

Filipino K-12 High School Graduates to Higher Education: A Systematic Literature Review of College Readiness

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Article Details:

Received: 15 February 2026
Revised: 16 February 2026
Accepted: 18 February 2026
Published: 21 February 2026
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Recommended Citation:

Bilar, E.A.(2026). Filipino K-12 High School Graduates to Higher Education: A Systematic Literature Review of College Readiness. *The International Review of Multidisciplinary Research*, 1 (2), 62-69.
<https://doi.org/10.5281/zenodo.18721725>

Index Terms:

College readiness, K-12 education, Filipino graduates, systematic literature review, cognitive factors, non-cognitive factors

Abstract. The systematic literature review delves into the complex factors influencing college readiness among Filipino K-12 graduates, even after the K-12 program's rollout. Despite reforms aimed at bridging secondary and tertiary education, significant gaps remain in students' preparedness for higher education demands. This study scrutinizes both cognitive and non-cognitive dimensions. Cognitive factors include academic proficiency in core subjects like Mathematics, Science, and English, measured through standardized assessments. Non-cognitive elements encompass student motivation, effective learning strategies, and test anxiety, which often undermine performance under pressure. A key focus is evaluating the College Readiness Test (CRT) as a predictive tool. Findings reveal a multifaceted interplay: while cognitive skills form the foundation, non-cognitive factors like resilience and self-efficacy play equally vital roles. The CRT emerges as a reliable instrument, offering actionable insights into readiness levels, yet it alone cannot capture the full spectrum of student potential. To bridge these gaps, the review advocates targeted interventions. Curriculum enhancements should prioritize rigorous instruction in core subjects. Teacher professional development programs must equip educators with strategies to foster both academic and motivational skills. Optimizing CRT usage involves integrating it with holistic support systems. Further recommendations include nurturing non-cognitive skills through counseling and workshops, launching comprehensive transition programs from high school to college, sustaining research on evolving readiness metrics, and pushing for policy reforms like aligned standards and resource allocation. By holistically addressing these dimensions, stakeholders—policymakers, educators, and institutions—can elevate Filipino K-12 graduates' college readiness, boosting their long-term success in higher education and professional arenas.

Introduction

Transitioning from secondary to higher education is a critical milestone in students' academic trajectory, particularly within the Philippine educational system. At this stage, students must demonstrate the knowledge, competencies, and analytical skills essential for success in higher education (Baber et al., 2019). The Philippines has undertaken significant reforms through the K-12 Program (Republic Act No. 10533, 2013), which added two years of senior high school, with the intent of improving graduates' readiness for college-level coursework. Despite this reform, the Commission on Higher Education (CHED) reported a dramatic rise in college attrition rates—from 15.90% in School Year (SY) 2020–2021 to 40.98% in SY 2022–2023—raising urgent concerns about the actual readiness of K-12 graduates (CHED, 2023).

Existing literature highlights a significant deficit in college preparedness among these graduates (Maria et al., 2020). While the College Readiness Standards (GRS) developed by CHED and the College Readiness Test (CRT) represent important policy responses, their effectiveness in bridging the gap between secondary and tertiary education remains a subject of

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scholarly debate. Current studies tend to isolate specific domains of readiness—such as academic skills or motivational factors—without providing a holistic, synthesized account of how these domains interact to produce or impede college readiness.

This study addresses three primary objectives: (1) to identify the essential cognitive and non-cognitive factors influencing college readiness among Filipino K-12 graduates; (2) to evaluate the efficacy of the CRT as an assessment instrument; and (3) to consolidate existing research findings into actionable recommendations for policymakers, educators, and curriculum designers. By fulfilling these objectives, this systematic literature review (SLR) seeks to provide a comprehensive and evidence-informed account of the college readiness landscape in the Philippines.

Methodology

Research Design

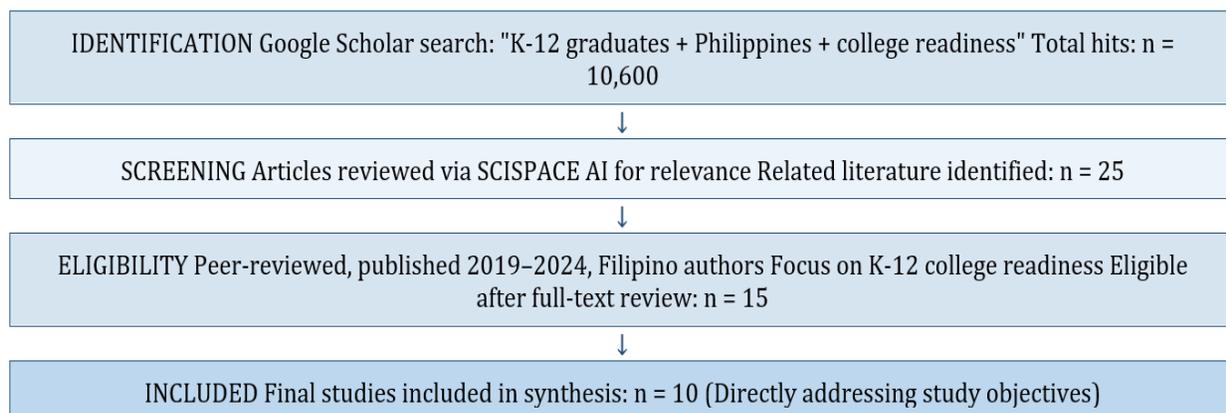
This study employed a qualitative systematic literature review (SLR) following the framework established by Tranfield et al. (2003), which organizes the process into three stages: (1) planning the review, (2) conducting the review, and (3) reporting findings. The SLR methodology was chosen because it provides a transparent, reproducible, and rigorous approach for synthesizing evidence from multiple studies while minimizing the risk of selection bias. Data analysis followed the six-step thematic analysis protocol of Braun and Clarke (2006), from familiarization with sources through to production of the final thematic report.

Participants and Study Environment

The study participants were not individuals but secondary sources—peer-reviewed published articles drawn from online academic databases. Due to limited relevant Scopus-indexed publications specific to the Philippine K-12 college readiness context, the primary database used was Google Scholar. The keyword string 'K-12 graduates + Philippines + college readiness' generated approximately 10,600 hits. The researcher used SCISPACE AI to identify the 25 most relevant studies authored by Filipino researchers. After thorough review, 10 articles were selected for final inclusion.

Inclusion and Exclusion Criteria

Articles were included if they met all of the following criteria: (a) peer-reviewed status, (b) publication between 2019 and 2024, (c) focus on college readiness among Filipino K-12 graduates, and (d) engagement with cognitive, non-cognitive, or socioeconomic factors. Articles were excluded if they were unrelated to the Philippine K-12 system, published before 2019, or sourced from non-peer-reviewed outlets.



Note. Adapted from PRISMA reporting guidelines (Page et al., 2021). Final sample: n = 10 studies.

Figure 1. PRISMA-Inspired Study Selection Flow Diagram

Data Analysis

Thematic analysis was applied to identify recurring patterns across the included studies. Following Braun and Clarke's (2006) framework, the researcher focused on Steps 5 and 6—defining and naming themes, and producing the final report—given that the aim was to synthesize existing literature rather than generate primary data. Themes were organized in alignment with the study's three research objectives: (1) cognitive factors, (2) non-cognitive factors, and (3) the design and effectiveness of the CRT.

Ethical Considerations

Although this SLR did not involve human participants, it adhered to ethical research standards: full transparency in the review process (Page et al., 2021), fair and accurate representation of included studies (Liberati et al., 2009), proper attribution of all sources (Pecorari, 2013), objective conduct without personal or institutional bias (Higgins et al., 2019), and protection of privacy for any individuals referenced within the included literature (Wiles et al., 2008). Evaluative trustworthiness followed Lincoln and Guba's (1985) criteria: credibility, transferability, dependability, and confirmability.

Results and Discussion

Analysis of ten peer-reviewed studies revealed two major thematic clusters shaping college readiness among Filipino K-12 graduates: (1) cognitive factors and (2) non-cognitive factors. Additionally, a distinct sub-theme emerged regarding the design and effectiveness of the College Readiness Test (CRT) as a standardized assessment instrument. These findings are presented below alongside supporting tables.

INPUT (Variables)	PROCESS (Methodology)	OUTPUT (Outcomes)
<ul style="list-style-type: none"> • English proficiency • Math competency • Science competency • School motivation • Learning strategies • Socioeconomic capital • Ecological factors 	<p>Systematic Literature Review (SLR)</p> <p>Google Scholar search (n = 10,600 hits)</p> <p>Screened & selected 10 peer-reviewed studies (2019–2024)</p> <p>Thematic Analysis (Braun & Clarke, 2006)</p>	<p>Enhanced college readiness programs</p> <p>Evidence-based recommendations</p> <p>Policy reforms for K-12 system</p> <p>Holistic student preparation model</p>

Note. The IPO model illustrates the variables, methodology, and expected outcomes of this systematic literature review.

Table 1. Conceptual Framework: Input–Process–Output Model of the Study

Factors Influencing College Readiness

Table 3 presents the thematic organization of factors identified across the reviewed literature. Cognitive factors include English language proficiency, mathematics competency, science competency, and languages and literature competency. Non-cognitive factors encompass school motivation, learning strategies, test anxiety, socioeconomic and cultural capital, and ecological considerations for students with disabilities.

Theme	Categories
Cognitive Factors	English language proficiency
	Mathematics competency

Theme	Categories
	Science competency
	Languages and literature competency
Non-cognitive Factors	School motivation, learning strategies, and test anxiety
	Socioeconomic and cultural capital
	Ecological factor (students with disabilities)

Note. Categories synthesized from Maria et al. (2020), Febe et al. (2023), Lopez (2022), Editha et al. (2021), and Jay et al. (2021).

Table 3. Factors Influencing Students' College Readiness

Cognitive Factors

The first significant cluster involves cognitive factors. Lopez (2022) demonstrated a positive correlation between English language proficiency and mathematics performance, underscoring the interdependence of these skills. The Programme for International Student Assessment (PISA) and the Basic Education Exit Assessment (BEEA) have consistently documented subpar performance by Filipino students in reading, mathematics, and science relative to OECD benchmarks (Maria et al., 2020; Lopez, 2022). These deficits reflect both the inadequacy of existing instructional approaches and structural challenges in the K-12 curriculum's preparation for higher education-level academic demands.

Non-Cognitive Factors

Non-cognitive factors emerged as equally determinative of college readiness. Research by Febe et al. (2023) documented a positive correlation between school motivation and effective learning strategies and readiness outcomes, while high test anxiety was negatively associated with preparedness. Socioeconomic and cultural capital were also found to be significant moderators: graduates from families with limited financial and cultural resources exhibited markedly lower levels of college readiness (Editha et al., 2021). Furthermore, Jay et al. (2021) applied an ecological systems lens to demonstrate that family, school, and community contexts interact in complex ways to shape individual readiness. Students with disabilities were identified as a particularly underserved group, facing unique barriers that demand tailored institutional support (Rudolf et al., 2020).

Summary of Included Studies

Table 4 provides an overview of the ten studies included in the final synthesis, including authorship, focus, methodology, and key findings. This summary enables readers to assess the breadth and quality of the evidence base underlying this review.

Author(s)	Title / Focus	Year	Method	Key Finding
Antonio et al.	Design & Validation of the CRT for Filipino K-12 Graduates	2020	Quantitative	CRT is reliable (r=0.796) and valid with good psychometric properties
Maria et al.	College Readiness via Criterion-Referenced Test	2020	Quantitative	K-12 graduates generally unready; weak in Science & Math, stronger in Languages
Febe et al.	School Motivation, Learning Strategies & College Readiness	2023	Quantitative	Motivation and strategies correlate positively; test anxiety correlates negatively
Editha et al.	Economic & Cultural Capital to College Readiness	2021	Quantitative	Higher socioeconomic capital linked to greater college readiness

Author(s)	Title / Focus	Year	Method	Key Finding
Lopez	English Proficiency & Mathematics Competency Nexus	2022	Quantitative	Higher English proficiency correlates with improved mathematics performance
Rudolf et al.	College Readiness of Filipino K-12 PWDs	2020	Mixed	Graduates with disabilities face unique barriers requiring tailored support
Jay et al.	Human Ecological Systems Shaping College Readiness	2021	Mixed	Ecological systems (family, school, community) interact to shape readiness
Alexa et al.	Preparedness of STEM Graduates for Engineering	2019	Quantitative	STEM graduates scored only 54.17%; below 75% threshold for engineering
Paat et al.	Grit and College Readiness among Filipino K-12 Graduates	2020	Quantitative	Grit shows moderate positive relationship with college readiness
Fulminar	Teaching College Physics to K-12 Graduates	2022	Qualitative	Teachers note gaps in foundational physics knowledge among K-12 graduates

Note. All studies published 2019–2024; sourced via Google Scholar. CRT = College Readiness Test; STEM = Science, Technology, Engineering, and Mathematics.

Table 4. Summary of Included Studies

College Readiness Test (CRT): Design and Effectiveness

A distinct and critical finding concerns the design and psychometric properties of the College Readiness Test (CRT), developed by Antonio et al. (2020) in alignment with CHED’s College Readiness Standards. The CRT demonstrated strong validity and reliability, with a difficulty index of 65.64, a discrimination index of 0.22, and inter-item consistency ($r = 0.796$). Table 3 below organizes the key themes and categories related to the CRT’s design and its revelations about K-12 graduate readiness.

Themes	Categories
Design of CRT	Validity of CRT (difficulty index 65.64; discrimination index 0.22)
	Reliability of CRT (inter-item consistency $r = 0.796$)
College Readiness of Filipino K-12 Graduates via CRT	Weak performance in Science and Mathematics (STEM mean score: 54.17%)
	Strong performance in Languages and Literature

Note. Adapted from Antonio et al. (2020) and Maria et al. (2020). CRT = College Readiness Test.

Table 5. College Readiness Test: Design and Outcomes

Despite the CRT’s proven psychometric soundness, results consistently revealed that many K-12 graduates are inadequately prepared for college—particularly in Science and Mathematics. Notably, STEM graduates aiming for engineering programs scored a mean of only 54.17% on the CRT, well below the 75% threshold considered indicative of college readiness (Alexa et al., 2019). Stronger performance was observed in Languages and Literature, suggesting that curriculum emphasis and instructional quality are unevenly distributed across subject domains.

The Interplay of Cognitive and Non-Cognitive Factors

The findings confirm that college readiness among Filipino K-12 graduates is not reducible to a single determinant but emerges from a complex interplay of cognitive and non-cognitive variables. English language proficiency serves as a gateway competency: Lopez (2022) demonstrated that students with higher English proficiency also exhibit stronger mathematics performance, suggesting that language instruction functions as a lever for broader academic achievement.

This relationship has practical implications for curriculum design, particularly in STEM-oriented strands where English is the medium of instruction for technical subjects.

The persistent underperformance in Science and Mathematics documented across PISA, BEEA, and CRT data points to systemic curriculum weaknesses that the K-12 reform has yet to fully address. Meanwhile, the role of non-cognitive factors—motivation, learning strategy use, and anxiety regulation—underscores that academic readiness is also a psychosocial achievement. Students who possess intrinsic motivation and deploy adaptive learning strategies are better positioned to convert academic exposure into genuine competence. The negative relationship between test anxiety and readiness (Febe et al., 2023) further suggests that assessment environments and school cultures can inadvertently undermine the very preparedness they aim to measure.

Socioeconomic and Ecological Dimensions

The evidence reviewed here challenges the assumption that college readiness is primarily an individual attribute. Editha et al. (2021) and Jay et al. (2021) collectively demonstrate that economic capital, cultural capital, and ecological systems (family, school, and community) significantly moderate the impact of any individual-level intervention. Students from resource-limited households begin the senior high school track with fewer academic supports, less access to enrichment activities, and weaker pathways to the informal knowledge and habits of mind associated with college success. Similarly, students with disabilities face structural barriers—in physical access, instructional accommodation, and attitudinal climate—that remain inadequately addressed in existing policy frameworks (Rudolf et al., 2020).

The CRT as a Diagnostic and Policy Instrument

The CRT has proven itself a technically sound instrument for gauging college readiness within the Philippine context. Its alignment with the College Readiness Standards provides a legitimate benchmark, and its documented reliability ($r = 0.796$) renders it suitable for large-scale diagnostic purposes. However, the consistently low CRT scores in Science and Mathematics—and the alarming 54.17% mean among aspiring engineering students—reveal that the CRT's power lies not in gatekeeping but in diagnosis. Educators and policymakers should treat CRT data as an institutional feedback mechanism, using strand-level and school-level performance profiles to identify instructional gaps, target professional development, and allocate remediation resources accordingly.

Conclusion and Implications

This systematic literature review reveals that college readiness among Filipino K-12 graduates is a multifaceted outcome shaped by the intersection of cognitive skills, non-cognitive dispositions, socioeconomic conditions, and ecological contexts. The CRT, while a valid and reliable instrument, consistently reveals significant gaps—particularly in Science and Mathematics—that the current K-12 curriculum and its implementation have not yet resolved.

The English–Mathematics proficiency nexus highlights the centrality of language instruction across all subject strands. The negative effects of test anxiety, combined with the positive effects of motivation and adaptive learning strategies, call for school-level psychosocial support to complement academic interventions. Socioeconomic disparities and the unmet needs of students with disabilities point toward the need for equity-centered policy reforms rather than universally applied programs that assume homogeneous student populations.

A holistic, system-sensitive approach—one that integrates enhanced STEM curricula, reinforced language instruction, psychosocial competency development, and targeted support for marginalized learners—is urgently needed. Such an approach would not only improve CRT scores but, more importantly, equip Filipino K-12 graduates with the genuine capabilities and adaptive dispositions required for sustained success in higher education and professional life.

Based on the findings, the following recommendations are offered to policymakers, educators, and future researchers:

Curriculum Development

Prioritize depth and rigor in Mathematics and Science instruction across all SHS strands. Integrate language skills within STEM subjects to leverage the demonstrated English–Mathematics proficiency relationship.

Professional Development

Provide continuous training for teachers in high-need subject areas, with particular emphasis on motivation-supportive pedagogy and strategies for managing student test anxiety.

CRT Utilization

Use CRT data as a diagnostic tool for school- and strand-level curriculum review, targeting remediation resources to documented areas of weakness.

Non-Cognitive Skill Development

Institutionalize programs that build intrinsic motivation, study skills, and coping strategies for test anxiety—including mindfulness-based approaches and structured academic coaching.

Transition Programs

Establish comprehensive senior-to-college bridge programs that combine academic preparation, mentorship, and orientation to higher education expectations and resources.

Equity-Centered Policy Reforms

Review curriculum standards and resource allocation policies to address the disproportionate impacts of socioeconomic disadvantage and disability on college readiness. Mandate inclusive instructional accommodations aligned with Universal Design for Learning (UDL) principles.

Future Research

Conduct longitudinal multi-site studies using structural equation modeling (SEM) to test causal pathways among the factors identified in this review. Particular attention should be given to interaction effects between institutional inputs and individual readiness outcomes.

While this review offers valuable insights, several limitations should be acknowledged. First, the reliance on Google Scholar rather than a wider array of databases (e.g., Scopus, ERIC) may have resulted in the exclusion of relevant studies. Second, the final sample of ten studies, while sufficient for qualitative synthesis, limits statistical generalizability. Third, the cross-sectional nature of most reviewed studies precludes causal inference and prevents tracking of readiness development over time. Fourth, important variables such as school-level infrastructure, parental involvement quality, and regional educational disparities are underrepresented in the available literature. Future research should systematically address these gaps to build a more complete understanding of college readiness as a dynamic, context-embedded process.

Acknowledgements

The author expresses gratitude to the faculty and administration of Cebu Technological University–Argao Campus and Dalaguete National High School for their support during the preparation of this manuscript. Appreciation is also extended to the scholars whose published works form the empirical foundation of this review.

Funding

This research received no external funding from any public, commercial, or not-for-profit funding agency

Competing Interests Statement

The author declares no known competing financial interests or personal relationships that could have influenced the work reported in this article.

Data Availability Statement

As this study is a systematic literature review of publicly available peer-reviewed publications, no new primary dataset was generated. All sources are fully cited and accessible via their respective publishers.

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Appendices

No appendices are included in this article.