The Effectiveness of Outcome-Based Special Needs Education in Enhancing the Affective Achievement of Students with Special Needs

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Abstract

Special needs education is a critical component in achieving inclusive and quality education for all students. However, previous studies indicate that the affective achievement of students with special needs still faces several challenges, particularly regarding learning motivation, independence, compliance, and social skills. This study aims to analyze the effectiveness of special needs education based on Outcome-Based Education (OBE) in enhancing the affective achievement of students with special needs. The research employed a quantitative explanatory correlational design. Data were collected using a Likert-scale questionnaire administered to 50 students with special needs in inclusive schools and special schools (SLB). Data analysis was conducted using descriptive statistics, Pearson correlation, and simple linear regression with IBM SPSS Statistics. The results indicate that the implementation of Outcome-Based Education is a positive and significant predictor of the affective achievement of students with special needs. The Pearson correlation yielded $r = 0.320$ with a significance of $p = 0.023$ (<0.05), while the regression analysis produced a coefficient of 0.312 and a coefficient of determination (R^2) of 0.103. These findings suggest that better implementation of Outcome-Based Education corresponds to higher affective achievement among students with special needs.

Theoretically, this study reinforces the concepts of Outcome-Based Education and Krathwohl's affective taxonomy as a basis for developing special needs education. Practically, the findings imply that schools and policymakers should integrate outcome-based learning in inclusive education to support students' affective development effectively.

Keywords: Outcome-Based Education; Diffable Education; Affective Achievement; Diffable Students; Inclusive Education.

Abstrak

Pendidikan difabel merupakan bagian penting dari upaya mewujudkan pendidikan yang inklusif dan berkualitas bagi seluruh peserta didik. Namun, berbagai penelitian menunjukkan bahwa capaian afektif peserta didik berkebutuhan khusus masih menghadapi berbagai tantangan, terutama terkait motivasi belajar, kemandirian, kepatuhan, dan kemampuan sosial. Penelitian ini bertujuan menganalisis efektivitas pendidikan difabel berbasis Outcome-Based Education (OBE) dalam meningkatkan capaian afektif peserta didik berkebutuhan khusus. Penelitian menggunakan pendekatan kuantitatif dengan desain korelasional eksplanatori. Data dikumpulkan melalui angket skala Likert yang diberikan kepada 50 peserta didik berkebutuhan khusus pada sekolah inklusif dan Sekolah Luar Biasa (SLB). Analisis data dilakukan menggunakan statistik deskriptif, korelasi Pearson, dan regresi linear sederhana dengan bantuan IBM SPSS Statistics. Hasil penelitian menunjukkan bahwa implementasi Outcome-Based Education merupakan prediktor positif dan signifikan bagi capaian afektif peserta didik berkebutuhan khusus. Hasil uji korelasi menunjukkan nilai r = 0,320 dengan signifikansi p = 0,023 (< 0,05), sedangkan analisis regresi menghasilkan koefisien regresi sebesar 0,312 dengan nilai koefisien determinasi (R^2) sebesar 0,103. Temuan ini menunjukkan bahwa semakin baik implementasi Outcome-Based Education, semakin tinggi pula capaian afektif peserta didik berkebutuhan khusus. Secara teoretis, penelitian ini memperkuat konsep Outcome-Based Education dan taksonomi afektif sebagai landasan pengembangan pendidikan difabel. Secara praktis, hasil penelitian memberikan implikasi bagi sekolah dan pembuat kebijakan untuk mengintegrasikan pembelajaran berbasis luaran dalam pendidikan inklusif guna mendukung perkembangan afektif peserta didik secara optimal.

Kata kunci: Outcome-Based Education; Pendidikan Difabel; Capaian Afektif; Peserta Didik Berkebutuhan Khusus; Pendidikan Inklusif.

A. Introduction

Education for students with special needs is a strategic agenda in achieving Sustainable Development Goal (SDG) 4, which emphasizes quality, inclusive, and equitable

education for all learners without discrimination. In recent years, attention to the quality of special needs education has moved beyond academic achievement alone to include the development of affective aspects, namely attitudes, values, motivation, independence, empathy, and social interaction skills. Various studies show that students with special needs still face obstacles in developing affective competencies owing to limited access to learning, weak support from the learning environment, and evaluation practices that do not yet fully accommodate learners' individual needs.[1]

Globally, a meta-analysis by Krämer et al. (2021) shows that inclusive educational environments contribute positively to the psychosocial outcomes of students with general learning difficulties, including self-concept, well-being, and social skills, which are important components of the affective domain.[2] This finding indicates that the success of special needs education should be gauged by affective achievement in addition to academic outcomes.

In Indonesia, inclusive education continues to develop, yet problems persist in both the learning process and the evaluation of learning outcomes. Jaya et al. (2025) reveal that the assessment system in inclusive schools in Jakarta does not yet fully accommodate the needs of students with special needs, which may affect the comprehensiveness of their learning outcomes, including in the affective domain.[3] In addition, Rrofiah et al. (2023) found that students with disabilities at an Indonesian university still face limited learning accommodations, social stigma, and suboptimal institutional support.[4] These conditions indicate that the quality of special needs education is determined not only by the provision of access but also by the effectiveness of learning models capable of producing measurable learning outcomes oriented toward learners' holistic development.

One approach increasingly used to improve the quality of learning is Outcome-Based Education (OBE). OBE emphasizes the achievement of clear, measurable, learner-centered outcomes by aligning learning objectives, learning strategies, and assessment systems.[5] Under the OBE paradigm, educational success is measured not by the material taught but by the abilities learners actually attain after the learning process. A recent systematic review stresses that OBE is not a quick fix, because the quality of its implementation depends on how learning outcomes are formulated, how learning activities are planned, and how assessment is carefully aligned.[6] Although OBE has been widely applied in higher education and across

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[1] Indra Jaya et al., "Evaluating the Effectiveness of Learning Outcomes Assessment for Students with Special Needs in Inclusive Education Schools in Jakarta," in *International Conference on Special Education and Inclusion Research (ICSAR)*, vol. 9 (2025), 41–51.

[2] Silke Krämer et al., "Inclusive Education of Students With General Learning Difficulties: A Meta-Analysis on Cognitive and Psychosocial Outcomes," *Review of Educational Research* 91, no. 3 (2021).

[3] Jaya et al., "Learning Outcomes Assessment."

[4] Khofidotur Rrofiah et al., "Inclusive Education at Universitas Negeri Surabaya: Perceptions and Realities of Students with Disabilities," *International Journal of Special Education* 38, no. 2 (2023): 14–25.

[5] William G. Spady, *Outcome-Based Education: Critical Issues and Answers* (Arlington, VA: American Association of School Administrators, 1994); R. M. Harden, J. R. Crosby, and M. H. Davis, "AMEE Guide No. 14: Outcome-Based Education: Part 1—An Introduction to Outcome-Based Education," *Medical Teacher* 21, no. 1 (1999): 7–14.

[6] Piyasena Kinchigune Gamaralalage Chanaka Chameera, Lubna Ali Mohammed, and R. M. Dhanapala, "Challenges and Recommendations for the Implementation of Outcome-Based Education: A

many disciplines, research on its application in special needs education, particularly in relation to the affective achievement of students with special needs, remains relatively limited. Yet the individual characteristics of these students call for learning approaches that develop affective competencies through meaningful, structured, and outcome-oriented learning experiences.

Most previous studies have focused on the influence of inclusive education on the social and psychological development of students with special needs. Kirana (2025) found that inclusive education significantly improves peer acceptance, cooperation skills, and self-confidence among students with special needs in primary schools.[7] Ibadullayeva et al. (2026) affirm that inclusive education opens opportunities for participation and social integration for children with disabilities, provided that the barriers can be overcome.[8] Broader syntheses of evidence present a cautious picture. A Campbell review of 15 non-randomized studies reported effects of inclusion on psychosocial adjustment that were positive in direction but not significant,[9] while a systematic review of social-emotional interventions for students with special educational needs found positive effects that were mostly small.[10] Moreover, most of these studies still concentrate on the effectiveness of inclusive education in general and have not specifically tested the relationship between the implementation of OBE-based special needs education and the affective achievement of students with special needs. The available studies also tend to use qualitative or descriptive approaches, so quantitative empirical evidence on the influence of OBE on affective achievement remains very limited.

These limitations reveal an important research gap. First, there is little quantitative research that empirically measures the effectiveness of OBE-based special needs education. Second, the relationship between OBE implementation as the independent variable and the affective achievement of students with special needs as the dependent variable has rarely been examined systematically. Third, most earlier studies emphasize academic outcomes or social development without integrating the OBE framework as a conceptual foundation. This study therefore offers theoretical and practical contributions by broadening understanding of how the OBE approach can enhance the affective achievement of students with special needs.

Theoretically, this study draws on the concept of OBE, which treats the attainment of learning outcomes as the indicator of educational success, and on Krathwohl's affective taxonomy, which describes the development of attitudes and values through the stages of

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Systematic Review," *International Journal of Emerging Issues in Social Science, Arts and Humanities* 2, no. 1 (2023): 20–30.

[7] E. Kirana, "Analysis of the Impact of Inclusive Education on the Social Development of Students with Special Needs in Primary Schools," *Child Development Studies* 1, no. 1 (2025): 1–12.

[8] Sharofat Nurullayevna Ibadullayeva, Shahina Ismatjon Nuriddinova, and Muxlisa Musulmonqul Panjiyeva, "Inclusive Education for Children with Disabilities: Overcoming Barriers and Unlocking Opportunities," *Indonesian Journal of Community and Special Needs Education* 6, no. 1 (2026): 1–8.

[9] Nina T. Dalgaard et al., "The Effects of Inclusion on Academic Achievement, Socioemotional Development and Wellbeing of Children with Special Educational Needs," *Campbell Systematic Reviews* 18, no. 4 (2022): e1291.

[10] Sepideh Hassani and Susanne Schwab, "Social-Emotional Learning Interventions for Students With Special Educational Needs: A Systematic Literature Review," *Frontiers in Education* 6 (2021): 808566.

receiving, *responding*, *valuing*, *organization*, and *characterization*.[11] Integrating the two frameworks enables a more comprehensive measurement of how effectively the learning process shapes the behavior and character of students with special needs. On this basis, the study hypothesizes that OBE-based special needs education has a positive and significant effect on the affective achievement of students with special needs.

Accordingly, the purpose of this study is to analyze the effectiveness of OBE-based special needs education in enhancing the affective achievement of students with special needs. The research questions are: (1) what is the level of OBE implementation in special needs education; (2) what is the level of affective achievement of students with special needs; and (3) does OBE-based special needs education have a significant effect on the affective achievement of students with special needs? The answers are expected to provide an empirical basis for developing more effective, outcome-oriented inclusive education policy and practice that supports learners' holistic development.

B. Research Method

This study employed a quantitative approach with an explanatory correlational design. The design was chosen because the study aims to test the influence of OBE-based special needs education on the affective achievement of students with special needs. A quantitative approach allows relationships among variables to be measured objectively through statistical analysis. Guo, Shi, and Zhai (2024) note that quantitative research using standardized instruments allows construct validity and relationships among variables to be examined more systematically.[12] The independent variable is the implementation of OBE-based special needs education, and the dependent variable is the affective achievement of students with special needs, covering attitudes, values, learning motivation, independence, and social skills.

The study used primary data obtained directly from respondents through a survey with a closed questionnaire based on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The Likert scale was chosen because it is effective for measuring respondents' perceptions, attitudes, and experiences of an educational phenomenon.[13] Data were collected over one academic semester in schools providing inclusive education and in special schools (*Sekolah Luar Biasa*, SLB). In addition to the questionnaire, supporting data were obtained from school documentation, including student profiles, reports on affective development, and documents on the implementation of OBE-based learning. Before data collection, respondents were informed of the purpose of the

[11] Spady, *Outcome-Based Education*; David R. Krathwohl, Benjamin S. Bloom, and Bertram B. Masia, *Taxonomy of Educational Objectives: The Classification of Educational Goals. Handbook II: Affective Domain* (New York: David McKay, 1964); David R. Krathwohl, "A Revision of Bloom's Taxonomy: An Overview," *Theory Into Practice* 41, no. 4 (2002): 212–18.

[12] S. Guo, L. Shi, and X. Zhai, "Validating an Instrument for Teachers' Acceptance of Artificial Intelligence in Education," *Education Sciences* 14, no. 8 (2024): 1–21.

[13] Malcolm Koo and Shih-Wei Yang, "Likert-Type Scale," *Encyclopedia* 5, no. 1 (2025): 18.

study, their consent to participate was obtained, and the confidentiality of their data was guaranteed in accordance with the ethical principles of educational research.

The population comprised all students with special needs enrolled in inclusive schools and SLB in the research area. Because the population is heterogeneous in terms of type of special need and level of education, stratified random sampling was used, giving each group of students a proportional chance of selection and thereby improving the representativeness of the data. Stratification was based on category of special need and level of education to minimize sampling bias and improve the accuracy of statistical estimates. The final sample consisted of 50 students with special needs from inclusive schools and SLB.

The research instruments consisted of two main constructs: an instrument for OBE implementation and an instrument for the affective achievement of students with special needs. The OBE instrument was developed from indicators of learning-outcome planning, suitability of learning strategies, outcome-based assessment, learning feedback, and attainment of learning outcomes. The affective instrument was developed from Krathwohl's affective taxonomy, comprising *receiving*, *responding*, *valuing*, *organization*, and *characterization*. Content validity was examined through expert judgment involving three experts in inclusive education and educational evaluation. Construct validity was then tested using Pearson product-moment correlation, with the criterion that the calculated r exceeds the tabulated r at the 0.05 significance level. Instrument reliability was tested using Cronbach's alpha, with 0.70 as the minimum acceptable value.[14] Cronbach's alpha remains widely used in educational research as a measure of the internal consistency of instruments.[15] Because very low alpha values indicate inconsistent items while very high values may indicate item redundancy, the coefficient was interpreted together with the content and number of items.[16]

Data were analyzed in two stages: descriptive and inferential statistics. Descriptive statistics, namely means, standard deviations, frequencies, and percentages, were used to describe respondent characteristics and the distribution of scores on each variable. Before hypothesis testing, prerequisite tests were conducted, comprising a Kolmogorov–Smirnov normality test, a linearity test, and a multicollinearity test where more than one predictor was present. Once the assumptions were satisfied, Pearson correlation and simple linear regression were used to determine the relationship and the effect of OBE implementation on the affective achievement of students with special needs. The coefficient of determination (R^2) measured the contribution of the independent variable to the dependent variable, while the regression coefficient indicated the direction and magnitude of the effect.

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[14] Yusuf F. Zakariya, "Cronbach's Alpha in Mathematics Education Research: Its Appropriateness, Overuse, and Alternatives," *Frontiers in Psychology* 13 (2022): 1–8, 1074430; A. Basantes-Andrade et al., "Validity and Reliability of the Questionnaire of Academic Knowledge in Teachers," *BMC Psychology* 12, no. 1 (2024): 1–14.

[15] P. A. Edelsbrunner, M. Heene, and M. Scherer, "The Cronbach's Alpha of Domain-Specific Knowledge Tests: A Meta-Analysis," *Educational Psychology Review* 37, no. 1 (2025): 1–28.

[16] Mohsen Tavakol and Reg Dennick, "Making Sense of Cronbach's Alpha," *International Journal of Medical Education* 2 (2011): 53–55.

Hypothesis testing was conducted at a significance level (α) of 0.05, with the alternative hypothesis (H1) accepted when the p-value is below 0.05. The hypotheses were as follows: H0 states that OBE-based special needs education does not have a significant effect on the affective achievement of students with special needs, whereas H1 states that OBE-based special needs education has a positive and significant effect on the affective achievement of students with special needs. All statistical analyses were performed using IBM SPSS Statistics version 27, which was chosen for its adequate capability for validity and reliability testing, descriptive analysis, and the regression analyses commonly used in quantitative educational research.

C. Results and Discussion

Profile of outcome-based education implementation and affective achievement of students with special needs

The study involved 50 respondents who were students with special needs from inclusive schools and SLB. Descriptive analysis shows that the total score for OBE implementation (X1) had a mean of 30.02 with a standard deviation of 10.74, while the total score for affective achievement (Y) had a mean of 27.34 with a standard deviation of 10.46. X1 scores ranged from 10 to 48, and Y scores from 11 to 44. These figures show considerable variation in students' perceptions of OBE-based learning and in their affective achievement.

Table 1. Descriptive Statistics of the Research Variables

Variable	Mean	Std. Deviation	Minimum	Maximum
X1 (OBE)	30.02	10.74	10	48
Y (Affective achievement)	27.34	10.46	11	44

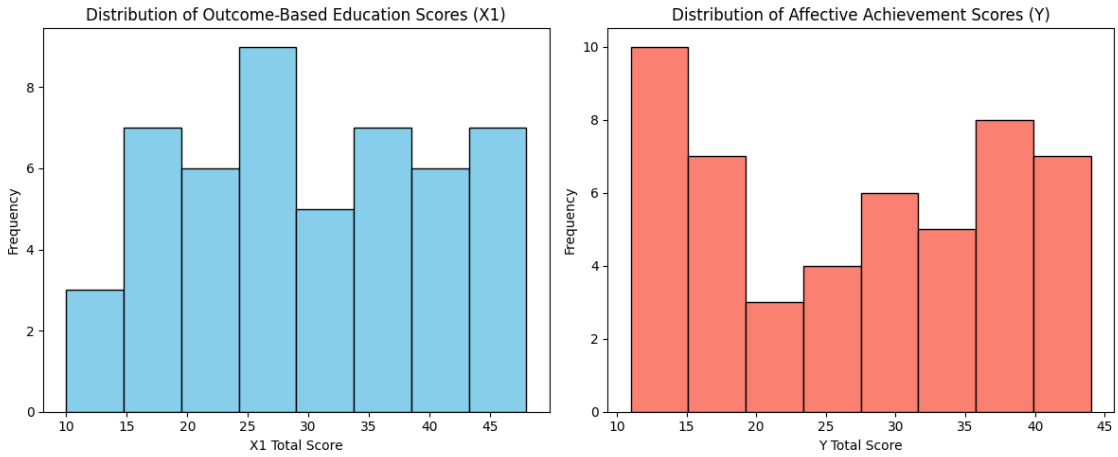


Figure 1. Histograms of the Score Distributions of Outcome-Based Education (X1) and Affective Achievement (Y)

The histograms in Figure 1 show that X1 scores are spread across the whole observed range, with the highest frequency in the 25–29 interval (nine respondents) and no pronounced concentration at either extreme. This indicates that OBE implementation was perceived at widely varying levels by the respondents.

The distribution of Y is less even. It shows two clusters: a lower one at approximately 11–19 (17 respondents) and an upper one at approximately 36–44 (15 respondents), with fewer respondents in between. The mean of 27.34 therefore summarizes a heterogeneous group rather than a typical level, because students were found at both low and high levels of affective achievement. Since the distribution of Y is not bell-shaped, it should also be noted that the assumptions of linear regression concern the residuals rather than the raw distribution of Y; the prerequisite tests described in the Method section address this requirement. Overall, both variables show enough variation to allow the relationship between them to be examined through correlation and regression analysis.

The descriptive profile shows that the perception of OBE implementation varied widely among respondents (SD = 10.74 for X1 and 10.46 for Y). This variation is conceptually meaningful. OBE is not merely a list of objectives but a framework that requires learning outcomes to be formulated explicitly and then serve as the basis for content, strategies, and assessment.[17] In special needs education, the depth with which these principles are applied can be expected to differ across schools and classes because of the diversity of learners' needs in inclusive schools and SLB. The systematic review by Chameera et al. shows that difficulties in implementing OBE concentrate on formulating outcomes, planning learning activities, and assessment,[18] so the quality of implementation commonly varies. The heterogeneity of X1 scores therefore provides the statistical variance needed to test whether differences in the quality of OBE implementation are related to differences in affective achievement.

The spread of Y scores is also methodologically important. Scores that span nearly the entire observed range indicate that the instrument can distinguish students with low, moderate, and high affective achievement, so the correlation is not attenuated by restriction of range. However, because both variables were measured through respondents' perceptions on a Likert scale,[19] X1 reflects OBE as experienced by students rather than as judged by an independent observer. The implications are discussed in the section on the limitations of the study.

Effect of outcome-based education implementation on affective achievement: correlation and regression results

The Pearson correlation test yielded $r = 0.320$ with $p = 0.023$ (< 0.05), indicating a positive, moderate, and significant relationship between X1 (OBE) and Y (affective achievement). Simple linear regression produced the following equation:

[17] Harden, Crosby, and Davis, "Outcome-Based Education: Part 1."
[18] Chameera, Mohammed, and Dhanapala, "Challenges and Recommendations."
[19] Koo and Yang, "Likert-Type Scale."

$$Y = 17.98 + 0.312X1$$

The coefficient of determination (R^2) of 0.103 indicates that 10.3% of the variation in affective achievement is explained by X1, while the remainder is influenced by other factors outside the model.

Table 2. Results of Simple Linear Regression Analysis

Variable	Coefficient	Std. Error	t	p
Intercept	17.98	-	-	-
X1 (OBE)	0.312	0.132	2.36	0.023

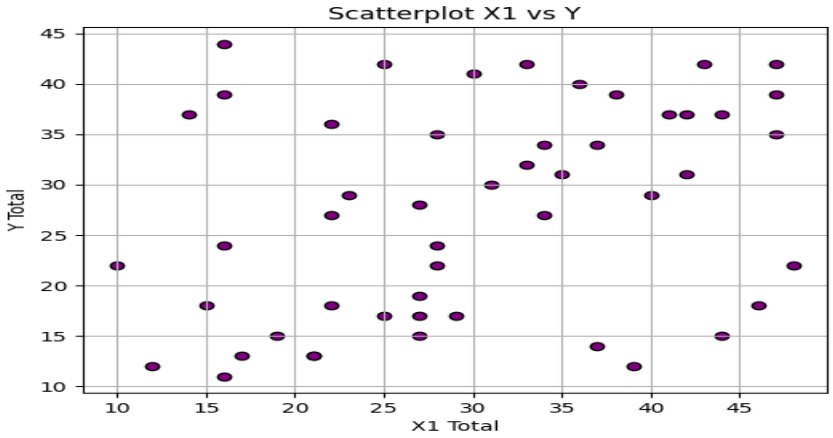


Figure 2. Scatterplot of the Relationship between Outcome-Based Education (X1) and Affective Achievement (Y)

The scatterplot in Figure 2 shows the relationship between OBE implementation (X1) and the affective achievement of students with special needs (Y). The points tend to move from the lower left to the upper right, indicating a positive relationship between the two variables. In other words, the higher the level of OBE implementation perceived by respondents, the higher the affective achievement they show.

However, the points do not form a tight straight line; considerable variation remains around the trend. This indicates a positive relationship of moderate strength, as reflected in the Pearson correlation coefficient of r = 0.320. The finding suggests that OBE implementation is associated with higher affective achievement but is not the only factor influencing the affective development of students with special needs. The visual pattern is consistent with the regression analysis, which produced a positive unstandardized coefficient (B = 0.312) and a significance value of p = 0.023 (< 0.05), and thus supports the statistical result that OBE implementation is a positive and significant predictor of the affective achievement of students with special needs.

The magnitude of the relationship should be interpreted proportionately. A coefficient of r = 0.320 is moderate by common convention, and R^2 = 0.103 means that roughly one-tenth of the variation in affective achievement is associated with OBE

implementation. Funder and Ozer argue that effect sizes in psychological research should be judged by their practical consequences, and that a correlation of about 0.30 can be potentially meaningful in the short and long term when it is estimated reliably.[20] Affective achievement is determined by many factors, so a contribution of about 10% from a single instructional practice that schools can manage should not be dismissed. Nevertheless, the precision of the estimate must be noted. With n = 50, the 95% confidence interval for r ranges from about 0.05 to 0.55, and p = 0.023 lies only slightly below the 0.05 threshold. The finding is therefore better regarded as preliminary evidence requiring replication than as a definitive estimate.

The terms "effect" and "effectiveness" in this study must also be read in light of its design. A correlational–explanatory design with data collected at one point in time supports the conclusion that OBE implementation is a significant predictor of affective achievement, but it does not permit causal claims. The reverse direction is also plausible: students with better affective dispositions, for example those who are more motivated and cooperative, may perceive learning as more structured. Testing effectiveness in the causal sense requires a quasi-experimental or longitudinal design with pretest and posttest measurements. The pattern in Figure 2, which is consistent with the regression results, supports the internal consistency of the findings but does not replace such causal testing.

Mechanisms of influence: constructive alignment, krathwohl's affective stages, and autonomous motivation

The finding that better OBE implementation is associated with higher affective achievement can be explained theoretically through three complementary mechanisms. The first is constructive alignment among outcomes, learning activities, and assessment. Spady positions all learning activities as efforts to achieve demonstrable learning results,[21] while Biggs shows that teaching is most effective when the intended outcomes, learning activities, and assessment are designed in alignment.[22] For students with special needs, such alignment can reduce ambiguity about expectations: students know which attitudes and behaviors are expected, experience activities that practice them, and receive feedback on the same things. This explanation accords with the OBE indicators measured in this study, namely outcome planning, suitability of strategies, outcome-based assessment, and feedback.

The second mechanism concerns the stages of affective internalization. Krathwohl's affective taxonomy describes the development of attitudes and values from *receiving*, *responding*, *valuing*, and *organization* to *characterization*.[23] Explicitly formulated affective outcomes, for example responding to an invitation to cooperate at the *responding* stage or

[20] David C. Funder and Daniel J. Ozer, "Evaluating Effect Size in Psychological Research: Sense and Nonsense," *Advances in Methods and Practices in Psychological Science* 2, no. 2 (2019): 156–68.

[21] Spady, *Outcome-Based Education*.

[22] John Biggs, "Enhancing Teaching through Constructive Alignment," *Higher Education* 32, no. 3 (1996): 347–64.

[23] Krathwohl, Bloom, and Masia, *Taxonomy of Educational Objectives*; Krathwohl, "Revision of Bloom's Taxonomy."

tidying up learning materials without being asked at the *valuing* stage, allow teachers to choose activities and assessment indicators suited to each student's stage. In this way, affective progress, which is generally gradual, becomes observable and can be given feedback. It should be noted that this study did not analyze each stage separately; this explanation is therefore interpretive and needs to be tested through dimension-level analysis in future research.

The third mechanism concerns motivation and independence. Self-determination theory explains that motivation and well-being develop when the basic needs for competence, autonomy, and relatedness are satisfied.[24] Clear and measurable learning outcomes can give students an experience of competence, namely knowing that a target has been achieved, while a choice of strategies and personalized feedback can support autonomy. A meta-analytic review by Burke et al. found that interventions to promote self-determination can be effective for students across grade levels, disability labels, and educational settings.[25] OBE practices that strengthen a sense of competence are therefore theoretically relevant to two of the affective indicators measured in this study, namely learning motivation and independence.

Positioning the findings against studies of inclusive education and social-emotional learning

The direction of the present findings is consistent with the evidence synthesis on social-emotional learning, although the magnitude of the effects must be read cautiously. Based on eleven studies, Hassani and Schwab report that school-based social-emotional interventions have positive effects for students with special needs, but most of these effects are small. [26] Among general student populations, Durlak et al. report significant improvements in social-emotional skills, attitudes, and behavior resulting from structured social-emotional learning programs.[27] The present findings point in the same direction: planned and structured instruction is associated with a tangible but limited affective improvement. A direct comparison of effect sizes was not undertaken because the metrics and study designs differ.

At the level of the learning environment, the Campbell review of 15 non-randomized studies reported effects of inclusion on psychosocial adjustment that were positive in direction but not significant (SMD = 0.20; 95% CI –0.01 to 0.42), and its authors stress the need to know which kind of inclusive education works for students with particular needs.[28] Ruijs and Peetsma likewise conclude that the effects of inclusion are neutral to positive, while the social position of students with special needs tends to be less favorable than that of their

[24] Richard M. Ryan and Edward L. Deci, "Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being," *American Psychologist* 55, no. 1 (2000): 68–78.

[25] Kathryn M. Burke et al., "A Meta-Analysis of Interventions to Promote Self-Determination for Students With Disabilities," *Remedial and Special Education* 41, no. 3 (2020): 176–88.

[26] Hassani and Schwab, "Social-Emotional Learning Interventions."

[27] Joseph A. Durlak et al., "The Impact of Enhancing Students' Social and Emotional Learning: A Meta-Analysis of School-Based Universal Interventions," *Child Development* 82, no. 1 (2011): 405–32.

[28] Dalgaard et al., "Effects of Inclusion."

peers.[29] These findings shift the question from "are students placed in inclusive classrooms?" to "how is instruction designed?". The present study contributes to that shift: in a sample drawn from inclusive schools and SLB, the quality of implementing outcome-based instruction, and not merely where students learn, is associated with affective achievement. Krämer et al. earlier reviewed the cognitive and psychosocial outcomes of inclusive education for students with general learning difficulties;[30] this study complements their work by showing that variation in the quality of instructional practice deserves consideration.

Moderate strength of the effect: the role of teachers, families, and the inclusive school ecosystem

A coefficient of determination of 0.103 means that 89.7% of the variation in affective achievement is not explained by the model, so factors other than OBE implementation clearly play a role. One of them is teacher readiness. In a meta-analysis of 41 studies, Yada et al. report a correlation of about 0.35 between teacher self-efficacy and attitudes toward inclusive education,[31] so the quality of OBE implementation may itself depend on teachers' beliefs and competence. In the analytical framework, teachers could act as a mediating or moderating variable that was not modeled in this study. The second factor is the family. Reviewing 28 studies on parental involvement in families of children with special needs, Kovács et al. conclude that strong collaboration among parents, teachers, and professionals can contribute significantly to children's psychological, emotional, and academic development.[32]

The third factor is the institutional ecosystem. Rrofiah et al. document limited learning accommodations, social stigma, and suboptimal institutional support for students with disabilities at an Indonesian university,[33] and Jaya et al. show that the assessment system in inclusive schools in Jakarta does not yet fully accommodate the needs of students with special needs.[34] Under such conditions, outcome-based assessment may lose its leverage if it is not accompanied by adequate accommodations, dampening the influence of OBE on affective achievement. Improvement in affective achievement should therefore be understood as the result of synergy among schools, families, and the community rather than as the success of a single instructional approach.

The theoretical contribution of this study lies in extending the scope of, and integrating, two frameworks. OBE has largely been studied in higher education and professional education,[35] whereas this study tests its relevance in special needs education and

[29] N. M. Ruijs and T. T. D. Peetsma, "The Effects of Inclusion on Students with and without Special Educational Needs Reviewed," *Educational Research Review* 4, no. 2 (2009): 67–79.

[30] Krämer et al., "Inclusive Education."

[31] Akie Yada et al., "Meta-Analysis of the Relationship between Teachers' Self-Efficacy and Attitudes toward Inclusive Education," *Teaching and Teacher Education* 109 (2022): 103521.

[32] Karolina Eszter Kovács et al., "Is Resilience a Trait or a Result of Parental Involvement? The Results of a Systematic Literature Review," *Education Sciences* 12, no. 6 (2022): 372.

[33] Rrofiah et al., "Inclusive Education at Universitas Negeri Surabaya."

[34] Jaya et al., "Learning Outcomes Assessment."

[35] Harden, Crosby, and Davis, "Outcome-Based Education: Part 1."; Chameera, Mohammed, and Dhanapala, "Challenges and Recommendations."

in the affective domain rather than only the cognitive one. The study also integrates OBE, as a framework for aligning the learning process, with Krathwohl's affective taxonomy, as a framework of value-internalization stages. The integration yields a testable conceptual pathway: clarity of outcomes and alignment of activities and assessment promote progress through the stages of affective internalization, which then becomes visible in the motivation, independence, compliance, and social skills of students. This pathway can serve as an initial proposition for developing an outcome-oriented theory of special needs education.

The empirical contribution is a quantitative estimate of the relationship between OBE implementation and the affective achievement of students with special needs ($r = 0.320$; $B = 0.312$; $R^2 = 0.103$), which, based on the literature reviewed in this article, has rarely been reported. This estimate can serve as a reference for planning further research. Detecting a correlation of 0.32 with a statistical power of 0.80 at $\alpha = 0.05$ (two-tailed) requires about 75 respondents, and about 124 respondents if the true effect is smaller, namely $r = 0.25$. The sample size of this study ($n = 50$) therefore provides a power of only about 0.62 for an effect of $r = 0.32$.

The methodological contribution is the operationalization of OBE in the context of special needs education through five indicators, namely learning-outcome planning, suitability of learning strategies, outcome-based assessment, learning feedback, and attainment of learning outcomes, together with the measurement of affective achievement according to the five stages of Krathwohl's taxonomy. The validation procedure used, namely expert judgment for content validity, Pearson product-moment correlation for construct validity, and Cronbach's alpha for reliability,[36] can be adapted and developed by other researchers working with similar populations.

For schools and teachers, the results recommend that affective outcomes be formulated operationally and included in learning plans, including students' individualized learning programs. Outcome statements should be mapped to the Krathwohl stage appropriate to each student's condition and then linked to aligned learning activities and assessment. Affective assessment should not rely on a single source but should combine teacher observation, behavioral records, and student feedback. Because OBE specifies what is to be achieved but does not in itself explain how instruction is adapted, its implementation can be combined with the principles of *universal design for learning*, which, according to Capp's meta-analysis, improves the learning process for all students.[37]

For policymakers, the findings support the formulation of inclusive education standards that include indicators of affective achievement alongside academic achievement, accompanied by assessment guidelines that accommodate the diversity of students' needs. Given that teacher efficacy is related to attitudes toward inclusion[38] and that OBE implementation demands careful formulation of outcomes and assessment,[39] teacher training should cover the preparation of adaptive learning outcomes and outcome-based assessment.

[36] Tavakol and Dennick, "Making Sense of Cronbach's Alpha."

[37] M. J. Capp, "The Effectiveness of Universal Design for Learning: A Meta-Analysis of Literature between 2013 and 2016," *International Journal of Inclusive Education* 21, no. 8 (2017): 791–807.

[38] Yada et al., "Teachers' Self-Efficacy and Attitudes."

[39] Chameera, Mohammed, and Dhanapala, "Challenges and Recommendations."

Support for school–family partnerships should also be considered, in line with the evidence on parental involvement.[40]

For future research, five directions are recommended. First, quasi-experimental or longitudinal studies with pretest and posttest measurements are needed to test the causal effect of OBE and to address the possibility of reverse directionality. Second, multivariate models should include teacher efficacy and competence, family support, inclusive school climate, and psychological well-being, together with mediation or moderation tests. Third, analyses by Krathwohl dimension, by type of special need, and by type of educational unit (inclusive school and SLB) are needed to identify the stages and groups that benefit most from OBE. Fourth, *mixed methods* approaches and multiple data sources, for example teacher observations and parent reports, would reduce single-perception bias. Fifth, sample sizes should be planned on the basis of power analysis, and multilevel analysis should be used because students are nested within schools.

This study has several limitations. First, the correlational design with data collected at one point in time does not allow causal conclusions. Second, OBE implementation and affective achievement were measured through students' perceptions on a Likert scale, which makes the results susceptible to self-assessment bias and single-method bias, especially for students with communication or cognitive barriers. Third, the limited sample size (n = 50) yields wide confidence intervals and only moderate statistical power. Fourth, the study was conducted in a particular area and did not separate the results by type of special need or type of educational unit, so generalization should be made with caution. Fifth, the model contains only one independent variable and therefore cannot account for all the factors that influence the affective achievement of students with special needs. Directions for future research to address these limitations have been outlined in the recommendations above.

D. Conclusion

This study aimed to analyze the effectiveness of OBE-based special needs education in enhancing the affective achievement of students with special needs. The statistical analysis of 50 respondents found that the implementation of OBE is a positive and significant predictor of the affective achievement of students with special needs. The correlation test showed a positive relationship between the two variables ($r = 0.320$; $p = 0.023$), while the simple linear regression showed that OBE implementation accounts for 10.3% of the variation in the affective achievement of students. This finding indicates that the better the principles of OBE are applied in the learning process, the better the development of students' affective aspects, such as learning motivation, independence, compliance with rules, cooperation skills, and the application of positive values in daily life.

Theoretically, the results of this study reinforce the concept of OBE, which places the attainment of learning outcomes at the center of the educational process. The findings also support the perspective of Krathwohl's affective taxonomy, which holds that planned, measurable, and outcome-oriented learning can foster the development of students' attitudes

[40] Kovács et al., "Resilience and Parental Involvement."

and values. The study thus provides an empirical contribution to the development of research on inclusive education and special needs education, specifically in explaining the relationship between OBE implementation and the affective achievement of students with special needs, which remains relatively limited in the earlier literature.

In practical terms, the results show the importance of applying OBE in the delivery of special needs education. Schools and teachers need to design learning around clear learning outcomes, accompanied by an assessment system that can measure students' development comprehensively, including in the affective domain. Educational institutions also need to strengthen teacher capacity through training in formulating learning outcomes, adaptive learning strategies, and outcome-based assessment suited to the characteristics of students with special needs. At the policy level, the findings can serve as a basis for developing inclusive education standards that emphasize not only academic aspects but also the development of character and the social-emotional competence of students.

Nevertheless, this study has limitations, as it used only one independent variable and involved a relatively small number of respondents. Future studies are therefore advised to develop a more comprehensive research model that includes other variables, such as family support, teacher competence, inclusive school climate, and students' psychological well-being. The use of mixed methods can also provide a deeper understanding of the mechanisms by which OBE influences the affective development of students with special needs. In this way, further research is expected to enrich the empirical evidence and broaden the development of special needs education practices that are more effective, inclusive, and oriented toward students' holistic learning outcomes.

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