether one informant was prioritized, or how discrepant ratings were handled. This issue is methodologically important because defiant behavior may differ substantially across home and school contexts. The authors should identify the actual respondent for each participant and describe how the defiance score entered into the structural model was calculated.

The manuscript should address the risk of common-method and common-informant bias. If the learning-difficulties questionnaire and defiance questionnaire were both completed by the same parent, the observed association may partly reflect shared perceptions rather than a true behavioral relationship. In the Method section following the instrument descriptions, the authors should specify the source of data for each construct and discuss procedural or statistical strategies used to reduce common-method variance. Potential analyses could include marker-variable procedures, full-collinearity assessment, or a comparison of parent and teacher reports, depending on the available data.

Response: Revised and uploaded the manuscript.

2. Revised

Editor's decision after revisions: Accepted.

Editor in Chief's decision: Accepted.