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Program Evaluation Models in Gifted Education: A Survey

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ABSTRACT

This study reviews major program evaluation models in gifted education as part of special needs education. Using a comparative literature review approach, the paper examines evaluation models such as the Discrepancy Evaluation Model, value-based evaluation, differential evaluation, DESDEG, Borland's model, the William and Mary Eclectic Model, Callahan's guide, the REDSIL Model, and Rimm's model. The findings show that each model offers different strengths in assessing program goals, stakeholder involvement, student outcomes, equity, process quality, and socio-emotional development. No single model is universally applicable; model selection should depend on program goals, student needs, available resources, and educational context.

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1. INTRODUCTION

Program evaluation is a systematic process of collecting and analyzing information to determine the worth, merit, or significance of a program (Renzulli, 1984). In gifted education, evaluation helps schools clarify program goals, assess implementation quality, examine student outcomes, and make evidence-based decisions for improvement. Evaluation may serve formative, summative, psychological, and socio-political functions. These functions are important because gifted programs should support not only academic achievement but also student well-being, equity, access, and community involvement (Carter and Hamilton, 1985; Rallis and Bolland, 2004). Evaluating gifted programs is challenging because giftedness is multidimensional and may appear differently across students, cultures, and educational settings. Program outcomes may include academic achievement, creativity, problem-solving, leadership, motivation, socio-emotional growth, and project production. These outcomes are not always easy to measure using standardized instruments alone. In addition, gifted learners may have diverse characteristics and needs, requiring evaluation models that are flexible and responsive to program context (Archambault, 1984; Chen and Chen, 2020). Student perspectives are also important because gifted learners' evaluation of their programs may relate to their project production and learning experiences (Özbek and Dağyar, 2022). Despite its importance, program evaluation is often treated as secondary because schools may have limited budgets, limited evaluation expertise, or insufficient instruments designed specifically for gifted education (Callahan, 1983). However, weak evaluation can reduce program quality because decisions about curriculum, identification, enrichment, acceleration, and support services depend on reliable information. The selection of appropriate instruments and evaluation models is, therefore, central to the validity and usefulness of program evaluation (Aylesworth, 1984).

This study reviews major program evaluation models in gifted education from a comparative perspective. It aims to identify the theoretical foundations, methodological orientations, strengths, limitations, and practical applications of selected evaluation models. By situating gifted education within special needs education, this paper highlights the importance of choosing evaluation models that are responsive to student diversity, program goals, stakeholder needs, and equity-driven educational practice.

2. METHODS

This study used a comparative literature review approach to examine program evaluation models in gifted education. The review focused on journal articles, book chapters, and scholarly reports related to program evaluation, gifted education, evaluation models, student outcomes, stakeholder involvement, equity, and program improvement. The literature was selected based on its relevance to gifted education and special needs education. Priority was given to sources discussing evaluation models that address program goals, curriculum quality, student outcomes, socio-emotional development, stakeholder perspectives, equity, implementation, and program refinement. The selected models were analyzed using comparative thematic synthesis. The analysis compared the theoretical orientation, evaluation focus, strengths, limitations, and practical relevance of models such as the Discrepancy Evaluation Model, value-based evaluation, differential evaluation, DESDEG, Borland's model, the William and Mary Eclectic Model, Callahan's Practitioner's Guide, the REDSIL Model, and Rimm's Model. The findings were organized to explain how these models can support evidence-based and equitable gifted education programs.

3. RESULTS AND DISCUSSION

Table 1 summarizes the main characteristics of the reviewed models. No single evaluation model is suitable for all gifted education programs. Each model offers different strengths depending on program goals, available resources, stakeholder needs, and local context.

Table 1. Comparison of program evaluation models in gifted education.

MODEL	MAIN FOCUS	STRENGTH	LIMITATION	RELEVANCE TO GIFTED EDUCATION
Discrepancy Evaluation Model	Standards and actual performance	Identifies gaps between goals and outcomes	May overlook qualitative experiences	Useful for checking goal achievement
Value-based evaluation	Stakeholder values	Includes student, parent, teacher, and community perspectives	Stakeholder values may conflict	Supports inclusive and context-sensitive evaluation
Differential evaluation	Program context and local needs	Flexible and responsive	Difficult to compare across settings	Suitable for diverse gifted programs
DESDEG	Specialized gifted program evaluation	Focuses on the quality of gifted education	Requires gifted education expertise	Useful for curriculum, assessment, administration, and resources
Borland's model	Judgment, description, improvement, and use	Views evaluation as reflective inquiry	Requires methodological flexibility	Evaluates complex academic and socio-emotional outcomes
William and Mary Eclectic Model	Integrated multi-dimensional evaluation	Combines several evaluation approaches	Requires planning and resources	Useful for broad program review and equity concerns
Callahan's guide	Practical school-based evaluation	Includes multiple measures and stakeholders	Depends on staff capacity	Useful for outcomes, side effects, and cultural relevance
REDSIL Model	Qualitative stakeholder-centered evaluation	Promotes ownership and feedback	Context-specific findings	Useful for stakeholder participation
Rimm's Model	Input, process, outcome, and evaluation	Balances process and product	Requires substantial data and time	Links resources, implementation, and student outcomes

3.1. Discrepancy Evaluation Model

The Discrepancy Evaluation Model compares program performance with established standards to identify gaps between intended outcomes and actual results (Carter, 1992). The process includes defining standards, collecting performance data, comparing results with benchmarks, identifying discrepancies, analyzing causes, and recommending corrective actions. In gifted education, this model is useful for checking whether program goals related to identification, enrichment, acceleration, creativity, achievement, and socio-emotional development are achieved. It can help administrators identify weaknesses in curriculum delivery, teacher preparation, resources, and student support (Moon, 1996). However, its strong focus on predetermined standards may not fully capture creativity, motivation,

leadership, or learner experience. Therefore, it should be supported with qualitative evidence from students, teachers, and parents (House and Lapan, 1994).

3.2. Value-based Evaluation Model

The value-based evaluation model places stakeholder values at the center of evaluation. It considers the perspectives of students, parents, teachers, administrators, and community members instead of relying only on objective standards or test-based outcomes (Vo, 2018). This model is relevant because gifted education programs often have multiple definitions of success. This is important because giftedness and talent development may be understood differently across educational communities, requiring evaluation models that recognize diverse goals and learner profiles (Renzulli, 1999). Students may value challenge and creativity, parents may value fairness and opportunity, teachers may focus on curriculum quality, and administrators may focus on accountability and sustainability. By including stakeholder values, evaluation becomes more inclusive and context-sensitive (Van Tassel-Baska, 1984). Its limitation is that stakeholder expectations may conflict, so evaluators must balance different priorities carefully.

3.3. Differential Evaluation Model

The differential evaluation model emphasizes that evaluation should be adapted to the characteristics, goals, and contexts of each gifted program (Carter and Hamilton, 1985; Dettmer, 1985). This model rejects a single uniform evaluation design because gifted education programs may differ in goals, student profiles, resources, and implementation stages. This approach is useful for programs that emphasize different priorities, such as enrichment, acceleration, talent development, research projects, or socio-emotional support. It also considers program stabilization, or whether a program has developed sustainable practices and consistent outcomes over time (George *et al.*, 1990). The strength of this model is contextual relevance, while its limitation is that highly customized evaluations may be difficult to compare across schools or districts.

3.4. DESDEG Model

The Diagnostic and Evaluative Scales for Differential Education for the Gifted is a specialized framework for evaluating gifted education programs. It examines curriculum, instruction, student assessment, professional development, administration, and resource allocation (Moller, 1986; Moon, 1996). The model is also supported by evaluation resources and previous gifted program evaluation practices that guide administrators and educators in reviewing program quality and implementation (Bolton, 1977; Hunsaker and Callahan, 1993). DESDEG is useful because it was designed specifically for gifted education. It recognizes that gifted programs require differentiated curriculum, appropriate identification procedures, trained teachers, and supportive administrative structures. The model is also relevant because gifted education programs require tools that can be adapted to curriculum differentiation, enrichment practices, and cross-cultural implementation contexts (Hernández and Saranlı, 2014; Ronksley-Pavia, 2010). However, schools may need evaluator training before applying it effectively.

3.5. Borland's Model for Evaluating Gifted Programs

Borland's model views evaluation as judgment, description, improvement, utilization-focused practice, and postpositivist inquiry (Borland, 1990; Borland, 1996). Evaluation is not only a technical procedure but also a reflective process that helps educators understand how

gifted programs work and how they can be improved. This model is useful because gifted education cannot be assessed only through test scores. Evaluation should also consider student products, learning processes, creativity, motivation, and stakeholder experiences. Improvement-oriented evaluation also links accountability with practical program refinement and helps schools use evaluation findings for decision-making and development (Chyung *et al.*, 2013). The model's limitation is that it requires strong conceptual understanding and methodological flexibility.

3.6. William and Mary Eclectic Model of Gifted Program Evaluation

The William and Mary Eclectic Model integrates several evaluation traditions, including CIPP, utilization-focused evaluation, knowledge-focused evaluation, client-centered evaluation, and accreditation-based evaluation (Van Tassel-Baska *et al.*, 2000). This allows evaluators to select approaches that match program goals and context. The model evaluates program philosophy, identification, curriculum, grouping, socio-emotional development, professional learning, evaluation practices, and resources. It is also consistent with equity-based and school-based gifted education evaluation because it encourages attention to underrepresented students, curriculum innovation, and program development across primary and secondary educational settings (Ford *et al.*, 2020; Shek *et al.*, 2022). Its broad scope is useful, but it may require considerable planning, resources, and evaluator expertise.

3.7. Callahan's Practitioner's Guide to Program Evaluation

Callahan's guide provides a practical framework for school-based evaluation of gifted programs. It emphasizes alignment between evaluation goals and program objectives, relevant data sources, appropriate methods, multiple measures, and stakeholder involvement (Callahan, 1983; Callahan, 1998). This guide is useful because it considers student identification, program components, intended outcomes, possible side effects, unanticipated effects, and culturally relevant materials. It also encourages participation from teachers, students, parents, and administrators. Reflective and participatory evaluation practices can help educators examine program quality more critically and use stakeholder feedback for continuous improvement (Landvogt *et al.*, 2000). Its limitation is that implementation depends on staff capacity, school resources, and data availability.

3.8. REDSIL Model

The REDSIL Model, also known as the Fourth Generation Evaluation Model for Gifted Education Programs, is a qualitative and stakeholder-centered model (Silky and Readling, 1992). It consists of three phases: identifying critical content, collecting data on critical questions, and analyzing, validating, and reporting findings. This model treats students, teachers, parents, administrators, and community members as active participants in evaluation. Its strength is that it promotes ownership, transparency, and meaningful feedback. Because stakeholders are involved from the beginning to the end, evaluation findings are more likely to be used for program improvement. However, findings may be context-specific and less generalizable beyond the local program setting.

3.9. Rimm's Model of Program Evaluation

Rimm's model is commonly described as a comprehensive framework based on input, process, outcome, and evaluation in gifted program assessment. Inputs include trained staff, identification tools, curriculum materials, budget, administrative support, and parental

involvement. Processes include student identification, instruction, staff training, curriculum implementation, counseling, and family engagement. Outcomes include achievement, products, motivation, interest, and student development. This model combines process-oriented and product-oriented evaluation. Process evaluation examines implementation quality, instructional methods, student engagement, and resource use. Product evaluation examines achievement, critical thinking, leadership, and student performance (Carter and Hamilton, 1985). Rimm's model also supports formative and summative evaluation, allowing schools to improve programs during implementation and judge overall effectiveness at the end of a program cycle (Callahan, 1998). Its main strength is its holistic scope, while its limitation is the amount of data and time required.

3.10. Comparative Synthesis of Evaluation Models

The reviewed models show that gifted education evaluation should be strategic, flexible, and context-sensitive. Standards-based models help identify gaps, while stakeholder-centered models ensure that student, parent, teacher, and community perspectives are represented. Specialized models such as DESDEG are useful for examining gifted program quality, while comprehensive models such as the William and Mary Eclectic Model and Rimm's Model can capture both process and outcome dimensions. For gifted education as part of special needs education, evaluation should not focus only on academic achievement. It should also consider creativity, problem-solving, leadership, socio-emotional development, access, equity, and program sustainability. Model selection should depend on program goals, available resources, evaluator expertise, and stakeholder expectations. Effective evaluation should guide program improvement and evidence-based support for gifted learners.

4. CONCLUSION

Program evaluation is essential for improving gifted education as part of special needs education. The reviewed models offer different strengths in assessing standards, stakeholder values, context, implementation, outcomes, equity, and program improvement. No single model is suitable for all programs; therefore, model selection should depend on program goals, student needs, resources, and local context. Effective evaluation should examine academic achievement, creativity, socio-emotional development, access, and sustainability. By using appropriate evaluation models, schools can make evidence-based decisions and provide more responsive support for gifted learners.

5. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. The authors confirmed that the paper was free of plagiarism.

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