



Technology-Based Learning, Academic Motivation, and Performance of Students in Literature: Basis for Intervention

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ABSTRACT

This study examined the relationship between technology-based learning, academic motivation, and academic performance in Literature among Grade 12 Academic Track learners enrolled in a public senior high school in a division component city in Northern Negros Occidental during School Year 2026-2027. Anchored on the Technology Acceptance Model, Self-Determination Theory, and Social Cognitive Theory, the study employed a quantitative descriptive-correlational research design. Using proportionate stratified sampling and Slovin's formula, 198 learners were selected from a population of 393. Data were collected through a researcher-made and validated four-point Likert-scale questionnaire and analyzed using frequency, percentage, weighted mean, Spearman Rank-Order Correlation, Kruskal-Wallis H test, and effect size measures. Results revealed high levels of technology-based learning (WM = 2.85) and academic motivation (WM = 2.78), but low academic performance in Literature (WM = 1.81). Technology-based learning showed a weak and insignificant relationship with academic performance ($r_s = 0.103$, $p = 0.150$), while academic motivation demonstrated a significant but very weak positive relationship ($r_s = 0.142$, $p = 0.045$). Although differences in performance were observed based on sex, the effect size indicated limited practical significance. Overall, the findings suggest that high levels of technology use and academic motivation do not necessarily translate into improved academic performance in Literature.

INTRODUCTION

The integration of digital technology into classroom instruction has become a defining feature of contemporary basic education, yet its influence on learner motivation and academic achievement remains uneven and context dependent. This study examines how technology-based learning and academic motivation relate to the academic performance in literature of Grade 12 Academic Track learners, and uses the findings as the basis for a targeted intervention. The discussion that follows situates the problem within global, national, regional, and local contexts.

Background of the Study

Worldwide, the rapid integration of digital technologies into basic education has reshaped how core subjects, literature among them, are delivered to secondary learners (Mbiza, 2021; Timotheou et al., 2023). Technology-based learning, the deliberate use of digital tools, platforms, and resources to deliver, reinforce, or assess learning content, is now an ordinary feature of secondary classrooms rather than an emergency measure (Haleem et al., 2022). Access alone, however, does not guarantee learning. International evidence identifies academic motivation as the variable that determines whether access translates into performance, since motivated learners engage more consistently and persist through difficulty, and motivation itself responds to how instruction is designed rather than remaining a fixed trait (Howard et al., 2021; Ryan & Deci, 2000). Because technology-based learning and academic motivation are both associated with academic performance and may be related to one another, they are increasingly examined together rather than in isolation (Bi et al., 2024).

In the Philippines, this shift sits alongside a documented performance gap. The country placed well below the Organisation for Economic Co-operation and Development average in reading literacy in the two most recent cycles of the Programme for International Student Assessment, and national data continue to show learners performing below the proficient band in reading and text comprehension (OECD, 2023). The Department of Education has accelerated digital integration since 2020, yet access to devices and stable connectivity remains uneven across public schools, so learners without reliable access risk falling further behind when instruction is redesigned around digital tools (Sezgin & Firat, 2024). Closer to the study site, a descriptive-correlational study of secondary learners in Negros Occidental found academic motivation to be high yet unrelated to learner demographics, which suggests that motivation in the province is shaped more by classroom and instructional conditions than by learner background (Ramos & Magallanes, 2021).

At one of the public senior high schools in a school division of a component city in Northern Negros Occidental, classroom access to computers, connectivity, and teacher facility with digital platforms varies noticeably from one Grade 12 Academic Track section to another. In this setting, technology-based learning is experienced both at school, through teacher-facilitated platforms and activities, and at home, through learners' self-directed use of online resources and personal devices, so its influence on literature learning extends across both environments. Informal observation suggests that sections with regular exposure to digital tools submit more complete outputs and score higher on periodic assessments, but no local study has tested whether this pattern holds once academic motivation is measured alongside it (James, 2022). Although these learners have broad access to educational technology and generally report high motivation, no local evidence yet establishes whether these favorable conditions translate into stronger performance in literature. This study therefore determines the relationship among technology-based learning, academic motivation, and academic performance in literature among Grade 12 Academic Track learners during School Year 2026-2027, as basis for a targeted intervention (Department of Education, 2016).

THEORETICAL FRAMEWORK

This study is anchored on three theories: Self-Determination Theory (Deci & Ryan, 1985), Social Cognitive Theory (Bandura, 1986), and the Technology Acceptance Model (Davis, 1989; extended by Zhou et al., 2022).

Self-Determination Theory (SDT) holds that motivation is strongest when three basic psychological needs are met: autonomy, competence, and relatedness (Deci & Ryan, 1985; Ryan & Deci, 2000). A recent meta-analysis of antecedents of student motivation confirms that autonomy-supportive conditions remain the most consistent predictor of self-determined, rather than merely compliant, engagement across educational levels (Howard et al., 2021). In this study, SDT explains why the same digital tool can raise one learner's motivation while leaving another's unchanged: what matters is whether the tool is experienced as offering choice, building skill, and connecting the learner to peers and teacher, not the tool itself. Accordingly, the academic motivation section of the questionnaire is grounded in Self-Determination Theory and adapted from validated Self-Determination Theory based motivation instruments, with its three subscales, intrinsic motivation, perceived competence, and autonomy, corresponding directly to the theory's constructs (Howard et al., 2021; Ramos et al., 2022). Although Self-Determination Theory identifies autonomy, competence, and relatedness as essential psychological needs, this study focuses on autonomy and competence because these dimensions are the most directly associated with learners' independent engagement and academic performance in literature. Relatedness was excluded to maintain a manageable instrument length and because the study primarily investigates individual learning experiences rather than interpersonal classroom relationships (Howard et al., 2021).

Social Cognitive Theory (SCT) contributes the construct of self-efficacy, an individual's belief in their capacity to execute a task successfully (Bandura, 1986, 1997). Learners exposed to technology-based learning observe peers navigating digital platforms and literary tasks; these observations, together with direct feedback, shape their confidence in handling similar tasks (Bartlett, 2011). SCT is used here to account for the observational and modeling pathway through which technology-based learning could plausibly raise motivation, separate from the autonomy-support pathway that SDT describes.

The Technology Acceptance Model (TAM) is added because neither SDT nor SCT, on its own, explains why learners adopt or resist a given digital tool in the first place. TAM proposes that a user's intention to use a

technology is shaped by two beliefs: perceived usefulness and perceived ease of use (Davis, 1989). These constructs have since been validated repeatedly in classroom settings, including studies on smartphone adoption in instruction (Fuchs, 2022) and on online-platform adoption by students in blended courses (Zhou et al., 2022). TAM supplies the mechanism by which technology-based learning, as an independent variable, is expected to register in a learner's day-to-day experience: a platform perceived as useful and easy to use is one a learner will actually engage with long enough for any motivational or performance effect to occur.

The SDT and SCT provide theoretical explanations for how technology-based learning may be associated with variations in academic motivation, while TAM explains whether learners engage with the technology enough for that mechanism to operate at all. Academic performance in literature is treated as the downstream outcome of this chain, consistent with the direction implied by the study's title and its independent-dependent variable structure below.

Conceptual Framework

Variable relationships as a schematic flow, the paradigm in Figure 1 specifies two independent variables, Technology-Based Learning and Academic Motivation, a single dependent variable, Academic Performance in Literature, and a demographic-profile block that is examined in relation to both. The output of the study is a proposed intervention.

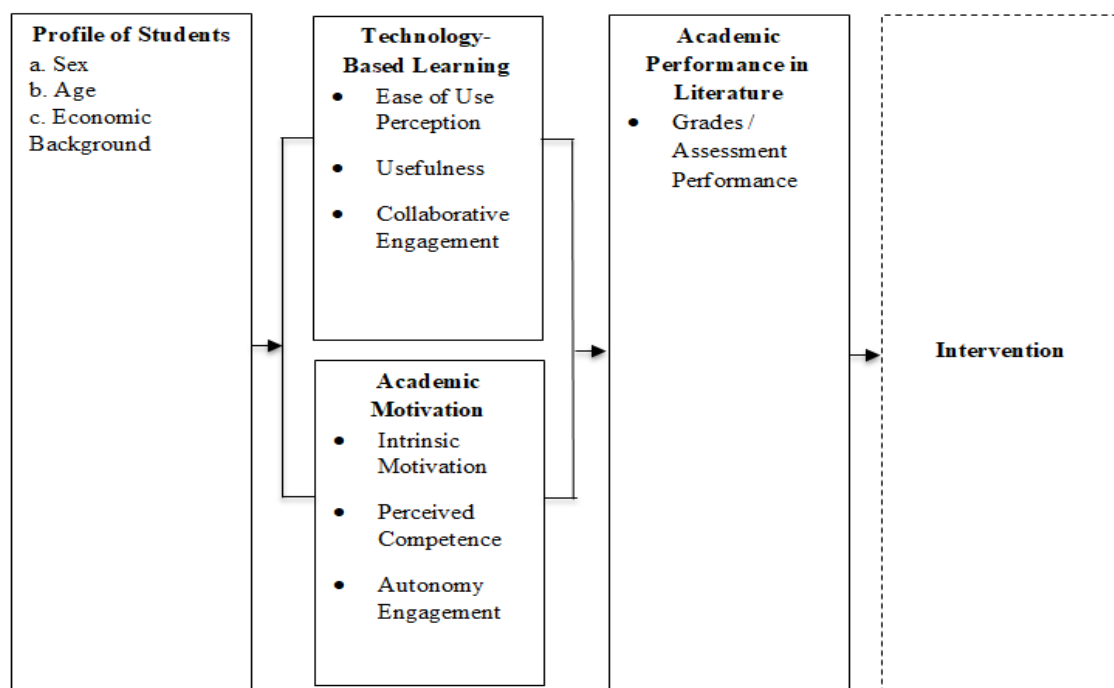


Figure 1. The schematic diagram of the study shows the selected variables and their relationships.

As shown in Figure 1, the framework is read as a downward flow. The demographic profile (sex, age, and economic background) describes the learners and is examined in relation to the two independent variables and to the outcome. Technology-based learning and academic motivation are treated as parallel independent variables that are expected to bear on the dependent variable, academic performance in literature. The direction of the arrows expresses the study's assumption that technology-based learning and academic motivation are related to literary performance, which in turn provides the empirical basis for the proposed intervention. The demographic profile is positioned as a describing and grouping variable rather than a cause, since it is not manipulated and is used to test whether the levels of the other variables differ across learner subgroups.

The demographic profile, sex, age, and economic background, is positioned outside the direct IV-to-DV arrow because it is not manipulated or expected to cause technology-based learning or academic motivation; rather, it is examined as a basis for describing whether the levels of the independent and dependent variables differ across learner subgroups (Question 4 onward, below).



Statement of the Problem

This study aims to determine the relationship among technology-based learning, academic motivation, and academic performance in literature among Grade 12 Academic Track learners in one of the public senior high schools in a school division of a component city in Northern Negros Occidental, Sections 1B, 2B, and 1C to 10C, during School Year 2026-2027, as basis for a proposed intervention. Specifically, it seeks to answer the following questions:

1. What is the demographic profile of the respondents in terms of:
 - a. Sex;
 - b. Age;
 - c. Economic background?
2. What is the level of technology-based learning among the respondents when taken as a whole and in terms of:
 - a. Ease of Use Perception;
 - b. Usefulness; and
 - c. Collaborative Engagement?
3. What is the level of academic motivation among the respondents when taken as a whole and in terms of:
 - a. Intrinsic Motivation;
 - b. Perceived Competence; and
 - c. Autonomy?
4. What is the level of academic performance in literature among the respondents, as a whole, and when grouped according to:
 - a. Sex;
 - b. Age;
 - c. Economic background?
5. Is there a significant relationship between technology-based learning and academic performance in literature?
6. Is there a significant relationship between academic motivation and academic performance in literature?
7. Is there a significant difference in the level of academic performance in literature when respondents are grouped according to sex, age, and economic background?
8. Based on the findings, what intervention program may be proposed to enhance the academic performance of Grade 12 learners in literature through technology-based learning and the strengthening of academic motivation?

Hypotheses of the Study

The following hypotheses were formulated and tested at the 0.05 level of significance:

1. There is no significant relationship between technology-based learning and academic performance in literature.
2. There is no significant relationship between academic motivation and academic performance in literature.
3. There is no significant difference in the level of academic performance in literature when respondents are grouped according to sex, age, and economic background.

Significance of the Study

The findings of this study are expected to benefit the following:

Curriculum Developers. They may use the findings to determine whether technology-based learning measurably strengthens academic motivation and performance in literature specifically, allowing them to decide, on local evidence rather than general trend, how much digital integration to build into the literature curriculum.

Policymakers and Educational Administrators. They may use the results to guide budget and infrastructure decisions related to technology-based learning, including which digital resources are worth sustaining and which sections may need additional access support.

Literature Teachers. They may draw on the findings to calibrate how heavily they rely on technology-based learning strategies relative to traditional methods, based on the demonstrated relationship, or absence of one, with learner motivation and performance.

Parents and Guardians. They may gain a clearer picture of how their children's engagement with digital learning tools relates to motivation and performance in literature, informing how they support studying at home.

Grade 12 Learners. Respondents and future cohorts stand to benefit directly from any intervention program that emerges from the study's findings.

Future Researchers. This study provides a locally grounded, post-2020 evidence base that they may build on, replicate in other tracks or schools, or extend using qualitative or experimental designs.

Scope and Limitations of the Study

This study is limited to Grade 12 Academic Track learners of one of the public senior high schools in a school division of a component city in Northern Negros Occidental enrolled in Sections 1B, 2B, and 1C to 10C during School Year 2026-2027. It covers the constructs of technology-based learning (ease of use perception, usefulness, collaborative engagement), academic motivation (intrinsic motivation, perceived competence, autonomy), and academic performance in literature (grades/assessment performance), gathered through a researcher-made, four-point Likert-scale questionnaire and analyzed using descriptive and inferential statistics.

The study is no longer confined to the Arts, Social Sciences and Humanities (ASSH) cluster or to a single named course, it addresses literature in general as encountered across the Grade 12 Academic Track curriculum, since literature-based instruction and assessment recur across sections regardless of strand specialization. This broadens the study's applicability but also means findings describe general patterns in literature performance rather than outcomes tied to one specific literature subject.

Several limitations apply. First, findings are context-specific to one school and one school year and should not be generalized to other institutions without further study. Second, the study relies on self-reported data, which may be affected by social desirability bias. Third, while economic background is measured as a demographic variable, the study does not directly audit each respondent's device ownership or home internet quality; income bracket is used as a proxy for access, which may not capture every access-related barrier a learner faces.



Fourth, the descriptive-correlational design identifies association, not causation, between technology-based learning, academic motivation, and academic performance.

Definition of Terms

The following terms are defined conceptually, from cited literature, and operationally, as used in this study:

Academic Motivation. Conceptually, it refers to the inner drive that influences a student's engagement in education (Howard et al., 2021).

Operationally, it is the composite score obtained from the Academic Motivation section of the study's questionnaire, covering intrinsic motivation, perceived competence, and autonomy.

Academic Performance in Literature. Conceptually, this refers to the demonstrated level of achievement in literature-related coursework and assessment tasks (Rudas, 2024).

Operationally, it is the respondent's self-reported grade range in literature-related subjects, taken as a whole and disaggregated by demographic subgroup.

Autonomy. Conceptually, this refers to the degree of independence and self-direction a learner exercises in academic pursuits (Deci & Ryan, 1985; Ryan & Deci, 2000).

Operationally, it refers to the respondent's rating on the Autonomy subscale of the questionnaire.

Collaborative Engagement. Conceptually, the extent of a learner's active participation and interaction with peers through digital or technology-mediated activities.

Operationally, this refers to the respondent's rating on the Collaborative Engagement subscale of the Technology-Based Learning section of the questionnaire.

Demographic Profile. Conceptually, the set of identifiable personal and background traits used to describe a study's respondents (Obaob & Moneva, 2021).

Operationally, this refers to the respondent's self-reported sex, age, and economic background, each operationally defined under Statement of the Problem, Question 1.

Ease of Use Perception. Conceptually, a learner's subjective evaluation of how user-friendly a given digital tool is within the learning environment (Kashive et al., 2020).

Operationally, it refers to the respondent's rating on the Ease of Use Perception subscale of the Technology-Based Learning section of the questionnaire.

Economic Background. Conceptually, a household's relative financial standing, commonly classified using monthly family income brackets (Philippine Statistics Authority, 2023).

Operationally, it refers to the respondent's self-reported estimated monthly family income bracket, categorized as low, middle, or high income following the Philippine Statistics Authority's income classification.

Intrinsic Motivation. Conceptually, the innate desire and interest to engage in learning without reliance on external reward (Howard et al., 2021).

Operationally, it refers to the respondent's rating on the Intrinsic Motivation subscale of the questionnaire.

Perceived Competence. Conceptually, a learner's self-perception of their ability to comprehend and perform well in an academic task (Honicke et al., 2023).

Operationally, it refers the respondent's rating on the Perceived Competence subscale of the questionnaire.

Technology-Based Learning. Conceptually, the deliberate use of digital tools, platforms, and resources to deliver, reinforce, or assess classroom learning (Bi et al., 2024; Nguyen et al., 2022).

Operationally, it is the composite score obtained from the Technology-Based Learning section of the study's questionnaire, covering ease of use perception, usefulness, and collaborative engagement.

Usefulness. Conceptually, the perceived value and effectiveness of a digital resource in supporting a learning task (Zhou et al., 2022).

Operationally, it is the respondent's rating on the Usefulness subscale of the Technology-Based Learning section of the questionnaire.

REVIEW OF RELATED LITERATURE AND STUDIES

This chapter synthesizes literature and studies relevant to technology-based learning, academic motivation, and academic performance in literature. The chapter is organized around the study's three constructs.

Technology-Based Learning

Technology-based learning has moved from a supplementary tool to a structural feature of secondary and tertiary classrooms. Bi et al. (2024) examined the impact of technology-based education on the academic motivation, perseverance, and self-efficacy of high school students and found that technology-based education significantly influenced both academic motivation and academic perseverance, though its effect on self-efficacy was more distinct and context-dependent. Their finding that technology's effect on motivation and effect on self-efficacy do not move in lockstep is directly relevant here, since this study treats technology-based learning and academic motivation as related but separately measured variables rather than assuming one automatically produces the other.

A meta-analytic synthesis by Kuş (2025) examined how technology-related factors, including device use, social media, and gaming, relate to students' academic performance across a large body of prior studies and reported that the relationship between technology exposure and academic outcomes remains inconsistent across studies, moderated by how the technology is used rather than by exposure alone. This reinforces the decision to measure specific dimensions of technology-based learning (ease of use, usefulness, collaborative engagement) instead of treating “technology use” as a single undifferentiated variable.

The Technology Acceptance Model continues to hold up under recent empirical testing. Fuchs (2022), writing in *Frontiers in Education*, found that students' behavioral intention to use smartphone technology in the classroom was predicted by perceived usefulness, perceived ease of use, and subjective norm, with perceived usefulness carrying the strongest weight. Zhou et al. (2022) extended the same model to an online education platform used by university students in China and similarly found that perceived ease of use and perceived usefulness together predicted intention to use, which in turn predicted actual platform engagement. Both studies support treating ease of use perception and usefulness as separable, measurable indicators of technology-based learning, as this study does.

Collaborative engagement through digital platforms has also drawn sustained attention since 2020. Gopinathan et al. (2022), publishing in *Sustainability*, found that digital collaboration positively influenced student engagement and participation during and after the pandemic shift to remote instruction, particularly where platforms supported real-time peer interaction rather than one-directional content delivery. Martin et al. (2022) reached a comparable conclusion using the Community of Inquiry framework across online and blended learning environments, reporting that the combination of social, cognitive, and teaching presence, not any one presence alone, predicted stronger learning outcomes. Taken together, these studies justify treating collaborative engagement as a distinct indicator of technology-based learning, separate from ease of use or usefulness.

Locally, access inequities complicate any assumption that more technology automatically benefits every learner. Sezgin and Firat (2024), in a comparative study of undergraduate learners in open and distance education, found that the digital divide, unequal access to devices and connectivity, continued to shape whether increased digital integration helped or disadvantaged particular student subgroups. This finding directly informs why the present study measures economic background as a demographic variable rather than treating technology access as uniform across respondents.

Academic Motivation

The most direct evidentiary support for Self-Determination Theory since 2020 comes from Howard et al. (2021), whose meta-analysis of antecedents of autonomous and controlled motivation, published in the *Perspectives on Psychological Science*, synthesized decades of prior findings and confirmed that autonomy-supportive teaching and learning conditions consistently predict self-determined motivation across age groups and subject areas, while controlling conditions predict weaker, more externally regulated forms of motivation. This meta-analytic confirmation anchors the study's continued reliance on SDT as a theoretical base.

Instrument-level work has also advanced. Ramos et al. (2022) validated the Elementary School Motivation Scale in a Spanish sample of over 1,000 students and confirmed a nine-dimension structure consistent with the self-determination continuum, with acceptable internal consistency across dimensions (composite reliability ranging from .70 to .90). Although developed for younger learners, the validation supports the broader claim that intrinsic motivation, perceived competence, and autonomy remain empirically separable and independently measurable subscales, the same structure this study's questionnaire uses for Grade 12 respondents.

The digital-classroom variant of academic motivation has been examined directly. Chiu (2022) applied Self-Determination Theory to explain student engagement in online learning during the pandemic and found that perceived autonomy support and structure jointly predicted engagement, while perceived chaos undermined it, evidence that digital delivery does not automatically strip motivation of its usual determinants; the same psychological needs still govern it, just under a different delivery format. Mendoza et al. (2023), publishing in *Computers & Education*, tested whether need-supportive task instructions in online learning environments improved intrinsic motivation and found that framing tasks around autonomy and competence support raised both self-reported motivation and actual task performance, a finding with direct implications for how technology-based literature tasks in this study's target school might be designed.

Motivation research specific to Filipino secondary learners remains comparatively thin, which is itself part of the gap this study addresses. Where available, adjacent Southeast Asian and cross-cultural findings are informative: Wong and Liem (2023), in a chapter examining cross-cultural differences in achievement-goal endorsement across the Asia-Pacific region, found that mastery-approach goals predicted academic achievement more consistently across cultural contexts than performance-approach goals, though the strength of the association varied by education system. This suggests caution in assuming that motivational patterns documented abroad transfer directly to a Philippine public secondary school, reinforcing the need for the present, locally grounded measurement.

Academic Performance in Literature

Reading and literary comprehension continue to be identified as a persistent weak point in Philippine basic education. National and international assessment data place Filipino learners' reading proficiency well below the OECD average, a pattern that has held across the two most recent PISA cycles (OECD, 2023). Locally, Rudas (2024), writing in *Universitas*, developed and piloted a reading comprehension skills test with 582 Senior High School respondents drawn through stratified sampling and found that learners scored only at the “nearly proficient” band despite prior reading interventions, underscoring both the scale of the gap and the continuing relevance of targeted, evidence-based intervention design, which is precisely the intended output of the present study.

Recent international evidence reinforces both the promise and the limits of technology-mediated reading. In a large study of 4,527 lower secondary students, Habók, Oo, and Magyar (2024) found that online reading strategies, particularly problem-solving strategies, exerted a significant and positive effect on reading comprehension achievement, which indicates that the presence of digital tools matters less than how deliberately learners engage with them. A systematic review by Murphy and Arciuli (2024) likewise reported that digital reading comprehension instruction can support diverse learners, but that its benefits depend heavily on instructional design rather than on technology alone. Taken together, these findings suggest that high exposure to digital platforms does not automatically translate into stronger literary comprehension, a caution that is directly relevant to the present setting, where technology use is high yet performance in literature remains low.

Self-efficacy, the Social Cognitive Theory construct this study also draws on, continues to show a reciprocal relationship with academic performance. Honicke et al. (2023), publishing in *Higher Education Research & Development*, found that self-efficacy and academic performance predict each other over time, with the strength of that reciprocal relationship moderated by task difficulty and a learner's baseline achievement level. Applied to literature specifically, this implies that a learner who starts with lower confidence in handling literary analysis may need instruction calibrated to rebuild competence gradually, rather than a uniform intervention applied to every learner regardless of starting point.

Socioeconomic status remains one of the most consistently documented predictors of academic achievement. Liu et al. (2022), in a meta-analytic review published in *Educational Psychology Review*, confirmed a significant positive association between socioeconomic status and academic achievement across primary and secondary education, an association that held across most of the studies they reviewed regardless of subject area or country. This finding is the empirical basis for including economic background as a demographic variable examined against academic performance in literature in the present study, rather than treating performance differences as attributable to motivation or instruction alone.

Interpersonal and classroom-climate factors also continue to matter. Li et al. (2022), publishing in *Learning and Instruction*, found that positive teacher-student relationships predicted better teaching quality, which in turn was associated with stronger student outcomes, while Thornberg et al. (2022) reported, in a sequential mixed-methods study, that teacher-student relationship quality predicted student engagement, which mediated its effect on broader academic outcomes. Together these studies suggest that any intervention emerging from the present study should not focus on technology alone; the human, relational dimension of instruction continues to carry independent weight.

RESEARCH METHODOLOGY

This chapter presents the research design, subject and respondents of the study, population and sample size, sampling technique, data gathering instrument, validity and reliability of the research instrument, data gathering procedures, and data analyses.

Research Design

This study employed a descriptive-correlational research design, a quantitative approach appropriate for describing the levels of technology-based learning, academic motivation, and academic performance in literature among the respondents, and for testing the relationships among these variables without manipulating them (Creswell & Creswell, 2018, as commonly applied in recent descriptive-correlational studies such as Rudas, 2024).

The descriptive component summarizes the levels of each variable, as a whole and by demographic subgroup, using means, frequencies, and percentages. The correlational component tests whether technology-based learning and academic motivation are significantly related to academic performance in literature, using Spearman rank-order correlation for the ordinal performance measure and the Kruskal-Wallis H test for group comparisons, consistent with the study's hypotheses.

Subject and Respondents of the Study

The respondents of this study are Grade 12 Academic Track learners in one of the public senior high schools in a school division of a component city in Northern Negros Occidental enrolled in Sections 1B, 2B, and 1C to 10C during School Year 2026-2027.

Population and Sample Size

The population consists of all learners officially enrolled in the twelve identified Grade 12 Academic Track sections for School Year 2026-2027, totaling 393 learners ($N = 393$). Per-section enrollment counts are presented in Table 1.

Sample size was computed using Slovin's formula because the population size was known and the study required an overall survey sample from a finite population before proportional allocation by section:

$$n = N \div (1 + Ne^2)$$

where n is the required sample size, N is the total population, and e is the margin of error, set at 0.05. Substituting the values gives $n = 393 \div [1 + 393(0.05)^2] = 393 \div 1.9825 = 198.23$, which was rounded to 198 respondents.

Because the respondents are naturally grouped into twelve intact sections of unequal size, proportionate stratified random sampling was used. In proportional allocation, each stratum receives a share of the sample that corresponds to its share of the population (Lohr, 2021). The preliminary per-section allocation was computed as:

$$n_h = (N_h \div N) \times n$$

where n_h is the sample size for stratum h , N_h is the population of that section, N is the total population of 393, and n is the overall sample size of 198.

Table 1. Stratified Sample Allocation per Section ($N = 393$, $n = 198$, $e = 0.05$)

Section	Population (N_h)	Raw proportional $n_h = (N_h/N) \times n$	Final sample (n_h)
12 ACAD 1B	32	16.12	16
12 ACAD 2B	29	14.61	15
12 ACAD 1C	34	17.13	17
12 ACAD 2C	29	14.61	14
12 ACAD 3C	35	17.63	18
12 ACAD 4C	33	16.63	17
12 ACAD 5C	36	18.14	18
12 ACAD 6C	35	17.63	18
12 ACAD 7C	32	16.12	16
12 ACAD 8C	35	17.63	18



12 ACAD 9C	34	17.13	17
12 ACAD 10C	29	14.61	14
Total	393	198.00	198

As shown in Table 1, proportional allocation across the twelve sections produces a total of 198 respondents, consistent with the sample size obtained from Slovin's formula. Within each section, the required number of respondents was selected through simple random sampling from the official class list.

Sampling Technique

This study used proportionate stratified random sampling, with each of the twelve Grade 12 Academic Track sections treated as a stratum. This is appropriate because the target population is not one undifferentiated group; it is distributed across sections with different enrollment sizes. Stratifying by section protects smaller sections from being overlooked and prevents larger sections from disproportionately shaping the findings. After the corrected per-stratum sample sizes were finalized, respondents within each section will be selected through simple random sampling using a random-number draw from the official class list, consistent with the logic of stratified survey sampling (Lohr, 2021). Section is used in this study only as the sampling stratum from which respondents are drawn; it is not analyzed as a respondent-profile variable, and is therefore excluded from the demographic profile and from the tests of difference in Chapter 4.

Data Gathering Instrument

The researcher used a researcher-made questionnaire divided into four parts: (I) Demographic Profile, (II) Technology-Based Learning, (III) Academic Motivation, and (IV) Academic Performance in Literature. Parts II and III use a four-point Likert scale ranging from 1 (Strongly Disagree) to 4 (Strongly Agree), with eight items per indicator. Part IV (Academic Performance in Literature) is captured through the respondent's self-reported most recent grade in a literature-related subject rather than through Likert items. Self-reported grades were used because official grade records were not accessible to the researcher under data-privacy constraints, and self-reported academic performance is a widely used proxy in school-based survey research when institutional records cannot be obtained; the associated recall and social-desirability limitations are acknowledged in the Scope and Limitations.

The four-point format was deliberately chosen over a five-point format. Because it omits a neutral midpoint, it is classified in the methodological literature as a forced-choice ordinal scale: respondents must indicate a directional lean, positive or negative, rather than defaulting to an undecided middle response (Uslu, 2022). Uslu's (2022) review of response-option research in education and social science notes that scales without a midpoint reduce the central-tendency clustering that can obscure genuine differences between respondents, which is the specific rationale for the choice here, where distinguishing clearly motivated from clearly unmotivated respondents matters more than capturing ambivalence.

Validity and Reliability of the Research Instrument

Content and face validity of the researcher-made questionnaire (Parts II and III) were established using Good and Scates validation instrument before final administration through the review of a three-member expert panel composed of: (1) a literature and language education specialist who examined construct alignment and wording, (2) a research and statistics specialist who examined scale structure, scoring, and item measurability, and (3) the school guidance counselor or testing coordinator who examined learner appropriateness, clarity, and school-testing suitability. Content validation was adopted because a researcher-made questionnaire requires qualified reviewers to judge whether the items adequately represent the intended constructs and are understandable to the target respondents (Yusoff, 2019; Taherdoost, 2016).

Each expert independently rated every item for relevance, clarity, and representativeness using a content-validation rating sheet. Item-level comments were consolidated, and items with weak relevance or clarity

ratings were revised, merged, or removed before pilot testing. The item agreement was treated conservatively: an item had to receive agreement from all three experts or be revised before administration, consistent with content-validity index practice for small expert panels (Yusoff, 2019). After expert validation, the revised instrument was pilot-tested on 30 Grade 12 learners drawn from a section outside the twelve target sections, that is, learners who were not part of the study but shared similar characteristics with the actual respondents. Internal consistency reliability was then computed using Cronbach's alpha for each subscale, with 0.70 set as the minimum acceptable threshold for educational survey instruments.

Data Gathering Procedures

Upon approval of the research proposal and securing of the necessary permits from the school principal, the schools division office, and parental or guardian consent for minor respondents, the researcher proceeded with data collection. The finalized questionnaire was administered through Google Forms to allow efficient, uniform distribution across all twelve sections while minimizing logistical disruption to class schedules. Participation in the study was voluntary. Written parental consent and learner assent were secured prior to data collection. Participants were informed that they could withdraw at any time without penalty and that their decision to participate or not participate would have no effect on their grades, academic standing, or relationship with the school. All responses were treated confidentially in accordance with the Data Privacy Act of 2012.

Data Analyses

The following statistical treatment was applied to answer each research question:

Descriptive statistics (weighted mean, frequency, and percentage distribution) were used to describe the demographic profile of respondents and the levels of technology-based learning, academic motivation, and academic performance in literature, as a whole and per indicator, answering Statement of the Problem Questions 1 to 4.

Spearman rank-order correlation (r_s) was used to determine the significance and direction of the relationship between technology-based learning and academic performance in literature, and between academic motivation and academic performance in literature, answering Questions 5 and 6. Spearman rank-order correlation was used in place of the Pearson r because academic performance in literature was measured as an ordinal grade band rather than a continuous score.

The Kruskal-Wallis H test, with Dunn's pairwise post-hoc test where the omnibus result was significant, was used to determine whether academic performance in literature differed significantly across sex, age group, and economic-background categories, answering Question 7. The Kruskal-Wallis H test was used in place of ANOVA because the dependent variable is ordinal and its distribution across groups is not assumed to be normal.

All inferential tests were evaluated at the 0.05 level of significance, with results feeding directly into the intervention proposed in response to Question 8.

Presentation, Analysis, And Interpretation Of Data

This chapter presents, analyzes, and interprets the data gathered from the Grade 12 Academic Track learners of one of the public senior high schools in a school division of a component city in Northern Negros Occidental during School Year 2026-2027. Although the sample size computed through Slovin's formula was 198, a total of 199 valid responses were retained and analyzed; the one additional respondent was kept because the response was complete and met the inclusion criteria. The findings are organized according to the sequence of the Statement of the Problem. Frequency and percentage were used for the demographic profile; the weighted mean and standard deviation were used for the levels of technology-based learning, academic motivation, and academic performance in literature; the Spearman rank-order correlation was used for the tests of relationship; and the Kruskal-Wallis H test, with Dunn's pairwise post-hoc test, was used for the tests of difference.



For the level of each construct, the following four-point descriptive legend was used to interpret the weighted means: 3.26 to 4.00, Very High; 2.51 to 3.25, High; 1.76 to 2.50, Low; and 1.00 to 1.75, Very Low.

Demographic Profile of the Respondents

The first problem sought to describe the demographic profile of the respondents in terms of sex, age, and economic background. Frequency and percentage distributions were computed using the formula below, where P is the percentage, f is the frequency of a category, and N is the total number of respondents.

$$P = (f / N) \times 100$$

Table 1. Frequency and Percentage Distribution of the Demographic Profile of the Respondents (N = 199)

Profile	Category	f	%
Sex	Male	90	45.23
	Female	105	52.76
	Prefer not to say	4	2.01
	Total	199	100.00
Age	16 years old and below	60	30.15
	17-18 years old	134	67.34
	19 years old and above	5	2.51
	Total	199	100.00
Estimated Monthly Family Income (Economic Background)	Poor (below ₱13,873)	89	44.72
	Low income class but not poor (₱13,873 to ₱27,745)	49	24.62
	Lower-middle income class (₱27,746 to ₱55,491)	42	21.11
	Middle-middle income class (₱55,492 to ₱97,110)	11	5.53
	Upper-middle income class (₱97,111 to ₱166,475)	5	2.51
	Upper income class but not rich (₱166,476 to ₱277,459)	1	0.50
	Rich (₱277,460 and above)	2	1.01
	Total	199	100.00

Note. Income brackets follow the Philippine Statistics Authority (2023) family income classification. Statistical tool: frequency and percentage.

As shown in Table 1, the respondents were slightly more female (105 or 52.76 percent) than male (90 or 45.23 percent), with a small group choosing not to disclose their sex (4 or 2.01 percent). More than two-thirds belonged to the 17 to 18 age bracket (134 or 67.34 percent), which is typical of a Grade 12 cohort. The most striking pattern is economic. Taken together, the three lowest income classes, that is, poor, low income but not



poor, and lower-middle income, accounted for 180 respondents, or 90.45 percent of the sample. Only 8 respondents, about 4 percent, belonged to the middle-middle bracket or higher.

The respondents therefore represent an overwhelmingly low-income learner population, a fact that frames the interpretation of every finding that follows, because it means differences in outcomes cannot easily be attributed to wide disparities in household resources within this group.

Level of Technology-Based Learning

The second problem determined the level of technology-based learning among the respondents, as a whole and in terms of ease of use perception, usefulness, and collaborative engagement. The weighted mean was computed using the formula below, where $\bar{x}$ is the weighted mean, f is the frequency of responses at each scale point, w is the weight of that scale point (1 to 4), and n is the number of respondents.

$$\bar{x} = \Sigma(f \cdot w) / n$$

Table 2. Level of Technology-Based Learning as a Whole and in Terms of Ease of Use Perception, Usefulness, and Collaborative Engagement

Statements	Mean	SD	Interpretation
Ease of Use Perception	2.80	0.67	High
1. Navigating digital platforms used in my literature classes is straightforward.	2.73	0.76	High
2. The user interface of the digital tools we use is easy to understand.	2.83	0.78	High
3. I find it easy to access online resources related to our literature lessons.	2.85	0.90	High
4. Digital learning tools make it easier for me to understand literary texts.	2.89	0.80	High
5. I feel comfortable using digital platforms for literature related tasks.	2.84	0.82	High
6. The steps needed to submit work through digital platforms are simple to follow.	2.81	0.84	High
7. I rarely encounter technical difficulty when using our class's digital tools.	2.60	0.76	High
8. I can quickly find what I need on the digital platforms used in class.	2.82	0.81	High
Usefulness	2.93	0.67	High
1. Online materials improve the overall quality of my literature learning.	2.91	0.78	High
2. I find digital tools valuable for reinforcing what I learn about literature.	2.90	0.77	High
3. Technology used in class helps me complete literature tasks more effectively.	2.95	0.80	High
4. Digital resources contribute to achieving the learning outcomes of our literature lessons.	2.95	0.78	High
5. I consider digital tools essential to how I study literature.	2.86	0.76	High
6. The digital resources used in class help me apply what I learn about literary	2.98	0.72	High

texts.			
7. Online materials give me access to a wider range of literary examples than the textbook alone.	2.93	0.84	High
Collaborative Engagement	2.83	0.65	High
1. Digital platforms allow me to work effectively with classmates on literature tasks.	2.83	0.82	High
2. Group activities using online tools help me understand literary themes better.	2.87	0.80	High
3. I find value in discussing literature topics with classmates through digital forums.	2.74	0.76	High
4. Collaborative digital activities improve my overall learning experience in literature.	2.87	0.75	High
5. Technology helps me connect meaningfully with classmates during literature discussions.	2.83	0.75	High
6. I feel part of a learning community when we use digital tools for group literature work.	2.83	0.76	High
7. Online tools make it easier for me to share ideas about literature with classmates.	2.89	0.83	High
8. Collaborating through digital platforms increases my interest in literature discussions.	2.78	0.82	High
Technology-Based Learning (Overall Mean)	2.85	0.62	High

Legend: 3.26 to 4.00, Very High; 2.51 to 3.25, High; 1.76 to 2.50, Low; 1.00 to 1.75, Very Low. Statistical tool: weighted mean and standard deviation.

Table 2 shows that the respondents rated technology-based learning at a High level overall (mean = 2.85, SD = 0.62). Among the three subcategories, usefulness received the highest rating (mean = 2.93, SD = 0.67), followed by collaborative engagement (mean = 2.83, SD = 0.65) and ease of use perception (mean = 2.80, SD = 0.67), all within the High band. No item in the entire scale fell below the High band, and no item reached the Very High band, which indicates a consistently favorable but not enthusiastic evaluation of classroom technology. This coheres with the Technology Acceptance Model, in which perceived usefulness and perceived ease of use jointly sustain continued engagement with digital tools (Fuchs, 2022; Zhou et al., 2022).

Within ease of use perception, the highest-rated statement was "Digital learning tools make it easier for me to understand literary texts" (mean = 2.89, SD = 0.80), while the lowest was "I rarely encounter technical difficulty when using our class's digital tools" (mean = 2.60, SD = 0.76), which is also the lowest single item in the whole subscale. The gap between these two statements is instructive: learners judge the tools conceptually helpful yet still meet friction in operating them. Recurrent technical difficulty is a documented feature of under-resourced digital learning environments and is one of the conditions that limits the instructional return on technology (Sezgin & Firat, 2024; Timotheus et al., 2023).

Within usefulness, the highest-rated statement was "The digital resources used in class help me apply what I learn about literary texts" (mean = 2.98, SD = 0.72), and the lowest was "I consider digital tools essential to how I study literature" (mean = 2.86, SD = 0.76). The ordering is telling. Learners credit digital resources with helping them apply learning, but they stop short of treating those resources as indispensable to how they



actually study. This is consistent with reviews that describe digital technologies as amplifiers of existing instructional practice rather than as substitutes for it (Haleem et al., 2022).

Within collaborative engagement, the highest-rated statement was "Online tools make it easier for me to share ideas about literature with classmates" (mean = 2.89, SD = 0.83), while the lowest was "I find value in discussing literature topics with classmates through digital forums" (mean = 2.74, SD = 0.76). Learners therefore value the convenience of sharing more than they value the substance of asynchronous discussion. Research on digital collaboration and on the Community of Inquiry framework indicates that online discussion produces learning gains only when cognitive and teaching presence are deliberately structured, and not from the availability of a forum alone (Gopinathan et al., 2022; Martin et al., 2022). In practical terms, access to and comfort with instructional technology is not the limiting factor for this cohort; the learners are already receiving, and positively evaluating, a technology-rich literature classroom.

Level of Academic Motivation

The third problem determined the level of academic motivation among the respondents, as a whole and in terms of intrinsic motivation, perceived competence, and autonomy. The same weighted-mean procedure and descriptive legend were applied.

Table 3. Level of Academic Motivation as a Whole and in Terms of Intrinsic Motivation, Perceived Competence, and Autonomy

Statements	Mean	SD	Interpretation
Intrinsic Motivation	2.84	0.67	High
1. Reading and studying literature genuinely interest me.	2.83	0.86	High
2. I find personal enjoyment in analyzing literary works.	2.74	0.84	High
3. I connect real-world experiences with themes I encounter in literature.	2.91	0.77	High
4. Understanding different perspectives in literature motivates me to keep learning.	2.94	0.79	High
5. I feel a sense of curiosity when starting a new literary text.	2.85	0.81	High
6. I look forward to our literature classes.	2.79	0.80	High
7. Discovering new ideas in literature stimulates my interest in learning more.	2.89	0.75	High
8. I enjoy literature even outside of required class activities.	2.76	0.81	High
Perceived Competence	2.68	0.61	High
1. I feel confident in my ability to understand literary texts.	2.67	0.74	High
2. I believe I have the skills to interpret complex literary themes.	2.54	0.74	High
3. I can express my thoughts clearly about literary works.	2.65	0.75	High
4. I feel capable of critically evaluating a literary text's significance.	2.58	0.74	High
5. I can apply what I have learned to analyze new literary texts.	2.82	0.75	High

6. I am confident in my ability to participate in literature discussions.	2.73	0.76	High
7. I can identify the key ideas in a literary text without much difficulty.	2.61	0.76	High
8. I believe my skills in literature have improved this school year.	2.83	0.80	High
Autonomy	2.81	0.62	High
1. I prefer exploring literary texts on my own before class discussion.	2.53	0.80	High
2. Having the freedom to choose what to read motivates me more.	3.02	0.80	High
3. I appreciate opportunities for self-directed learning in literature.	2.93	0.75	High
4. I am driven to explore literature topics beyond what is required.	2.80	0.76	High
5. I value having some independence in how I complete literature tasks.	2.84	0.81	High
6. I take initiative to research literary topics that interest me.	2.83	0.76	High
7. I feel more motivated when I have a say in how I study literature.	2.81	0.81	High
Academic Motivation (Overall Mean)	2.78	0.59	High

Legend: 3.26 to 4.00, Very High; 2.51 to 3.25, High; 1.76 to 2.50, Low; 1.00 to 1.75, Very Low. Statistical tool: weighted mean and standard deviation.

As presented in Table 3, academic motivation was High overall (mean = 2.78, SD = 0.59). Intrinsic motivation was the strongest subcategory (mean = 2.84, SD = 0.67), autonomy was close behind (mean = 2.81, SD = 0.62), and perceived competence was the lowest of the three (mean = 2.68, SD = 0.61), though still within the High band. The internal pattern is informative. The respondents report that they find literature genuinely interesting and that they value having a say in how they learn it, yet their confidence in their own ability to understand and interpret literary texts lags behind their interest and their sense of autonomy.

Within intrinsic motivation, the highest-rated statement was "Understanding different perspectives in literature motivates me to keep learning" (mean = 2.94, SD = 0.79), while the lowest was "I find personal enjoyment in analyzing literary works" (mean = 2.74, SD = 0.84). The distinction matters for instruction: learners are drawn to the ideas and perspectives literature carries, but they derive less enjoyment from the analytical act itself, which is precisely the behavior that graded literature tasks require. Studies of reading engagement report the same separation between interest in content and willingness to undertake effortful strategic processing of text (Habók et al., 2024).

Within perceived competence, the highest-rated statement was "I believe my skills in literature have improved this school year" (mean = 2.83, SD = 0.80), while the lowest was "I believe I have the skills to interpret complex literary themes" (mean = 2.54, SD = 0.74), the lowest-rated statement in the entire motivation scale. The two adjacent items, "I feel capable of critically evaluating a literary text's significance" (mean = 2.58, SD = 0.74) and "I can identify the key ideas in a literary text without much difficulty" (mean = 2.61, SD = 0.76), sit only slightly higher. The three weakest items in the scale therefore all concern higher-order interpretive skill. Learners believe they are improving in general, but they do not believe they can perform the specific analytical operations that literature assessment measures. This localized deficit in self-efficacy is the kind of belief that has been shown to constrain subsequent achievement, and to do so reciprocally, with low performance further depressing efficacy (Honicke et al., 2023).

Within autonomy, the highest-rated statement was "Having the freedom to choose what to read motivates me more" (mean = 3.02, SD = 0.80), the highest-rated statement anywhere in the motivation scale, while the



lowest was "I prefer exploring literary texts on my own before class discussion" (mean = 2.53, SD = 0.80). The contrast is sharp and should not be read as a contradiction. Learners want choice over what they read, but they do not want to face an unfamiliar text without support. Self-Determination Theory anticipates exactly this pattern, in which the need for autonomy is satisfied by meaningful choice rather than by unsupported independence, and in which autonomy support produces gains only when the competence need is also met (Chiu, 2022; Howard et al., 2021; Mendoza et al., 2023). Taken together, the gap between wanting to engage and feeling able to succeed is the first signal in the data that motivation, on its own, may not be converting into achievement.

Level of Academic Performance in Literature

The fourth problem determined the level of academic performance in literature among the respondents when grouped in terms of sex, age, and economic background. Academic performance was drawn from the respondent's most recent grade in a literature-related subject and interpreted using the study's four-point descriptive legend. The weighted mean across all groupings was approximately 1.81, which falls within the Low band.

Table 4. Level of Academic Performance in Literature when Grouped in Terms of Profile

Profile	Category	Mean	SD	Interpretation
Sex	Male	1.93	0.91	Low
	Female	1.73	0.86	Very Low
	Prefer not to say	1.25	0.50	Very Low
Age	16 years old and below	1.68	0.87	Very Low
	17-18 years old	1.87	0.90	Low
	19 years old and above	2.00	0.71	Low
Estimated Monthly Family Income (Economic Background)	Poor (below ₱13,873)	1.81	0.84	Low
	Low income class but not poor (₱13,873 to ₱27,745)	1.71	0.91	Very Low
	Lower-middle income class (₱27,746 to ₱55,491)	1.90	0.91	Low
	Middle-middle income class (₱55,492 to ₱97,110)	1.82	0.75	Low
	Upper-middle income class (₱97,111 to ₱166,475)	1.80	1.30	Low
	Upper income class but not rich (₱166,476 to ₱277,459)	2.00	-	Low
	Rich (₱277,460 and above)	2.50	2.12	Low

Legend: 3.26 to 4.00, Very High; 2.51 to 3.25, High; 1.76 to 2.50, Low; 1.00 to 1.75, Very Low. Statistical tool: weighted mean and standard deviation. No standard deviation is reported for the Upper income class but not rich group because it contains a single respondent. The means for that group and for the Rich group (n = 2) are statistically unstable and should be read with caution.

Table 4 presents a result that stands in sharp contrast to the two preceding sections. Where technology-based learning and academic motivation were both High, academic performance in literature was Low to Very Low across every demographic group. By sex, the highest mean belonged to male respondents (mean = 1.93, SD = 0.91) and the lowest to those who preferred not to disclose their sex (mean = 1.25, SD = 0.50), with female respondents in between (mean = 1.73, SD = 0.86). By age, performance rose monotonically but modestly, from 1.68 (SD = 0.87) among those 16 years old and below to 2.00 (SD = 0.71) among those 19 years old and above. By economic background, the highest interpretable mean belonged to the lower-middle income class (mean = 1.90, SD = 0.91) and the lowest to the low income but not poor class (mean = 1.71, SD = 0.91).

Across economic background there is no consistent upward gradient. The poor group (mean = 1.81) performed at essentially the same level as the lower-middle group (mean = 1.90) and the middle-middle group (mean = 1.82), and the two nominally higher means belong to groups of one and two respondents and cannot be interpreted reliably. The wide standard deviations in the smallest groups, notably 1.30 for the upper-middle class and 2.12 for the Rich group, confirm this instability. The central observation is that low performance is not concentrated in a disadvantaged subgroup; it is spread evenly across the cohort, which indicates that the performance problem is general rather than the product of a particular group's circumstances. The uniformly low performance echoes the persistent reading-proficiency gap documented for Filipino learners (OECD, 2023; Rudas, 2024), while the absence of a clear income gradient runs counter to the socioeconomic-achievement association reported elsewhere (Liu et al., 2022), plausibly because the sample is overwhelmingly low-income and therefore offers little variation in household resources to detect.

Relationship Between Technology-Based Learning and Academic Performance

The fifth problem tested whether there is a significant relationship between technology-based learning and academic performance in literature. Because academic performance was measured as an ordinal grade band, the Spearman rank-order correlation was used, computed with the formula below, where d is the difference between the paired ranks and n is the number of respondents.

$$r_s = 1 - [6\sum d^2 / (n(n^2 - 1))]$$

Table 5. Relationship Between the Level of Technology-Based Learning and the Level of Academic Performance

Variables	rs	p-value	Decision on Ho	Interpretation
Level of Technology-Based Learning vs. Level of Academic Performance	0.103	0.150	Fail to Reject Ho	Not Significant

Note. Significant at $p < 0.05$. Statistical tool: Spearman rank-order correlation coefficient.

As shown in Table 5, the correlation between technology-based learning and academic performance in literature was positive but very weak ($r_s = 0.103$) and did not reach statistical significance ($p = 0.150$, which is greater than 0.05). The null hypothesis (H_0) is therefore not rejected. The coefficient of determination is approximately 0.011, meaning the two variables share only about one percent of their variance. In plain terms, the level of technology-based learning a learner reports has no meaningful bearing on that learner's grade in literature within this sample.

This null result is consistent with the wider evidence base. Reviews of educational technology conclude that digital tools operate as amplifiers of instructional design rather than as independent causes of achievement, so that exposure alone predicts little (Haleem et al., 2022; Timotheou et al., 2023). Meta-analytic work reports that technology-based instruction acts most reliably on motivational mediators such as self-efficacy and academic perseverance rather than directly on performance (Bi et al., 2024), and a meta-analysis of 63 studies covering 124,166 learners found that greater engagement with technology is, on balance, associated with slightly poorer rather than better academic outcomes when that engagement is recreational rather than

instructional (Kuş, 2025). Read together, these findings indicate that the mere presence of, and comfort with, digital tools should not be expected to raise literature grades.

Relationship Between Academic Motivation and Academic Performance

The sixth problem tested whether there is a significant relationship between academic motivation and academic performance in literature, again using the Spearman rank-order correlation.

Table 6. Relationship Between the Level of Academic Motivation and the Level of Academic Performance

Variables	rs	p-value	Decision on Ho	Interpretation
Level of Academic Motivation vs. Level of Academic Performance	0.142*	0.045	Reject Ho	Significant

*Note. *Significant at $p < 0.05$. Statistical tool: Spearman rank-order correlation coefficient.*

Table 6 shows a positive and statistically significant, though still weak, relationship between academic motivation and academic performance in literature ($rs = 0.142$, $p = 0.045$, which is less than 0.05). The null hypothesis (H_0) is therefore rejected. Care is needed in interpreting this result. Although the relationship is significant, the coefficient of determination is only about 0.020, so academic motivation accounts for roughly two percent of the variance in performance. The finding should be read as a real but small effect: more motivated learners tend to perform slightly better in literature, but motivation is far from a strong predictor of achievement in this cohort.

The magnitude is in line with the wider literature rather than an anomaly within it. A meta-analysis of self-determination theory research reports that motivation is consistently but modestly related to performance outcomes, with the competence need carrying much of the predictive weight (Howard et al., 2021), and experimental work on need-supportive task instruction likewise produces reliable but small gains in task performance (Mendoza et al., 2023). Read alongside Table 3, where perceived competence was the lowest-rated subcategory and the interpretive-skill items were the weakest of all, the weak coefficient in Table 6 is best understood not as evidence that motivation is unimportant but as evidence that motivation in this cohort is not being supported by the competence beliefs that would allow it to translate into achievement (Honicke et al., 2023).

Difference in the Level of Academic Performance When Grouped by Profile

The seventh problem tested whether academic performance in literature differs significantly when respondents are grouped by sex, age, and economic background. The Kruskal-Wallis H test was used, with the formula below, where N is the total sample, R_j is the sum of ranks in group j, and n_j is the number of respondents in group j. Where the omnibus test was significant, a pairwise post-hoc comparison was applied.

$$H = [12 / (N(N + 1))] \cdot \Sigma(R_j^2 / n_j) - 3(N + 1)$$

Table 7. Difference in the Level of Academic Performance When Grouped by Sex

Sex	Test Statistics (H)	p-value	Decision on Ho	Interpretation
Male	6.134	0.047	Reject Ho	Significant
Female				
Prefer not to say				

Note. Significant at $p < 0.05$. Statistical tool: Kruskal-Wallis H test.



Table 7.1 Pairwise Comparison Between Sex

Sex		Test Statistic	p-value	Interpretation
Male	Female	-15.335	0.063	Not Significant
	Prefer not to say	-55.711	0.058	Not Significant
Female	Prefer not to say	-40.376	0.167	Not Significant

Note. Significant at $p < 0.05$. Post-hoc pairwise comparison following a significant Kruskal-Wallis H test.

Table 8. Difference in the Level of Academic Performance When Grouped by Age

Age	Test Statistics (H)	p-value	Decision on Ho	Interpretation
16 years old and below	1.950	0.377	Fail to Reject Ho	Not Significant
17-18 years old				
19 years old and above				

Note. Significant at $p < 0.05$. Statistical tool: Kruskal-Wallis H test.

Table 9. Difference in the Level of Academic Performance When Grouped by Estimated Monthly Family Income (Economic Background)

Estimated Monthly Family Income (Economic Background)	Test Statistics (H)	p-value	Decision on Ho	Interpretation
Poor (below ₱13,873)	5.237	0.514	Fail to Reject Ho	Not Significant
Low income class but not poor (₱13,873 to ₱27,745)				
Lower-middle income class (₱27,746 to ₱55,491)				
Middle-middle income class (₱55,492 to ₱97,110)				
Upper-middle income class (₱97,111 to ₱166,475)				
Upper income class but not rich (₱166,476 to ₱277,459)				
Rich (₱277,460 and above)				

Note. Significant at $p < 0.05$. Statistical tool: Kruskal-Wallis H test.

Tables 7, 7.1, 8, and 9 test the third null hypothesis (H_{03}). For sex, the omnibus Kruskal-Wallis test was significant ($H = 6.134$, $p = 0.047$), so H_{03} is rejected for this variable. This significance must be read carefully. The associated effect size (epsilon squared of about 0.031) is small, and the pairwise comparisons in Table 7.1 show that no two sex groups differed significantly: male versus female (test statistic = -15.335, $p = 0.063$), male versus prefer not to say (test statistic = -55.711, $p = 0.058$), and female versus prefer not to say (test statistic = -40.376, $p = 0.167$), all with p-values greater than 0.05. This pattern, a significant overall test with

no significant pair, typically arises when the omnibus result is only marginally significant and is influenced by a very small group, here the four respondents who preferred not to disclose their sex. The practical conclusion is that the difference by sex, while statistically detectable overall, is weak and not reliably located in any specific comparison.

It is also worth noting the direction of the nominal difference. In this cohort male respondents recorded the higher mean (1.93) and female respondents the lower (1.73), which runs opposite to the small but persistent female advantage in reading that large-scale literacy assessments typically report (OECD, 2023). Given that every pairwise comparison was non-significant, the present data are too weak to treat either direction as established for this population, and no sex-specific claim should be drawn from them.

For age ($H = 1.950$, $p = 0.377$) and for economic background ($H = 5.237$, $p = 0.514$), the tests were not significant, and H_0 is not rejected for these variables. Academic performance in literature does not differ meaningfully by age bracket or by income class. The absence of an economic-background difference is notable given how strongly low-income the sample is. Within this cohort, being relatively poorer or relatively less poor made no reliable difference to literature performance. The most defensible reading is statistical rather than substantive: with 90.45 percent of respondents concentrated in the three lowest income classes, the restricted range of socioeconomic status leaves little variance for the test to detect, which is the standard explanation for attenuated socioeconomic effects in homogeneous samples (Liu et al., 2022; Philippine Statistics Authority, 2023). Taken together, H_0 is only partially and weakly rejected, on the basis of sex alone.

Read as a whole, the results of this chapter capture a single consistent pattern. Both independent variables sit comfortably in the High band at every level of analysis, from the overall means down to the individual statements, while the dependent variable sits in the Low band across every demographic group. The statistical tests confirm that the link between the two is either absent, in the case of technology-based learning, or weak, in the case of academic motivation. The item-level results locate the likely point of breakdown with some precision: the weakest statements in the entire instrument were those asking learners whether they could interpret complex literary themes, evaluate a text's significance, and identify its key ideas. The problem this cohort presents is therefore one of conversion rather than of access or willingness, and it is that conversion problem which the intervention proposed in Chapter 5 is designed to address.

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This chapter presents the summary of the study, the summary of findings, the conclusions drawn from those findings, and the recommendations, including a proposed intervention program derived from the results.

Summary of the Study

This study determined the relationship between technology-based learning, academic motivation, and academic performance in literature among 199 Grade 12 Academic Track learners of one of the public senior high schools in a school division of a component city in Northern Negros Occidental during School Year 2026-2027. It employed a descriptive-correlational design and a researcher-made, four-point Likert questionnaire covering technology-based learning (ease of use perception, usefulness, and collaborative engagement) and academic motivation (intrinsic motivation, perceived competence, and autonomy), together with the learners' self-reported grades in literature-related subjects. Frequency and percentage, weighted mean and standard deviation, the Spearman rank-order correlation, and the Kruskal-Wallis H test with Dunn's post-hoc test were used to analyze the data.

Summary of Findings

The salient findings of the study are as follows:

1. The respondents were predominantly female (52.76 percent), aged 17 to 18 years (67.34 percent), and drawn overwhelmingly from low-income households, with the three lowest income classes accounting for 90.45 percent of the sample.



2. The level of technology-based learning was High overall (mean = 2.85), with usefulness rated highest among its indicators.
3. The level of academic motivation was High overall (mean = 2.78), with intrinsic motivation rated highest and perceived competence rated lowest among its indicators.
4. The level of academic performance in literature was Low overall (weighted mean of about 1.81) and was Low to Very Low across every demographic group, with no consistent advantage for higher-income learners.
5. There was no significant relationship between technology-based learning and academic performance in literature ($r_s = 0.103$, $p = 0.150$).
6. There was a significant but weak positive relationship between academic motivation and academic performance in literature ($r_s = 0.142$, $p = 0.045$), accounting for about two percent of the variance in performance.
7. Academic performance differed significantly by sex at the omnibus level only ($H = 6.134$, $p = 0.047$), with a small effect and no significant pairwise difference; it did not differ significantly by age ($p = 0.377$) or by economic background ($p = 0.514$).

Conclusions

On the basis of the findings, the following conclusions are drawn.

First, the central conclusion of the study is that high technology-based learning and high academic motivation coexist with low academic performance in literature, and the connection between the two is weak. The learners in this cohort are neither disengaged nor deprived of classroom technology. They find digital tools useful and easy to use, they are intrinsically interested in literature, and they value autonomy in how they learn. Yet these favorable inputs are not translating into achievement. The problem this study uncovers is therefore not a problem of access or of willingness; it is a problem of conversion, that is, of turning engagement and motivation into demonstrated literary competence.

Second, Technology-based learning was not significantly associated with academic performance in literature in this setting. The absence of a significant relationship indicates that simply increasing the presence of digital tools, or the learners' comfort with them, cannot be expected to raise grades. This is consistent with the broader literature that treats the effect of educational technology as conditional rather than automatic (Bi et al., 2024; Haleem et al., 2022). The findings suggest that technology-based learning alone may not be strongly related to academic performance.

Third, academic motivation is the only variable significantly related to performance, but its weak effect, combined with the finding that perceived competence was the lowest-rated motivation indicator, points to where the conversion is breaking down. Learners want to succeed and are interested in the material, but they feel least confident in their own ability to analyze and interpret literary texts. This is coherent with Self-Determination Theory, in which competence is one of the three basic needs that sustain productive motivation (Howard et al., 2021); when the competence need is comparatively unmet, higher levels of motivation were associated with slightly higher academic performance.

Fourth, the uniformity of low performance across age and economic background indicates that the challenge is cohort-wide rather than confined to a disadvantaged subgroup. Because being relatively poorer within this low-income population did not produce significantly lower performance, the appropriate response is a whole-cohort instructional intervention rather than a narrowly targeted remedial program. The weak and non-locatable difference by sex does not warrant a sex-specific intervention.

Finally, these conclusions are bounded by the study's limitations: the data are self-reported and cross-sectional, they come from a single school and a single school year, the observed effects are weak, and several economic-



background groups were too small to interpret reliably. The conclusions describe association within this cohort and should not be read as establishing causation or as generalizable beyond this population without further study.

Recommendations

In light of the findings and conclusions, the following recommendations are offered.

Literature teachers should pair the already-strong use of classroom technology with explicit instruction in reading comprehension and literary analysis, so that digital engagement is directed toward the specific skills that grades measure. Because perceived competence was the weakest motivation indicator, teachers should build in frequent, low-stakes formative tasks that let learners experience success and thereby strengthen their confidence in interpreting texts.

Curriculum developers should not treat additional technology as an end in itself. The evidence here indicates that the return on further technology integration, absent a matching focus on analytical skill-building, is likely to be small. Curriculum planning should embed structured critical-reading routines within technology-mediated lessons.

School administrators should redirect part of the resources that might otherwise fund additional devices toward teacher development in technology-mediated literature instruction and formative assessment, since access is already adequate for this cohort while performance is not.

Grade 12 learners should be supported to use the digital tools they already find useful for deliberate practice in reading and analysis, rather than for passive consumption, and should be encouraged through structured feedback that builds their confidence in their own literary judgment.

Future researchers should test the conversion problem identified here using verified rather than self-reported grades, longitudinal or experimental designs, and larger multi-school samples, and should investigate the mediating role of perceived competence between motivation and performance.

Proposed Intervention Program

In response to the eighth problem, the following intervention program is proposed. Its guiding logic follows directly from the findings: the cohort already has high technology use and high motivation, so the program does not add more technology or attempt to raise interest. Instead, it targets the conversion of existing engagement and motivation into demonstrated literary competence, with particular attention to strengthening perceived competence.

The READ to RISE intervention was developed from the specific areas of weakness revealed by the study, particularly learners' perceived difficulty in interpreting literary themes, evaluating literary significance, and identifying key textual ideas. The intervention should therefore focus on guided literary analysis rather than increased technology exposure alone. Additionally, prior to implementation, the intervention should undergo expert validation. Its effectiveness should be established through pilot testing or a pretest-posttest evaluation design before wider adoption.

Program Title: *READ to RISE: A Technology-Mediated Literature Competence Program*

Table 10. Proposed Intervention Program (READ to RISE)

Focus Area	Objective and Strategy	Persons Involved	Success Indicator
Analytical Reading Routines	Build explicit close-reading and textual-analysis skills by embedding a weekly guided-analysis routine within existing	Literature teachers; department head	Measurable rise in quarterly literature grades and in analysis-task scores over one school year.



	technology-mediated literature lessons.		
Confidence and Competence	Raise perceived competence through frequent low-stakes formative tasks with immediate feedback, so learners repeatedly experience success in interpreting texts.	Literature teachers; guidance counselor	Increase in learners rating themselves confident in literary interpretation on a short pre and post survey.
Purposeful Technology Use	Redirect the digital tools learners already find useful toward deliberate practice (annotation, discussion, and self-assessment) rather than passive consumption.	Literature teachers; ICT coordinator	Documented use of digital tools for analysis and feedback in at least 80 percent of literature sessions.
Teacher Capacity	Train teachers in technology-mediated literature instruction and formative assessment through school-based learning-action-cell sessions.	School administrators; master teachers	Completion of training by all literature teachers and observed use of the strategies in class.
Monitoring and Review	Track cohort performance quarterly and adjust the program based on results, using verified grades where possible.	Administrators; research coordinator	Quarterly monitoring report and end-of-year evaluation of the program's effect on performance.

The program is deliberately whole-cohort in scope, consistent with the finding that low performance was general across age and economic background. Its success should be judged not by increased technology use or motivation, both of which are already high, but by a measurable improvement in academic performance in literature, which is the outcome the data show to be lacking.

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