Gestation to maturation: A framework for transforming Knowledge, Attitudes, and Practices (KAP) into a sustainable research culture in basic education

Marcel Edullantes Baril[1*], Rhoderick John S. Abellanosa[1]

[1]Sacred Heart School - Ateneo de Cebu, Cebu City, Philippines
[*]Corresponding author: marcel.baril@shs-adc.edu.ph

ARTICLE INFO

DOI:10.46223/HCMCOUJS.soci.en.16.13.5063.2026

Received: November 22nd, 2025

Revised: April 02nd, 2026

Accepted: April 13th, 2026

Keywords:

academic personnel; basic education research; Jesuit education; KAP Framework; research culture; teacher research competence

ABSTRACT

Developing a culture of research is becoming a need for basic education schools. To provide a concrete and actual case for this, the study surveys the knowledge, attitudes, and practices (KAP) in research of the academic personnel of Sacred Heart School-Ateneo de Cebu (SHS-AdC), a Jesuit basic education school in Cebu, Philippines. The study shows that the academic personnel's knowledge of research falls under the satisfactory level, while their attitude towards it reflects a positive perception of its usefulness, with mild anxiety and a neutral predisposition towards it, and their research practices are described as very good. A Mann-Whitney U-test revealed that academic personnel's graduate studies engagement significantly affects their knowledge in research ($p = 0.006$), but not their attitudes ($p = 0.172$) or practices ($p = 0.08$), although the latter nearly approached statistical significance. A separate Kruskal-Wallis test and Mann-Whitney U test indicated relatively uniform KAP levels across department or employment category ($p = 0.114$) and employment status ($p = 0.591$).

The study recommends the refinement and adaptation of the proposed strategic initiatives to support the continuous development of a strong research culture within the institution, and to address the identified needs in the academic personnel's knowledge, attitude, and practices in research.

1. Introduction

While research is often associated with higher education, the foundational spirit of human inquiry - curiosity, reflection, and a desire to understand - begins in basic education. Research in this context may take simpler forms, as is the case of action research. Regardless of the type and scope of investigation, the principles of inquiry and evidence-seeking are not exclusive to higher education.

In the last decade, much has been emphasized on the need for teaching in basic education to involve and include research, making it part of the core of the teaching-learning process. After all, empirical evidence suggests that teachers engaged in research are more inclined to reorient, apply ongoing observation, and apply new ideas to their teaching versus those who don't (Leuverink & Aarts, 2024). Resonating with this is the study of Günyel and Bilgivar (2023), which shows that teachers consider educational research in the fields of "Learning and Teaching Strategies", "Equal Opportunity and Opportunity," and "Family

Factor" as contributory to the academic development of students.

In the Philippine context, the emphasis on the importance of research in basic education institutions is aligned with the country's qualification framework, which references the Asian Quality Framework. Pushing for the necessity of an intensified research orientation even in basic education is no less than the United Nations' Sustainable Development Goals on Quality Education. Though not an explicit directive, the UN's SDGs, if taken seriously, not only invite but necessitate the cultivation of strong research-based and research-related skills even in the earlier years of basic education. Without research in the equation of teaching-learning, students won't in any way be equipped with skills that would innovate and ensure that education in the 21st century is not just transformative but socially responsive (United Nations, 2015). The Philippine Accrediting Association of Schools, Colleges and Universities (PAASCU) reinforces the standard with the inclusion of research (area 7) and research results (area 8) in its newly adopted accreditation tool.

In this light, research plays a crucial role in the continuous improvement of teaching practices, school systems, and learner outcomes. As Karagiorgi and Papanastasiou (2012) explain, engaging teachers in the research process helps position teaching as an evidence-based profession. Kapur (2018) adds that scientific methods of inquiry offer critical insights for educational planning, curriculum design, school management, and the understanding of learners. However, teachers cannot engage in what they are not prepared or empowered to do. Many basic education teachers report feeling underconfident or underqualified to conduct research (Onwuegbuzie et al., 2010), often recalling university research courses as overwhelming or intimidating (Lodico et al., 2004).

A teacher cannot effectively model or facilitate research-based learning without a sufficient grasp of research principles (knowledge), an openness to the value of inquiry (attitude), and meaningful engagement in the process (practice). Although expectations for basic education teachers differ from those in higher education, the attitude toward research should be open, curious, and supportive of professional growth rather than dismissive or antagonistic. The DepEd Basic Education Research Agenda serves as a guide for what is expected of schools and teachers in the area of research. It identifies priority areas and encourages all education stakeholders to engage in research, contextualised inquiry, and data-driven planning. In this sense, the teacher is not only a transmitter of knowledge but also a contributor to educational development through research.

Although the studies mentioned earlier are affirmed, but more empirical grounding is needed. It is not enough to emphasise the nexus between research and inquiry and a teacher's growth; this must be demonstrated using fresh evidence. The more data there are, the more we get to see the importance of developing or shaping a culture of research in basic education.

At the heart of these concerns lies the issue of KAP - Knowledge, Attitude, and Practice. This endeavor argues that by providing an actual case of the KAP of academic personnel of an institution, the theoretical points of related studies mentioned in the foregoing are given on a concrete basis. If shaping or developing a research culture in basic education is important, there is a need for continual self-evaluation and self-reflection by schools and their administrators.

In this study, particular focus is given to Sacred Heart School - Ateneo de Cebu, a Jesuit basic education school in Cebu, Philippines. At present, the school has started tracking research

engagements (e.g., studies conducted, presented, or published). Baseline data on KAP in research among the academic staff still has to be established. There is also a lack of systematic needs assessment involving administrators. This is largely because institutional research monitoring has traditionally been faculty-centred, with emphasis placed on academic outputs such as teaching-related studies and publications. As a result, administrators, whose main roles are often perceived as managerial or policy-oriented rather than research-driven, have not been formally evaluated in terms of their research competencies or support needs. Yet, they are vital in leading and sustaining a research- conducive environment, and staff members likewise play critical roles in supporting the institutional systems where research can flourish.

Finally, other than filling in the empirical and knowledge gaps in the discourse, this study provides groundwork for interventions for a competitive, mission-aligned, and socially responsive research culture. Such interventions are designed using a developmental framework that supports research endeavors from their gestation to maturation stages, that is, from their stages of initiation to implementation or institutionalization.

Statement of hypotheses

Based on the study objectives and the variables outlined, the following hypotheses were formulated:

Department

H0: There is no significant difference in the knowledge, attitude, and practices (KAP) in research among academic personnel across departments

H1: There is a significant difference in KAP in research among academic personnel across departments

Employment status

H0: There is no significant difference in KAP in research between probationary and tenured academic personnel

H1: There is a significant difference in KAP in research between probationary and tenured academic personnel

Graduate studies status

H0: There is no significant difference in KAP in research between academic personnel enrolled and not enrolled in graduate studies

H1: There is a significant difference in KAP in research between academic personnel enrolled and not enrolled in graduate studies

2. Theoretical basis

This study is anchored on two theoretical bases that provide a foundation for understanding the development of a research culture within an academic institution: the Componential Structure of Professionalism by Evans (2015) and the Gestation-Expansion-Maturation Theory by Olvido (2022).

Evans (2015) conceptualised professionalism as a multidimensional construct composed of behavioural, attitudinal, and intellectual components. Behavioural professionalism refers to the visible practices and actions that professionals undertake in

carrying out their responsibilities. Attitudinal professionalism pertains to the values, motivations, and evaluative stances that guide one's professional conduct, while intellectual professionalism highlights the role of knowledge, critical thinking, and analytical competence in shaping professional identity and practice.

Given the definitions, the dimensions or components (behavioural, attitudinal, and intellectual) are used as a basis for identifying the variables and thus the key areas for the study's inquiry. Applied to SHS-AdC academic personnel's research, the dimensions of professionalism are concretely measured in terms of knowledge (intellectual), attitudes (attitudinal), and practices (behavioral). To elaborate, behavioral professionalism can be seen in how faculty members engage in writing, presenting, or mentoring research; attitudinal professionalism reflects their openness to inquiry, willingness to collaborate, and commitment to scholarly growth; and intellectual professionalism is expressed through their ability to apply methodological rigour, analyze data critically, and situate research within educational practice.

By adopting Evans's (2015) componential structure, this study establishes a rigorous direction for its initial phase. This structure is instrumental not only in delineating the constituent areas of the institutional research culture but also in providing the necessary framework to contextualize and interpret the respondents' KAP data.

The tripartite components highlight a key proposition held by this study: that cultivating a research culture in a basic education institution requires more than just compliance with policies - it demands holistic professional growth where teachers embody the knowledge, attitudes, and practices that sustain scholarly work, which is what Evans elaborates as professionalism with a multidimensional construct.

Drawing upon the KAP baseline of SHS-AdC's academic personnel, this study interrogates its findings through the lens of Olvido's (2022) Gestation-Expansion-Maturation (GEM) theory. By incorporating this developmental framework, the study accounts for the evolutionary trajectory of institutional initiatives, moving beyond static data to address the dynamic nature of organizational change. Olvido's (2022) GEM proves particularly salient for navigating the 'nascent stage' of research programs, providing the structural discipline required to transform early-stage initiatives into sustainable institutional practices.

The gestation stage refers to the initial phase of conceptualisation and preparation, where ideas are generated, and foundations for implementation are laid out. Expansion is the phase of growth and dissemination, characterized by broader participation, adoption of initiatives, and increased institutional support. Maturation, on the other hand, signifies the stage where initiatives become institutionalized, integrated into organisational culture, and sustained as part of the school's identity.

For SHS-AdC, the GEM theory provides a useful lens to understand how research culture is seeded, nurtured, and institutionalised. At the same time, it can be the basis for the creation of a blueprint for an institutional program that would shape and strengthen an academic culture of research among teachers and staff. Olvido's (2022) Gestation-Expansion-Maturation (GEM) model enhances the Knowledge, Attitudes, and Practices (KAP) findings derived from Evans (2015) by transitioning the analysis from a static diagnostic to a dynamic developmental trajectory. While Evans provides the "what" (the current state of professional dimensions), Olvido (2022) provides the "how" and "when" (the institutional phase and required next steps).

The school's strategic initiatives, faculty training programs, and capacity-building workshops represent the gestation phase, while the gradual increase in teacher participation and production of research outputs illustrate the expansion phase. The long-term vision is to reach the maturation phase, where research is fully embedded in the culture of the institution and becomes a hallmark of its educational identity.

Moving beyond a mere descriptive analysis of KAP, this study synthesizes findings into a strategic 'path forward' through the application of Olvido's (2022) GEM. By integrating this framework, the discussion transcends individual data points to offer a more robust contribution to the discourse on research in basic education. Consequently, Olvido's (2022) GEM provides the structural rigor necessary to theorize a sustainable model for institutional research culture. The presentation of the findings, as well as the analysis that will be provided below, proceeds from this framework.

3. Methodology

The research used a quantitative-descriptive research design, which aims to describe and interpret the status, settings, conditions, or events (Mertler, 2014) of the academic personnel's KAP in the research of SHS-AdC. Using stratified sampling, it gathered 48 out of 67 academic personnel from the grade school, 40 out of 53 from junior high school, 24 out of 31 from senior high school, 24 out of 35 from the school administrators, and 15 out of 21 from academic non-teaching staff as the respondents of the study. The samples were computed using Slovin's formula to identify sufficient representativeness per department or personnel category. Three research instruments were utilized to answer the research objectives - first, a 40-item researcher-made test validated by experts in the fields of research, assessment, and educational management to assess their level of knowledge; second a completely adopted Revised Attitude Towards Research (R-ATR) Scale of Papanastasiou (2014) to assess their attitude; and third, a completely adopted Practices in Research survey questionnaire from the PAASCU's standards on research management, collaboration, and results which contains the ten standards on the promotion of research culture, provision of support, recognition, documentation, monitoring and assessment of research outputs and activities in an institution. Three experts in the fields of research, assessment, and educational management validated the content of the 40-item researcher-made knowledge test. An item analysis was also conducted for it, yielding a mean difficulty index of 0.69 and a mean discrimination index of 0.38, indicating generally acceptable item difficulty and good discriminatory power. Factor analyses were also conducted for all three instruments to examine the internal reliability of the items, and the Cronbach's Alpha coefficients were as follows: 0.827 for the 40-item researcher-made test, 0.755 for the R-ATR, and 0.929 for the Practices in Research survey questionnaire. This means that all three instruments demonstrated acceptable internal consistency. All 149 respondents answered the three instruments in one setting. Both the test and surveys were administered using Google Forms. Results reliability was ensured by proctoring and providing them with reasonable time to accomplish both assessments. Descriptive statistics were used to describe the research participants' knowledge and attitude towards research. A Kruskal-Wallis Test was conducted to test hypothesis one, while two Mann-Whitney U Tests were conducted to test hypotheses two and three.

To ensure the ethical soundness of the study, a certificate of ethics review, endorsements from the research office, and consent from the respondents were sought prior to the conduct of

the study. Guidelines on data storage and data sharing in accordance with the Data Privacy Act of 2012 (Republic Act No. 10173, 2012) were strictly followed. Collected data were kept confidential and deleted in observance of the ethical soundness of the research. The paper also declares the use of two AI tools - ConnectedPapers and Perplexity, in gathering and reviewing of literature and studies that are related to the subject being studied. All related literature and studies gathered through these AI tools were verified as correct and published in trusted and reputable journals.

4. Result and discussion

4.1. Participants' profile

Table 1 shows the summary of the participants' profile based on their department or category, status of their employment, and status of their completion or enrolment in graduate studies.

In terms of employment status, the data show a composition of relatively young or new teaching staff, with a little more than half of the participants (55.03%) on probationary status, while 44.97% are tenured. Notably, the senior high school faculty has the highest percentage of probationary members at 87.5%. In contrast, all members under the school administrator's category are tenured, as would be expected given the level of responsibility and stability associated with leadership positions.

In terms of graduate studies status, the data show that there is strong commitment to professional growth, with nearly 60% of the total participants having either completed or being currently enrolled in a graduate program. School administrators lead with the highest proportion of graduate studies engagement at 82.6%. This is followed by senior high school faculty (62.5%), academic non-teaching staff (62.5%), and junior high school faculty (60%). In contrast, the grade school faculty shows the lowest percentage, with only 43.75% having pursued or completed graduate education.

Table 1

Respondent's Profile based on Department, Employment Status, Graduate Studies Status

		Employment Status		Graduate Studies Status	
Department/ Category	**n**	**Probationary**	**Tenured**	**Completed or enrolled**	**Not enrolled**
Grade School Faculty	48	31 (64.58%)	17 (35.42%)	21 (43.75%)	27 (56.25%)
Junior High School Faculty	40	22 (55%)	18 (45%)	24 (60%)	16 (40%)
Senior High School Faculty	24	21 (87.5%)	3 (12.5%)	15 (62.25%)	9 (37.50%)

Department/ Category	n	Employment Status		Graduate Studies Status	
		Probationary	**Tenured**	**Completed or enrolled**	**Not enrolled**
School Administrators (Principals, Assistant Principals, Strand heads, SACs)	23	0 (0%)	23 (100%)	19 (82.6%)	4 (17.39%)
Academic Non-teaching Staff (Guidance Counselors, Character Prefects, Librarians)	14	8 (57.14%)	6 (42.86%)	9 (62.50%)	5 (37.50%)
Total		**82 (55.03%)**	**67 (44.97%)**	**88 (59.06%)**	**61 (40.94%)**

Note. Authors' own data collected through the Respondent Profile Form

4.2. SHS-AdC academic personnel's knowledge in research

Data on the faculty, administrators, and academic non-teaching staff's level of knowledge in research (see Table 2) show an overall Satisfactory level with strengths in two areas: Literature Review, and Problem Formulation. On the other hand, while the areas of Qualitative Research Methods, Quantitative Research Methods, Research Writing, and Ethics in Research all fell within the Satisfactory level, significant gaps are found in the competencies on Sampling Designs, Evaluation Design, Research Instrumentation, and Data Analysis.

It is worth noting that these academic personnel performed satisfactorily in the technical aspects but Did Not Meet Expectations to Fairly Satisfactory levels in the analytical aspects of research writing. This means that while our academic personnel possess adequate foundational skills in the technical aspects, or with the aid of advanced tools, including statistical software and generative artificial intelligence used as a source-search assistant, grammar checker, and more (Behera et al., 2023; Sun, 2024), they still face greater challenges in higher-order analytical tasks that demand methodological rigor and critical thinking for data analysis. This is in congruence with the findings of Tumiran (2024), wherein he identified that most novice researchers encounter confusion in selecting appropriate sampling methods, particularly between experimental and social research contexts, and often struggle to differentiate between normality tests and validity/reliability tests, as well as between parametric and non-parametric tests. Tindowen and Baquiaran (2024) have also found that data analysis and interpretation are among the top three research areas that need training priorities for basic education teachers, alongside digital tools in research and research design/methods.

These challenges need to be addressed because persistent confusion in technical research areas undermines the rigor and overall quality of research outputs. When researchers are unclear about methodological choices, the risk of misaligned research designs, inappropriate

sampling, and incorrect statistical applications increases, which compromises the validity and reliability of findings (Creswell & Creswell, 2017). Furthermore, poor handling of data analysis and evaluation design may lead to superficial interpretations or erroneous conclusions, thereby diminishing the credibility and usefulness of the research (Punch & Oancea, 2014). Thus, strengthening training in these technical competencies is not only a matter of skill development but also essential for ensuring that research generated within the institution can inform practice and policy in a trustworthy and meaningful way.

Table 2

SHS-AdC Academic Personnels' Level of Knowledge in Research

	Mean	SD	Transmuted Grade	Description
Literature Review	3.27	0.893	88	Very Satisfactory
Problem Formulation	2.35	0.695	86	Very Satisfactory
Research Instrumentation	2.60	1.045	78	Fairly Satisfactory
Sampling Design	2.21	1.047	73	Did Not Meet Expectations
Evaluation Design	2.57	1.026	77	Fairly Satisfactory
Qualitative Research Methods	2.93	1.045	83	Satisfactory
Quantitative Research Methods	2.96	1.089	83	Satisfactory
Data Analysis	3.71	1.569	76	Fairly Satisfactory
Research Writing	2.89	0.944	82	Satisfactory
Ethics in Research	2.13	1.183	81	Satisfactory
Overall Level	27.86	6.849	80	Satisfactory

Note.

Grade	Description
90 - 100	Outstanding
85 - 89	Very Satisfactory
80 - 84	Satisfactory
75 - 79	Fairly Satisfactory
Below 75	Did Not Meet Expectations

Data were collected by the authors using the Research Knowledge Test and analyzed using jamovi version 2.6. Grade descriptors were adapted from the Department of Education (2015)

4.3. SHS-AdC academic personnel's attitude towards research

Data on the faculty, administrators, and academic non-teaching staff's attitude towards research (see Table 3) show that they perceived research as useful, however, there exist a mild anxiety level, and a neutral predisposition towards it. This means that they have recognized the usefulness of research results in carrying out their mission in the academe, although a bit anxious about it due to its demands and technicalities. Notably, they don't

have a collective positive or negative predisposition towards it, which may have been affecting their research engagement.

Multiple studies support of these findings, such as teachers' attribution of their research anxiety to the tedious process of completing action research vis-à-vis the heavy workload in basic education (Saboya, 2024), and its correlation with low self-efficacy and a less positive attitude towards research (Natividad et al., 2019). In addition, Taruc (2016) found that the absence of positive disposition among academic personnel in basic education institutions is primarily because of their lack of developing research competencies, which can lead to frustration a negative disposition toward research. However, Gasper et al. (2019) argued that a neutral mindset is the absence of negativity, allowing for more advancement towards positivity. This neutral predisposition towards research could be filled with a positive attitude when factors affecting it are addressed. As research engagements primarily influence the development of research culture in basic education, it is important for the institution to pay attention to these factors that caused the "not so favorable" attitude of its academic personnel towards research.

Table 3

SHS-AdC Academic Personnel's Attitude towards Research

	Median	SD	Description
Results Usefulness	6.00	1.03	Agree
Anxiety	5.00	1.10	Somewhat Agree
Positive Research Predisposition	4.00	1.19	Neutral

Note. Authors' own data collected using the Research Attitude Toward Research (R-ATR) Scale and analyzed using Jamovi version 2.6 statistical software

4.4. SHS-AdC academic personnel's practices in research

Data on the faculty, administrators, and academic non-teaching staff's practices towards research show there is a strong consensus among the academic personnel that the PAASCU criteria have been effectively implemented by the school, such as the promotion of research culture, institutional research support, utilization of school resources, and recognition of research outputs, among others (see Table 4). Capulso et al. (2024) highlighted that leadership, which prioritizes research, allocates resources, and nurtures a culture of research excellence, has significant effects. In addition, institutional support such as research infrastructure and funding opportunities like grants and incentives empowers educators to engage effectively in research activities. They also emphasized the impact of leadership and mentorship, which are vital in providing guidance and support by leaders and mentors in elevating research capabilities (Capulso et al., 2024). These findings were in consonance with the empirical model of Torrentira (2021), which talks about the three dimensions of research culture: enhancement of knowledge and skills training and development and resources; use of incentives and personal and professional opportunities; and integration of research into the school routine. In other words, the approach to having a "very good" practice in research is systematic and should be fueled by effective leadership and institutional support.

Table 4

SHS-AdC Academic Personnel's Practices in Research Based on the Self-Report Survey of PAASCU Standards

	Median	SD	Description
Promotion of Research Culture	4.00	0.905	Very Good
Institutional Research Support	4.00	0.825	Very Good
Integration of Research in Academics	4.00	0.868	Very Good
Assessment of Research Activities	4.00	0.858	Very Good
Utilization of School Resources for Research	4.00	0.976	Very Good
Recognition of Personnel Research Outputs	5.00	0.802	Excellent
Ethics and Intellectual Property Compliance	4.00	0.852	Very Good
Monitoring of Learners' Research Development	4.00	0.898	Very Good
Documentation, Monitoring, and Assessment of Research Outputs	4.00	0.851	Very Good
Documentation, Monitoring, and Assessment of Creative Works and Intellectual Properties	4.00	0.950	Very Good

Note. Authors' own data collected using the Practices in Research Questionnaire and analyzed using Jamovi version 2.6 statistical software

But in terms of actual engagements, only 60% were engaged into research writing, 36% in presentation to conferences, and 20% in dissemination through publication (see Table 5). It is worth noting that Senior high faculty members earned the highest mean in Research Knowledge test, however, such capacity to write should be translated to actual outputs. Interestingly, the grade school faculty earned the lowest mean, but are the most engaged in writing, presentation, and publication.

In the context of Sacred Heart School-Ateneo de Cebu, the data from both the Faculty and Staff Development Office (FSDO) and the Research and Impact Assessment Office (RIAO) highlight the sustained engagement of academic personnel in graduate studies. In school year 2025 - 2026, the FSDO approved 58 personnel for further studies: six administrators, five staff, and 47 faculty members, with 19 from the Grade School Department, 19 from the Junior High School Department, and nine from the Senior High School Department (Sacred Heart School-Ateneo de Cebu. Faculty and Staff Development Office, 2025). This figure is almost the same as in school year 2024 - 2025, when 56 personnel pursued graduate studies (Sacred Heart School-Ateneo de Cebu. Faculty and Staff Development Office, 2024), most of whom are the

same individuals. When compared with the total of 207 academic personnel, these numbers show that more or less one-fourth of the school's workforce is actively pursuing graduate studies, with balanced participation across the basic education departments. Furthermore, the RIAO's record of 50 ongoing graduate studies as of November 2024 (Sacred Heart School-Ateneo de Cebu. Research and Impact Assessment Office, 2025) emphasizes that the institution not only approves but also monitors these initiatives to strengthen research utilization.

Table 5

SHS-AdC Academic Personnel's Engagements in Research Writing, Presentation, and Publication

	Frequency	**Percentage**
Engaged in research writing	90	60.4%
Engaged in research presentation	54	36.2%
Engaged in research publication	30	20.1%

Note. Authors' own data collected using the Research Inventory Form

4.5. Department, employment status, and graduate studies profile comparison of SHS-AdC academic personnel's KAP in research

Research competence is a must-have competence for academic personnel in 21st century education. One potential pathway to strengthen research capacity is through graduate studies, which offer structured training in research methodology, critical thinking, and academic writing. Three inferential statistics through Kruskal-Wallis and Mann-Whitney U tests, were conducted to compare the profile of SHS-AdC academic personnel in terms of the department they belong to, employment status, and graduate studies status. These non-parametric tests were used since the data failed to meet the normal distribution assumption (Kolmogorov Smirnov test, $p < 0.001$).

Results indicated no statistically significant differences in research KAP among academic personnel in terms of the department they belong to ($p > 0.05$), as well as in terms of employment status, whether they are probationary or tenured (p-value = 0.591 for knowledge, p-value = 0.737 for attitude, and p-value = 0.285 for practices). However, as shown in Table 6, their graduate studies status has a significant effect on research knowledge (p-value = 0.006). This means that being enrolled in or having completed graduate studies is associated with higher research knowledge, regardless of whether one is tenured or probationary. Additionally, the p-value for practices in research almost reached the threshold of 0.05 (p-value = 0.08). This suggests that academic personnel pursuing graduate studies are, to some extent, more engaged in research.

These findings are supported by the studies of Tamban and Maningas (2020), and Abella et al. (2024) that educational attainment is a factor that significantly affects research competence. They also in agreement that the length of teaching experience, and the rank or position of the teachers do not significantly affect their research knowledge.

Table 6

Comparison of KAP in Research between Academic Personnel Who Have Completed or are Enrolled and Not Enrolled in Graduate Studies

	Mann-Whitney U-Test		Interpretation
	Statistic	p-value	
Knowledge of Research	1660	**0.006**	**There is a significant difference**
Attitude towards Research	1967	0.172	No significant difference
Practices in Research	1880	0.080	No significant difference

Note. H_a μ Completed or enrolled in a graduate degree program, > μ; Not enrolled in a graduate program. Authors' own data; statistical analyses were performed using Jamovi version 2.6

4.6. Insights from the KAP

The foregoing presentation provides the details of SHS-AdC academic personnel's KAP in research. It is important, however, not to be lost in the process of interpretation, and this can be accomplished by highlighting the necessity of a unified reading of the institution's research landscape. This means that ultimately, knowledge, attitudes, and practices are not just variables that are measured for the sake of research. Above all, they are the real and actual activities that constitute what researchers do. Whatever knowledge of research there is, affects or even determines the attitudes and practices, and the same goes for the next variable or element in relation to the others.

Any effort or attempt to improve one area, e.g., attitudes, requires that something must be done also with the others. Practice cannot be improved if knowledge is insufficient or absent, and if the attitude is not disposed to or open to research engagement in whatever form or type. In the end, there is a need for a unified approach towards developing or shaping a research culture. This requires the selection of an appropriate framework and a realistic identification of assumptions as preconditions to any activity or project. This point brings the discussion to the study's proposed Strategic Initiative (S.I.) for the development of a research culture.

4.7. Strategic initiatives to develop a culture of research in SHS-AdC

In this section, the researchers proposed strategic initiatives based on the KAP assessment presented in the previous sections. The Gestation-Expansion-Maturation theory of Olvido (2022) is used as the framework of these strategic initiatives. As defined by the proponent, the gestation phase refers to setting up what would serve as the foundation of the institution's research culture, such as capability building, allocating budget, conducting research, and writing manuscripts; while the expansion phase is when an institution reaches a certain level of stability and a steady increase in quality research activity and output; on the other hand, the maturation phase is reached when an institution consistently takes on research activities and produces quality outputs, and it reaches a period of the establishment of its standing in the academic community (Olvido, 2022).

The findings discussed in the previous sections of this paper revealed that, in terms of the academic personnel's knowledge, attitude, and practices, Sacred Heart School-Ateneo de Cebu has made strategic priorities to establish the foundation of a strong research culture. Its effort to capacitate and allocate budget for research production and incentivization through the Research Grant and Incentive program provided the most essential support its employees need. In addition, the creation of its Research and Impact Assessment Office (RIAO), as well as the establishment of its Institutional Research Council (IRC) and Research Ethics Committee (REC), has solidified its commitment to establishing a robust foundation of research culture.

During its gestation phase, the teachers, administrators, and academic non-teaching staff have gradually responded to the call for quality education through research and innovation. This is shown in their satisfactory knowledge level and high level of perceived practices in research, as well as a moderate level of engagement in research writing, presentation, and publication despite the not-so-positive attitude towards research.

However, the school's research culture has not yet developed objectively into the next phase, which is the Expansion phase. This phase is characterised by nurturing of existing policies and programs, building and collaborating teams, and attaining grants, which happen side by side with dissemination efforts such as paper presentations and article publications. The number of academic personnel engaged in research dissemination is too few and does not represent a culture yet. There is a need for a collective response as an institution to establish continuous development in research engagement and actual utilisation of research outputs. This paper proposes strategic initiatives (Table 7) based on the Gestation-Expansion-Maturation theory of Olvido (2022). This is to ensure that the school's research culture will continuously develop in response to the KAP assessment presented in the previous sections.

The gestation phase focuses on establishing the foundational competencies and structures necessary for developing a sustainable research culture among academic personnel. During this phase, the institution will enhance faculty knowledge and skills by continuing and improving capacity enhancement sessions with greater emphasis on analytical areas where academic personnel demonstrated lower attainment, particularly in research methodology and data analysis.

To fortify the institutional research culture, the school will maintain its commitment to specialized training in core competencies, including research writing, database navigation, and Artificial Intelligence (AI) literacy. These initiatives are not merely supplementary; they are critical gestational interventions designed to elevate the faculty's KAP profile. By systematically addressing research-related anxiety and enhancing technical proficiency, the institution aims to transition from a state of nascent inquiry to one of robust, ethically grounded, and effective research practice.

To strengthen research engagement, the institution will sustain the research grant program and incentive system (RGI) that support research writing, presentation, and publication, thereby encouraging increased participation and improved quality of research outputs. Furthermore, clear research priority areas aligned with the school's research agenda will be established through collaboration with relevant stakeholders. The process will include the crafting, dissemination, and periodic evaluation of priority areas, resulting in clear guidelines and policies that will guide research initiatives across departments and offices.

The expansion phase focuses on strengthening institutional systems and increasing faculty participation in meaningful and impactful research activities. During this phase, the institution will implement a research utilization matrix or mechanism that systematically links research outputs to instructional improvement, institutional decision-making, and policy development. This mechanism will be developed and periodically evaluated in collaboration with relevant stakeholders to ensure that research findings are effectively translated into practice. The institution will also implement a research mentoring program that pairs novice researchers with intermediate or expert researchers in various disciplines to strengthen research competencies and increase participation in classroom-based and educational research aligned with institutional priority areas.

Additionally, structured mentoring, regular consultations, and guided research development will support academic personnel throughout the research process. In addition, the institution will develop a research financial management plan that provides clear and strategic allocation of resources according to research priorities. Collaboration with stakeholders and potential sponsors will be strengthened to secure additional funding and support for research and research-related activities. These initiatives are expected to result in a well-established research support system and a steady increase in both the quantity and quality of research outputs.

The maturation phase focuses on institutionalizing research practices and ensuring the long-term sustainability and societal impact of research initiatives. During this phase, the institution will consistently produce high-quality research outputs that are responsive to the needs of improving educational practices and informing institutional policymaking. Regular research activities emphasizing methodological rigor and relevance will be conducted, supported by periodic monitoring and evaluation to ensure alignment with institutional priorities and quality standards.

Further, the institution will also strengthen collaboration with stakeholders in order to translate research findings into evidence-based decision-making, community initiatives, and policy development that address both local and broader societal needs. To sustain research initiatives financially, the institution will pursue long-term funding opportunities through partnerships, sponsorships, and income-generating initiatives. One major initiative will be the establishment of an institutional research journal, which may be published online and/or in print, to serve as a platform for disseminating research outputs while also generating income to support research activities. External research grants and formal partnerships with funding organizations will also be pursued to ensure the long-term viability of the institution's research program.

Table 7

Proposed Strategic Initiatives for the Development of a Research Culture in SHS-AdC based on KAP Assessment

Phases	Strategic objectives	Proposed action plan	Success indicators
Gestation	To enhance faculty's knowledge and skills and equip them with necessary tools for research	To continue and improve the capacity enhancement sessions with more emphasis on the analytical topics that the academic personnel least attained such as methodology, and data analysis. To continue the funding of seminars and trainings in relation to skills development, utilization of available online databases, research tools, and AI literacy	Increased level of knowledge and skills in research (From Fairly/ Satisfactory to Above Satisfactory); Enhanced attitude towards research; and (Less Anxious, Positive Predisposition) Enhanced utilization of provided databases and research tools
	To enhance the level of engagement in impactful research writing, presentation, and publication	To sustain the research grant and incentives for research writing, presentation and publication	Increased quantity and quality of research outputs, presentations, publication
	To establish clear priority areas per department/ office that are aligned with the school's research agenda program	To collaborate with the different stakeholders in the crafting, disseminating, and evaluation of the priority areas	Active involvement of stakeholders in the crafting, disseminating, and evaluation of the priority areas Completed and disseminated program, guidelines and policies
Expansion	To implement a research utilization matrix/ mechanism, and conduct periodic monitoring and evaluation	To collaborate with involved stakeholders in the implementation and periodic evaluation of a research utilisation matrix/ mechanism	A well-crafted and monitored research utilization matrix/ mechanism

Phases	Strategic objectives	Proposed action plan	Success indicators
	To empower more academic personnels to conduct classroom-based/ educational research based on the priority areas of the institution as its niche	To design a research mentoring program between Novice and Intermediate or Expert researchers in different areas or field	A steady increase in quality research activities and outputs
	To create a financial management plan for clear allocation based on research initiative priorities	To strengthen collaboration with stakeholders for research funding and sponsorship	A well-crafted financial management plan for research and research-related activities
	To consistently produce quality research outputs that are responsive to the needs of enhancing practice and policymaking	Initiate consistent research activities that emphasize rigor and relevance to the need of the community. Periodic monitoring and evaluation of alignment and quality assurance	Rigorous and responsive research outputs
Maturation	To enhance life experiences through research that responds to national and global needs	Collaborate with stakeholders to carry out informed decision-making and policymaking.	Community initiatives and policies anchored in research findings
	To sustain long-term financial viability through sponsorships and income-generating initiatives	Establish a publication journal for income-generating initiatives	MOA with partner stakeholders Established online and/ or printed publication journal External grant

Note. Developed by the authors based on the Knowledge, Attitude, and Practices (KAP) assessment and the Gestation-Expansion-Maturation Theory

5. Conclusions & recommendations

21st-century education is described as evidence-based, data-driven, and critical. These words are no less what research is all about. Sadly, there remains the misconception that basic education does not have enough space for research. It is equally sad that this view is still held by some people, teachers in particular, despite the many changes that have happened in the educational landscape vis-à-vis the challenges posed by technological advancements particularly A.I.

If basic education is to be true to its purpose of providing the fundamentals and foundations of education, it must serve as the very provider of the elements of learning. In other words, education today is inconceivable without research. Teachers cannot teach students inquiry if they themselves don't have not only actual but also the very habit of doing intelligent investigations of social and natural phenomena. Teachers cannot be genuine sharers of critical thinking if all they prefer is settling with 'canned' or 'prepackaged' knowledge that is readily available or digestible in and from textbooks. While it is true, to some extent, that basic education teachers cannot spend most of their time doing research in the same way as their higher education counterparts do, it is equally true that they can sharpen their skills and make teaching-learning meaningful by researching some of the concerns themselves and even finding or proposing solutions for them.

The problem sometimes is the unquestioned presumption that basic education teachers are not ready, not capable, or not interested in research. This is not entirely correct. Based on the data that this study has gathered, the academic personnel of SHS-AdC have a satisfactory level in terms of knowledge in research. Moreover, their attitude towards research reflects a positive perception of its usefulness, albeit with mild anxiety and a neutral predisposition toward research. Meanwhile, their research practices are described as very good. A Mann-Whitney U-test revealed a significant difference ($p < 0.006$) in the academic personnel's knowledge of research based on their graduate studies status, indicating that those who are engaged in graduate studies are more knowledgeable in research. The academic personnel's current KAP provides evidence that the research culture at Sacred Heart School-Ateneo de Cebu is beginning to develop and is presently in its gestation phase. If this is true in SHS-AdC, then there is a probability, subject to validation, that other basic education institutions share the same situation or experience.

The following recommendations are made to support the continuous development of a strong research culture within the institution, and to address the identified needs in the academic personnel's knowledge, attitude, and practices in research:

- Refine and adapt the proposed strategic initiatives based on the current assessment of the academic personnel's KAP in research.
- Continue the institutional support for academic personnel pursuing graduate studies;
- Sustain and strengthen the school's strong support for academic personnel in their research engagements to further enhance their knowledge of, attitude toward, and practice of research;
- Strengthen the research mentoring initiatives and sustain the grant and incentivization of academic personnel's research outputs;
- Conduct a qualitative version of the study to explore the academic personnel's in-depth experiences and perspectives that may not have been captured through quantitative data; and
- Establish a monitoring and evaluation mechanism to periodically assess the progress of research culture development within the institution and to ensure that interventions and strategies remain responsive to the evolving needs of the academic personnel.

SCIENTIFIC CONTRIBUTION

The manuscript clearly identifies a research gap; the manuscript extends or refines existing theories; the manuscript introduces or improves research methods; the manuscript provides new datasets or empirical evidence; the manuscript presents statistically and practically significant findings; the manuscript offers policy/managerial/technological implications; the manuscript opens new directions for further research.

AUTHOR CONTRIBUTIONS

CRediT: **Marcel Edullantes Baril**: Conceptualization, Methodology, Software, Validation, Formal Analysis, Investigation, Resources, Data Curation, Writing - Original Draft, Writing - Review & Editing; **Rhoderick John S. Abellanosa**: Conceptualization, Writing - Review & Editing.

ACKNOWLEDGMENTS

We gratefully acknowledge the Sacred Heart School-Ateneo de Cebu administrators, faculty, and staff, Research Office, Faculty and Staff Development Office, Institutional Research Council, and Research Ethics Committee that supported this research through the research grant, scientific review process, and voluntary participation that made this study possible.

FUNDING

We declare that this research was funded by Sacred Heart School-Ateneo de Cebu under the Light Program of the Faculty and Staff Development Office.

NO CONFLICT OF INTEREST STATEMENT

We hereby declare that no conflict of interest exists regarding the research, authorship, or publication of this manuscript.

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