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Global Perspectives on Specialized Secondary Programs

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Abstract

This study examines the design and outcomes of special interest programs (SIPs) in secondary education, using the case of the Cabadbaran City Division in the Philippines as a foundation for insights with global relevance. It explores how program structures, curriculum, and stakeholder support influence graduate outcomes in areas such as employability, higher education readiness, and personal growth. A descriptive-correlational design was employed to analyze both program design and graduate experiences, highlighting the alignment of educational strategies with students' needs and aspirations. Findings show that well-structured curricula, effective instructional strategies, and strong community collaboration contribute to positive learner outcomes, while challenges remain in ensuring equitable access and consistent support for diverse learners. The results provide a framework for enhancing special interest programs in secondary education and offer guidance for policymakers, administrators, and educators seeking to integrate specialized pathways that prepare students for academic, professional, and entrepreneurial success.

Keywords: Special Interest Programs, Secondary Education, Gifted Education, Program Design, Educational Outcomes, Philippines

Introduction

Background

Special interest programs (SIPs) in secondary education are purpose-designed curricular tracks or extracurricular initiatives that cater to students with unique academic interests and talents, such as in science, arts, journalism, or technology. Drawing upon foundational educational theories—including Howard Gardner's *Theory of Multiple Intelligences*, Lev Vygotsky's *Zone of Proximal Development* and *sociocultural theory*, and Renzulli's *three-ring conception of giftedness*—these programs aim to cultivate students' distinctive abilities through enriching instructional environments (Natividad, 2025).

In the Philippines, SIPs such as the Special Program in Journalism (SPJ), Special Program in the Arts (SPA), and the former Engineering and Science Education Program (ESEP) represent national efforts to nurture gifted learners in specialized domains (Santos & Natividad, 2023). Research indicates that such programs contribute not only to students' academic performance but also to their social and emotional development. However, challenges persist,

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especially in ensuring equitable program access and consistent support for diverse learners (Santos & Natividad, 2023).

Compounding these challenges is the broader context of the Philippine education system, which continues to grapple with disparities in learning outcomes. National data reveal concerning proficiency levels in basic literacy and numeracy, alongside dropout rates among upper-secondary students—highlighting a systemic need for effective, inclusive educational innovations (Philippine Statistics Authority, 2025). These systemic factors underscore the importance of strategic program design in addressing both the advancement of talented learners and overall educational equity.

Rationale

Though SIPs are locally implemented with the intent of nurturing giftedness and talent, most existing studies in the Philippines remain descriptive and context-specific, with limited integration into wider international discourse. There is a clear need for analytical investigations that link program design characteristics—such as governance structures, instructional resources, and stakeholder engagement—with concrete learner outcomes like academic readiness, employability, and socio-emotional growth.

Drawing upon the case of Cabadbaran City Division, this study offers a focused lens through which to examine how SIPs function in both local and global dimensions, facilitating transferability of findings. It addresses key research gaps by:

1. Analyzing how structural elements and implementation practices of SIPs influence multiple outcome domains.
2. Examining inclusivity and equitable access within SIPs.
3. Contributing to the international understanding of how secondary-level SIPs can be effectively designed and assessed across diverse educational systems.

Aim

This study aimed to evaluate the design and outcomes of special interest programs in secondary education. It specifically analyzed how program design influences graduate outcomes such as employability, pursuit of higher education, and entrepreneurship, using the Cabadbaran City Division in the Philippines as the study setting.

Research Questions

The study addressed the following questions:

1. What is the profile of the respondents in terms of:
   a. Age
   b. Sex
   c. Special program completed
   d. Year graduated
2. How do graduates assess the design of the Special Interest Programs in terms of:
   a. Curriculum design
   b. Instructional strategies and methods
   c. Resource allocation
   d. Teacher competency and professional development
   e. Stakeholder engagement
3. How do graduates assess their outcomes in terms of:
   a. Employment
   b. Pursuit of higher education
   c. Entrepreneurship
4. Are there significant differences in graduates' assessments of program design when grouped according to their profile?
5. What is the relationship between program design and graduate outcomes?
6. What intervention strategies can be proposed to enhance the design and outcomes of Special Interest Programs.

Hypotheses

The study tested the following null hypotheses at the 0.05 significance level:

- **H_o1:** There is no significant difference in graduate outcomes when respondents are grouped according to their profile variables.
- **H_o2:** Program design does not significantly influence graduate outcomes.

Theoretical Framework

This study is anchored on Howard Gardner's Theory of Multiple Intelligences (1983), Lev Vygotsky's Sociocultural Theory (1978), and Joseph Renzulli's Three-Ring Conception of Giftedness (1978), which collectively provide a foundation for understanding the design and outcomes of Special Interest Programs (SIPs) in secondary education.

Gardner's Theory of Multiple Intelligences emphasizes that learners possess varied forms of intelligence—such as linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, intrapersonal, and naturalistic—which require differentiated instructional approaches. In the context of SIPs, this theory supports the integration of specialized curricula that recognize and nurture these diverse intelligences, enabling students to maximize their potential in fields such as science, arts, or journalism.

Vygotsky's Sociocultural Theory, particularly the concept of the Zone of Proximal Development (ZPD), highlights the importance of social interaction, scaffolding, and cultural tools in the learning process. SIPs leverage collaborative environments, mentorship, and peer support systems to bridge the gap between learners' current abilities and their potential competencies, thereby fostering academic and personal growth.

Renzulli's Three-Ring Conception of Giftedness posits that gifted behavior emerges from the interaction of above-average ability, creativity, and task commitment. This framework justifies the SIPs' focus on providing enriched learning environments, opportunities for innovation, and sustained support that enhance students' commitment and engagement with their chosen specialization.

Integrating these theories, the study underscores that effective program design is multidimensional—requiring the alignment of curriculum, instructional strategies, resources, and stakeholder engagement. This theoretical foundation guides the examination of how SIP components influence graduate outcomes in employability, higher education readiness, and entrepreneurship.

Conceptual Framework

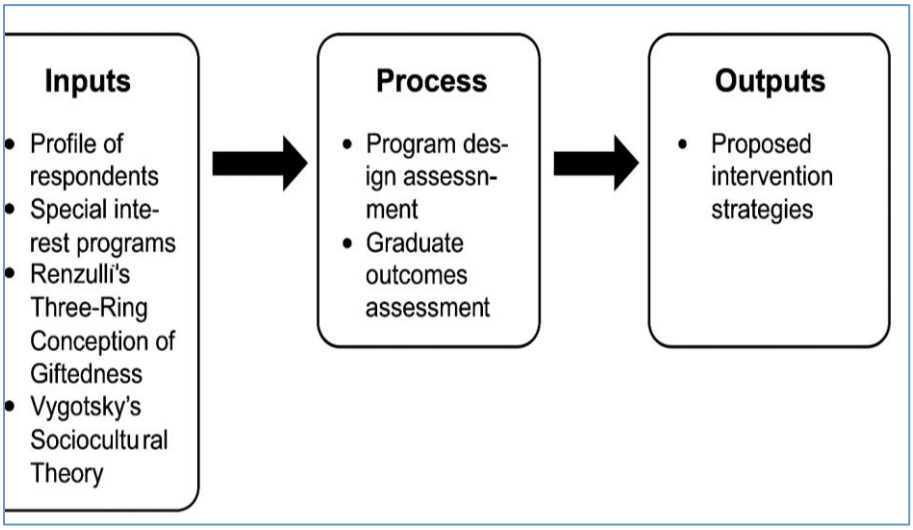

Figure 1. Schematic diagram of conceptual framework

Figure 1 illustrates the Input-Process-Output (IPO) framework of the study. The Inputs represent the key elements such as the respondents' profiles, the different Special Interest Programs, and the guiding theories including Renzulli's Three-Ring Conception of Giftedness and Vygotsky's Sociocultural Theory. The Process highlights the assessment procedures undertaken in the study, specifically the evaluation of program design and graduate outcomes. The Outputs point to the proposed intervention strategies aimed at enhancing the design and outcomes of Special Interest Programs. This framework shows the logical flow of the research, from data collection to the generation of actionable recommendations.

2. Review of Related Literature

Global and Local Efficacy of Specialized Programs in Secondary Education

Special interest programs (SIPs) and themed academic tracks—including career-technical education, arts-focused curricula, and STEM academies—have consistently demonstrated beneficial impacts on student outcomes. Systematic investigations into school effectiveness highlight that factors such as instructional quality, supportive leadership, and a positive school climate significantly influence academic achievement and student engagement (Javornik, 2023). Meanwhile, social and emotional learning (SEL) programs, which often complement specialist tracks, have been shown across multiple meta-analyses to generate medium to large positive effects in academic performance, behavioral adjustment, and social-emotional development (Cipriano et al., 2024; Learning Policy Institute, 2023).

Key Design Elements That Foster Positive Outcomes

Effective SIPs typically integrate differentiated curricula, student-centered instruction, strong teacher competency, and collaborative stakeholder involvement—design features that enhance student engagement, academic performance, and equitable participation. Research underscores that comprehensive teacher quality accounts for a measurable share of variation in student success (López-Martín et al., 2023), while differentiated or student-centered learning strategies are linked to improved academic outcomes and narrowed achievement gaps (Learning Policy Institute, 2023; Jabornik, 2023).

Equity and Access in Special Interest Programs

Despite their value, SIPs can unintentionally reinforce systemic inequities when they fail to accommodate diverse learner profiles. Structural inequalities—such as tracking based on standardized testing—can marginalize some student populations and limit access to program benefits (Wikipedia contributors, 2025). Addressing these barriers requires deliberate policy and program design that emphasize inclusion, broad representation, and equitable resource distribution to ensure that specialized programs serve all learners effectively.

3. Methodology

This study employed a descriptive-correlational research design to examine the relationship between program design and graduate outcomes in the Special Interest Programs of Cabadbaran City Division, Philippines. A stratified random sampling technique was used to select 192 graduates from three program tracks—Science, Technology, and Engineering; Special Program in the Arts; and Special Program in Journalism—across school years 2020 to 2023 to ensure balanced representation. Data were collected using a validated researcher-made questionnaire that measured program design across five dimensions—curriculum, instructional strategies, resource allocation, teacher competency, and stakeholder engagement—and graduate outcomes in employability, higher education readiness, and entrepreneurship. Reliability testing yielded Cronbach's alpha values above 0.80 for all dimensions, confirming internal consistency. Descriptive statistics, such as frequency, percentage, and weighted mean, were used to summarize data, while t-tests, ANOVA, and Pearson correlation analyses were applied to examine group differences and relationships between variables. Ethical standards were observed through informed consent, confidentiality, and voluntary participation to ensure data integrity and respondent protection.

4. Results and Discussion

4.1. Profile of the Respondents

Table 1. Distribution of Respondents by Sex

Sex	Frequency	Percentage (%)
Male	88	45.8
Female	104	54.2

The distribution shows a slightly higher number of female respondents than males, indicating a relatively balanced representation. This balance suggests that the findings reflect perspectives across genders, supporting the validity of the assessment.

Table 2. Distribution of Respondents by Age

Age Group	Frequency	Percentage (%)
17–19	82	42.7
20–22	77	40.1
23 and above	33	17.2

Most graduates were between 17 and 22 years old, consistent with the typical completion age for secondary education. This profile aligns with program expectations, ensuring participants are assessed at a comparable academic and maturity level.

Table 3. Distribution of Respondents by Program

Program	Frequency	Percentage (%)
STE	95	49.5
SPA	58	30.2
SPJ	39	20.3

The Science, Technology, and Engineering (STE) track had the highest enrollment, reflecting the growing interest in STEM education. The SPA and SPJ tracks also maintained significant participation, highlighting diverse student interests across programs.

Table 4. Distribution of Respondents by Year of Graduation

Year	Frequency	Percentage (%)
2020	40	20.8
2021	47	24.5
2022	49	25.5
2023	56	29.2

Graduates across multiple years were well-represented, with the highest participation from 2023 graduates. This diversity supports a multi-cohort evaluation of program effectiveness.

4.2. Assessment of Program Design

Table 5. Assessment of Program Design

Program Component	Weighted Mean	Verbal Interpretation
Curriculum Design	3.42	Very Good
Instructional Strategies & Methods	3.38	Very Good
Resource Allocation	3.28	Very Good
Teacher Competency & Development	3.50	Very Good
Stakeholder Engagement	3.45	Very Good

Respondents rated the overall program design as **very good**, with teacher competency and stakeholder engagement emerging as the strongest areas. However, slightly lower ratings for resource allocation point to opportunities for enhancement, particularly in infrastructure and materials.

4.3. Graduate Outcomes

Table 6. Assessment of Graduate Outcomes

Outcome	Weighted Mean	Verbal Interpretation
Employment	3.20	Good
Pursuit of Higher Education	3.36	Very Good
Entrepreneurship	2.95	Good

The pursuit of higher education was rated highest, indicating that SIPs effectively prepare graduates for tertiary education. Employability and entrepreneurship scored slightly lower, suggesting a need for enhanced career preparation and entrepreneurial support within the programs.

4.4. Differences in Program Design Assessments

Table 7. **Differences in Program Design Assessment by Demographic Profile**

Profile Variable	Significant Difference	p-value
Sex	None	> .05
Age	Stakeholder Engagement	< .05
Program Track	None	> .05
Year Graduated	Stakeholder Engagement	< .05

The findings show no significant differences by sex or program track. However, differences in stakeholder engagement by age and year of graduation suggest that experiences of collaboration and support may vary across cohorts.

4.5. Relationship Between Program Design and Graduate Outcomes

Table 8. **Correlation of Program Design and Graduate Outcomes**

Program Design Component	Employment (r)	Higher Education (r)	Entrepreneurship (r)
Curriculum Design	-0.124	0.046	-0.146*
Instructional Strategies & Methods	-0.101	-0.120	-0.064
Resource Allocation	-0.135	0.027	-0.082
Teacher Competency & Development	-0.030	0.035	-0.059
Stakeholder Engagement	-0.236***	0.106	-0.190**

Note: *p < .05; **p < .01; ***p < .001

The analysis revealed a significant negative correlation between stakeholder engagement and employment, suggesting that graduates with higher stakeholder involvement may have prioritized academic or entrepreneurial activities over immediate employment. Weak but significant relationships between curriculum design and entrepreneurship also highlight the role of targeted curriculum support in fostering entrepreneurial skills.

5. Discussion

The findings highlight that the Special Interest Programs (SIPs) of Cabadbaran City Division are generally well-designed and effectively implemented, particularly in areas of teacher competency, curriculum quality, and stakeholder collaboration. These strengths have contributed to positive outcomes, especially in preparing graduates for higher education, where readiness was rated very good. However, the results also reveal gaps in employability and entrepreneurship outcomes, suggesting that while academic pathways are well-supported, stronger industry linkages, practical training, and entrepreneurial development are needed to match evolving labor market demands. The significant variation in stakeholder engagement across cohorts indicates the need for consistent collaboration strategies over time to ensure equitable experiences for all students. Moreover, the weak but meaningful correlations between program design elements and graduate outcomes underscore the importance of aligning curriculum content, teaching strategies, and resources with both academic and career pathways. These insights reinforce the value of continuous monitoring and evidence-based refinement to sustain the programs' relevance and responsiveness to the diverse needs of learners in a global education context.

6. Conclusion and Recommendations

Conclusion

The Special Interest Programs (SIPs) of the Cabadbaran City Division demonstrated strong program design and effective implementation, particularly in teacher competency, curriculum delivery, and stakeholder collaboration. These strengths have enabled graduates to pursue higher education with confidence and readiness, affirming the programs' value in fostering academic growth and preparedness for tertiary studies. However, the results also

highlighted areas that require attention, notably in enhancing employability and entrepreneurship outcomes. Limited alignment between program content and industry demands, coupled with gaps in practical training and resource provision, signals the need for adaptive strategies to maintain the programs' relevance in a dynamic educational and economic landscape. Overall, the findings affirm that the SIPs have positively shaped graduate trajectories, while emphasizing the importance of continuous evaluation and refinement to sustain their impact and expand opportunities for learners in both local and global contexts.

Recommendations

To strengthen the design and outcomes of the Special Interest Programs, several measures are recommended. First, programs should integrate more industry-aligned training and partnerships to enhance graduates' employability, including internships, mentoring, and skills certification. Second, curriculum enrichment should be prioritized, embedding entrepreneurship education and experiential learning activities that build innovation, problem-solving, and business competencies. Third, resource allocation needs to be enhanced by upgrading facilities, technology, and learning materials to support modern and practical instruction. Fourth, consistent and structured stakeholder engagement mechanisms should be established to ensure equal collaboration and support across program cohorts. Finally, the institution should implement regular program monitoring and evaluation, using evidence-based approaches to assess effectiveness and guide continuous improvements. These actions will ensure that the SIPs remain responsive, inclusive, and capable of equipping graduates with the competencies required to thrive in academic, professional, and entrepreneurial pathways.

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