

Contextualizing Adolescent Social Deviance in Secondary Sociology Education: Guided Discovery, Digital Project Work, and Pedagogical Scaffolding

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Abstract

Teaching adolescent social deviance in secondary sociology is challenging because students encounter issues such as bullying, peer pressure, and substance use in everyday life while also needing to understand abstract sociological concepts. This qualitative case study examines how a sociology teacher at SMA Pembangunan Laboratorium Universitas Negeri Padang used guided discovery, contextual cases, digital media, and project-oriented activities to connect theory with students' social worlds. Data were drawn from an in-depth teacher interview, classroom observation in Grade 10, and supporting instructional materials. The analysis shows that guided discovery supported conceptual understanding, contextual and project work linked theory to lived experience, digital media widened participation and feedback, and careful facilitation supported discussion of sensitive topics. The study does not establish causal learning effects, but it demonstrates how structured guidance, contextualization, and student production can make sociology learning more meaningful and inquiry-oriented. The study highlights the value of contextual sociology teaching that connects deviance concepts with evidence, interpretation, and students' everyday social worlds.

Keywords: adolescent social deviance; digital pedagogy; guided discovery; project-based learning; sociology education.

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Introduction

Sociology education has a distinctive pedagogical challenge: it asks students to move between everyday experience and abstract explanation. Concepts such as norms, social control, deviance, anomie, labeling, peer influence, and structural constraint are intellectually powerful precisely because they invite learners to question explanations that treat social problems as merely individual failings. Yet this movement from experience to sociological analysis is not automatic. When teaching relies primarily on verbal exposition or textbook definitions, students may recognize the examples but fail to understand the analytical concepts that make those examples sociologically meaningful.

The topic of adolescent social deviance is particularly demanding. Bullying, school violence, substance use, peer pressure, and intimate or sexual conduct are socially and emotionally close to students' lives. This proximity can support engagement, but it can also generate embarrassment, moral judgment, defensiveness, or oversimplified explanations. A pedagogically productive lesson must therefore do at least two things simultaneously: make sociological theory intelligible and create conditions in which students can examine sensitive social issues without reproducing stigma. Merton's (1938) account of strain, for example, directs

attention toward the relationship between socially valued goals and structurally available means rather than reducing deviance to individual character. Such theories can expand students' sociological imagination, but only when they are connected to concrete situations that students can interrogate.

Active and inquiry-oriented pedagogies are often proposed as a response to the difficulty of teaching social deviance beyond memorized definitions. The central design problem is how to let students work with recognizable cases while preserving analytical distance from everyday moral judgment. Secondary-school problem-solving research shows that teachers' interpretations of a problem strongly shape how inquiry is enacted (Lane et al., 2023). For this case, guided discovery is therefore treated as a sequence of teacher prompts that progressively directs attention toward norms, sanctions, labeling, social control, and structural explanation rather than as minimally guided discovery.

The same principle applies to discovery-oriented instruction. Students benefit from opportunities to search, compare, classify, discuss, and infer; however, novice learners often require carefully sequenced prompts and feedback. In this article, "guided discovery" therefore refers to structured exploration rather than minimally guided discovery. This distinction is especially relevant in Grade 10 sociology, where students are still developing conceptual language and may need teacher support to distinguish a personal opinion from a sociological explanation.

Digital tools can extend these pedagogical possibilities. Videos may function as concrete prompts for analysis, online quizzes may provide rapid formative feedback, and digital production tasks can give students multiple modes for representing their understanding. Yet technology does not itself guarantee engagement. A systematic review of technology-mediated education shows that student engagement depends on instructional structure, feedback, social interaction, access, and the relationship between the tool and the learning task (Balalle, 2024). The pedagogical question is therefore not whether technology is used, but what intellectual and social work the technology enables.

The study at SMA Pembangunan Laboratorium Universitas Negeri Padang described a teacher's use of discovery learning, contextual cases, digital media, and project-oriented tasks in teaching social deviance. The analysis sharpens that contribution by avoiding unsupported claims of effectiveness and by treating the school as a bounded pedagogical case. It asks: How are guided discovery, digital media, and project-oriented activities used to make social deviance sociologically meaningful to secondary students, and what pedagogical tensions emerge in the process?

Three ideas organize the analysis. The first is calibrated guidance. Student-centered learning does not remove the teacher from instruction; it changes when and how guidance is provided. Guided-discovery research shows that structured prompts can support learning when students need to connect observations with disciplinary concepts (Sakinah & Yerimadesi, 2022). In sociology, this is especially important for socially sensitive topics: students need room to interpret familiar cases, but the teacher must intervene when explanations collapse into stigma, anecdote, or unexamined moral judgment.

The second idea is authenticity. Project-based learning is commonly associated with real-world questions and products that extend beyond routine exercises. In secondary classrooms, authentic work can support student choice and meaningful learning, although it can also produce tensions around curricular coverage and uneven participation (Lonergan et al., 2022). For sociology, authenticity is not simply the use of "real examples." It means allowing students to examine how sociological concepts illuminate relationships, institutions, norms, and inequalities that they can recognize in their own environments.

The third idea is sociological inquiry. A sociology lesson becomes inquiry-oriented when students are asked to interpret evidence, compare explanations, identify social mechanisms, and justify claims. Digital products such as vlogs or infographics can support this process only when they require sociological reasoning rather than aesthetic production alone. The analytical value of a project therefore lies in the disciplinary thinking embedded in the task.

Guided discovery is particularly appropriate when students possess experiential familiarity but limited disciplinary language. The aim is not to make students rediscover sociological theory independently, but to create a sequence in which they notice patterns, formulate tentative explanations, and then refine those explanations through concepts and feedback. Evidence on discovery-based instruction suggests that unassisted discovery is less productive than enhanced discovery that provides prompts, worked examples, or scaffolding (Alfieri, Brooks, Aldrich, & Tenenbaum, 2011). In the context of social deviance, teacher prompts can ask students to identify the norm at stake, distinguish individual motives from structural conditions, or compare formal and informal sanctions. These questions make the structure of sociological reasoning visible while preserving meaningful student participation.

Structured participation also addresses a common misconception about student-centered pedagogy: that teacher explanation should disappear. In novice learning, the more productive shift is from continuous explanation to strategically timed explanation. The teacher can introduce a concept briefly, allow students to test it against a

case, and then return to the concept when their interpretations expose misunderstanding. This iterative movement between explanation and inquiry allows conceptual knowledge to remain connected to evidence rather than becoming a list of definitions.

Project-oriented learning extends the movement from interpretation to production. Students may create a mini-drama, vlog, or infographic, but the artifact is educationally valuable only when it embodies sociological reasoning. A mini-drama can represent competing social positions; an infographic can synthesize evidence about causes and consequences; and a vlog can communicate an argument about peer influence, norms, or institutional responses. The relevant criterion is therefore not whether students produce something attractive, but whether the product requires them to select evidence, apply concepts, and justify an interpretation.

A second idea is disciplinary accountability in student production. Authentic products and collaborative tasks are pedagogically valuable only when students must use sociological concepts and evidence to justify what they produce. Research on digital competence and secondary technology integration likewise emphasizes that technology has educational value when teachers can align tools with pedagogy, content, feedback, and classroom organization (Msafiri et al., 2023; Tzafilkou et al., 2023). The same principle applies here: a digital or project artifact should make sociological reasoning more visible, not replace it with presentation quality.

Authenticity also has an ethical dimension. Social deviance is not a neutral category: labels can stigmatize individuals and groups. A classroom project should therefore avoid asking students to identify 'deviant people' in their immediate environment or to disclose personal experiences. Composite cases, anonymized examples, and publicly available materials can provide authenticity without exposing classmates. This ethical containment supports the disciplinary objective because it directs attention toward social processes of labeling, control, and inequality rather than toward public judgment of particular individuals.

Method

This study is best understood as an exploratory qualitative case study of sociology teaching in one secondary-school setting (Yin, 2018). The case is bounded by the teaching of adolescent social deviance at SMA Pembangunan Laboratorium Universitas Negeri Padang in Padang, Indonesia.

The study report identifies three sources of material. First, an in-depth face-to-face interview was conducted with Dina Afriyani Alde, a Grade 10 sociology teacher, on 29 April 2025. The interview addressed instructional strategies, difficulties encountered when teaching adolescent social deviance, the use of digital media and current cases, and the teacher's perceptions of student responses. Second, classroom observation was conducted in Grade 10 to document teacher-student interaction and the enactment of discovery-oriented activities. Third, scholarly literature and instructional sources were consulted to situate the field observations within broader debates on sociology pedagogy and social deviance.

Because the study did not include a larger sample or pre/post measures, changes in student motivation, conceptual mastery, empathy, or critical thinking are not treated as measured outcomes. The analysis focuses on observable and reported pedagogical practices. Field material was organized into recurrent thematic categories concerning conceptual scaffolding, contextualization, digital mediation, student participation, and the handling of sensitive topics. This thematic organization is consistent with qualitative thematic analysis for identifying patterned meaning while remaining attentive to context (Braun & Clarke, 2021).

The evidentiary scope is intentionally limited. One teacher interview and one observed Grade 10 context can illuminate instructional processes but cannot establish the general effectiveness of the approach or represent all sociology classrooms. Details concerning ethics review, consent, interview duration, and observation duration were not reported in the study report. This reporting gap limits methodological transparency and is therefore treated as a limitation of the study.

Results and Discussion

Guided discovery as conceptual scaffolding

The classroom account suggests that discovery-oriented activities were most useful when they were structured rather than left open-ended. Students were encouraged to locate information, discuss cases, and present group interpretations, while the teacher remained active in asking questions and correcting misconceptions. This pattern matters because the topic combines familiar social experiences with unfamiliar analytical vocabulary. Students may know what bullying or peer pressure looks like, for example, but still require guidance to distinguish description from an explanation based on norms, social control, group pressure, or structural strain.

The teacher's role was therefore not displaced by student activity. Instead, direct explanation was used selectively to establish conceptual anchors, after which students were asked to explore cases and construct

connections. Observation indicated that students appeared more willing to participate when they were given concrete phenomena to analyze and when the teacher circulated among groups to provide feedback. The pedagogical value of guided discovery in this case was thus its sequencing: conceptual cues, exploration, discussion, and teacher-mediated clarification.

From abstract theory to students' social worlds

A second pattern concerned contextualization. The teacher used current and locally recognizable examples to make the topic less distant. Cases of bullying, adolescent misconduct, substance use, and peer influence allowed students to ask why certain behaviors emerge and how institutions respond. The study's original discussion also described project forms such as mini-dramas, educational vlogs, and digital infographics. These activities are better classified as project-based or project-oriented learning than as problem-based learning because students create an artifact over a sequence of activities.

The importance of these projects lies less in the artifact itself than in the analytical work required before production. A mini-drama can remain superficial if students merely reproduce stereotypes of "good" and "bad" behavior. It becomes sociologically meaningful when students must represent competing perspectives, identify the social conditions shaping action, and explain how norms and sanctions operate. Similarly, an infographic becomes a disciplinary product when claims are supported by evidence and sociological concepts rather than by moral slogans alone.

Digital media as a participation and feedback infrastructure

Digital media were used in several ways: visual materials and short videos provided concrete prompts; online quizzes such as Quizizz or Kahoot supported formative checks; and project artifacts allowed students to communicate findings in multimodal forms. The observed value of these tools was practical and pedagogical. Visual prompts reduced the abstraction of unfamiliar concepts, and quiz formats made it possible for students to receive rapid feedback without the formality of conventional testing.

However, the case does not support the claim that digital media by themselves increased achievement. Their contribution was conditional on how they were embedded in the lesson. This is consistent with broader evidence that technology-mediated engagement depends on task design, feedback, interaction, and access rather than on the novelty of the platform (Balalle, 2024). In the observed context, digital tools were most productive when they served a specific disciplinary purpose: introducing a case, checking conceptual understanding, or enabling students to communicate an interpretation.

Sensitive topics require pedagogical containment

The final theme concerns the affective and ethical dimension of teaching deviance. Issues involving sexuality, dating violence, substance use, or gender can make students reluctant to speak, particularly when classroom discussion risks exposing personal experience or inviting peer judgment. The teacher therefore faced a dual task: encouraging inquiry while preventing the discussion from becoming accusatory or sensational.

Small-group discussion, carefully selected cases, and teacher mediation were described as strategies for creating a more manageable conversational space. The case indicates that active learning is not synonymous with unrestricted discussion. Sensitive sociological inquiry requires explicit norms for respectful interaction, attention to language, and a distinction between analyzing a social phenomenon and judging an individual. This pedagogical containment is central to the educational value of the topic.

Sequencing learning models rather than blending them indiscriminately

The evidence is better interpreted as a pedagogical sequence than as a simple combination of two models. Guided discovery was emphasized in the observed Grade 10 context because students were still constructing foundational concepts. Project-oriented activity was described as more appropriate when learners had sufficient conceptual, collaborative, and communicative readiness to investigate a problem over a longer period. The distinction matters because guided discovery and project inquiry address different instructional needs: one supports concept formation, while the other supports application, synthesis, and communication.

Teacher guidance remained important across both phases, but its form changed. During discovery, scaffolding focused on vocabulary, examples, comparison, and conceptual clarification. During project work, scaffolding shifted toward question formulation, division of labor, evidence selection, time management, and revision of products. This pattern suggests that student agency does not expand because teachers withdraw; it expands because guidance becomes less directive and more responsive as students acquire disciplinary competence.

Discussion

The case demonstrates that the pedagogical problem in teaching social deviance is not simply low student interest. The more fundamental challenge is how to convert familiarity with a social issue into disciplinary

understanding. Students may be highly familiar with bullying or peer conflict while lacking the conceptual tools needed to explain those phenomena sociologically. Guided discovery helps address this gap when exploration is coupled with explicit scaffolding.

This finding highlights the teacher's dual role as conceptual guide and learning designer. The teacher must decide when students can productively explore a case and when a prompt is needed to distinguish description from explanation. Evidence from integrated social-science multimedia suggests that problem-based digital materials can support engagement when the media is organized around a coherent learning problem rather than added as decoration (Anissi & Darmansyah, 2024). The present case extends that principle to sociology by showing why conceptual scaffolding must accompany contextual cases.

The use of student-produced media should also be understood in disciplinary rather than technological terms. A vlog, digital poster, or quiz is not inherently innovative. Its value depends on whether it prompts students to use evidence, apply concepts, compare explanations, and revise claims. This point is important because educational technology can easily become an engagement strategy detached from subject knowledge. Balalle's (2024) review similarly cautions that engagement in technology-based environments is shaped by instructional design and social support.

The study therefore suggests a three-part model for contextual sociology teaching: conceptual scaffolding provides analytical language; authentic cases provide a bridge to lived social worlds; and student production provides an opportunity to reorganize and communicate sociological understanding. The model is not presented as a tested intervention. Rather, it is a pedagogical interpretation derived from a bounded qualitative case.

Several limitations remain. The evidence comes from one teacher and one observed Grade 10 context, and the study did not include systematic student interviews, achievement measures, or longitudinal observation. Statements about student learning should therefore be treated as perceptions or classroom observations rather than causal outcomes. Future research could compare guided discovery and project-based sequences across classes, include student voices, and use pre/post conceptual measures to assess whether students' explanations become more sociological over time.

From everyday recognition to sociological explanation

The central contribution of the case is to clarify the difference between recognizing a social problem and explaining it sociologically. Students may already know what bullying or peer conflict looks like, but everyday familiarity can encourage moral simplification. Sociology becomes educationally distinctive when students learn to ask how group norms, status, institutional rules, structural pressures, and social labeling shape the behavior under discussion. Guided discovery provides a bridge because it begins with phenomena students recognize but requires them to reorganize those phenomena through disciplinary concepts.

This progression can be described as recognition, interpretation, and production. Recognition establishes a shared phenomenon; interpretation introduces evidence and sociological concepts; production requires students to communicate a coherent explanation to others. Each stage has a different cognitive demand and therefore a different form of teacher support. The model offers a practical alternative to the assumption that one learning approach should dominate the entire unit.

Digital pedagogy should follow disciplinary purpose

The case also cautions against equating technological use with pedagogical innovation. Videos, online quizzes, and digital products can increase visible activity, but visible activity is not identical to learning. Balalle (2024) shows that engagement in technology-mediated learning depends on task design, interaction, feedback, and access. In this case, digital tools were most meaningful when they performed a specific intellectual function: a video created a shared case for analysis, a quiz revealed conceptual misunderstanding, and a digital product required students to reorganize and communicate an interpretation.

This function-first perspective can guide teachers' decisions. Instead of asking which platform is currently popular, the teacher can begin with the learning problem: What should students observe? What misconception needs to be diagnosed? What evidence should be compared? What form of explanation should students produce? A digital tool is appropriate only when it improves one of these processes. This principle also makes lessons more resilient because the sociological task can remain intact if the technology is unavailable.

Implications, limitations, and future research

For practice, the findings suggest that innovation should be evaluated through disciplinary quality rather than novelty. Teachers can use short guided-discovery cycles to establish concepts, select authentic but ethically manageable cases, and then move toward project work when students are ready to apply concepts independently. Rubrics should distinguish conceptual understanding, evidence use, collaboration, communication, and reflection so that a visually sophisticated product does not conceal weak sociological reasoning.

The study remains limited by its small empirical base. One principal teacher interview and one observed Grade 10 setting cannot represent the diversity of Indonesian sociology classrooms. Systematic student interviews, concept measures, and longitudinal observation were not included. Future research should analyze student work across several classes, compare the quality of explanations before and after instruction, and examine how students themselves experience guided discovery and project inquiry. Such evidence would allow stronger conclusions about how pedagogical sequencing affects the development of sociological reasoning.

Pedagogical progression and sociological literacy

A further implication concerns sociological literacy. The capacity to use a sociological concept should be distinguished from the ability to repeat its definition. Sociological literacy involves identifying a social pattern, selecting an appropriate concept, relating evidence to that concept, and recognizing the limitations of one explanation. Teaching social deviance provides a particularly useful environment for developing this literacy because the topic invites competing explanations. Students can compare individual-choice accounts with explanations based on peer groups, family conditions, school regulation, or structural strain. Guided discussion can make these differences explicit and require students to justify why one explanation is more adequate for a particular case.

Project products can function as evidence of sociological literacy when they make the reasoning process visible. For instance, a digital infographic should show how evidence supports an argument rather than simply listing forms of deviance. A mini-drama should represent how social positions and norms shape action rather than reduce the story to a moral lesson. A vlog should explain relationships among causes, actors, and institutional responses rather than reproduce a sequence of opinions. These distinctions can be translated into assessment criteria that reward analytical depth.

The case also suggests that classroom dialogue is part of the learning outcome. When students discuss deviance, they practice naming social processes and responding to perspectives that differ from their own. The teacher can use disagreement as a resource by asking groups to identify the evidence behind competing interpretations. Such dialogue supports the movement from certainty to inquiry and can reduce the tendency to frame social problems only through blame.

Finally, the sequencing model has implications for curriculum planning. Short cycles of guided discovery can be used early in a unit, followed by progressively more open tasks as conceptual and research skills develop. This allows project work to become the culmination of a learning progression rather than an isolated assignment. In this way, active learning is connected to cumulative disciplinary development, which is essential if sociology is to function as more than a collection of contemporary social issues.

Teacher preparation is therefore central to the approach. Teachers need more than familiarity with the procedural steps of Discovery Learning or PjBL. They need to anticipate common misconceptions, formulate prompts that elicit sociological reasoning, select cases that are authentic without exposing students, and design rubrics that capture analytical quality. Professional learning can use examples of student responses and project artifacts so that teachers practice distinguishing superficial participation from evidence of conceptual development.

School support also matters. Digital projects require time, access, and workable classroom routines. If teachers must solve every technical problem individually, the pedagogical focus can be displaced by logistics. Shared devices, reliable connectivity, coordinated scheduling, and access to simple digital platforms can make implementation more equitable. Nevertheless, the case indicates that technology should remain optional to the sociological purpose: the same reasoning task should be achievable through non-digital means when access is limited.

These practical conditions reinforce the article's broader argument: innovation is not located in a single method, platform, or student product. It lies in the alignment among the social problem, the sociological concept, the form of inquiry, the degree of guidance, and the evidence students are expected to produce. When these elements are aligned, student participation becomes a means of disciplinary learning rather than an end in itself.

Contribution to Sociology Education: From Moral Classification to Sociological Explanation

The principal contribution of this case is disciplinary rather than technological. Teaching social deviance becomes sociologically meaningful when students move beyond deciding whether a behavior is simply "good" or "bad" and instead ask how norms are produced, how sanctions are applied, whose definitions become authoritative, and how peer relations and structural conditions shape conduct. Problem-centered sociology teaching has long been valued for creating opportunities to examine contested social issues rather than memorize settled answers (Eglitis, Buntman, & Alexander, 2016). Project-oriented work can support engagement, but engagement alone is not the educational endpoint (Almulla, 2020). Meta-analytic evidence also indicates that project-based learning outcomes vary with implementation conditions rather than following automatically from the label of the method (Chen & Yang, 2019). The case therefore suggests a disciplinary sequence: begin with a

recognizable social situation, guide students to identify relevant norms and social relationships, introduce sociological concepts that complicate initial judgments, and require a product that makes the reasoning visible. Recent evidence on problem-driven pedagogies likewise cautions that motivational benefits are heterogeneous and depend on how the learning environment is organized (Wijnia, Noordzij, Arends, Rikers, & Loyens, 2024). For secondary sociology, the implication is that innovation should be judged by the quality of sociological explanation students are enabled to produce, not by the novelty of the media or activity itself.

Recent evidence strengthens the argument that contextual sociology teaching is primarily a problem of instructional design. The strongest classroom sequence is not simply 'student-centered'; it coordinates a recognizable social case, structured inquiry, conceptual vocabulary, opportunities to compare interpretations, and teacher feedback. Reviews of secondary ICT integration show that outcomes vary with teacher competence, pedagogical purpose, infrastructure, and support rather than with access alone (Msafiri et al., 2023). This is especially relevant to social deviance, where familiar digital examples can invite engagement but also intensify stereotyping if sociological categories are not carefully taught.

The Indonesian evidence published in 2024 also supports a contextual reading of the case. Ramadhan (2024) and Relawati, Ramadhan, and Hainon (2024) show that digital tools can organize participation and interest in sociology classrooms when they are embedded in purposeful activity. Anissi and Darmansyah (2024) similarly demonstrate the value of problem-based interactive multimedia in integrated social-science learning. Together, these studies support a bounded claim: technology and contextual cases are most useful when they structure inquiry, interaction, and feedback. The present study contributes a sociology-specific emphasis on guided conceptualization so that locally recognizable deviance cases become objects of analysis rather than occasions for moral labeling.

A further implication concerns the boundary between discovery and open inquiry. Evidence from inquiry research indicates that increasing student autonomy can deepen learning, but it also increases the need for methodological and conceptual scaffolding (Dah, Noor, Kamarudin, & Syed Abdul Azziz, 2024). In the observed context, this means teachers should not withdraw from instruction once students begin investigating a case. Instead, they need to intervene strategically by asking students what evidence supports a claim, which sociological concept best explains an observed pattern, whose perspective is missing, and whether a proposed solution addresses individual behaviour or the social conditions surrounding it. This kind of questioning is also consistent with broader evidence that motivation in problem-, project-, and case-based environments is sensitive to design features rather than guaranteed by the model label itself (Wijnia, Noordzij, Arends, Rikers, & Loyens, 2024). For sociology education, the practical lesson is therefore a balanced one: authenticity should invite students into inquiry, while disciplinary scaffolding should keep the inquiry sociological.

This interpretation also remains consistent with broader project-learning research. Grossman et al. (2019) emphasize that authentic project work requires teachers to preserve disciplinary goals while students assume greater responsibility, and Yusri et al. (2024) show that PjBL frameworks vary substantially in how they organize inquiry, collaboration, and assessment. These studies reinforce the article's central caution: contextual activity is educationally valuable only when teacher guidance keeps students' interpretations accountable to sociological concepts.

Conclusion

Teaching adolescent social deviance can become more meaningful when sociological theory is connected to the social realities that students already recognize. In the case examined here, guided discovery, contextual cases, digital media, and project-oriented activities created opportunities for students to move from description toward analysis while the teacher retained an active role in scaffolding concepts and managing sensitive discussion.

The central implication is not that one learning model is universally superior. Instead, the case highlights the importance of pedagogical sequencing and disciplinary purpose. Discovery requires guidance; project work requires sociological criteria; and digital media require alignment with learning goals. For sociology teachers, innovation is therefore best understood as the careful design of learning environments in which students can investigate real social issues, use disciplinary concepts, and communicate interpretations without reducing complex forms of deviance to individual blame.

Declarations

Author contribution

Author 1: developed the main research idea and objectives, designed the research methodology, conducted data collection and investigation, performed the data analysis, and prepared the first draft of the manuscript. Author 2: contributed to the development and implementation of the research methodology, supported the data

collection and investigation process, and reviewed and revised the manuscript to improve its academic quality, clarity, and structure, provided input into the research concept and direction, supervised and guided the overall research process, reviewed and improved the manuscript, and contributed to obtaining financial support or research funding

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The authors declare that there is no conflict of interest related to the publication of this article.

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