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Love of Learning as a Character Strength in Educational Contexts: A Systematic Review of Student Engagement, Academic Functioning, and Psychological Well-Being

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ABSTRACT

Love of learning is the Values in Action (VIA) character strength most closely associated with schooling, yet evidence regarding its educational outcomes remains scattered across studies examining all 24 character strengths. This systematic review synthesized empirical findings on the associations between love of learning and student engagement, academic functioning, and psychological well-being, as well as its potential for development through educational interventions. Following the PRISMA 2020 guidelines, searches of Semantic Scholar and Garuda were supplemented by searches of publisher websites and citation tracking. Eligible studies were empirical investigations published between 2017 and 2026 in journals ranked Scopus Q1 or SINTA 1–2, involved students in formal educational settings, and reported love of learning as an independent character strength or as part of a small composite of intellectual strengths. Methodological quality was assessed using the Joanna Briggs Institute (JBI) critical appraisal checklists, and findings were integrated through a structured narrative synthesis incorporating GRADE-informed certainty assessments. Fifteen studies involving 11,858 participants across 12 countries or regions met the inclusion criteria. Love of learning was consistently associated with flow, enjoyment of learning, perseverance, school satisfaction, and psychological well-being. It was also associated with academic achievement among school-aged students, partly through academic self-efficacy. However, associations with academic self-efficacy and academic buoyancy among university students were weak, while the association with psychological distress was negligible. Three intervention studies yielded mixed findings supported by low-certainty evidence. Overall, love of learning appears to be more strongly associated with positive student functioning than with protection against psychological distress. Further longitudinal and experimental research is warranted to clarify causal relationships and intervention effectiveness, particularly in the Indonesian educational context.

INTRODUCTION

Schools and universities generally evaluate learning success through grades, graduation rates, and institutional rankings. However, learners' inclination to enjoy the learning process and continuously deepen their knowledge receives considerably less attention, even though motivation arising from an inherent interest in learning activities is associated with persistence, deeper understanding, and psychological well-being (Ryan & Deci, 2020). In Indonesia, the reading, mathematics, and science performance of 15-year-old students in the Programme for International Student Assessment (PISA) 2022 remained below the Organisation for Economic Co-operation and Development (OECD) average (OECD, 2023). Although these results do not directly measure learning motivation, they highlight persistent challenges in educational quality and underscore the importance of examining noncognitive factors that sustain students' willingness to learn. For example, a study conducted at an Islamic boarding school in Garut found that students' boredom with learning was associated with monotonous teaching methods, whereas students who remained engaged attributed their persistence to a desire to deepen their religious knowledge and support from their peers (Tahrir et al., 2021). Positive psychology provides a conceptual framework for understanding this phenomenon through the character strength known as love of learning.

Peterson & Seligman, (2004) identified love of learning as one of the 24 character strengths in the Values in Action (VIA) Classification of Character Strengths, categorizing it under the virtue of wisdom and knowledge. This character strength is defined as the tendency to acquire and master new skills, explore unfamiliar topics, and expand one's knowledge, either independently or through formal education (Park, 2021). (Carr, 2022) emphasized its systematic dimension, particularly the habitual integration of newly acquired knowledge with existing understanding. (Niemiec & McGrath, 2019) distinguished love of learning from curiosity by explaining that curiosity motivates individuals to seek new information, whereas love of learning encourages them to retain, process, and deepen their understanding of that information, thereby fostering a more reflective approach to learning. However, this strength may be underused when individuals demonstrate enthusiasm for learning only in selected areas while neglecting other academically important subjects. Conversely, its overuse may manifest as excessively intellectual or patronizing behavior (Niemiec & McGrath, 2019). These authors also cautioned that the absence of formal academic qualifications should not be interpreted as indicating a low level of love of learning, given inequalities in educational opportunities. Accordingly, assessments should consider individuals' everyday learning behaviors rather than relying exclusively on formal educational attainment. Within the present review, these conceptual distinctions establish love of learning as a relatively stable character strength assessed using VIA-based instruments or measures explicitly identifying love of learning, rather than as intrinsic motivation toward a particular subject or temporary situational interest.

Several theoretical frameworks provide complementary yet distinct explanations of how love of learning may operate within educational settings. Self-determination theory identifies intrinsic motivation as an important foundation for sustained engagement, suggesting that learners who demonstrate a strong love of learning may exhibit greater cognitive and emotional engagement (Ryan & Deci, 2020). Control-value theory of achievement emotions proposes that individuals who attach substantial value to learning activities are more likely to experience enjoyment during learning (Pekrun, 2006). Broaden-and-build theory further suggests that positive emotions experienced during learning broaden individuals' thought–action repertoires and contribute to the development of enduring psychological resources that support well-being (Fredrickson, 2001). Collectively, these theoretical perspectives suggest positive associations between love of learning, student engagement, and positive affect. Meanwhile, the positive school engine model examined by Weber and Harzer (2022) conceptualizes character strengths

as inputs; school satisfaction, enjoyment of learning, and academic self-efficacy as mediating processes; and academic achievement as an outcome. If the competence-related pathway predominates, associations between love of learning, academic self-efficacy, and achievement would be expected to be stronger than those involving affective outcomes. These alternative theoretical expectations highlight the need to compare patterns of association across different educational and psychological outcomes.

Research conducted before the review period had already indicated that love of learning was among the character strengths frequently associated with academic success. Among university students in the United States, love of learning, together with perseverance and self-regulation, predicted grade point average (Lounsbury et al., 2009). Similarly, research involving primary and secondary school students in Switzerland identified love of learning as one of the character strengths associated with academic achievement, with positive classroom behavior partially accounting for this relationship (Wagner & Ruch, 2015). Another study demonstrated that students' character strengths were associated with positive affect toward school and overall school functioning (Weber et al., 2016). Nevertheless, these findings were derived from studies employing different research designs, measurement instruments, and educational populations, potentially limiting their comparability. Furthermore, a meta-analysis examining age-related differences in character strengths indicated that love of learning scores tend to increase with age (Heintz & Ruch, 2022). Consequently, the magnitude and nature of associations observed among adolescent learners may differ from those identified among university students.

Existing reviews have predominantly examined character strengths as a broad psychological construct rather than investigating love of learning independently. Lavy (2020) reviewed character strengths interventions in twenty-first-century schools and concluded that these approaches showed promise, although the specific contribution of love of learning was not examined separately. Similarly, a meta-analysis conducted by Schutte and Malouff (2019) demonstrated that signature strengths interventions improved psychological well-being; however, the analysis did not specifically investigate love of learning or its associations with educational outcomes. Based on the literature searches conducted through October 29, 2026, no systematic review was identified that specifically synthesized evidence concerning love of learning and its associations with student engagement, academic functioning, and psychological well-being across formal educational settings.

This research gap has important theoretical and practical implications. In many empirical investigations, love of learning is reported merely as one variable within correlation matrices encompassing all 24 character strengths, leaving its distinctive patterns of association insufficiently synthesized. Consequently, uncertainty remains regarding whether love of learning demonstrates comparable associations with student engagement, academic achievement, psychological well-being, and psychological distress. Additional questions concern whether these associations differ between school-aged students and university students and whether targeted educational interventions can effectively strengthen love of learning. Furthermore, the availability and methodological quality of empirical evidence from Indonesia remain insufficiently established. Addressing these uncertainties is particularly relevant for teachers, university lecturers, school counselors, and educational program developers seeking to integrate character strengths into evidence-based teaching, counseling, and student development practices.

This systematic review aimed to synthesize empirical evidence published between 2017 and 2026 concerning love of learning as a character strength in educational contexts. Specifically, the review addressed four research questions: (RQ1) How is love of learning associated with student engagement in learning activities? (RQ2) How is love of learning associated with academic functioning, including academic achievement, academic self-

efficacy, and academic buoyancy? (RQ3) How is love of learning associated with psychological well-being and psychological distress? and (RQ4) To what extent can love of learning be enhanced through educational or psychological interventions? Additionally, the review examined the methodological characteristics of the included studies and mapped the available evidence from Indonesia. The anticipated contribution of this review is a comprehensive synthesis that distinguishes educational and psychological outcomes demonstrating consistent associations with love of learning from those exhibiting weak or inconsistent relationships, while evaluating the certainty of the available evidence. By integrating findings across educational levels and outcome domains, this review seeks to advance theoretical understanding of love of learning and provide an evidence-based foundation for future research, educational interventions, and strength-based counseling practices.

METHOD

This systematic review synthesized empirical studies examining love of learning as a character strength in formal educational settings, following the PRISMA 2020 reporting guidelines and a structured narrative synthesis consistent with Synthesis Without Meta-analysis (SWiM) reporting guidelines. Studies published between 2017 and 2026 were included if they examined love of learning independently or as part of a composite comprising no more than four intellectual character strengths, involved students or preservice teachers, and were published in journals classified as Scopus Q1 or SINTA 1–2. Eligible studies employed cross-sectional, longitudinal, quasi-experimental, or randomized designs, whereas reviews and studies without education-related outcomes were excluded. The review protocol was not registered, and an eligibility amendment concerning composite measures was consistently applied during full-text assessment.

Literature searches were conducted using Semantic Scholar and Garuda and supplemented by publisher websites, citation tracking, and existing full-text collections. The final search was conducted on October 29, 2026. A total of 140 records were screened from Semantic Scholar (n = 100) and Garuda (n = 40), while supplementary sources were documented separately. Search strategies and source-specific records were presented in Table 2. Study selection involved title and abstract screening followed by full-text eligibility assessment, with reasons for exclusion documented. Data were extracted using a structured form covering study characteristics, participant populations, research designs, measurement instruments, educational outcomes, and relevant statistical findings, including correlation coefficients, regression coefficients, indirect effects, and partial eta-squared values. Screening was not conducted independently by two reviewers, which was acknowledged as a methodological limitation.

Methodological quality was assessed using the Joanna Briggs Institute (JBI) critical appraisal checklists appropriate to each study design, focusing on sampling, measurement validity, confounding factors, outcome assessment, and statistical analysis. Findings were synthesized across four domains: student engagement, academic functioning, psychological well-being and distress, and intervention outcomes. Given the heterogeneity of study designs, outcome measures, and effect-size metrics, a pooled meta-analysis was not considered appropriate. Instead, a structured narrative synthesis was conducted to examine patterns of association, effect-size ranges, inconsistencies, and methodological differences. Sensitivity analyses were performed by excluding studies with substantial methodological concerns and those using composite measures. The certainty of evidence was evaluated using a GRADE-informed approach. No specialized statistical software was used for the narrative synthesis.

Table 1. Eligibility criteria

Aspect	Inclusion	Exclusion
Population	Learners in formal education (primary school to higher education), preservice teachers, or samples mostly in education and analysed within the education domain	General adult or worker samples without analysis of the education domain; alumni
Exposure	Love of learning as a character strength, measured with VIA-based instruments or a component labelled love of learning; or an intellectual/wisdom strengths composite of ≤ 4 strengths that includes love of learning	Love of learning not measured, only mentioned in the introduction, or combined in a composite of > 4 strengths or a non-intellectual composite
Outcome	Learning engagement (flow, enjoyment of learning, perseverance, cognitive engagement, learning behaviour); academic functioning (achievement, self-efficacy, buoyancy, learning-related cognitive ability); psychological well-being or distress; change in love of learning due to intervention	Outcomes outside education and well-being (e.g., consumer behaviour); instrument development studies without education-related love of learning results
Design	Quantitative, qualitative, or mixed empirical studies: cross-sectional, longitudinal, quasi-experimental, randomised trials	Reviews, meta-analyses, editorials, book chapters, proceedings, theses
Publication	Journal articles 2017–2026, in English or Indonesian, published in Scopus Q1 (best quartile) or SINTA 1–2 journals	Journals outside the ranking criteria or whose ranking could not be verified; full text inaccessible

Source: Eligibility criteria and research protocol described in this review.

Table 2. Information sources, search strategy, and number of records

Source	Query/strategy	Limits and stopping rule	n
Semantic Scholar	love of learning character strength students	Years 2017–2026; sorted by relevance; top 100 records screened	100
Garuda (SINTA portal)	"love of learning"	Sorted by relevance; stopped after two consecutive pages without relevant titles (40 records)	40
Publisher websites and search engines	"love of learning" AND ("character strength*" OR "kekuatan karakter") AND (student* OR siswa OR mahasiswa OR school OR university) AND (engagement OR achievement OR "self-efficacy" OR "well-being" OR burnout OR intervention); Indonesian variants: "cinta belajar", "kesejahteraan", "keterlibatan"	Frontiers, ScienceDirect, SpringerLink, SAGE, Taylor & Francis, Wiley; 2017–2026	27*
Citation searching	VIA Institute on Character research summaries; reference lists of included studies	Studies 2017–2026	–
Team collection	Full texts compiled by the team and list of articles from group presentations	Checked against the same criteria	26

Source: Authors' synthesis of the studies and methods cited in this review.

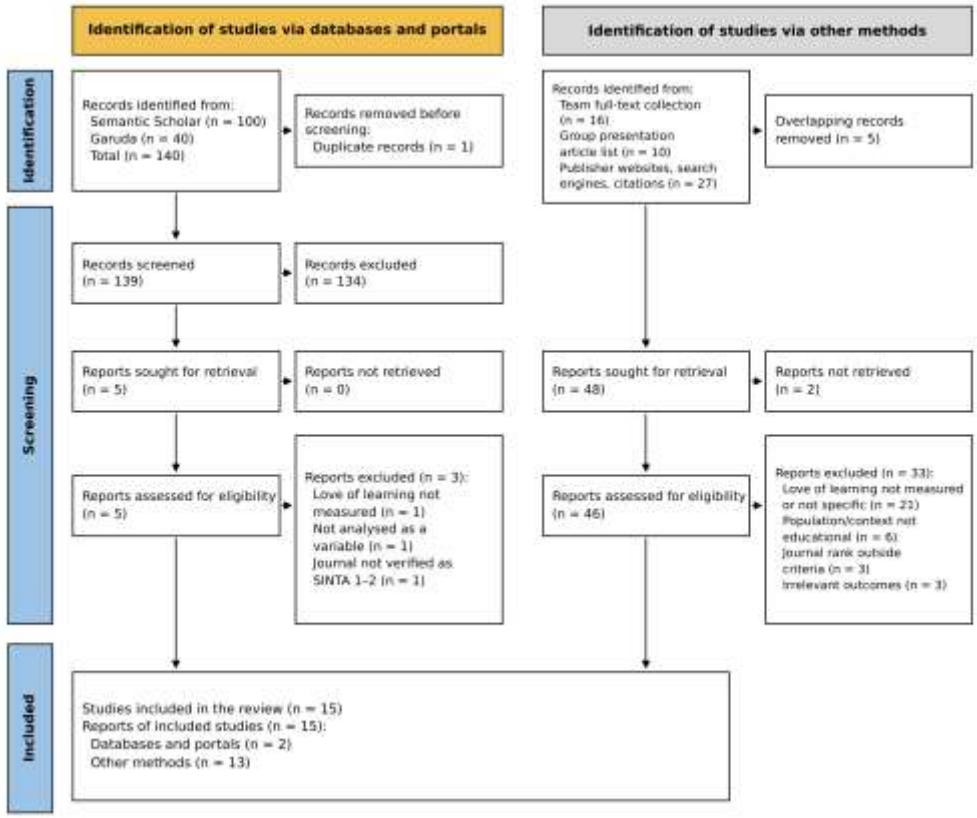
*Number of unique reports from publisher websites, search engines, and citation searching that were assessed for eligibility. Last search: 29 October 2026.

RESULTS AND DISCUSSION

Study Selection

Database and portal searches yielded 140 records, namely 100 records from Semantic Scholar and 40 records from Garuda. After one duplicate was removed, 139 records were screened by title and abstract, and 134 of them were excluded. Most records excluded from Garuda turned out to discuss love of the homeland, love-based curricula, or love of culture rather than love of learning as a character strength. Five reports were assessed in full text, and two of them met the criteria. Other methods yielded 48 reports after five overlaps were removed. Two reports could not be accessed in full text, 46 reports were assessed, and 13 of them met the criteria. Overall, 15 studies from 15 reports were included. The most frequent reason for exclusion was that love of learning was not measured or not reported specifically (Figure 1).

Figure 1. PRISMA 2020 flow diagram of the study selection process



Note. Adapted from the PRISMA 2020 flow diagram template .

Study Characteristics

The fifteen studies involved 11,858 participants from 12 countries or regions, namely mainland China, Hong Kong, the Philippines, Indonesia, Israel, Turkey, Switzerland, Germany, Spain, Chile, Uruguay, and Venezuela (Table 3). Eight studies examined primary or secondary school students, four examined university students, one examined preservice teachers, one involved a mix of secondary school and university students, and one examined adults most of whom were in education. Ten studies were cross-sectional, two used two-wave longitudinal designs with intervals of three and four months, and three tested interventions. Most studies measured love of learning with VIA-family instruments, such as the VIA-Youth, the VIA-IS, or their short versions. The exceptions were one study that used a character strengths inventory for primary school children (S2; Shoshani & Shwartz, 2018), one study

that used the Chinese Virtues Questionnaire (S1; Zhang & Chen, 2018), two studies that used the Growing Strong scale (S12, S14; García-Álvarez et al., 2024, 2026), and one validation study of a learning behaviour instrument in which love of learning emerged as a separate component (S13; Wati et al., 2025). The only Indonesian study was S13, conducted with 787 junior secondary students in Banda Aceh. No study from SINTA 1–2 journals met all criteria.

Table 3. Characteristics and main findings of the included studies

ID	Study; journal; index	Context and sample	Design	Love of learning measure	Main findings on love of learning
S1	Zhang & Chen (2018) *Front. Psychol.*; Q1	China; undergraduates; N = 225	Cross-sectional; moderated mediation	CVQ-96	Partial r with subjective well-being 0.24; with strengths use 0.33; indirect effect via strengths use 0.29
S2	Shoshani & Shwartz (2018) *Front. Psychol.*; Q1	Israel; primary school, aged 7–12; N = 2,061 (two samples)	Cross-sectional; validation and SEM	CSI-C; intellectual composite (4 strengths)	Intellectual composite → school functioning/cognitive engagement β = 0.23
S3	Datu & Mateo (2020) *Child. Youth Serv. Rev.*; Q1	Philippines; junior–senior high school; N = 320	Two-wave longitudinal (4 months)	VIA-Youth 96	T1 love of learning predicted T2 interdependent happiness; did not predict academic self-efficacy
S4	Wagner et al. (2020) *Front. Psychol.*; Q1	Switzerland; secondary school; N = 255 students, 18 teachers	Two-wave longitudinal (3 months); multi-informant	VIA-Youth	Related to achievement, flow, and enjoyment across learning situations after controlling for intelligence
S5	Wagner et al. (2021) *Front. Psychol.*; Q1	Switzerland/Germany; adults, 69.5% in education; N = 203	Cross-sectional	VIA-IS and ACS-RS per life domain	Love of learning relevant in the education domain; displaying it in education related to flourishing
S6	Azañedo et al. (2021) *Front. Psychol.*; Q1	Spain; psychology students; N = 1,494	Cross-sectional; hierarchical regression	VIA-IS; intellectual composite (3 strengths)	Strongest predictor of personal growth β = 0.39; partial r with GSI −0.21
S7	Güldal & Satan (2022) *Curr. Psychol.*; Q1	Turkey; high school; N = 390 + 24	Mixed: correlational and small randomised trial	VIA-Youth (Turkish adaptation)	With mindfulness, perseverance, and prudence explained 24.5% of GPA variance; increased in the experimental group (z = −2.352)
S8	Weber & Harzer (2022) *Front. Psychol.*; Q1	Germany; aged 10–17; N = 300	Cross-sectional; mediation	Revised Brief VIA-Youth (96 items)	Strongest correlate of school satisfaction (β = 0.54) and enjoyment of learning (β = 0.50); to grades via self-efficacy (≈ 0.22)
S9	Kretzschmar et al. (2022) *J. Pers.*; Q1	Switzerland; students aged 7–19; n = 193 and 290	Multi-sample cross-sectional	VIA-Youth; fluid intelligence tests	Only strength with a small, consistent positive association with fluid intelligence

ID	Study; journal; index	Context and sample	Design	Love of learning measure	Main findings on love of learning
S10	Ho et al. (2023) *Comput. Educ.*; Q1	Hong Kong; preservice teachers; N = 314	Quasi-experiment, matched groups	VIA items adapted to online teaching	T.E.A.C.H. programme increased love of learning, $F(1, 312) = 27.94$, partial $\eta^2 = 0.08$
S11	Hämpke et al. (2024) *Int. J. Appl. Posit. Psychol.*; Q1	Germany; high school and university students aged 14–35; N = 247	Longitudinal field experiment, active control, preregistered	R-VIA-Youth love of learning subscale	No total effect on love of learning; only an indirect effect via enticing-world beliefs
S12	García-Álvarez et al. (2024) *Front. Psychol.*; Q1	Venezuela; psychology students; N = 668	Cross-sectional	Growing Strong, 48 items	r with academic self-efficacy 0.17 and general self-efficacy 0.15; highly skewed scores
S13	Wati et al. (2025) *SAGE Open*; Q1	Indonesia (Banda Aceh); junior secondary; N = 787	Instrument validation (EFA, CFA)	Love of learning component in the Learning Behavior Questionnaire	Love of learning emerged as a separate component of classroom learning behaviour; good model fit (CFI = 0.953)
S14	García-Álvarez et al. (2026) *Front. Educ.*; Q1	Uruguay; university students; N = 518	Cross-sectional; mediation	Growing Strong, 24 items (1 item per strength)	M = 4.50 (SD = 0.71); r with distress 0.046 and academic buoyancy 0.085 (non-significant)
S15	Ortiz-Correa et al. (2026) *Front. Psychol.*; Q1	Chile; public schools, aged 8–18; N = 3,569	Cross-sectional; hierarchical regression, FDR correction	VIA strength item indicators	Predicted perseverance (EPOCH) β = 0.149 (8–12 years) and 0.236 (≥ 13 years); consistently predicted well-being

Source: Authors' synthesis of the studies and methods cited in this review.

Note. Q1 = best Scopus quartile in the year of the search. β = standardised regression coefficient; r = correlation coefficient; T1/T2 = first/second measurement occasion.

Methodological Quality

Four studies were rated as low concern, nine as moderate concern, and two as high concern (Table 4). The most frequent problem was the use of self-report for both exposure and outcomes, so the observed associations may be inflated by shared method variance. Only S4 combined teacher ratings with a time lag between measurements, whereas S9 used an objective intelligence test and S7 used the semester grade point average. In the university samples (S12, S14), love of learning scores were strongly skewed, with a skewness of −2.55 in S12 and a mean of 4.50 on a 5-point scale in S14. This restricted score variance and may have attenuated correlations. S14 also used a single item for each strength, with reliabilities of 0.58–0.77. Among the intervention studies, the experimental phase of S7 involved only 12 participants per group and tested within-group change, S10 did not use random assignment, and S11 lost many participants after the first survey.

Table 4. Summary of methodological quality appraisal based on JBI checklists

ID	JBI tool	D1	D2	D3	D4	D5	Concern	Main notes
S1	Cross-sectional	Yes	Yes	P	N	Yes	Moderate	Convenience sample; self-reported outcomes
S2	Cross-sectional	Yes	Yes	P	N	Yes	Moderate	Composite; love of learning not separated
S3	Cohort	Yes	Yes	Yes	N	Yes	Low	Baseline scores controlled; 4-month interval
S4	Cohort	Yes	Yes	Yes	Yes	Yes	Low	Teacher ratings; intelligence controlled
S5	Cross-sectional	Yes	Yes	P	N	Yes	Moderate	Small sample, mostly female
S6	Cross-sectional	Yes	Yes	Yes	N	Yes	Moderate	Composite; age range 18–68
S7	Cross-sectional; RCT	Yes	Yes	P	Yes	N	High	n = 12 per group; within-group tests
S8	Cross-sectional	Yes	Yes	P	N	Yes	Moderate	Self-reported grades
S9	Cross-sectional	Yes	Yes	P	Yes	Yes	Low	Objective tests; gifted students oversampled
S10	Quasi-experimental	Yes	P	P	P	Yes	Moderate	No randomisation; context-specific instrument
S11	RCT	Yes	Yes	Yes	N	Yes	Moderate	High attrition; preregistered
S12	Cross-sectional	Yes	P	N	N	Yes	Moderate	Ceiling effect on scores
S13	Cross-sectional (validation)	Yes	P	–	–	Yes	Moderate	Learning behaviour construct, not VIA
S14	Cross-sectional	Yes	N	N	N	Yes	High	1 item per strength; reporting errors
S15	Cross-sectional	Yes	P	Yes	N	Yes	Low	Large sample; multiple-testing correction

Source: Authors' synthesis of the studies and methods cited in this review.

Note. D1 = sample and setting; D2 = measurement of love of learning; D3 = control of confounders/group equivalence; D4 = objectivity of outcomes; D5 = statistical analysis. P = partly; N = no; – = not applicable.

RQ1: Love of Learning and Learning Engagement

Seven studies provided data on learning engagement, and all of them showed positive associations. The strongest evidence came from Wagner et al. (2020; S4). In this study, love of learning and perseverance were the two strengths consistently associated with flow and enjoyment in teacher-centred learning, individual work, and group work measured three months later, after cognitive ability was controlled. The association of love of learning with flow was stronger in individual tasks than in group work, and love of learning did not predict enjoyment during group work. In Weber and Harzer (2022; S8), love of learning was the strongest correlate of enjoyment of learning among the 24 strengths ($\beta = 0.50$). Among 3,569 public school students in Chile (Ortiz-Correa et al., 2026; S15), love of learning still predicted perseverance within the EPOCH framework after age, gender, school level, and emotion regulation strategies were controlled, both in the 8–12-year age group ($\beta = 0.149$) and in those aged 13 and above ($\beta = 0.236$). An intellectual strengths composite comprising love of learning,

curiosity, creativity, and appreciation of beauty predicted school functioning in the form of cognitive engagement among children aged 7–12 years (β = 0.23; Shoshani & Shwartz, 2018).

Three other studies provided more indirect evidence. In Wagner et al. (2021; S5), love of learning was rated as highly relevant to the education domain, and the frequency of displaying love of learning in educational activities was associated with flourishing. In Wati et al. (2025; S13), love of learning emerged as a separate component in the structure of classroom learning behaviour, alongside learning strategies, group learning, perseverance, independent learning, and learning competition. The final model showed good fit (RMSEA = 0.062; CFI = 0.953). In Güldal and Satan (2022; S7), love of learning correlated with mindfulness (r = 0.20), and qualitative teacher data described students in the experimental group who began taking notes on the material and discussing lessons at home. Thus, the reported effect sizes for engagement outcomes ranged from small to large, with β of approximately 0.15–0.50, and were largest for enjoyment of learning.

RQ2: Love of Learning and Academic Functioning

Associations with academic achievement were positive in school-age samples. In S4, love of learning was associated with self-rated and teacher-rated achievement in teacher-centred learning and with achievement in individual tasks. Among 390 high school students in Istanbul (S7), love of learning, together with mindfulness, perseverance, and prudence, explained 24.5% of the variance in the previous semester's grade point average. In S8, love of learning was among the five strengths directly associated with self-reported school grades. This association was not mediated by school satisfaction or enjoyment of learning, but by academic self-efficacy, with an indirect effect of about 0.22. Kretzschmar et al. (2022; S9) added that love of learning was the only strength showing a positive, albeit small, association with fluid intelligence in two samples of Swiss students (n = 193 and 290). This finding suggests that part of the association between love of learning and achievement may share variance with cognitive ability. However, S4 showed that the association persisted after intelligence was controlled.

The picture differed for university students and for self-efficacy outcomes. In the longitudinal study by Datu and Mateo (2020; S3), love of learning at the first time point did not predict academic self-efficacy four months later; the predictors were fairness, gratitude, and hope. Among 668 psychology students in Venezuela (García-Álvarez et al., 2024; S12), the correlation of love of learning with academic self-efficacy was only 0.17 and with general self-efficacy 0.15, among the weakest of the 24 strengths. Among 518 university students in Uruguay (García-Álvarez et al., 2026; S14), the correlation of love of learning with academic buoyancy was only 0.085 and non-significant, whereas hope and zest played a much larger role. Thus, love of learning is associated with achievement among school students, but it is not a prominent predictor of university students' academic self-beliefs and resilience.

RQ3: Love of Learning, Psychological Well-Being, and Distress

On the side of positive well-being, six studies showed positive associations. Love of learning was the strongest correlate of school satisfaction (β = 0.54; S8). Among 225 university students in China (Zhang & Chen, 2018; S1), love of learning correlated with subjective well-being (partial r = 0.24), and most of this association passed through strengths use (indirect effect 0.29; non-significant direct effect). Among Filipino students (S3), love of learning was the only strength that predicted an increase in interdependent happiness four months later after baseline scores were controlled. The intellectual strengths composite among 1,494 university students in Spain was the strongest predictor of personal growth (β = 0.39; Azañedo et al., 2021). In S15, love of learning was among the strengths that consistently predicted student well-being. In S5, displaying love of learning in the education domain was associated with higher flourishing. An inconsistent finding came from S2: the subjective well-being of primary school children was more closely related to restraint and transcendence strengths than to the intellectual factor.

Associations with distress were much weaker. In S6, the partial correlation of the intellectual composite with the global severity index was only −0.21 and with depression −0.23, smaller than its role for personal growth. In S14, the correlation of love of learning with psychological distress measured with the DASS-21 was close to zero ($r = 0.046$). The pattern is fairly clear: love of learning is related to positive aspects such as satisfaction, growth, and happiness, but is hardly related to lower distress symptoms.

RQ4: Can Love of Learning Be Increased?

Three studies tested changes in love of learning through interventions, and the results were mixed. The three-week online T.E.A.C.H. programme for 314 preservice teachers in Hong Kong (Ho et al., 2023; S10) included love of learning as one of five modules. The programme produced a significant group × time interaction for love of learning towards online learning and teaching, $F(1, 312) = 27.94$, $p < 0.001$, *partial* $\eta^2 = 0.08$, a medium effect. However, the design was quasi-experimental, and the instrument was adapted specifically to the online teaching context. An eight-week mindfulness-based psychoeducation programme (S7) increased love of learning within the experimental group ($z = -2.352$; $p < 0.05$), but the groups were very small and between-group comparisons were not adequately reported. A nine-day intervention targeting the belief that the world is enticing (Hämpke et al., 2024; S11), which was preregistered and used an active control group, produced no total effect on love of learning. The only effect was indirect, through changes in that belief, and the belief change did not persist at the two-week follow-up.

Sensitivity Analysis and Certainty of Evidence

When the two composite-based studies (S2, S6) were excluded, the direction of conclusions for all four domains did not change. Evidence on engagement still rested on S4, S8, S13, and S15, whereas evidence on positive well-being was still supported by S1, S3, S5, S8, and S15. When the two high-concern studies (S7, S14) were excluded, the conclusion on achievement was still supported by S4 and S8, whereas evidence on distress was left with S6 only and no study on academic buoyancy remained. The conclusion that the association of love of learning with university students' self-efficacy is weak was still supported by S3 and S12. A summary of the certainty of evidence is presented in Table 5. Certainty was rated moderate for associations with engagement, positive well-being, and school students' achievement, and low for university students' self-efficacy and buoyancy, distress, and intervention effectiveness.

Table 5. Summary of synthesis and certainty of evidence by outcome domain

Outcome domain	Studies	Direction and magnitude	Certainty	Reasons for downgrading
Learning engagement (RQ1)	S2, S4, S5, S7, S8, S13, S15	Positive in all studies; β ≈ 0.15–0.50	Moderate	Predominantly self-report and cross-sectional
School students' achievement (RQ2)	S4, S7, S8, S9	Positive; partly via self-efficacy (≈ 0.22)	Moderate	Some self-reported grades; shared variance with intelligence
University students' self-efficacy and buoyancy (RQ2)	S3, S12, S14	Weak to null; r = 0.085–0.17	Low	Ceiling effects; single-item measurement; inconsistency
Positive well-being (RQ3)	S1, S2, S3, S5, S6, S8, S15	Positive in six studies (r 0.24; β 0.39–0.54); S2 inconsistent	Moderate	Self-report; two composite studies
Psychological distress (RQ3)	S6, S14	Weak to null; r −0.21 to 0.046	Low	Few studies; imprecision; indirectness

Outcome domain	Studies	Direction and magnitude	Certainty	Reasons for downgrading
Increase through intervention (RQ4)	S7, S10, S11	Mixed; partial $\eta^2 = 0.08$ to no total effect	Low	Risk of bias; inconsistency; small samples

Source: Authors' synthesis of the studies and methods cited in this review.

Love of Learning as a Resource for Engagement and Well-Being

The most defensible answer to the main question of this review is that love of learning is positively and consistently associated with the positive side of learner functioning. The strongest associations were seen for enjoyment of learning and school satisfaction, followed by flow, perseverance, and well-being. Associations with achievement were also positive among school students. However, love of learning did not appear to protect against distress, and its role for university students' self-efficacy and buoyancy was small. Because ten of the fifteen studies were cross-sectional and only two were longitudinal with short intervals, these findings should be read as associations rather than causal effects.

This pattern fits the predictions of self-determination theory and control-value theory better than those of the competence pathway. If love of learning works mainly through the intrinsic value attached to learning material, the largest associations should appear for enjoyment and engagement (Pekrun, 2006; Ryan & Deci, 2020), and this is the pattern that was found. Even so, S8 showed that the pathway to achievement ran through academic self-efficacy rather than enjoyment of learning. Both findings can hold at the same time. Love of learning makes the learning process enjoyable, and the experience of gradually mastering material may build academic self-beliefs that are in turn related to grades. This explanation remains a conjecture because no study has tested it longitudinally. The finding of S1 that the association of love of learning with well-being largely passed through strengths use is also consistent with the view of Niemiec and McGrath (2019) that the benefits of a strength depend on how often it is used, not merely on possessing it.

Differences between school and university students can be explained from several angles. Methodologically, in the Latin American university samples (S12, S14), love of learning scores were close to the upper limit of the scale, so variance was narrow and correlations may have been attenuated. This is consistent with the finding that love of learning scores tend to increase with age (Heintz & Ruch, 2022). S14 also measured each strength with a single item. Substantively, academic buoyancy and self-efficacy relate to appraisals of one's ability to cope with pressure, and are therefore closer to hope and zest than to the enjoyment of knowledge. Cultural context may also play a role. Among Filipino students from a collectivist culture, love of learning predicted interdependent happiness (S3), suggesting that the meaning of learning may be tied to relationships and family expectations. These explanations cannot yet be disentangled with the available data.

Strength of Evidence and Theoretical Implications

The strength of evidence must be weighed against the limitations of the studies. Reliance on self-report means that the associations of love of learning with enjoyment and satisfaction risk being inflated because both constructs were measured in the same way at the same time. More robust evidence came from studies with teacher ratings and time lags (S4), control of baseline scores (S3), and large samples with correction for multiple testing (S15). All three still showed the same direction. For interventions, the medium effect in S10 is promising, but it was obtained without random assignment and with an instrument adapted to the online teaching context. Meanwhile, the only preregistered study (S11) found no total effect. Low certainty for RQ4 means that the true estimate may differ substantially from what is currently observed.

Theoretically, this review suggests that love of learning is better positioned as a resource for engagement and positive well-being than as a protective factor against psychopathology. This distinction is in line with the way positive psychology views well-being as the presence of positive functioning, not merely the absence of symptoms (Carr, 2022). The review also shows that love of learning needs to be distinguished from curiosity in measurement. The two studies that reported only intellectual composites (S2, S6) could not separate their contributions, even though Niemiec and McGrath (2019) describe them as different drives. The positive school engine model (Weber & Harzer, 2022) could be refined by positioning academic self-efficacy as the main pathway to achievement and enjoyment of learning as the pathway to well-being. This proposal still needs to be tested.

Implications for Practice in Indonesia

For practice in Indonesia, defensible implications are still limited, because only one study came from Indonesia and that study was an instrument validation. Teachers and school counsellors can draw on the most consistent findings by giving students room to explore topics they are interested in and by paying attention to signs of underused love of learning, such as interest that appears only in areas outside school subjects. Because the association with achievement appears to run through self-efficacy, programmes should include small, gradual experiences of success. For university students experiencing distress, strengthening love of learning alone is unlikely to be sufficient. Components targeting hope, zest, and social support should be included, and students with severe symptoms should still be referred to professional services.

Limitations and Directions for Future Research

This review has limitations arising from its own process. The search was not conducted directly in the Scopus, ScienceDirect, or Emerald interfaces, but through Semantic Scholar, Garuda, and supplementary sources. Screening also used a relevance-based stopping rule, so relevant studies may have been missed. Selection and extraction were not performed by two independent reviewers. The journal ranking threshold excluded Indonesian studies that were topically relevant but published in SINTA 3 or lower journals, including a study on boredom among Islamic boarding school students (Tahrir et al., 2021), so the picture for Indonesia is very thin. Two reports could not be accessed in full text. The protocol was not registered, and the composite rule was added during the process, although it was applied to all reports and tested through sensitivity analysis.

The most needed future research is longitudinal studies with three or more waves among Indonesian school and university students. Such studies should measure love of learning and curiosity separately with adapted VIA instruments, use outcomes from other sources such as official grades and teacher ratings, and test academic self-efficacy and enjoyment of learning as mediators. Preregistered randomised controlled trials are also needed for group programmes that specifically target love of learning, with follow-up measurement at least three months after the programme. Such programmes could be tested among university students experiencing learning burnout, with hope and zest included as complementary components. Indonesian researchers also need to publish findings on this topic in reputable journals so that local evidence can enter the next synthesis.

CONCLUSION

Evidence from 15 studies indicated that love of learning was consistently and positively associated with student engagement, particularly enjoyment of learning, flow, and perseverance, as well as school satisfaction and psychological well-being. The certainty of evidence supporting these associations was moderate. Among school-aged students, love of learning was also positively associated with academic achievement, with academic self-efficacy partially accounting for this relationship. In contrast, its associations with academic

self-efficacy and academic buoyancy among university students were weak, while its association with psychological distress was negligible. Furthermore, evidence regarding the effectiveness of interventions designed to enhance love of learning remained limited and was characterized by low certainty.

These findings suggested that love of learning represented a valuable psychological resource for promoting positive learning experiences and academic functioning. However, it should not be regarded as a substitute for interventions aimed at preventing and addressing students' mental health problems. Future research should prioritize longitudinal studies and randomized controlled trials, particularly in Indonesia, to clarify the direction and potential causal nature of these relationships, distinguish love of learning from curiosity, and incorporate objective or independently assessed measures of academic outcomes rather than relying exclusively on self-reported data.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY

The selection log, exclusion reasons, and extraction tables are available from the corresponding author upon reasonable request.

AUTHOR CONTRIBUTIONS

Author[1]: conceptualization, methodology, literature search, data curation, and writing – original draft. Baruna Wing Parasantya: study selection, data extraction, methodological quality appraisal, and writing – review and editing. Author[2]: study selection, data extraction, visualization, and writing – review and editing. All authors contributed to the interpretation of the findings and approved the final version of the manuscript.

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