

## Talent-Based Curriculum Management for Student Talent Development: A Case Study in an Indonesian Elementary School

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**ABSTRACT:** This study aims to analyze the implementation of talent-based curriculum management, from planning to evaluation, in supporting student achievement and psychosocial development at SD Muhammadiyah Bodon, Yogyakarta. Two related but analytically distinct outcome constructs are examined: (a) achievement, comprising academic achievement, non-academic achievement, and competition-based recognition, each verifiable through documentation or competition records; and (b) psychosocial development, comprising perceived gains in confidence, discipline, and learning motivation as reported by informants. Using a qualitative case study approach, data were collected through interviews, non-participant observation, and documentation involving four key informants, and analyzed using six-phase reflexive thematic analysis assisted by ATLAS.ti software. The findings show that talent-based curriculum management is not administered as a stand-alone extracurricular program, but is embedded throughout the entire school management cycle. Planning is informed by multi-source talent-mapping data, organizing is carried out through formalized task division and cross-generation regeneration, implementation is realized through differentiated instruction and tiered talent programs, and evaluation functions as continuous feedback that directly refines subsequent planning. Parental and teacher support act as environmental catalysts that sustain the entire cycle rather than as peripheral factors. Based on these findings, the study proposes a Talent-Based Curriculum Management Cycle model, which extends conventional management functions by positioning talent data as the axis that flows continuously across planning, organizing, actuating, and evaluation stages, offering a contextually grounded framework that may inform talent-based curriculum management in elementary schools sharing comparable characteristics, particularly a designated curriculum-coordinator role, partnership-based resourcing, and a similar national talent-management policy context, rather than being generalizable across elementary schools broadly.

**Keywords:** curriculum management, elementary school, student achievement, talent development.

**ABSTRAK:** Penelitian ini bertujuan untuk menganalisis implementasi manajemen kurikulum berbasis bakat, mulai dari perencanaan hingga evaluasi, dalam mendukung prestasi siswa dan perkembangan psikososial di SD Muhammadiyah Bodon, Yogyakarta. Penelitian ini mengkaji dua konstruk hasil yang saling berkaitan, tetapi berbeda secara analitis, yaitu: (a) prestasi, yang mencakup prestasi akademik, prestasi nonakademik, dan penghargaan berbasis kompetisi, yang masing-masing dapat diverifikasi melalui dokumentasi atau catatan kompetisi; dan (b) perkembangan psikososial, yang mencakup peningkatan kepercayaan diri, kedisiplinan, dan motivasi belajar berdasarkan persepsi yang dilaporkan oleh para informan. Dengan menggunakan pendekatan studi kasus kualitatif, data dikumpulkan melalui wawancara,

observasi nonpartisipan, dan dokumentasi yang melibatkan empat informan kunci. Data dianalisis menggunakan analisis tematik reflektif melalui enam fase dengan bantuan perangkat lunak ATLAS.ti. Hasil penelitian menunjukkan bahwa manajemen kurikulum berbasis bakat tidak dikelola sebagai program ekstrakurikuler yang berdiri sendiri, melainkan terintegrasi dalam seluruh siklus manajemen sekolah. Perencanaan didasarkan pada data pemetaan bakat dari berbagai sumber, pengorganisasian dilaksanakan melalui pembagian tugas yang diformalkan dan regenerasi lintas generasi, implementasi diwujudkan melalui pembelajaran terdiferensiasi dan program pengembangan bakat berjenjang, sedangkan evaluasi berfungsi sebagai mekanisme umpan balik berkelanjutan yang secara langsung menyempurnakan perencanaan berikutnya. Dukungan orang tua dan guru berperan sebagai katalisator lingkungan yang menopang keseluruhan siklus tersebut, bukan sekadar sebagai faktor pendukung tambahan. Berdasarkan temuan tersebut, penelitian ini mengusulkan model Siklus Manajemen Kurikulum Berbasis Bakat (Talent-Based Curriculum Management Cycle), yang mengembangkan fungsi-fungsi manajemen konvensional dengan menempatkan data bakat sebagai poros yang mengalir secara berkelanjutan dalam tahapan perencanaan, pengorganisasian, pelaksanaan, dan evaluasi. Model ini menawarkan kerangka kerja yang berlandaskan konteks empiris dan berpotensi menjadi acuan bagi pengelolaan kurikulum berbasis bakat di sekolah dasar yang memiliki karakteristik serupa, khususnya dalam hal keberadaan koordinator kurikulum yang ditunjuk secara khusus, penyediaan sumber daya berbasis kemitraan, dan konteks kebijakan nasional yang serupa mengenai pengelolaan bakat. Dengan demikian, model ini tidak dimaksudkan untuk digeneralisasikan pada seluruh sekolah dasar secara luas.

**Kata kunci:** manajemen kurikulum, sekolah dasar, prestasi siswa, pengembangan bakat.

## INTRODUCTION

The curriculum is a central component that determines the direction of educational services within a school. In the talent-development framework, giftedness is understood as an ability that develops through structured and sustained educational provision (Subotnik et al., 2023). Studies have shown that differentiated provision is effective for high-ability students at both primary and secondary levels (Nicholas et al., 2024). Talent may therefore develop into achievement when it is identified and supported through a curriculum design that accommodates students' readiness and interests (Anwar et al., 2025). Curriculum management oriented toward students' competencies and potential has also been shown to improve learning outcomes in primary schools (Silaban & Panjaitan, 2025). The urgency of talent management is reinforced by Indonesia's Minister of Primary and Secondary Education Regulation No. 25 of 2025 on Student Talent Management, which requires schools to manage talent in a planned, structured, and continuous manner from identification to capitalization (Kementrian Pendidikan RI, 2025).

Conditions in practice present a different picture. In some schools, curriculum management is still treated as an administrative routine, while talent development relies on extracurricular activities that are not yet integrated into the curriculum cycle (Martadiningsih & Nirina, 2024; Rambe et al., 2024). Teachers' readiness to translate curriculum policy into classroom practice also remains limited (Gurion, 2024). Yet research indicates that educational leadership and management significantly influence student learning outcomes (Li et al., 2023).

This situation is also reflected in a recent multisite study of two public primary schools, which found that curriculum management remained conventional and had not fully integrated students' potential into instructional planning (Sulistiyan, 2025).

The relationship between talent management and achievement is supported by empirical evidence. Systematically managed talent development in primary schools improves academic and non-academic achievement (Rifa & Muhammad, 2022), while evaluations of model schools with institutionalized talent-development programs indicate positive effects on students' motivation and achievement (Jöstl et al., 2023). Schools therefore require consistent, multi-source talent-identification systems embedded in learning provision (Johnsen, 2024), together with inclusive learning environments and tiered services tailored to students' domains and levels of readiness (Mossberg et al., 2024). Without adequate managerial capacity, talent identification remains an administrative screening exercise rather than a basis for curricular decision-making.

International literature on curriculum management and talent development has not yet explicitly connected these fields. First, the giftedness and talent-development literature explains how potential is identified and supported, but generally stops at classroom provision or individual eligibility decisions and does not extend to school-management systems (Mossberg et al., 2024; Subotnik et al., 2023). This includes research showing that variation in teacher assessment and rules for combining instruments influences which students are ultimately identified as eligible for talent provision (Delgado-valencia et al., 2025). Second, the curriculum-differentiation literature demonstrates adaptations for high-ability students but focuses mainly on classroom practice and teacher readiness (Li et al., 2023). Standardized assessment and aligned instructional materials support data-based differentiation at classroom level, but this work has not extended to school management (Ardenlid et al., 2025). Third, educational-management literature explains planning, organizing, implementation, and evaluation in educational change, but does not treat talent data as an object flowing through the system (McLure, 2024). Fourth, data-informed decision-making literature emphasizes the importance of evidence as the basis for decisions, but does not connect data use to a talent-development cycle (Johnsen, 2024). Across these four gaps, the central issue is not simply the scarcity of Indonesian research, but how talent identification can move from an extracurricular mechanism to a curricular decision-making mechanism embedded across the school-management cycle.

Building on this theoretical problem, the study identifies three research gaps. First, there is a unit-of-analysis gap: talent is commonly studied as a stand-alone extracurricular program, whereas curriculum research often focuses on teacher readiness and policy implementation (Gurion, 2024; Rambe et al., 2024). Second, there is a cycle-completeness gap: studies of primary-school management tend to focus on service quality and leadership capacity in general, but have not traced the use of talent data from planning through evaluation (Kurniatun & Mei, 2026; Nugraha et al., 2025; Silaban & Panjaitan, 2025). Third, there is a contextual gap that supports, rather than constitutes, the main argument: evidence on

psychosocial mechanisms and institutionalized talent programs largely comes from outside Indonesia and from secondary education (Jöstl et al., 2023). Together, these gaps point to an unresolved theoretical mechanism through which talent identification is transformed into curricular decisions across each management stage. The Indonesian primary-school context serves as an empirical site for examining that mechanism, rather than as a stand-alone claim to novelty.

This study distinguishes between two related but analytically separate student-outcome constructs: (a) achievement, including academic, non-academic, and competition-based achievement that can be verified through documentation; and (b) psychosocial development, including confidence, discipline, and learning motivation as perceived and reported by informants. Talent-based curriculum management is defined as curriculum management that uses talent data as one basis for decision-making throughout the management cycle, from identification to evaluation. Teacher support, parental involvement, and resources operate as environmental catalysts that facilitate the transformation of potential into realized competence, as described in the Differentiated Model of Giftedness and Talent (Gagné, 2004; Worrell et al., 2019).

SD Muhammadiyah Bodon was selected because talent development at the school has been institutionalized within the planning, organizing, actuating/implementation, and controlling/evaluation cycle of curriculum management. This pattern is recommended in talent-development frameworks and has been documented in model secondary schools (Subotnik et al., 2023). This study aims to analyze the implementation of talent-based curriculum management, from planning through evaluation, in supporting student achievement at the school.

The novelty of this study is not framed as a claim to generalizability, but as a set of empirically identified mechanisms within a single case, supported by evidence, theoretically extended, and bounded by clear contextual conditions. Empirically, the study documents a functioning and documented cycle at an Indonesian primary school rather than proposing a normative model. Conceptually, it positions talent as a basis for curricular decision-making by mapping the flow of talent data from identification to outcome evaluation. Practically, it offers an empirically derived conceptual framework for talent-based curriculum management without claiming replicability or validity across schools, given the study's limited scope.

The study addresses four research questions: How are students' talents identified and translated into curriculum decisions? How are these decisions organized and implemented within the school curriculum? How is evaluation conducted in talent-based curriculum implementation? What barriers and forms of support shape the implementation of talent-based curriculum management?

The study integrates two frameworks: the Differentiated Model of Giftedness and Talent (DMGT) (Gagné, 2004; Worrell et al., 2019) and the management functions of planning, organizing, actuating, and controlling (POAC) (Terry & D.F.M, 2006), and the management functions of planning, organizing, actuating, and controlling (POAC) (Gagné, 2004; Worrell et al., 2019) while the four

management functions explain how that potential is organized and supported (Terry & D.F.M, 2006). Their integration allows talent data to flow through all four management functions rather than ending at identification.

## **RESEARCH METHOD**

### **Research Design**

This study employed a qualitative case study design. The approach was selected because the aim was to understand how actors within one school interpret and enact talent-based curriculum management, rather than to measure the magnitude of relationships among variables. Thematic analysis was used because it enables researchers to construct patterns of meaning across participants without stripping the case of its context (Braun & Clarke, 2021).

The study adopted a constructivist–interpretive paradigm. Management practices were viewed as intersubjectively constructed by actors in the field the principal, curriculum coordinator, talent/achievement coordinator, and classroom teacher rather than as a single objectively measurable reality (Chafe, 2024; Sugiyono, 2020). The first author, one of the three researchers, is a teacher at SD Muhammadiyah Bodon and therefore occupied an insider position, whereas the other two authors had no institutional affiliation with the school.

This position facilitated access to the data but also introduced risks of familiarity bias and social-desirability bias because of the first author’s familiarity with school routines and relationships with informants. These risks were mitigated through reflexive journaling by the first author, peer debriefing with the other two authors as external critical readers, triangulation across observations and documents, and member checking (Braun & Clarke, 2021).

The insider position supported contextual understanding but could also influence the questions asked and the interpretations produced. Reflexive journaling and critical review by the two non-insider authors were therefore used to examine the research team’s assumptions (Yip, 2024)

### **Research Site and Participants**

The study was conducted at SD Muhammadiyah Bodon in Bantul, Special Region of Yogyakarta. The school was purposively selected because it had institutionalized talent-based curriculum management. Participants were selected using purposive sampling. Sample adequacy was assessed through the principle of information power (Braun & Clarke, 2021) which evaluates adequacy not by participant numbers alone, but by the specificity of the study aim, participant characteristics, strength of theory, quality of dialogue, and analytical strategy.

This assessment was based on four considerations: (1) the study had a specific purpose and focused on a single case, so it did not require broad participant variation; (2) the four informants collectively represented the full talent-based curriculum-management cycle, from strategic planning (P1 and P2) to technical implementation (P3 and P4), enabling each stage of the cycle to be addressed; (3) all four provided high-quality dialogue because they were directly

and continuously involved in the program; and (4) the interview data were triangulated with non-participant observations and document analysis, so informational adequacy rested on depth and source diversity rather than participant numbers alone. Students and parents were not interviewed directly because the study focused on managerial and institutional processes rather than their subjective experiences.

Their perspectives were represented indirectly through documents, observation notes, and informants' accounts of student and parent responses. All participants gave informed consent after receiving an explanation of the study, and their identities were anonymized using the codes shown in Table 1, consistent with transparent reporting in thematic analysis (Nowell et al., 2017).

**Table 1.** Participant Profiles and Data-Collection Techniques

| Participant | Structural Role                     | Relevance to the Research Focus                                                       | Data-Collection Technique |
|-------------|-------------------------------------|---------------------------------------------------------------------------------------|---------------------------|
| P1          | Principal                           | Strategic decision-maker and supervisor of the curriculum-management cycle            | Interview, documentation  |
| P2          | Curriculum Coordinator              | Curriculum planning and evaluation; translation of talent data into curriculum design | Interview, documentation  |
| P3          | Talent/ Extracurricular Coordinator | Implementation of talent-development programs                                         | Interview, documentation  |
| P4          | Classroom Teacher                   | Implementation of provision and differentiated classroom instruction                  | Interview, documentation  |

### Data Collection

Data were collected over four months during the second semester of the 2025/2026 academic year using three complementary techniques. First, semi-structured interviews were conducted with all four informants (P1–P4). Second, three 60–90 minute non participant observation sessions covered differentiated instruction in the CI (Cerdas Istimewa) program, the Takhasus Program, and selected extracurricular coaching activities. These observations examined alignment between curriculum documents and classroom practice, given the recurring implementation gap in curriculum policy (Gurion, 2024). Third, document analysis covered five sources: (1) the school operational curriculum, (2) the annual work program, (3) talent-identification instruments, including IQ-test results and interest-and-talent questionnaires, (4) tiered evaluation records, and (5) student-achievement records for 2025/2026. These documents enabled the use of talent data to be reconstructed from planning through evaluation (Johnsen,

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2024). Interviews were recorded and transcribed verbatim, while field notes and documents were compiled into a digital corpus for analysis.

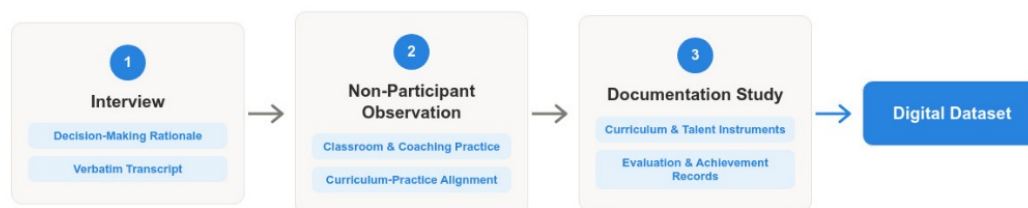


**Figure 1.** Data-Collection Techniques

The following table shows how each theme was supported by more than one data source, making the evidentiary basis transparent and strengthening triangulation.

**Table 2.** Cross-Theme Triangulation of Interview, Observation, and Documentary Evidence

| Theme                | Interviews                                                              | Observations                                                       | Documents                                              | Analytical Conclusion                                                                            |
|----------------------|-------------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Planning             | P1, P2<br>Basis of multi-source data (IQ, questionnaires, report cards) | No direct observation                                              | School curriculum documents and talent-mapping results | Planning was data-informed; the main evidence comprised documents and interviews with P1 and P2. |
| Organizing           | P1, P2, P3<br>Role allocation and succession                            | Session 1<br>Roles of coaches and accompanying teachers            | Appointment letters assigning responsibilities         | Formal structure in documents was confirmed in field practice.                                   |
| Implementation       | P3, P4<br>Classroom differentiation and tiered programs                 | Sessions 2 and 3<br>Classroom and archery extracurricular activity | Schedules and differentiated instructional materials   | Strong convergence across sources; observations confirmed interview accounts.                    |
| Evaluation           | P1, P2, P3<br>Tiered evaluation and feedback                            | No direct observation                                              | Achievement records and evaluation notes               | Documents and interviews jointly explained the evaluation process.                               |
| Barriers and Support | P2, P3, P4<br>Parental support and resource limitations                 | Sessions 2 and 3<br>Parental and accompanying teacher involvement  | Activity records and student correspondence            | Strong triangulation between informant perceptions and observed events.                          |

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### Data Analysis

The data were analyzed using six-phase thematic analysis supported by ATLAS.ti: (1) data familiarization through repeated reading and initial memo writing; (2) systematic coding of relevant quotations; (3) development of candidate themes by grouping codes into code groups; (4) theme review using the code co-occurrence table and query tool; (5) definition and naming of themes through Networks; and (6) report writing that linked each claim to documented data excerpts (Braun & Clarke, 2021).

**Table 3.** ATLAS.ti Audit Trail

| Raw Quotation<br>(example)                                                                                                                                                                                                        | Initial Code                                                          | Focused Code                                                                              | Theme          | Theoretical Construct                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|-------------------------------------------------------------------------------------------|----------------|----------------------------------------------|
| "We examine report cards from the previous level and trace their achievement records... We also use psychological tests, and students whose IQ is above average enter the Special Intelligence class." (P1)                       | Mapping instruments: IQ tests, report cards, and teacher observations | Potential Mapping (IQ Tests, Questionnaires, Report Cards) and Achievement-Target Setting | Planning       | Talent identification (DMGT)                 |
| "At the beginning of every year, I issue an appointment letter assigning responsibilities... who coordinates extracurricular activities, who coaches each activity, and who manages achievement or competition preparation." (P1) | Appointment letters and succession                                    | Competency Development and Role Allocation (through Appointment Letters)                  | Organizing     | Institutional organization (POAC—Organizing) |
| "... implementing differentiated instruction... I vary the teaching approach and the                                                                                                                                              | Variation in teaching approaches and tasks                            | Differentiated Instruction and Routine Formation (Positive                                | Implementation | Competence actualization (DMGT—talent-       |

|                                                                                                                                                                                |                                         |                                                                                          |                            |                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------------------------------------------------------------------------------------|----------------------------|------------------------------------------------|
| types of tasks.”<br>(P4)                                                                                                                                                       |                                         | Climate,<br>Healthy<br>Competition,<br>Role<br>Modelling)                                |                            | development<br>process)                        |
| “We conduct<br>evaluation in<br>stages... I also<br>carry out<br>supervision and<br>occasionally<br>observe<br>extracurricular or<br>coaching<br>activities<br>directly.” (P1) | Tiered<br>evaluation and<br>supervision | Evaluation<br>(Data, Process,<br>Supervision)                                            | Evaluation                 | Tiered<br>evaluation<br>(POAC—<br>Controlling) |
| “There are<br>several barriers.<br>The first concerns<br>time... The<br>second concerns<br>competence...”<br>(P4)                                                              | Multidimension<br>al barriers           | Program-<br>Implementatio<br>n Challenges<br>(Time,<br>Competence,<br>Uneven<br>Support) | Barriers<br>and<br>Support | Implementatio<br>n constraints                 |

The complete coding audit trail for all focused codes across the five themes, generated from the ATLAS.ti analysis, is provided as supplementary research data.

### Trustworthiness and Study Limitations

Trustworthiness was addressed through source triangulation across interviews, observations, and documents; method triangulation; and member checking of the findings summary with key informants. All informants verbal consent and written consent before interviews and observations. The researchers explained the study’s purpose, data confidentiality, and participants’ rights to decline or withdraw. Student names in the achievement records were omitted from the report.

The findings should be interpreted in light of several limitations: (1) the single-case design limits generalization to schools with different characteristics; (2) the four informants held managerial roles, and students and parents were not interviewed directly; (3) only three observation sessions were conducted, so variation across the academic year was not captured; (4) no pre–post outcome measurement was undertaken, so claims remain descriptive and perception-based rather than measured causal effects; and (5) the findings depend heavily on the institutional context of SD Muhammadiyah Bodon and require examination in other settings.

## RESULT

The ATLAS.ti analysis mapped Talent-Based Curriculum Management in Supporting Student Achievement as the central node connected to five themes: talent-based curriculum planning, organizing, implementation, and evaluation, as well as barriers and support. The five themes were interrelated within a continuous management cycle. Data condensation in ATLAS.ti showed that each major theme comprised several complementary rather than independent codes.

### **Talent-Based Planning**

Planning drew on report cards, achievement records, interest-and-talent questionnaires, teacher observations, and psychological tests. Interviews with P1–P2 and mapping documents showed that these data were used to set targets and recommend provision, including the Special Intelligence class. However, IQ testing was not administered to all students, so access to identification was uneven. P1 summarized the basis of the mapping process: *“We examine report cards from the previous level and trace their achievement records...”* (P1).

Planning involved coordination among the principal, curriculum coordinator, classroom teachers, and extracurricular coaches. The P2 interview and program schedules showed that coordination aligned mapping, targets, and the school agenda. Decisions therefore did not originate solely from school leaders, but were developed through a shared interpretation of the data.

Curriculum documents and the P1 interview showed that mapping results were translated into differentiated instruction, Cerdas Istimewa (CI) class, the Takhasus Program, and extracurricular activities. These programs were aligned with the school’s vision and the Pancasila Student Profile. Talent data were therefore interpreted through the school’s normative aims rather than used mechanically.

The planning findings were supported by interviews with P1 and P2, curriculum documents, and talent-mapping records. Convergence across these sources showed that talent information informed the development of several forms of provision. However, IQ testing was not administered to all students; it was offered to those considered to have prominent academic interests and potential. Because initial screening depended on school judgments, this mechanism may create unequal access and limits any claim that mapping was comprehensive.

### **Organizing the Talent-Based Curriculum**

Talent-based curriculum organization comprised competency development and formal assignment of responsibilities through appointment letters, succession and regeneration across cohorts, and the use of resources including facilities, budgets, and partnerships.

Appointment letters designated coordinators, coaches, and staff responsible for competition preparation. These documents, together with observations of teacher and coach roles, showed that program responsibilities were formally distributed rather than dependent solely on individual initiative. P1 provided direct evidence of this formalization: *“At the beginning of every year, I issue an appointment letter assigning responsibilities.”* (P1).

The P2 interview indicated that junior students were involved alongside senior teams to support continuity. However, no written succession criteria were found. The evidence demonstrates a regeneration practice, but is insufficient to conclude that the mechanism has been consistently formalized. The P2 interview, activity records, and observations showed that the school used internal funding, support from the school committee and alumni, and external coaches to meet program needs. Partnerships expanded capacity but also showed that some provision depended on resources outside the school.

These findings were corroborated by appointment letters and field observations of extracurricular implementation, which showed the roles of coaches and accompanying teachers. However, the succession mechanism described by P3 was not supported by written planning documents, such as selection criteria. The absence of written documentation means that succession for talented students did not rest on a formally documented procedure.

### **Actuating the Talent-Based Curriculum**

Implementation comprised differentiated instruction and the development of routines that fostered a positive climate, healthy competition, and role modelling; coordination and communication; talent programs including Cerdas Istimewa (CI) class, Takhasus, and 27 extracurricular activities; and student coaching and recognition through flyers, trophies, and public acknowledgment.

Classroom observations and the P4 interview showed variation in teaching approaches, task types, and difficulty levels. However, implementation was uneven across classes. Teacher capacity therefore emerged as a condition shaping whether talent information was translated into an appropriate learning experience. P4 provided a concise example: *“I vary the teaching approach and the types of tasks...”* (P4).

Cerdas Istimewa (CI) class, Takhasus, and 27 extracurricular activities provided channels for talent development beyond the regular classroom. P3 stated that the range of extracurricular activities allowed students to find programs matching their talents in academic, sporting, artistic, and religious domains. The P3 interview and activity schedules showed weekly coordination to prevent conflicts among training, additional lessons, examinations, and competitions. Coordination functioned as an operational mechanism connecting program decisions with daily implementation.

Achievement records, flyers, trophies, and the P1 interview showed that the school publicly recognized student achievements. This evidence demonstrates recognition and achievement communication, but does not establish that such recognition caused increased motivation.

**Table 4.** Achievement Records for the 2025/2026 Academic Year

| Domain | Level | Number of Recorded Achievements | Examples of Competitions |
|--------|-------|---------------------------------|--------------------------|
|--------|-------|---------------------------------|--------------------------|

|                      |                                                                         |    |                                                                                                                                                 |
|----------------------|-------------------------------------------------------------------------|----|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Academic             | Regency /<br>Province /<br>National                                     | 23 | National Science Olympiad,<br>OlympicAD (Mathematics, Science,<br>Robotics), Academic Quiz<br>Competition, English<br>Storytelling/News Reading |
| Sports               | Subdistrict /<br>Regency /<br>Province /<br>National /<br>International | 86 | Athletics (running, long jump, relay),<br>Football, Badminton, Taekwondo,<br>Karate, Judo, Swimming, Wall<br>Climbing, Chess                    |
| Arts                 | Subdistrict /<br>Regency /<br>International                             | 16 | Drawing/Coloring, Poetry<br>Musicalization, Acoustic Music,<br>Crafts (FLS3N)                                                                   |
| Religious<br>Studies | Subdistrict /<br>Regency /<br>Province                                  | 28 | Call to Prayer, Qur'an<br>Memorization/Recitation, Qur'anic<br>Quiz, ISMU (Al-Islam and<br>Muhammadiyah Studies)                                |

The figures in the table represent recorded instances of achievement rather than the total number of students. One student could contribute to more than one competition category. The data were drawn from student-achievement records and provide supporting evidence that the programs were implemented. The records contained 71 unique students, several of whom achieved in more than one competition category.

Observations showed that differentiated instruction was not implemented consistently in every classroom and depended on teachers' classroom-management capacity. This variation indicates that the quality of differentiation depends not simply on the availability of tiered programs, but on the extent to which teachers can implement learning processes suited to students' talents.

### **Controlling/Evaluating the Talent-Based Curriculum**

Talent-based curriculum evaluation comprised data, process, and supervision based evaluation; follow-up and improvement cycles; indicators such as consistency, progress, and achievement; and distinct outputs comprising documented academic and non-academic achievement, perceived school image, and perceived psychosocial development. Interviews with P1–P3 and supervision documents showed tiered evaluation at the coach, coordinator, and principal levels. Documentary evidence was available for some activities, while other evaluations were conducted orally. Evaluation was therefore in place, but documentation was not consistent across programs.

The P2 interview showed that evaluation results informed recommendations and revisions to plans for the following period. This feedback mechanism was evident in specific practices, but its consistency across all programs could not be established because some follow-up actions were not recorded. P2 emphasized the use of evaluation in subsequent planning: *"I formulate recommendations from the evaluation results... and revise the planning*

*documents for the next period.*" (P2). Academic and non-academic achievements are presented as documented outcomes. School image represents P1's perception of external recognition and is not treated as a student-learning outcome. Developments in confidence, discipline, and motivation are discussed separately as informants' perceptions.

Evaluation practices were not fully documented. Interviews described tiered evaluation, while documents contained achievement records and selected supervision notes. Some evaluations by extracurricular or achievement coordinators were conducted orally without formal records. This tension across sources limits claims that the cycle was fully institutionalized: a feedback mechanism was evident, but consistent documentation and the use of explicit indicators were not demonstrated across all programs.

### **Barriers and support**

Barriers and support included implementation challenges such as limited time, uneven competence, and uneven support; limitations in space and equipment alongside the availability of fields, tools, coaches, parental moral, logistical, financial support, teachers' competence, commitment, and collaboration. The P4 interview identified three main barriers: limited time, variation in teacher competence, and an insufficient number of coaches. Observations confirmed implementation constraints in selected activities. These barriers explain why the availability of numerous programs did not necessarily ensure equal service quality. P4 summarized two key constraints: *"There are several barriers. The first concerns time... The second concerns competence..."* (P4).

The P3 interview and observations identified limitations in fields, equipment, and coach availability. In some activities, these conditions required participants to share equipment or reschedule sessions. These findings represent boundary conditions for the continuity of provision. Interviews with P2–P4 showed that parents provided permission, transport, moral support, and funding. However, support was uneven, and some parents objected to the timing of activities. Parental involvement is therefore treated as a variable contextual condition rather than the sole determinant of success. The P1 interview and observations showed that teacher competence, commitment, and collaboration supported program implementation. However, these capacities varied among teachers and activities. Teacher support therefore operated as an enabling condition that could strengthen or constrain the translation of talent data into practice.

Confidence, discipline, and learning motivation were reported by informants as perceived psychosocial developments. These findings were not combined with achievement counts because their sources, units of analysis, and levels of certainty differed. Achievement records constituted documentary evidence, whereas psychosocial changes were inferred from informant interpretations and qualitative observations without psychometric measures. Psychosocial findings are therefore presented as indications requiring further examination rather than as causal program effects.

Informant accounts (P2, P3, and P4) and field observations both showed that parental involvement differed across activities and that teacher support was not equally available in every program. General accounts of support were not fully consistent with field observations. During extracurricular activities, facility limitations reduced the quality of some sessions, while uneven parental support constituted an additional practical challenge. In this case, support and barriers were therefore not fixed conditions operating uniformly across the school, but varied according to activity type, personnel, and family circumstances

### Contextual Catalysts and Constraints

The sustainability of talent-based curriculum management was shaped by organizational and environmental conditions. Teachers' competence, commitment, and collaboration supported differentiated instruction and talent-program implementation. Parental involvement provided permission, transport, moral encouragement, and financial assistance for selected activities.

External partnerships expanded the school's access to coaching expertise and facilities. In selected activities, external coaches worked with school personnel to address limitations in internal capacity. Several constraints were also identified. Teachers reported limited time, variation in competence, and too few coaching personnel relative to the diversity of student needs. Observations also identified limitations in facilities and equipment for selected activities. Parental support was not uniform. Some parents actively supported competition and extracurricular participation, while others expressed concern about extended school hours. The evidence therefore indicates that support and constraints were not fixed school characteristics; they varied according to the type of activity, the personnel involved, and family circumstances. These findings position these factors as contextual conditions that shape the sustainability and consistency of translating talent into curriculum provision.

### Cross-Source Evidence Matrix

**Table 5.** Cross-Source Evidence Matrix

| Theme                                | Interview Evidence | Observation                         | Documentary Evidence                            | Analytical Interpretation                                              |
|--------------------------------------|--------------------|-------------------------------------|-------------------------------------------------|------------------------------------------------------------------------|
| Talent information and planning      | P1, P2             | No direct observation of planning   | Curriculum documents and talent-mapping records | Talent information was translated into curricular decisions.           |
| Organization and resource allocation | P1, P2, P3         | Sessions involving coaches/teachers | Role-allocation documents                       | Formal role allocation and resource mobilization supported continuity. |

|                                          |                                 |                                         |                                                              |                                                                                            |
|------------------------------------------|---------------------------------|-----------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| Differentiated and specialized provision | P3, P4; Cerdas Istimewa Program | Takhasus and extracurricular activities | Schedules, differentiated materials, and achievement records | Organizational decisions were enacted through differentiated and specialized provision.    |
| Evaluation and feedback                  | P1, P2, P3                      | Direct observation                      | Limited evaluation and achievement records                   | Evaluation generated feedback for subsequent planning.                                     |
| Catalysts and barriers                   | P1–P4                           | Field observations                      | Supporting institutional documents                           | Teacher capacity, parental involvement, resources, and coordination shaped implementation. |

## Discussion

This study analyzed the implementation of talent-based curriculum management in supporting student achievement and psychosocial development at SD Muhammadiyah Bodon. The findings indicate that talent-based curriculum management was not administered as an extracurricular program separate from the regular curriculum, but was embedded throughout the school-management cycle. The following sections discuss each finding.

### Talent-Based Curriculum Planning

The findings support the argument that credible talent identification requires multiple data sources (Kuznetsova et al., 2024), as reflected in planning practices involving IQ tests, questionnaires, report cards, and achievement targets. A bibliometric analysis likewise emphasizes that credible talent identification depends on varied instruments and data sources rather than a single measure (Parra-Martinez & Wai, 2023). At the implementation level, clear leadership responsibility for validating data is also essential before those data are translated into achievement targets (Ivarsson, 2023).

Multi-source data became actionable when the curriculum coordinator translated them into decisions about classes, coaching, and programs. Coordination with teachers and coaches provided legitimacy: data did not remain archived, and decisions did not originate solely from leadership. The contribution to data-informed decision-making lies in the translation chain of data → shared interpretation → service decisions → implementation evidence, thereby connecting individual identification with school management. Data become useful when school leaders interpret them with teachers and connect them to instructional decisions. The effectiveness of data use nevertheless remains shaped by organizational context and capacity (Lee et al., 2025).

Alignment with the school vision and the Pancasila Student Profile shows that talent information was not applied neutrally, the data were filtered through the school's normative aims. Similar data could therefore produce different decisions in other organizations. The planning mechanism depends on adequate access to data, a forum for shared interpretation, and explicit normative criteria. If any of these conditions is weak, data risk reverting to an administrative classification. However, IQ testing was not administered to all students, creating a risk of unequal access at the beginning of the planning process. The mechanism may weaken when instruments are applied unevenly. Consistent data use is a major condition shaping the success or failure of data-based decision-making (Serafina, 2026), unaddressed capacity gaps may therefore produce incomplete provision.

### **Organizing the Talent-Based Curriculum**

Talent-based curriculum organization at SD Muhammadiyah Bodon involved competency development and formal assignment of teacher responsibilities through appointment letters, succession and regeneration across student cohorts, and the mobilization of facilities, funding, and partnerships. The formal assignment of responsibilities through appointment letters indicates that clear organizational structures support program continuity (Li et al., 2023). The implementation of differentiation for high-ability students depends on clear structures and role allocation at school level rather than on the goodwill of individual teachers alone (Lüddeckens, 2025).

Succession and regeneration across cohorts extend this finding theoretically. Succession was not merely an administrative practice, but a mechanism intended to sustain programs when personnel changed. The durability of such mechanisms depends on leaders establishing clear and formal divisions of responsibility among personnel (Galdames-Calderón, 2023). Budget limitations were addressed through partnerships with external clubs for robotics, athletics, and wall climbing, underscoring the role of community and external partners in curriculum implementation (Donatille et al., 2025). Succession across cohorts, from beginners to the core team, suggests that continuity was supported through deliberate regeneration planning rather than occurring naturally, consistent with the importance of succession for maintaining achievement across generations (Maharani & Winardi, 2025). Appointment letters and observations of teacher and coach roles indicated that a formal structure was operating. However, no written criteria were found for tiered succession among talented students. This indicates a gap between verbally enacted practices and formally documented procedures.

### **Actuating the Talent-Based Curriculum**

Talent-based curriculum implementation at SD Muhammadiyah Bodon began with differentiated classroom instruction and routines that fostered a positive climate, healthy competition, and role modelling. It also included implementation coordination and communication; talent-development provision through Cerdas Instimewa (CI) class, Takhasus, and 27 extracurricular activities;

and student coaching and recognition through flyers, trophies, and public acknowledgment.

Differentiated instruction combined with a positive climate and role modelling accommodated students' readiness and interests while supporting character development. This mechanism is consistent with the proposition that talent can develop into achievement when curriculum design responds to students' readiness and interests (Yunus et al., 2021). Differentiated instruction also requires teachers to adapt objectives, tasks, support, and assessment. Sustained professional development is more adequate than brief theoretical introductions (Langelaan et al., 2024)

Tiered programs such as the Cerdas Istimewa (CI) class and Takhasus, alongside 27 extracurricular activities, reflected tiered services tailored to students' domains and readiness levels (Mossberg et al., 2024). Public recognition through flyers and trophies functioned as encouragement for achievement, consistent with evidence that institutionalized talent-development programs are associated with student motivation and achievement (Jöstl et al., 2023). The range of provision from differentiation in regular classes to the Cerdas Istimewa class, Takhasus, and 27 extracurricular activities did more than implement earlier decisions. It also generated new data, including progress records and competition results, which subsequently entered evaluation. Implementation therefore served both to translate curricular decisions into practice and to generate field evidence for the next evaluation cycle. However, observations showed that differentiated instruction was uneven across classrooms because teacher capacity varied. This finding provides a methodological boundary to general claims of program success.

The implementation mechanism operated most effectively when teachers could interpret differences in student ability and convert data into differentiated tasks with appropriate levels of difficulty and support. It weakened when competence, time, or facilities were inadequate. The number of programs alone therefore cannot indicate the quality of differentiation. What matters is alignment among student needs, appropriate provision, implementer capacity, and continuous progress monitoring (Lüddeckens, 2025; Subotnik et al., 2023). Differentiation can support high-ability students when implemented consistently and according to need, implementation quality matters more than the number of available programs (Ziernwald et al., 2022).

### **Controlling/Evaluating the Talent-Based Curriculum**

The connection among evaluation, follow-up, and improvement indicates that evaluation did not end with final assessment. It functioned as feedback that closed the management cycle and reconnected it with subsequent planning. In this study, evaluation is positioned as the operational form of controlling in classical management theory (Aslami, 2023), the terms evaluation and controlling are therefore used interchangeably to refer to Planning–Organizing–Actuating–Controlling/Evaluation. This pattern accords with talent-development models in which development must be monitored continuously rather than measured only once at the end (Subotnik et al., 2023).

Achievement documents record outcomes within the implementation context; they do not demonstrate that the curriculum caused improved learning outcomes. These records differ from informants' accounts of school image, confidence, discipline, and motivation. Without pre post comparisons or a control group, the relationship between curriculum management and student outcomes can only be described as an association within the implementation context.

Evaluation closed the cycle only when implementation evidence was used to revise subsequent plans. This finding extends continuous improvement by identifying a point of vulnerability: oral evaluation can generate feedback, but it is difficult to audit and may not survive personnel changes (Stosich, 2024). The recursive mechanism depends on explicit indicators, consistent recording, and authority to revise plans not merely on meeting frequency.

Some evaluation practices remained oral and therefore did not leave a consistent documentary trail. Claims that the management cycle was fully institutionalized should consequently be understood as representations of the practices and documents observed in this case. The evaluation system was not documented in its entirety. Without explicit indicators and consistent records, evaluation risks being reduced to subjective impressions rather than supporting systematic programming.

### **Support and Barriers in Talent-Based Curriculum Management**

The direct connection of support and barriers to the central theme indicates that parental and teacher support were not passive peripheral factors, but environmental catalysts that shaped every stage of the curriculum-management cycle, as described in the DMGT (Gagné, 2004; Worrell et al., 2019). Teacher competence, commitment, and collaboration remained critical to translating curriculum policy into classroom practice, consistent with evidence that limited teacher readiness is a common implementation barrier (Gurion, 2024). Facility limitations and uneven support show that talent-based curriculum management depended on contextual factors beyond the school's direct control (Martadiningsih & Nirina, 2024).

Parental academic commitment may support student learning outcomes, but its contribution varies across families (Zhang & Huang Wu, 2025). Constraints involving time, competence, and coach availability underscore the importance of sustained professional development, including mentoring and coaching (Geletu, 2026). Facility limitations may be addressed through collaboration with external stakeholders (Donatille et al., 2025). Teachers' dual role as observers and facilitators of student talent reflects their central function in talent development (AL-naim et al., 2023). Independent learning, collaboration among teachers, and participation in training may help address competency limitations, consistent with evidence that mentoring and coaching can strengthen teachers' professional competence (Geletu, 2026)

### **Talent-Based Curriculum Management Cycle Model**

The model is expressed through four propositions that can be examined in future research. Proposition 1: Talent-identification data become a curricular resource when they draw on multiple instruments tests, questionnaires, teacher

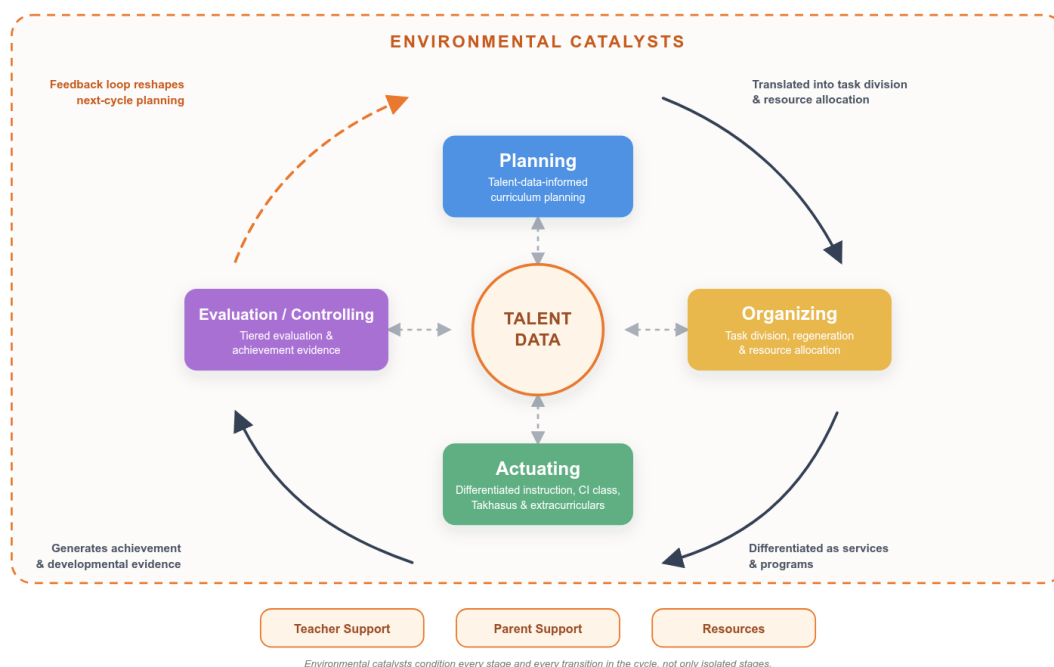


**Figure 2.** Talent-Based Curriculum Management Cycle Model

## CONCLUSION

This study examined how student talent is identified, interpreted, and integrated into curriculum management at an Indonesian primary school. The findings show that talent-based curriculum management was not limited to identifying talent or providing extracurricular activities. Instead, talent information was integrated into a documented management cycle comprising planning, organizing, implementation, evaluation, and subsequent revision. Four principal conclusions were drawn. First, talent information became actionable when it was developed and translated into curricular and organizational decisions. Second, organizational continuity was supported by formal role allocation, succession, resource mobilization, and coordination. Third, implementation

occurred through differentiated instruction and specialized provision, but remained dependent on teacher capacity and available resources. Fourth, evaluation functioned as recursive feedback when findings were used to revise subsequent planning.

The study's theoretical contribution is the Talent-to-Curriculum Translation Mechanism, which integrates the Differentiated Model of Giftedness and Talent, POAC, and data-informed decision-making. The DMGT explains why talent development requires enabling conditions; POAC explains the organizational architecture through which those conditions are managed; and data-informed decision-making explains how information connects identification, decision-making, implementation, and evaluation. This integration positions talent information as a continuous managerial resource rather than a one-time classification.

In practice, schools seeking to develop talent-based curriculum management should not focus solely on increasing the number of talent programs. Greater attention should be given to the quality of information-to-decision processes, formal allocation of responsibility, teacher capacity, coordination, resource mobilization, and the use of evaluation findings to inform subsequent planning. Documentation of evaluation and succession processes may also strengthen organizational continuity. These findings should not be interpreted as evidence of a causal relationship between talent-based curriculum management and student achievement. The study did not use pre–post measurement, experimental comparison, or longitudinal outcome tracking. Achievement records are therefore treated as documentary evidence of student outcomes associated with the implementation context, not as evidence of causal impact.

The study was limited by its single-school case design, four organizational informants, limited direct observation, the absence of direct student and parent interviews, and dependence on the organizational and resource conditions of the research site. Future research should examine the proposed mechanism across schools, include student and parent perspectives, and use longitudinal or mixed-methods designs to investigate how recursive curriculum-management processes relate to changes in participation, achievement, and student-development outcomes. Within these boundaries, the study provides a mechanism-based explanation of how talent information can move beyond identification and become integrated into curriculum management through recursive processes of translation, implementation, evaluation, and subsequent planning.

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## Ethics Statement

All participants received information about the study's purpose and procedures and provided informed consent before participating. Participant identities were anonymized using the codes P1–P4. Particular attention was paid to protecting information concerning children because the research was conducted in a primary-school setting.

## Limitations

This study has several limitations. First, the study was conducted in a single primary school, limiting the extent to which the findings may apply to settings with substantially different organizational, curricular, or resource conditions. Second, the empirical data involved four organizational informants. Although their positions provided access to several stages of the management process, students and parents were not interviewed directly; their perspectives were therefore represented indirectly. Third, direct observation was limited to three sessions. Consequently, some aspects of the management cycle particularly planning and evaluation were reconstructed mainly through interviews and documents rather than sustained observation. Fourth, the study did not use pre post or longitudinal measurements of student learning outcomes. Achievement records and reported developmental changes therefore cannot be interpreted as evidence of causality. Finally, some evaluation and succession practices were not fully documented. The proposed recursive mechanism should therefore be interpreted as an empirically supported pattern within the case, not as evidence that the entire management system was uniformly formalized.

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