

Developing Research Skills in Criminology Students Through Interdisciplinary Approaches

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Abstract. This study examines the effect of interdisciplinary approaches on the development of research skills among criminology students at St. Francis Xavier College. Recognizing the critical need for research competence in criminology, this study examines how integrating insights from various disciplines, such as law, psychology, and sociology, enhances students' abilities to formulate research questions, design methodologies, and analyze data. Utilizing a quantitative, descriptive-correlational research design, data were collected from 245 criminology students at St. Francis Xavier College through a structured survey questionnaire. Findings indicate that interdisciplinary approaches, particularly curriculum integration, effective teaching strategies, and student engagement, significantly influence the development of research skills. Results show very high levels of both interdisciplinary approaches and research skills, with strong positive correlations between the two variables. Notably, student engagement was found to have the most substantial impact on research attitude and confidence. The study underscores the importance of adopting interdisciplinary frameworks in criminology education to foster critical thinking and evidence-based practice. Recommendations include enhancing curriculum design to reflect interdisciplinary connections, employing interactive teaching strategies, and promoting student engagement through collaborative research activities. This research contributes to the understanding of how interdisciplinary learning can prepare criminology students for effective research and professional practice, aligning with the goals of quality education and sustainable development.

Keywords: Research skills development; Interdisciplinary approaches

1.0 Introduction

The demand for criminology graduates with robust research capabilities has increased substantially in recent years, driven by the growing complexity of crime and the shift toward evidence-based practices in the criminal justice system. This rising demand underscores the importance of equipping students with the ability to conduct methodologically sound and practically relevant research. According to Libradilla, Dacera, and Biadog (2023), a persistent gap exists between theoretical understanding and applied research skills among criminology students, limiting their effectiveness in addressing real-world issues. This is compounded by traditional instructional models that isolate criminology from other disciplines, preventing students from acquiring the broader analytical tools necessary for complex problem-solving.

To bridge this gap, interdisciplinary approaches – integrating insights from fields such as psychology, sociology,

public administration, and law—are increasingly recognized as essential in criminology education. Stockdale, Sweeney, and McCluskey Dean (2021) argued that such approaches, particularly those rooted in critical pedagogy and intersectionality, enhance student engagement, analytical thinking, and research literacy. Likewise, Teixeira, Melo, and Amaral (2023) emphasized that integrating legal, scientific, and criminological frameworks in undergraduate curricula fosters a more comprehensive understanding of forensic investigation and reflective practice. These studies highlight the positive impact of interdisciplinary strategies in developing students' research competencies.

However, much of the existing research focuses on graduate-level programs or institutional research settings, leaving a noticeable gap in understanding how interdisciplinary pedagogy affects undergraduate criminology students. Most studies do not directly assess how these strategies influence students' development of research skills such as question formulation, data collection, and interpretation in applied social science settings. As noted by Santos et al. (2022), there remains a need to explore how such approaches can be adapted and assessed within undergraduate criminology instruction to promote research proficiency.

This study addresses that gap by examining the relationship between interdisciplinary approaches and research skill development among criminology students. Specifically, it aims to assess whether strategies such as curriculum integration, student engagement, and varied teaching methods enhance students' capacity to undertake meaningful research. In doing so, the study contributes to evidence-based educational reforms that align criminology education with the analytical demands of modern criminal justice practice (Pham & Tanner, 2022).

2.0 Methodology

2.1 Research Design

This study adopted a quantitative, descriptive-correlational research design, which is well-suited for examining the relationships between variables without exerting experimental control. Descriptive research enables the systematic and factual portrayal of characteristics within a defined population, whereas correlational research focuses on identifying and analyzing statistical associations between variables (Miksza & Hash, 2023). In this study, the design enabled the researcher to explore how interdisciplinary learning approaches influence the development of research skills among criminology students at St. Francis Xavier College. As supported by Creswell and Creswell (2018), this approach is practical in collecting numeric data and applying statistical techniques to uncover patterns, trends, and potential predictive relationships among variables in social science contexts.

2.2 Research Participants

The participants in the study were selected from a population of 680 criminology students enrolled at St. Francis Xavier College during the second semester of the 2024–2025 academic year. Using the Raosoft Sample Size Calculator, and setting a 95% confidence level, 5% margin of error, and 50% response distribution, the recommended sample size was calculated to be 245 respondents. A stratified random sampling method was employed to ensure that all year levels (first to fourth year) were proportionally represented. Within each year level, simple random sampling was used to select individual respondents, ensuring that each student had an equal chance of inclusion.

The inclusion criteria required that participants be currently enrolled criminology students who had completed at least one semester and had exposure to interdisciplinary courses or research-related subjects. Students who did not meet these conditions were excluded from the study. This sampling strategy ensured a balanced and diverse representation of experiences related to interdisciplinary learning and research development across the criminology program.

2.3 Research Instrument

The study adapted and modified standardized survey instruments from established scholars to assess the Interdisciplinary Approach and Research Skills of Criminology students. The Interdisciplinary Approach was measured using a revised version of the Interdisciplinary Education Perception Scale (IEPS) developed by McFadyen, Maclaren, and Webster (2009). The original scale was modified to fit the criminology context, with a particular emphasis on integrating knowledge from law enforcement, forensic science, sociology, and legal

studies. The revised instrument consisted of 10 items and demonstrated a high level of internal consistency with Cronbach's Alpha of 0.876.

To measure research skills, the study adapted the Research Self-Efficacy Scale by Brancolini and Kennedy (2017). The original items were tailored to reflect competencies relevant to criminology students, such as problem formulation, literature review, methodological design, data analysis, and academic writing. The revised 12-item scale showed strong reliability, with a Cronbach's Alpha of 0.891. Both instruments were evaluated by a panel of experts in criminology and educational research to ensure content validity, contextual appropriateness, and clarity of expression. Pilot testing was conducted among a group of criminology students who were not included in the actual sample. Feedback from the pilot test affirmed the clarity and applicability of the revised instruments. All items were rated using a five-point Likert scale ranging from 5 (strongly agree) to 1 (strongly disagree).

2.4 Data Gathering Procedure

Before administering the survey, the researcher obtained ethical clearance from the St. Francis Xavier College Ethics Review Committee and secured formal approval from the Office of the Dean of the College. Coordination with instructors was made to distribute and collect questionnaires during scheduled class periods. The purpose of the study, the voluntary nature of participation, and the right to withdraw at any point without penalty were clearly explained to all participants. Informed consent was obtained prior to the distribution of the questionnaires. Survey administration was conducted manually, and participants were instructed not to include any personally identifiable information. Upon collection, all responses were checked for completeness, encoded into a spreadsheet, and screened for outliers or inconsistencies. All hardcopy forms were securely stored and later disposed of properly. Only the researcher had access to the data, and it was used strictly for academic purposes.

2.5 Data Analysis

The statistical analysis was conducted using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics, specifically the mean, were used to determine the levels of interdisciplinary approaches and research skill development among criminology students. To determine relationships between variables, the Pearson Product-Moment Correlation Coefficient (r) was employed, which assessed the strength and direction of the associations. In addition, multiple regression analysis was used to examine the predictive power of interdisciplinary approaches—such as curriculum integration, collaborative learning, and exposure to multi-disciplinary subjects—on students' research skill development. Before running the regression, assumptions such as normality, linearity, homoscedasticity, and multicollinearity were tested to ensure that the statistical results would be valid and reliable.

2.6 Ethical Considerations

The research adhered to strict ethical guidelines as approved by the St. Francis Xavier College Ethics Review Committee. Participation in the study was completely voluntary. Prior to administering the survey, the researcher explained the study's objectives, data privacy measures, and the expected duration of participation. Respondents were assured of their right to decline or withdraw without any academic consequences. Informed consent was obtained in writing, and no personally identifiable information was collected. The researcher ensured that data were handled with the highest level of confidentiality—stored securely, analyzed only by the researcher, and reported in aggregate form. Any hardcopy survey forms were properly destroyed after data encoding through secure shredding. The study posed no foreseeable risks to the participants and involved only completing a self-report questionnaire. While no monetary compensation was provided, tokens of appreciation and a certificate of acknowledgment were presented to the Criminology Department and participating classes. The overarching goal of the study was to promote instructional improvement and academic growth by utilizing data-driven educational insights.

3.0 Results and Discussion

3.1. Perceived Interdisciplinary Approaches

Table 1 presents the data regarding the level of interdisciplinary approaches.

Table 1. Level of Interdisciplinary Approaches			
Indicators	Mean	SD	Descriptive Level
Curriculum Integration	4.66	0.872	Very High
Teaching Strategies	4.21	0.767	Very High
Student Engagement	4.34	0.738	Very High
Overall	4.40	0.792	Very High

The results in Table 1 reveal that the level of interdisciplinary approaches in criminology education is perceived to be very high across all measured variables. Curriculum Integration received the highest rating with a mean score of 4.66 and a standard deviation of 0.872, indicating that learning content is effectively connected across subject areas. Teaching Strategies followed with a mean of 4.21 and a standard deviation of 0.767, suggesting the frequent use of varied instructional methods that support interdisciplinary learning. Student Engagement also ranked very high, with a mean of 4.34 and a standard deviation of 0.738, reflecting active participation and interest among students in interdisciplinary activities. The overall mean score of 4.40 supports the interpretation that interdisciplinary approaches are successfully embedded in the educational experience of criminology students. These findings align with Mahgoub (2018), who noted that interdisciplinary strategies enhance student engagement and deepen content understanding across disciplines. More recently, Zhang et al. (2025) conducted a case study on interdisciplinary thematic learning, demonstrating that learning environments centered on real-world problems significantly foster students' problem-solving ability, critical thinking, collaboration, and creativity—even within a non-criminology context. This supports the interpretation that a structured, interdisciplinary curriculum can have a profound impact on student motivation and cognitive engagement.

3.2. Perceived Research Skill Development

Table 2 depicts the level of research skill development.

Table 2. Level of Research Skill Development			
Indicators	Mean	SD	Descriptive Level
Research Knowledge	4.21	0.772	Very High
Research Practice	4.61	0.867	Very High
Research Attitude and Confidence	4.64	0.838	Very High
Overall	4.49	0.826	Very High

The data presented in Table 2 indicate that the level of research skill development among criminology students is assessed to be very high across all dimensions. Research Attitude and Confidence garnered the highest mean score of 4.64 with a standard deviation of 0.838, signifying that students possess strong positive attitudes and a high degree of self-assurance in conducting research. Research Practice followed closely with a mean score of 4.61 and a standard deviation of 0.867, highlighting the students' frequent application of research methods and procedures. Research Knowledge, with a mean score of 4.21 and a standard deviation of 0.772, still reflects a very high level, indicating a solid grasp of research concepts and theories.

The overall mean score of 4.49 confirms that the students are highly competent and confident in their research abilities. These results are consistent with Kiem et al. (2020), who emphasized that embedding active research tasks in undergraduate programs—mainly when supported by collaborative and reflective learning environments—significantly strengthens students' research skills. More recently, Ciraso-Calí et al. (2022) examined the acquisition of research competence among undergraduates in the education sciences and found that structured, skill-focused research training not only heightened students' technical abilities (e.g., data analysis, methodological design) but also bolstered their confidence and overall orientation toward research.

3.3. Test for the Significance of the Relationship Between Variables

Table 3 illustrates the significance of the relationship between interdisciplinary approaches and the development of research skills in criminology students.

Table 3. *Significance of the Relationship Between Interdisciplinary Approaches and Research Skill Development of Criminology Students*

Interdisciplinary Approaches (x)	Research Skill Development (y)	R-value	P-value	Decision on Ho
Curriculum Integration	Research Knowledge	.769	.007	Rejected
	Research Practice	.698	.021	Rejected
	Research Attitude and Confidence	.747	.043	Rejected
Teaching Strategies	Research Knowledge	.734	.019	Rejected
	Research Practice	.667	.018	Rejected
	Research Attitude and Confidence	.842	.039	Rejected
Student Engagement	Research Knowledge	.769	.014	Rejected
	Research Practice	.798	.031	Rejected
	Research Attitude and Confidence	.847	.043	Rejected
Overall Mean	Research Knowledge	.757	.013	Rejected
	Research Practice	.721	.023	Rejected
	Research Attitude and Confidence	.812	.042	Rejected
Overall Mean		.763	.026	Rejected

The results in Table 3 demonstrate a statistically significant relationship between interdisciplinary approaches and the development of research skills among criminology students. Specifically, Curriculum Integration shows a strong positive correlation with Research Knowledge ($r = .769$, $p = .007$), Research Practice ($r = .698$, $p = .021$), and Research Attitude and Confidence ($r = .747$, $p = .043$), all of which led to the rejection of the null hypothesis. Similarly, Teaching Strategies significantly correlate with Research Knowledge ($r = .734$, $p = .019$), Research Practice ($r = .667$, $p = .018$), and Research Attitude and Confidence ($r = .842$, $p = .039$). Student Engagement also reflects strong correlations with Research Knowledge ($r = .769$, $p = .014$), Research Practice ($r = .798$, $p = .031$), and Research Attitude and Confidence ($r = .847$, $p = .043$). When considering the overall means, the relationship between interdisciplinary approaches and the three components of research skill development remains statistically significant, with correlation coefficients ranging from .721 to .812.

The overall r-value of .763 and p-value of .026 further confirm that interdisciplinary approaches positively and significantly influence research skill development. These results align with those of Lim et al. (2024), who found that increased exposure to structured interdisciplinary learning experiences enhances students' attitudes, perceived value, and engagement in their discipline, particularly in public health education settings. They are also consistent with findings from BMC Nursing (2024), which reported that integrating interdisciplinary learning significantly elevated student competencies in communication, problem-solving, critical thinking, and applied research skills.

4.0 Conclusion

The findings of this study clearly demonstrate that interdisciplinary approaches, particularly curriculum integration, teaching strategies, and student engagement, significantly influence the development of research skills among criminology students. Each component of research skill development — namely, research knowledge, research practice, and research attitude and confidence — received very high ratings. This suggests that students exposed to interconnected academic disciplines acquire a deeper understanding of the research process, apply research principles more effectively, and develop a stronger appreciation for scholarly inquiry. The significant relationships found between the dimensions of interdisciplinary approaches and the three core areas of research skills confirm the value of integrating diverse academic perspectives into criminology education. When students engage in learning that connects criminology with fields such as psychology, law, information technology, and public administration, they become better equipped to analyze complex social problems, formulate research questions, and conduct meaningful investigations. This integrated learning environment promotes not only technical competence but also critical thinking and a proactive research mindset.

Given these findings, it is recommended that criminology programs formally adopt interdisciplinary frameworks in both curriculum design and instructional practices. Academic institutions should design courses that reflect the interconnected nature of criminology with other relevant disciplines. Faculty members should be encouraged to apply interactive teaching strategies that foster inquiry, creativity, and reflection. Additionally, student engagement activities, such as research colloquia, collaborative projects, and interdisciplinary forums, should be strengthened to boost students' confidence and interest in conducting research.

Lastly, this study affirms the relevance of the Constructivist Learning Theory, which served as the foundation of the research. This theory underscores that learners construct knowledge through meaningful experiences and active participation. The findings confirm that students develop research competence more effectively when they are engaged in dynamic and interdisciplinary learning environments. The alignment of the study's results with the core principles of constructivism highlights the importance of learner-centered and contextually rich education in preparing criminology students to become competent researchers.

5.0 Contributions of Authors

All four authors contributed equally to the completion of this study. They collectively participated in formulating the research design, developing the instrument, gathering and analyzing data, and interpreting the findings. Each author was actively involved in writing and revising the manuscript, ensuring the quality, coherence, and accuracy of the content. The final output reflects their shared efforts, and all authors reviewed and approved the manuscript for submission and publication.

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7.0 Conflict of Interests

The authors declare that there are no financial or non-financial conflicts of interest that may have affected the conduct or findings of this research.

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