Fostering Problem-Solving and Active Citizenship Literacy Through Incident-Based Learning in Grade 10 Education

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Abstract

This study aimed to determine the effects of the Learning from Incidents (LFI) approach in developing students' problem-solving skills and enhancing active citizenship literacy. It addressed the need to strengthen students' critical awareness of societal issues and their ability to apply their skills in real-life community contexts. Learning from Incident as a strategic learning approach in education benefited the five skills learning area of analytical thinking, brainstorming, communication, decision making, and community engagement. An experimental research design was employed, involving 50 Grade 10 students from Sta. Filomena Integrated School during the School Year 2025–2026, and were selected through purposive sampling. Data were gathered using pre-test and post-test assessments, as well as pre- and post-self-assessment surveys, and were analyzed using mean, frequency, percentage, and One-Paired sample T-test.

Descriptive findings revealed that respondents generally agreed on the effectiveness of LFI processes, including investigating and analyzing (M = 3.40, SD = 0.57), planning interventions (M = 3.22, SD = 0.69), intervening (M = 3.28, SD = 0.66), and evaluating (M = 3.33, SD = 0.62), indicating that students were able to understand and apply the structured steps of LFI. After implementation, respondents agreed that LFI enhanced their skills, particularly in active citizenship literacy (M = 4.48, SD = 0.551), decision-making (M = 4.28, SD = 0.543), communication and brainstorming (both M = 4.23), and analytical thinking (M = 4.13). This suggests that LFI effectively promotes higher-order thinking, collaboration, and civic engagement. Inferential analysis showed that LFI led to improvements in all measured skills; however, only some were statistically significant. Analytical thinking increased from M = 12.36 (SD = 4.72) to M = 13.56 (SD = 3.84) but was not significant (t = -1.444, p >.155), indicating a modest effect. In contrast, communication (t = -5.545, p <.000), brainstorming (t = -8.419, p < .000), decision-making (t = -4.589, p < .000), and active citizenship literacy (t = -5.223, p < .000) showed statistically significant improvements, with brainstorming demonstrating the greatest gain. These results highlighted that LFI is particularly effective in enhancing creative thinking, collaboration, decision-making, and civic participation.

The study rejected the null hypothesis, confirming significant differences between pre-test and post-test results. Overall, the findings demonstrated that LFI is a transformative instructional approach that strengthens students' practical problem-solving skills and fosters active citizenship, although additional strategies may be needed to further enhance analytical thinking.

Keywords: Learning from Incidents; analytical thinking; communication; brainstorming; decision-making; community engagement

1. Introduction

A considerable portion of today's students' learning can be classified as learning about their surroundings or the society in which they live. Students must comprehend the need to have a thorough understanding of the events or issues confronting their society to come up with immediate solutions. According to data issued last year (2025) by the Philippine Statistics Authority (PSA), 18 million Filipino learners who graduated from Junior High and Senior High School between 2019 and 2024 struggled to understand what they were reading. Reading and comprehension, being the foundation of education, pose a significant challenge for Filipino adolescents who must be comprehensive in their analysis and perceptive in dealing with social problems. A 2022 study by the Programme for International Student Assessment (PISA)

revealed little improvement in the reading, mathematics and science scores of Filipino pupils, which were still poor compared to those of pupils in 81 other countries.

In accordance with the student learning competencies of the Department of Education's Araling Panlipunan 10 content standards, students must demonstrate knowledge of the environmental, economic, political, human rights, educational, and civic responsibility issues and challenges facing nations today with the skills that include investigation, analyzing data from various sources, research, reasoning critically, communicating effectively, showing fairness, and exercising informed decision-making. The Social Studies curriculum aims to provide young people with a distinct identity and role as Filipinos who participate in the life of society, the country, and the world. It will also help students develop not just content-based but also competency-based knowledge. The AP competencies are listed particularly to: (a) show their relevance to basic education goals, and (b) to emphasize critical thinking skills that cannot be achieved solely by memorization. (K-12 Curriculum Guide)

The PSA and PISA data highlight how students struggle to recognize and address real-world social problems included in Araling Panlipunan 10. This study sought to underscore the significance and impact of Learning from Incidents on students, encouraging them to be critical of the societal issues and incidents that confront them and leverage their abilities and potential to assist others, as well as their own community.

Learning from Incidents (LFI) is "a process through which employees and the organization as a whole seek to understand any negative safety events that have taken place to prevent similar future events" (Lukic, 2012, p. 12). It was developed in high-hazard industries such as energy and has been widely adopted across most sectors, including manufacturing, construction, transport, aviation, maritime, and health care. Following an incident being reported, the LFI process usually involves carrying out an investigation into the incident and identifying its cause (Lindberg et al., 2010). With an investigation completed and recommendations for changes developed, high-level 'learning points' are abstracted and fed back into the organization, and occasionally shared with others in different organizations. Relating to the needs of students of today's generation of citizens, students can practice to become more innovative at choosing the best answer to a problem, and to become active citizens of this society. Learning by experience should result in adaptation of "doing" and behavioral adaptation. Cognitive progress alone is thereby considered to be incomplete learning as long as the lessons learned do not result in changing the actual practice. (Kolb,1984).

The objective of this research was to study the impact of the LFI approach in developing problem-solving skills and promoting literacy for active citizenship among students. This aids the students to deliver a structured, team-centric problem-solving method that systematically walks them through an extensive and methodical process of recognizing, reviewing, and resolving problems effectively, which is practicable for everyday life.

1.1. Significance of the study

The researcher believed that this study would help the following individuals:

1. *Respondents/Students.* Learning from incidents allows students to enhance their problem-solving skills by being smarter thinkers, creative, and to gain a deeper understanding of complex issues, as well as preparing them to discover answers in a variety of contexts. Incident-based learning fosters empathy, promotes educated decision-making on societal concerns, and instills a sense of responsibility and determination to effect positive change in their communities. Children who learn to solve issues at a young age are more likely to value lifelong learning. They are inquisitive, motivated, and innovative. These skills then prepare students for life and their future jobs.
2. *Teachers/ Mentors.* Learning from incidents encourages teachers to improve self-awareness, evaluate their teaching approaches, and develop new strategies, resulting in ongoing professional development and a better knowledge of the learning process. By examining both positive and negative events, teachers may find effective methods, address ineffective ones, and handle problems as they arise, ultimately enhancing their teaching competence and making a more positive and effective learning environment for students.
3. *School Administrators/Curriculum Developers.* Learning from incidents provides a feedback loop that lets them improve safety protocols, refine emergency response plans, improve teacher professional development, and create more effective and resilient educational systems by informing policy and practice. For administrators, this implies improved crisis management and a safer educational environment, while curriculum developers benefit from more relevant, context-specific, and supportive learning resources that address real-world challenges while also promoting student well-being and resilience.

1.2. Statement of the Problem

This study aimed to explore and assess the effectiveness of Learning from Incidents as an approach to problem-solving skills and active citizenship literacy among Grade 10 students in Araling Panlipunan. Specifically, it sought to answer the following questions:

1. What is the perception of the respondents in using Learning from Incidents in terms of: investigating and analyzing; planning interventions; intervening; and evaluating?
2. What is the post-self assessment of the respondents in problem-solving skills and active citizenship literacy?
3. What are the pre-test and post-test scores of the respondents before and after using Learning from incidents in terms of: analytical thinking; communication; brainstorming; decision making; and active citizenship literacy (community engagement)?
4. Is there a significant difference in the pre-test and post-test of the respondents using Learning from Incidents in improving problem-solving skills and active citizenship literacy in terms of: analytical thinking; communication; brainstorming; decision making; and active citizenship literacy (community engagement)?

1.3 Hypothesis

There is no significant difference in the pre-test and post-test of the respondents using Learning from Incidents in improving problem-solving skills and active citizenship literacy of the respondents.

1.3. Theoretical Framework

The theoretical grounds for this study included Gough and Tummer's Simple View of Reading Model, Bloom's Revised Taxonomy, Lev Vygotsky's Collaborative Learning Theory, Kolb's Experiential Learning Theory, and Ivan Pavlov's Classical Conditioning. These theories served as the theoretical framework because they set the foundations for understanding how students create a lifelong learning process.

The ***Simple View of Reading*** refers to the hypothesis that reading comprehension develops from the interaction of one's reading ability and one's understanding of language, implying that comprehension is the result of the combination of both factors (Gough & Tunmer, 1986). In this view, weakened component skills limit progress in reading comprehension experimentation. Reading fluency and language comprehension are both significant in reading in the early stages, but language comprehension becomes increasingly important as one progresses to higher levels of reading (Lonigan, Burgess, & Schatschneider, 2018). This general notion fits well into the ideas embodied in Dr. Drupsteen's vision of Learning from Incidents (2017), where meaningful learning results from the capability to accurately and reliably explain a report or incident in terms of its fundamental causes and the significance of that incident being examined. There is no "learning" from the incident unless learners decode facts (what happened) and also comprehend and reflect on meaning (why it happened and how to prevent it). While both theories refer to different ideas, they are based on the notion that something has been learned from combining knowledge to solve a new problem, just as "learning" occurs in simply reading to understand. The Simple View of Reading model provides information on how students learn from the texts or data related to an incident that they read. By decoding, students are likely to read a particular incident and extract if they read fast, yet they hardly comprehend its significance since they have no language comprehension component involved. When students study both types of content directly, they are positioned to convert incidents into knowledge or to learn from incidents. Thus, this study is based on the premise that indirectly learning from an incident provided to students will develop their reading skills and their ability to learn from an incident.

Bloom's Revised Taxonomy of Anderson & Krathwohl, 2001, provides a conception of cognitive levels that is organized from lower-order thinking skills, such as remembering and understanding, to higher-order thinking skills, including analyzing, evaluating, and creating. Higher-order thinking has never been more important for education in the 21st century, as an understanding of how to approach knowledge critically and creatively, to solve life's complex problems, benefits everyone. This allows the user to get beyond rote learning to independent problem-solving. Dr. Drupsteen's Learning from Incident draws directly from the principles of Bloom's Revised Taxonomy. Good problem-solving requires the capability to dissect an event, evaluate it, and then create tactics so that similar incidents do not take place in the future. In Dr Drupsteen's Learning from Incidents (LFI) framework, students do not simply write down what happened; they use higher-order skills, interpreting, evaluating, and creating from the data. In this study, Bloom's higher-order thinking skills give a cognitive framework to the process of 'learning from incidents'. Remembering and understanding help learners grasp incident details and data accurately; analyzing, evaluating, and creating enable the discovery of reasons why the incident happened, assessing what effects it has, and creating ways of preventing it or its recurrence. The aim of the study is for higher-order skills to translate incident information in a way that will improve the ability of students to use the data in their incident creation, re-creation, and problem-solving.

David Kolb's Experiential Learning Theory describes learning as a four-stage cycle in which knowledge is continuously being formed through experiences, reflection, conceptualization, and experimentation. "Learning is the process whereby knowledge is created through the transformation of experience" (Kolb 1984, 38). Learning occurs when individuals conduct experiences and reflection on the outcomes, derive abstract concepts to understand what happened,

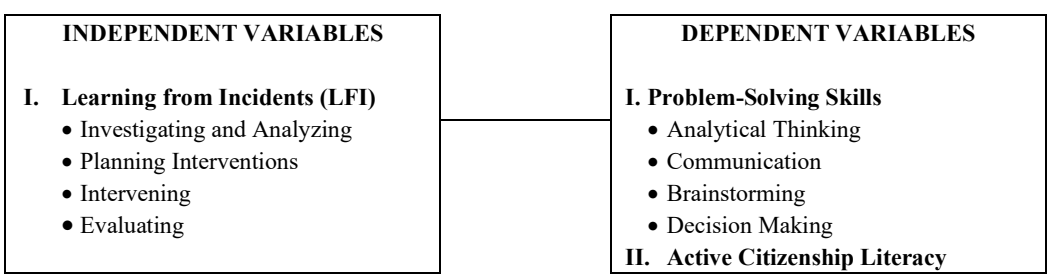
and experiment with those concepts in new experiences. Kolb's theory mirrors Dr. Drupsteen's definition of Learning from Incidents (LFI). "We learn most from analyzing real incidents", and LFI states that during it you are not merely recording what happened "but you actively engage with the incident you are presented, reflect on its reason and its consequences, conceptualize how it could have been better, and you apply your concepts to produce corrective or preventative action".

Classical Conditioning Theory, created by Ivan Pavlov in the 1890's, explains how behaviors can form through stimulus associations (Kanevsky, 2025). Pavlov's experiments showed how a neutral stimulus, when paired with something significant, can produce a response. This is why repeated experiences are helpful for learning and behavior; it helps form behavior, so it helps with teaching. It provides insight into how things that are experienced many times can result in certain expected outcomes. (Stangor, 2014). For Dr. Drupsteen's Learning from Incidents framework, Classical Conditioning Theory gives insight into how making similar connections can help individuals form predictable associations when they face incidents. When a neutral cue (that bit of the environment, the warning signs, that step in the procedure) is linked in someone's mind with the incident, then when they learn, they link something new to it that is safe. Adaptive learning will help the learner predict what sorts of things could happen if they respond in a certain way. Which means they will respond differently and take steps to mitigate the impact. Classical Conditioning Theory aligns with the hypothesis in that they do go beyond learning from incidents from just cognitive learning into behavioral and emotional. They begin to expect certain outcomes from even smaller cues. This will feed into the study of trying to show how they can learn from incidents through reoccurring experiences, because of how it learns to adapt problem-solving as part of learning from incidents.

Lev Vygotsky's Collaborative Learning Theory proposes that knowledge is constructed socially with peers. Collaborative learning offers students the opportunity to engage in discussions, share perspectives, and co-construct understanding, which promotes critical thinking, deepened understanding, and retention of material in an active manner (Top Hand, 2025). In the same way, teams are often used in real-world environments, such as companies, etc., for goal accomplishment. Research has shown that students in a collaborative learning context have outperformed them in competitive or individualistic contexts (Johnson, Johnson, & Smith, 2014). This social aspect of learning coincides with the Learning from Incidents (LFI) framework as well, which posits that for anything meaningful to be learned from an event, it has to be engaged from the learner's position. In LFI, the analysis of the incidents often needs to be a joint effort. When done collaboratively, a bunch of differing inputs from various perspectives allows the students to understand why it happened, the consequences, and then collectively develop the call or actionable step to mitigate it from occurring again. Group interaction allows students to get a shared meaning and understanding of the various perspectives and to construct a greater solution than they could have on their own. In this study, Vygotsky supports the idea of students working together on social issues and incidents. In that process, the students become able to exercise skills for higher-level thinking, communication, and leadership as they tie the lessons from their incident to the facts in the real world.

1.4. Conceptual Framework

Figure 1 shows how the LFI of Dr. Drupsteen et. al. (2014), is used as an approach to the learning process, enhancing the Grade 10 students' skills in problem-solving and active citizenship literacy.



		• Community Engagement (real world connections)

Figure 1. Research Paradigm

2. Methodology

2.1. Research Design

The research design used in this study is the Experimental Research Design. Experimental research is the scientific method for proving the relationship of dependent and independent variables. It establishes a cause-and-effect relationship of the variables and proves the hypothesis. The Learning from Incidents (LFI) conceptualized by Dr. Drupsteen was used as the independent variable to determine how such would affect the learners in solving problems through analytical thinking, communication, brainstorming, decision making, and active citizenship

2.2. Respondents of the Study

Respondents of this research were the students of a heterogeneously grouped two-section Grade 10, 25 students each, in Sta. Filomena Integrated School (SFIS), Division of San Pablo City, School Year 2025-2026.

2.3. Population and Sampling Technique

The researcher used a purposive sampling in selecting participants, that are reached - two sections of student respondents of Grade 10 of Araling Panlipunan - 50 students in all. Purposive sampling technique is a non-probability sampling method whereby the researcher deliberately selects participants based on certain characteristics, knowledge, or experiences that are relevant to the purpose of this study.

2.4. Research Procedure

The study followed a systematic procedure from the application of the LFI approach to assessing its effectiveness.

1. To determine how the students perceive the Learning from Incidents approach, regarding the contents of Araling Panlipunan 10 (Mga Kontemporaryong Isyu) given from the first quarter to the fourth quarter, environmental, economic, political, human rights, educational, and civic responsibility, the researcher prepared the Pre-Self-Assessment Survey Form.
2. The learners answered the 30 items Pre-Test.
3. The researcher presented the LFI approach and its stages (investigating and analyzing, planning interventions, intervening, evaluating), and explained how this approach was related to Araling Panlipunan topics and competencies.
4. After presenting the approach, learners answered a Post-Test to evaluate and apply the stages of LFI, which focused on the aspects of incidents and corrective or preventive measures. Afterwards, they completed a Post-Self Assessment Survey Form that evaluated how LFI helped them enhance their problem-solving skills and active citizenship literacy.

Upon completion of the research instruments, the researcher sought advice and suggestions from the adviser, statistician, subject specialist, and technical editor to evaluate the instruments to be used. The Sta. Filomena Integrated School's school head received a formal letter regarding the conduct of research. After duly asking permission from the offices, the researcher started the study.

2.5. Research Instruments

As part of data collection, researcher-made instruments were utilized, such as surveys and questionnaires. This instrument was used to determine the effectiveness of the LFI approach to problem-solving skills and active citizenship literacy of the students in Araling Panlipunan. The instruments underwent review by experts, which included the adviser, subject specialist (Social Science master teacher), technical editor, and statistician, in order to determine the validity and reliability.

A. *Pre-Self-Assessment Survey Form* – A 20-statement survey was assessed using a Likert scale to establish whether respondents had initial knowledge of the Learning from Incidents approach.

B. *Presentation of LFI Approach* – The researcher presented the concept of the LFI approach and its relation to the chosen subject matter. A structured Lesson Plan was used.

C. *Pre-Test and Post-Test (LFI in Situational Application Questions)* – This instrument consisted of 30 questions about how the stages of the LFI approach could be applied to various topics and aligned with the competencies per quarter. The number of questions in each level was distributed as shown below. This written-response instrument was answered using a selection procedure (multiple choice).

LFI approach stages *(Drupsteen et. al., 2014)*	**AP Topics (Mga Kontemporaryong Isyu)**	**Quarter**	**Selected Competencies from DepEd (2016). K to12 Gabay Pangkurikulum**	**Num. of Items**
Investigating and Analyzing	Environmental (Disaster Risk Mitigation)	1st	Naiuugnay ang gawain at desisyon ng tao sa pagkakaroon ng mga kalamidad Natutukoy ang mga paghahanda na nararapat gawin sa harap ng mga kalamidad	4 *(1-4)*
	Economic (Unemployment)		Naipaliliwanag ang mga dahilan ng pagkakaroon ng unemployment Natataya ang implikasyon ng unemployment sa pamumuhay at sa pag-unlad ng ekonomiya ng bansa	4 *(5-8)*
Planning Intervention	Political (Political dynasties)	2nd	Naipaliliwanag ang konsepto ng political dynasties Nasusuri ang sanhi at epekto ng political dynasties sa pagpapanatili ng malinis at matatag na pamahalaan	7 *(9-15)*
Intervening	Human Rights (Gender & Sexuality) Epekto ng paglabag sa karapatang pantao	3rd	Nasusuri ang iba't ibang salik na nagiging dahilan ng pagkakaroon ng diskriminasyon sa kasarian Nasusuri ang epekto ng paglabag sa karapatang pantao	7 *(16-22)*
Evaluating	Educational (Kalidad ng Edukasyon)	4th	Nasusuri ang kalidad ng edukasyon sa bansa Nakapagmumungkahi ng mga pamamaraan na makakatulong sa pagpapataas ng kalidad ng edukasyon sa pamayanan at bansa	3 *(23-25)*
	Citizenship responsibilities (Pakikilahok sa mga gawaing pansibiko (Civic Engagement)		Natutukoy ang mga katangian na dapat taglayin ng isang aktibong mamamayan na nakikilahok sa mga gawain at usaping pansibiko Natatalakay ang iba't ibang gawaing pansibiko sa pamayanan at bansa	5 *26-30)*
				30

D. *Post-Self Assessment Survey Form* – After completing the LFI scenario application, participants were given a survey to evaluate how well the LFI method was able to assist them in developing target skills.

2.6. Statistical Treatment of Data

To interpret the raw data that was gathered, descriptive and inferential statistics were used to give significant meaning to the data set. In presenting the descriptive data on how the respondents perceived Learning from Incidents using the Pre- and Post-Self-Assessment Surveys, the Mean was used. Frequency and Percentages were also used to show how often each response option was chosen. In order to analyze the results from the data collected with respect to the inferential question, a one-sample Paired T-test was employed to identify the significant difference between the pre-test and post-test of the respondents in the usage of LFI in problem-solving skills and active citizenship.

3. Results

This chapter presents the results, the analysis, and the interpretation of data gathered through the research instruments used in the study.

Table 1. Perception on Using Learning from Incidents in terms of Investigating and Analyzing

Indicators	Mean	Std. Deviation	Interpretation
1. Learning from incidents enables me to better identify causes, effects, and connections among events.	3.48	.580	Agree
2. Analyzing real-life improves my critical thinking abilities.	3.52	.505	Strongly Agree
3. Learning from Incident activities helps me develop my skills in investigating social and historical issues.	3.42	.538	Agree
4. Through Learning from incidents, I feel more confident in examining evidence before forming conclusions.	3.22	.616	Agree
5. Through Learning from incidents, investigating and analyzing incidents makes the subject Araling Panlipunan more engaging and meaningful to me.	3.34	.626	Agree
Overall	**3.40**	**0.57**	**Agree**

Legend: 3.50-4.00 Strongly agree, 2.50-3.49 Agree, 1.50-2.49 Disagree, 1.00-1.49 Strongly disagree

The findings show that respondents had a good perception of Learning from Incidents in terms of investigating and analyzing, with an overall mean of 3.40, interpreted as Agree. This indicates that this approach is effective in improving students' analytical skills. Respondents strongly agreed that analyzing real-life incidents improved their critical thinking ability (M = 3.52), the highest rated item. Hence, insufficient analytical thinking is likely to greatly hamper students' academic performance and their ability to make well-considered decisions in real situations.

They also agreed that this method helped them identify causes and links (M = 3.48) and develop skills in examining social and historical issues (M = 3.42). However, the slightly lower mean for their confidence in examining evidence before forming a conclusion (M = 3.22) suggests that, although students may benefit from this approach, there is still the potential to strengthen their confidence in analytical decision-making.

The results of the previous study of Prayogi et al. (2023) provide evidence for the potentially powerful impact of this first LFI stage in promoting meaningful and reflective learning. "Inquiry-based learning (IBL) has positive effects on cognitive engagement as it involves students in investigation and solving problems, which cognitively engages students and encourages them to have a deeper understanding" (Prayogi). This supports the investigating and analyzing stage of the LFI, where learners investigate incidents, trace causes, and interpret evidence. They are not passively receiving information, but engaging in a certain structured inquiry akin to IBL. Such active participation promotes critical thinking, allowing learners to internalize a deeper understanding of why incidents occur. "Both emphasize that deeper learning takes place when learners are actively engaged in analysis and investigation."

Table 2. Perception on Using Learning from Incidents in terms of Planning Intervention

Indicators	Mean	Std. Deviation	Interpretation
1. Learning from Incident activities helps me develop effective plans to address identified problems.	3.42	.609	Agree
2. Analyzing incidents enables me to design appropriate and realistic interventions.	3.12	.718	Agree
3. Learning from incidents improves my ability to identify practical steps in solving issues.	3.28	.640	Agree
4. I feel more confident proposing intervention strategies and participating in Learning from Incident discussions.	3.12	.773	Agree
5. Planning interventions based on analyzed incidents enhances my decision-making skills.	3.16	.710	Agree
Overall	**3.22**	**0.690**	**Agree**

Legend: 3.50-4.00 Strongly agree, 2.50-3.49 Agree, 1.50-2.49 Disagree, 1.00-1.49 Strongly disagree

The data illustrate that, in general, respondents had a good outlook on Learning from Incidents (LFI) in planning intervention, as illustrated in the overall mean of 3.22, interpreted as Agree. It indicates that respondents appreciate LFI to aid them with more effective planning and implementing interventions. For all the statements, the highest mean (3.42) was to the statement "Learning from Incident activities helps me develop effective plans to address identified problems", which conveys that LFI was perceived as most beneficial in forming an effective and planned action; clearly demonstrating the strength of skills that lie within LFI in developing planning and action in a structured way on problems.

On the other hand, the lower mean (3.12) for the two statements in items 2 and 4. Although the scores reflect an overall Agree, it indicates a weak confidence in designing an intervention and participating readily in discussion. This indicates that respondents would appreciate support, assistance, and training before they are confident in putting LFI in practice in the design and communication of interventions on incidents and discussions.

Overall, the results suggest that Learning from Incidents was viewed as favorable for planning interventions, developing potentially more effective plans, but that the intervention lacked a focus on further improving respondents' confidence and skills in using and communicating intervention strategies.

The previous study of Albert and Steinberg 2011 is built upon here, treating "first-move latency" (the time a person takes until they have acted/for their first action) as an indicator of planning. This work suggests people who "plan" longer tend to be better at problem solving, essentially placing planning in that it is continuous and adaptive in nature as opposed to static, and particularly in that when the path of solutions is not clear, adjusts as the environment changes with new information.

Table 3. Perception on Using Learning from Incidents in terms of Intervening

Indicators	Mean	Std. Deviation	Interpretation
1. Learning from Incident activities helps me understand when and how to intervene in problem situations.	3.38	.567	Agree
2. Through learning from incidents, I am better prepared to take appropriate action when issues arise.	3.16	.680	Agree
3. Learning from incidents increases my confidence in responding to real-life challenges.	3.20	.755	Agree
4. Learning from incidents improves my ability to make timely and responsible interventions.	3.28	.640	Agree
5. Applying lessons learned from incidents helps me become more proactive in addressing problems.	3.40	.670	Agree
Overall	**3.28**	**0.662**	**Agree**

Legend: 3.50-4.00 Strongly agree, 2.50-3.49 Agree, 1.50-2.49 Disagree, 1.00-1.49 Strongly disagree

Table 3 shows that the general perception of Learning from Incidents (LFI) as an intervention indicated that respondents viewed LFI favorably, as seen by the overall mean of 3.28, which is interpreted to agree. This means that LFI appears to provide support to respondents in how they are guided to act in problem situations. The highest mean of 3.40 implies that the key impact of LFI is in encouraging proactive behavior, as respondents are encouraged to act before a situation gets out of hand. It implies that LFI enables not only a reaction to problems but a forward-thinking stance.

The next highest mean (3.38) shows that it is also recognised strongly by respondents that learning from incidents enhances their sensitivity and judgment in identifying when and how to intervene. This underlines the impact of developing situational understanding. In contrast is the lowest mean (3.16) is for "Through learning from incidents, I am better prepared to take appropriate action when issues arise. Although this is still interpreted as Agree, its relatively lower proceeding this statement suggests that respondents do not feel completely prepared to act, despite the understanding. This may imply a need for more "hands-on" practice, or reinforcement to affect readiness for 'action'.

Concerning the results of the previous study by Rimm-Kaufman and Hulleman (2015), students' disengagement is indicative of their readiness for intervention in learning from incidents. They argue that teachers interpret disruptive behavior as a signal of disengagement. If students engage in misbehavior, it suggests that they are not ready to learn from a corrective intervention unless help is provided in whatever domain may be lacking (interest, motivation, emotional support, etc.).

In a learning-from-incidents framework, the readiness for intervention amounts to whether or not a student is prepared to learn from thinking about the behavior. If that readiness is lacking, then an intervention is unlikely to be effective, as the misbehaving student may not be in a cognitive or emotional state of mind amenable to learning from the teacher-directed lesson or guidance. Instead, teachers can learn to puzzle through the disengagement and address the root cause of the disengagement in some way. This reengagement motivates and strengthens the student's desire to be taught something about how to improve their behavior. In so doing, the intervention is more likely to find traction because the child is more open to pedagogical guidance. In brief, with adequate motivation or readiness, the intervention process is facilitated.

Overall, the data indicate that the students are growing into a sense of personal responsibility when it is a matter of doing something in regard to actual life problems, are coming to realize the significance of timely and appropriate action, and are learning to profit by their social understandings in practical situations. At the same time, the results indicate the presence in the student of some lingering, and perhaps occasional, hesitation to act and still a somewhat vacillating attitude toward deciding on a course of action. Opportunities for exercising skills of intervention should afford them the means of hardening their attitude to be confident, decisive, and more responsible.

Table 4. Perception on Using Learning from Incidents in terms of Evaluating

Indicators	Mean	Std. Deviation	Interpretation
1. Learning from Incident activities helps me evaluate situations more carefully before making judgments.	3.34	.626	Agree
2. Analyzing incidents improves my ability to assess the effectiveness of actions or decisions.	3.22	.545	Agree
3. Through Learning from incidents, I am better able to identify strengths and weaknesses in proposed solutions.	3.36	.631	Agree
4. Participating in Learning from Incident discussions enhances my ability to use evidence when evaluating issues.	3.30	.735	Agree
5. Learning from the incident strengthens my skills in reflecting on outcomes and suggesting improvements.	3.46	.578	Agree
Overall	**3.33**	**0.623**	**Agree**

Legend: 3.50-4.00 Strongly agree, 2.50-3.49 Agree, 1.50-2.49 Disagree, 1.00-1.49 Strongly disagree

The results of the findings in Table 4 show that the respondents have a good impression of using Learning from Incidents (LFI) in terms of evaluating as indicated by the overall mean of 3.33, which is interpreted as Agree. Among the indicators, the highest mean (3.46) indicates LFI was most effective in promoting respondents' reflective ability, specifically in going over the results and areas for improvement. This suggests respondents enabled themselves to use their past incidents in a way to help them continuously learn and improve accordingly, which is central to evaluation. The lowest mean (3.22) suggests that some of the respondents have slight difficulty in fully assessing the effectiveness of decisions or actions. This suggests a need for further improvement in how respondents apply evaluation criteria or framework when reviewing the effectiveness of outcomes.

In general, the results reveal that Learning from Incidents was effective in building respondents' reflective, analytical, and evaluative competencies. Its most prominent effect was on reflection and preparing for continuous improvement, while there remain opportunities to turn students into confident evaluators, who systematically assess the effectiveness of his/her actions and proposed solution of real life, through a more explicit evaluative process. They are developing the reflective habit pattern of wise men, more careful in assigning blame, realizing the benefit of an open dialogue, and learning to recognize clues that indicate whether a proposed solution might work, and critically think how the outcome could be improved. However, the results suggest that students still need more experience and guidance in assessing the effectiveness of their decisions confidently. Evaluation of the learning strategy and the results obtained with it is an important part of the process of regulating one's learning, and thus may well prove to be an important added step in LFI, Zimmerman (2002).

Table 5. Post-Self Assessment of the Respondents on the Effectiveness of the Learning from Incident Approach in Problem-Solving in terms of Analytical Thinking

Indicators	Mean	Std. Deviation	Interpretation
1. I can identify the key components of a problem or situation.	4.22	.418	Agree
2. I am skilled at evaluating different options and their potential outcomes.	4.08	.665	Agree
3. I can recognize patterns and trends in a given situation.	4.04	.532	Agree
4. I can identify the underlying causes and consequences of events or actions.	4.08	.565	Agree
5. I consider different perspectives before forming a conclusion.	4.20	.451	Agree
6. I can draw logical conclusions from available information.	4.08	.528	Agree
7. I can identify assumptions that may be influencing a particular viewpoint.	4.20	.404	Agree
8. I am confident in my ability to solve problems using a systematic approach (Learning from Incidents)	4.20	.494	Agree
Overall	**4.13**	**0.507**	**Agree**

Legend: 4.50-5.00 Strongly Agree, 3.50-4.49 Agree, 2.50-3.49 Moderately Agree, 1.50-2.49 Disagree, 1.00-1.49 Strongly Disagree

Table 5 reveals the effectiveness of the Learning from Incidents (LFI) approach in developing an ability to think analytically in problem-solving. Respondents agree across all items with a mean of 4.13 (SD = 0.507) that LFI supported students' ability to analyze problems, weigh options, and apply significant strategies for solving issues in real-life and community. The highest rated items 1 (M = 4.22), 5, 7, and 8, with the same mean of (4.20), means respondents were most confident in decomposing problems, to do many view thinking, to identify assumptions, and apply a systematic approach to selective problem-solving. The second highest mean of 4.08, as depicted in items 2, 4, and 8, indicates respondents felt a great deal better at analyzing alternatives, making logical decisions, and following principles of cause and effect relationship, building blocks of analytical thinking. Dominating the lowest mean of the survey items with 4.04, "I can recognize patterns and trends in a given situation", explains respondents' great deal of self-confidence in recognizing patterns within solutions in ascertaining the outcomes and recurring problems common in all problems.

Overall, the Learning from Incidents approach effectively enhanced the diverse characteristics of analytical thinking. Thus, they were most confident in not only systematic reasoning and analysis, but also honing in on precisely what is important in the problem, understanding of its likely course and other consequences, rather than the detailed, extensive thinking needed to be effective at pattern recognition. This profoundly suggests that learning from incidents builds students' systematic approach to structured reasoning, tends to be self-paced as an instance of critical evaluation of multiple views, thinking of the problem, and its affecting variable in helping address community issues and real-world problems.

The result supports Khairunnisa et al. (2023) and Suyatman et al. (2021), who strongly posited that "Analytical thinking skills can make it easier for individuals to analyze complex issues and determine valuable data". Our unpredictable world increasingly emphasizes the importance of analytical skills since the ability to understand complexity is essential for everyone (Li, 2022).

Table 6. Post-Self Assessment of the Respondents on the Effectiveness of the Learning from Incident Approach in Problem-Solving in terms of Communication

Indicators	Mean	Std. Deviation	Interpretation
1. Discussing real-life incidents helped me clearly communicate the nature of a problem	4.28	.453	Agree
2. The Learning from Incidents approach improved my ability to explain my ideas during problem-solving activities.	4.24	.476	Agree
3. I was able to ask meaningful questions while analyzing incidents.	4.10	.543	Agree
4. Sharing my thoughts during incident-based discussions helped me refine possible solutions.	4.18	.481	Agree
5. Listening to others' perspectives improved my understanding of the problem.	4.28	.536	Agree
6. Communication during incident analysis helped identify causes and consequences of problems.	4.34	.478	Agree
7. I felt comfortable expressing my opinions when solving problems based on incidents.	4.26	.527	Agree
8. Collaborative communication during Learning from Incidents activities led to better problem-solving outcomes.	4.22	.506	Agree
Overall	**4.23**	**0.500**	**Agree**

Legend: 4.50-5.00 Strongly Agree, 3.50-4.49 Agree, 2.50-3.49 Moderately Agree, 1.50-2.49 Disagree, 1.00-1.49 Strongly Disagree

The post-self assessment on the effectiveness of the LFI approach in the area of enhancing communication skills for solving problems indicates that respondents generally agree with all items, M = 4.23 (SD = 0.500). Thus, they felt that LFI effectively helped students to communicate problem-solving ideas with one another, listen to one another's input during problem resolution, and collaboratively engage one another in arriving at a solution. The next highest mean of 4.34 suggests that respondents felt most confident in the belief that educational LFI strengthened the importance of communication as a critical crime analysis tool, helping identify where the problem came from and its effects, which is integral to solving a problem.

The second-highest mean score of 4.28 highlights that respondents value both expressing their own ideas clearly and actively listening to others, emphasizing the role of communication in clarifying problems and understanding different viewpoints.

The third highest average score (4.26 to 4.24) showed that respondents felt they were more confident and clear in sharing ideas, leading to improved participation and collaboration in solving problems in groups. Also, meaningfully agree items, such as asking thoughtful questions (4.10), sharing your thoughts to refine a solution (4.18), and communicating collaboratively (4.22), indicated that LFI was encouraging engagement, dialogue, and teamwork in solving problems. In general, the results indicated Learning from Incidents developed communication competencies by improving clarity and confidence in expressing thoughts, listening to and considering others, and collaborating to analyze problems and refine solutions. The highest mean, using communication to identify causes and consequences, indicated that this external measure improves interpersonal communication and connects communication with analytical problem-solving. The mean in general indicated that respondents found the approach of LFI a useful tool for strengthening individual and collaborative communication.

According to Muskaan Oswal (2023), "A team that communicates well can overcome obstacles smoothly. Each person brings her own unique views, which the team members draw on to find creative solutions."

The result reinforces Robi et al.'s (2024) findings that students' communication skills should be empowered by acclimatizing them to discuss to increase learning and understanding. This habit can be trained by performing lesson study (LS) activities in problem-based learning (PBL).

Table 7. Post-Self Assessment of the Respondents on the Effectiveness of the Learning from Incident Approach in Problem-Solving in terms of Brainstorming

Indicators	Mean	Std. Deviation	Interpretation

1.	Brainstorming during incident analysis helped me generate multiple solutions to a problem.	4.24	.476	Agree
2.	The Learning from Incidents approach encouraged me to share ideas freely during brainstorming sessions.	4.10	.505	Agree
3.	Listening to others' ideas during brainstorming improved the quality of my solutions.	4.32	.551	Agree
4.	Brainstorming helped me consider different perspectives related to the incident.	4.34	.478	Agree
5.	Group brainstorming allowed me to build on others' ideas to improve problem-solving outcomes.	4.22	.506	Agree
6.	Brainstorming activities helped me identify the root causes of problems presented in incidents.	4.18	.522	Agree
7.	I felt comfortable contributing creative ideas during brainstorming discussions.	4.24	.517	Agree
8.	Brainstorming in Learning from Incidents activities made problem-solving more effective.	4.22	.545	Agree
Overall		**4.23**	**0.512**	**Agree**

Legend: 4.50-5.00 Strongly Agree, 3.50-4.49 Agree, 2.50-3.49 Moderately Agree, 1.50-2.49 Disagree, 1.00-1.49 Strongly Disagree

The post-self-assessment of the effectiveness of the Learning from Incidents (LFI) in enhancing brainstorming skills showed that respondents agreed on all items, with an overall mean of 4.23 (SD = 0.512), which means LFI increased the ability to brainstorm, share, and use others' ideas to create solutions. "Brainstorming helped me consider different perspectives related to the incident" (4.34) and "Listening to others' ideas during brainstorming improved the quality of my solutions" (4.32), items scored the highest. These emphasised that working together, thinking about other people's viewpoints, enhanced problem-solving. Other strongly scored items, generating multiple solutions (4.24), and I contributed creative ideas comfortably (4.24), indicate that LFI also enhances individual creativity and self-efficacy. Other values indicate that using the Learning from Incidents approach promotes students' collaborative and creative thinking so that ideas are created, revised, and implemented to solve problems more effectively.

These results support the study of Al Mutairi (2015), which proves the effectiveness of using the brainstorming strategy in developing creative thinking skills in Kuwait schools. A clear problem statement with good planning encourages meaningful idea generation and development, making these ideas relevant to solving problems or addressing challenges in class (Northern Illinois University, 2012).

Table 8. Post-Self Assessment of the Respondents on the Effectiveness of the Learning from Incident Approach in Problem-Solving in terms of Decision-making

	Indicators	Mean	Std. Deviation	Interpretation
1.	The Learning from Incidents approach improved my ability to evaluate different options before making decisions.	4.22	.506	Agree
2.	Analyzing incidents helped me identify the most appropriate solution to a problem.	4.34	.592	Agree
3.	I considered possible consequences when choosing solutions during incident-based activities.	4.24	.476	Agree
4.	Decision-making during incident analysis was based on evidence and logical reasoning.	4.32	.512	Agree
5.	The approach helped me make informed decisions when faced with complex problems.	4.28	.572	Agree
6.	I felt confident deciding on a solution after reviewing similar past incidents.	4.30	.580	Agree
7.	Learning from incidents helped me weigh risks and benefits before taking action.	4.26	.599	Agree

8.	Decision-making activities in Learning from Incidents improved the overall effectiveness of my problem-solving.	4.30	.505	Agree
Overall		**4.28**	**0.543**	**Agree**

Legend: 4.50-5.00 Strongly Agree, 3.50-4.49 Agree, 2.50-3.49 Moderately Agree, 1.50-2.49 Disagree, 1.00-1.49 Strongly Disagree

It can be seen from Table 8 that the respondents viewed that Learning from Incidents (LFI) effectively improved students' ability to make decisions logically and strategically. The majority of the respondents agreed that the LFI method improved their decision-making skills, with a mean of 4.28 (SD = 0.543).

The highest rated items were item 2, with an overall mean score of 4.34, and item 3 (4.32), indicating that the respondents believed that problem-based learning via LFI was effective in selecting appropriate solutions and utilizing critical, evidence, and knowledge-based reasoning. This was followed by items 6 and 8, wherein the average was 4.30, reflecting that the students are aware of how much the LFI helped in improving the effectiveness of their outcomes when solving problems. Items relating to weighing risk and benefit (4.26) and considering consequences (4.24) also scored above the mean, and respondents agreed that it is important to consider outcomes of advice while postponing action.

The low standard deviations (0.476–0.599) further suggest consistent perceptions regarding LFI. The lowest rated item 1 (M = 4.22, SD = 0.507) indicates that systematic evaluation of all possible options needs to be emphasized, and also shows room for improvement in that domain. Overall, the data indicate that learning from Incidents helps in decision-making skills related to evaluating other options and selecting appropriate solutions. Students agreed that, especially in applying logical reasoning and evidence-based analysis, enhancement of decision-making confidence, and weighing various risks, benefits, and how to consider consequences, will help reinforce their effective problem-solving skills with complex problems, as learning's main ability (LFI material). In all items, the respondent showed general agreement, but slightly lower in evaluating options suggested that additional exercises or guided practices in the systematic option analysis would strengthen the ability a bit better. Overall, LFI was a flexible and helpful strategy in improving students' problem-solving and decision-making abilities, especially for handling complex, real-life, community-related problems.

This result reinforces the study of Manal Khazen (2025), which refers to the issue of transforming and enhancing problem-based learning approaches that promote ethical thinking and decision making, which provides concrete suggestions for teachers to apply problem-based learning techniques that actually enhance ethical reasoning and decision-making skills, thus making a workable framework for ready use in the classroom.

Table 9. Post-Self Assessment of the Respondents on the Effectiveness of the Learning from Incident Approach in Active Citizenship Literacy in terms of Community Engagement

	Indicators	Mean	Std. Deviation	Interpretation
1.	I understand my rights and responsibilities as a citizen.	4.40	.534	Agree
2.	I can distinguish between fact and opinion when analyzing information about public issues.	4.50	.505	Strongly Agree
3.	I feel a sense of responsibility to contribute positively to my community.	4.58	.537	Strongly Agree
4.	I am interested in learning more about current public issues and solutions.	4.50	.580	Strongly Agree
5.	I understand the importance of engaging with local authorities and stakeholders in the problem-solving process.	4.48	.543	Agree
6.	I value the importance of diverse perspectives in resolving community incidents effectively.	4.46	.578	Agree
7.	I believe my actions as an individual citizen can contribute to solving community problems.	4.36	.597	Agree
8.	I am willing to participate in community-based initiatives to prevent future incidents.	4.60	.534	Strongly Agree
Overall		**4.48**	**0.551**	**Agree**

Legend: 4.50-5.00 Strongly Agree, 3.50-4.49 Agree, 2.50-3.49 Moderately Agree, 1.50-2.49 Disagree, 1.00-1.49 Strongly Disagree

Table 9 presents data on the enhancement of Active Citizenship Literacy in terms of the Community Engagement of the respondents as a result of the LFI approach. The results show a high degree of agreement with an overall mean of 4.48 (SD = 0.551) interpreted as Agree. This demonstrates that the respondents feel that LFI prompted awareness and responsibility, and encouraged civic engagement.

The highest mean score of 4.60 reflects "I am willing to participate in the next community-based efforts to ensure we are on the right path not to repeat the incident," which shows the impact of LFI on inciting active participation and engagement. Respondents have developed a disposition not just to awareness but to community action. This reflects a move towards proactive citizenship.

The second highest mean score was 4.58, as in item 3 states, that the respondents developed a strong sense of civic responsibility. The LFI also instilled values of accountability and social contribution, so necessary for active citizenship.

The third-highest rated items were 2 and 4, rated 4.50, expressing that "LFI equipped me with the knowledge and skills necessary to critically analyze information and make well-informed decisions," also indicates a boost in awareness and engagement with public issues. Respondents learnt to analyse what they read, and on the ground, we perceive this as being informed, and responsibly informed citizens who engage with society, and not just inside information.

The third highest rated with a 4.50 mean score was 2 and 4, demonstrating that LFI enhanced the critical awareness and engagement of respondents towards public issues in such a way that respondents can analyze responsibly and stay informed, which is needed for meaningful participation in society. Respondents also agreed on understanding rights and responsibilities as citizens 4.40 and engaging with stakeholders 4.48, meaning respondents improved in civic literacy and awareness of collaboration. Item 7 "I believe my actions as an individual citizen can significantly contribute to solving problems in the community" 4.36, although it is slightly lower, reflecting strong agreement, suggesting most respondents feel empowered despite a fraction unsure of their capacity for effecting significant change. The relatively low standard deviations seen across items indicated respondents perceived nearly identical reinforcing findings. Collectively, data suggested the LFI was effective in developing active citizenship literacy in fostering willingness to engage in community initiatives, as well as with regard to feelings of civic responsibility and accountability, critical awareness of public issues, and appreciation of the necessity of collaboration and diverse perspectives. In essence, LFI not only boosts students' understanding of community issues but also motivates them to be active, responsible, and engaged citizens capable of meaningful efforts toward resolving real-life and community-based problems.

Item 7, rated 4.36, is lower, and states, "I believe the things I do as an individual citizen can contribute to solving some of the problems of the community", and certainly reflects strong agreement. Most of them felt empowered, though not that confident of the degree and potency of their relevance and impact should they. And perhaps doubting how great a citizen they can really be. The low standard deviations reflect that the examiners uniformly perceived the performance of active citizenship literacy based on how well each examiner clustered their ratings together. Therefore, the implementation of the LFI method was statistically successful in teaching active citizenship literacy to the students in the study.

In conclusion, LFI not only deepened the understanding of the respondent students about the function of community issues, but also made them always active, responsible, and engaged citizens who can do things to solve real-life and community problems.

According to the research of Nantale Hadijah & Special (2025), civic engagement is an anchoring modality of community development; it provides pathways for citizens to influence their local, social, and political landscapes, promote issues of shared concern, and help persuade leaders and make social change happen.

Table 10. Respondents' Pre-Test Scores Before Using Learning from Incidents in Problem-Solving Skills and Active Citizenship Literacy

Scores	Analytical Thinking		Communication		Brain-storming		Decision-making		Community Engagement		Verbal Interpretation
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	
17 to 18	12	24	0	0	0	0	0	0	0	0	Excellent
13 to 16	10	20	1	2	5	10	1	2	2	4	Very Good
9 to 12	21	42	20	40	25	50	27	54	30	60	Good
5 to 8	3	6	7	14	14	28	15	30	7	14	Fair
0 to 4	4	8	22	44	6	12	7	14	11	22	Poor

Total	**50**	**100%**	**50**	**100%**	**50**	**100%**	**50**	**100%**	**50**	**100%**

Table 10 provides information concerning the distribution of pre-test scores from 5 skill sets (analytical thinking, communication, brainstorming, decision making, community engagement) before implementing the Learning from Incidents method.

On Analytical Thinking, most (42%) respondents are in the Good and (20%) Very Good categories, while 24% have an Excellent rating. Only a small percentage (14%) scored in the Fair and Poor levels. This indicates that learners already have relatively strong analytical abilities, which indicates that they should be prepared to perform tasks requiring reasoning and evaluation.

However, communication is labeled as the weakest of skill areas, while 44% fall under the Poor category, with only 2% of respondents being rated Very Good, and no student receiving Excellent. Though about 40% are, as classified, Good, the high percentage of low-performing students indicates that interacting meaningfully and communicating ideas effectively is still a struggle for many learners.

In Brainstorming, half of the respondents (50%) are at the Good level, while 28% are Fair and 12% Poor. Only 10% reached the Very Good level, and none got Excellent. This implies that while students generate ideas, they do not do so very productively, as to have a diversity of ideas and a wealth of options in their responses.

On Decision-making, most respondents (54%) are classified as Good, followed by 30% at Fair and 14% at Poor. Again, only 2% reached the Very Good level, with no Excellent at all. Students seem to have a basic capacity to make decisions, but the ability to evaluate options and anticipate outcomes along important dimensions may be missing. 60% of respondents are at the Good level, with 14% and 22% at Fair and Poor, respectively; only 4% were Very Good, and no one scored an Excellent in this area. Although students demonstrate some awareness of community involvement, active participation, and civic involvement is not yet fully developed.

Likewise, in Community Engagement, 60% are at the Good level, while 14% and 22% are in Fair and Poor, respectively. 4% have achieved Very Good, and none Excellent, indicating some awareness of community engagement on the part of students, but active engagement and civic responsibility have not developed fully.

Overall, most learners are found in the Good category across all domains, meaning they are moderately proficient but not highly skilled or able to apply up-to-date knowledge and skills. There are no Excellent ratings in 4 of the 5 skills, indicating these learners have a great need to be instructed in higher-order thinking and expertise development. Communication is the area that needs the most improvement; Analytical Thinking is indeed the best area according to student data.

These findings illustrate the need to take the Learning from Incidents approach to develop higher-level problem-solving ability, improve communication, and enhance students' willingness to engage as members of the community.

The use of problem-solving approaches in school learning significantly improves students' problem-solving abilities (PSAs), strengthens teacher–student interaction, and facilitates the development of critical thinking (Sihotang, Sukardiyono, Kuswanto, 2025). A Systematic Literature Review (SLR) of 38 papers Scopus and SINTA indexed for publications between 2019 and 2024 showed that problem-solving strategies are able to improve the ability and motivation of students to engage in lessons through picture cards as learning media. Through this systematic literature review study, the authors implied that the application of adaptive, interactive, and student-centered, especially problem-solving, has a positive influence on the learning outcomes achieved. Results like these are yet more proof of the importance of taking a problem-solving approach to maximize cognitive and motivational factors in students.

Table 11. Respondents' Post-Test Scores After Using Learning from Incidents in Problem-Solving Skills and Active Citizenship Literacy

Scores	Analytical Thinking		Communication		Brain-storming		Decision-making		Community Engagement		Verbal Interpretation
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	
17 to 18	11	22	6	12	5	10	3	6	6	12	Excellent
13 to 16	17	34	8	16	13	26	11	22	18	36	Very Good
9 to 12	19	38	30	60	27	54	25	50	17	34	Good
5 to 8	1	2	6	12	4	8	7	14	8	16	Fair
0 to 4	2	4	0	0	1	2	4	8	1	2	Poor
Total	**50**	**100%**	**50**	**100%**	**50**	**100%**	**50**	**100%**	**50**	**100%**	

Table 11 shows the distribution of post-test scores of respondents in problem-solving skills and literacy in active citizenship. The results indicated significant improvement across the board of respondents after the intervention was implemented.

For Analytical Thinking, most of the respondents are now in the Good (38%), Very Good (34%), and Excellent (22%) levels, with only 6% in the Poor and Fair categories combined. After the intervention, they must therefore have strengthened their power to analyze situations and advance and evaluate reach decision logically.

For Communication, the majority of respondents (60% now) are in the Good rating, with 16% at Very Good and 12% at Excellent. In the pre-test, a greater number was in the Poor category. This indicates that students had greatly improved in expressing ideas, taking part in discussions, and conveying information. The findings in communication skills lends support Chen et al. (2023); Reith-Hall & Montgomery (2022, 2023)'s suggestion that communication skills are key to enabling students to convey their ideas and arguments clearly, appreciate and engage with diverse perspectives, and participate constructively in group dialogue, assisting not only academic learning but equipping students for engagement with a diverse and vibrant society (Reith-Hall & Montgomery, 2023).

In Brainstorming, more than half (54%) of respondents are at the Good level, with 26% at Very Good and 10% at Excellent. Few (10%) in Fair and Poor. These results suggest better creativity and brainstorming ability, that is, being better able to generate many relevant solutions.

For Decision-Making, respondents averaged 50% Good; 22% were at the level of Very Good, and 6% Excellent. Some respondents did remain in the group Fair (14%) and Poor (8%); still, the overall picture indicated an improvement with regard to decision-making, particularly in being able to weigh alternatives and arriving at sound judgments.

In Community Engagement, it was heartening to see a marked improvement with 36% rated Very Good, 12% Excellent, and altogether 34% at the Good level. The students seem to have developed a civic consciousness and demonstrated that they were more aware of their community responsibilities.

In summary, the post-test results show that respondents are mostly grouped in the Good, Very Good, and Excellent range on most domains. The reduction in Poor and growth in higher-level successful performance indicates that the Learning from Incidents approach has been successful in growing skills in problem solving and active citizenship literacy. As summarized in the study of Guo R. et al. (2024), "it is of increasing importance to develop students' critical and analytical thinking skills in the global landscape of fast globalization."

Table 12. Significant Difference in the Pre-Test and Post-Test Scores of the Respondents Using Learning from Incidents in Improving Problem-Solving Skills and Active Citizenship Literacy

Learning Skills	Pre-test		Post-test		t	df	Sig. (2-tailed)
	mean	sd	mean	sd			
Problem-solving							
Analytical Thinking	12.36	4.71974	13.56	3.84474	-1.444	49	.155
Communication	8.58	3.78553	12.24	3.47328	-5.545	49	.000
Brainstorming	6.30	4.38108	11.70	3.54706	-8.419	49	.000
Decision-making	7.80	2.90671	11.04	4.17456	-4.589	49	.000
Active Citizenship Literacy							
Community Engagement	8.28	4.26682	12.48	3.94472	-5.223	49	.000

Legend: $p < 0.05$ Significant; $p > 0.05$ Not Significant

Table 12 indicates the significant difference between the pre-test and post-test scores, implying that the Learning from Incidents (LFI) approach has contributed to developing the students' competencies in problem-solving and active citizenship literacy.

Analytical Thinking. An increase from a pre-test mean of 12.36 (SD = 4.72) to a post-test mean of 13.56 (SD = 3.84) suggests a positive gain. The t-value of -1.444 and a significance level of .155 indicates that the improvement is not statistically significant at the 0.05 level. This indicates that LFI was effective in enhancing student learning in analytical thinking; however, the improvement, while noticeable, may not have been statistically significant due to the moderate level of respondents' skills at the pre-test.

Communication. The mean scores of 8.58 (SD = 3.79) to 12.24 (SD = 3.47) have already improved significantly since the t-value of -5.545 with .000 significance suggests that LFI significantly enhanced the students' skills in articulating ideas, discussing, and interacting with peers.

Brainstorming. Respondents made a significant improvement in brainstorming, the mean rising from 6.30 (SD = 4.38) to 11.70 (SD = 3.55). The t-value of -8.419 and significance of .000, which indicates a significant difference. It shows that LFI was very effective in fostering students' idea generation, creativity, and collaborative thinking as it relates to any particular skill amongst students who are initially scored low.

The results of the findings of brainstorming skills also supported the prior study of Jack and Kyado (2017), which suggested that brainstorming strategy is an instructional strategy that focuses on students' participation, discussion, input, and two-way communication. The primary goal of a brainstorming pedagogical strategy is to develop and enhance the communication/interaction skills, improve the thinking and decision-making or judgment skills, and at the same time promote diverse opinions. It is effective because it activates students' prior knowledge and arouses their interest.

Decision Making. The mean score moved from 7.80 (SD = 2.91) to 11.04 (SD = 4.17) (t = -4.589, p = .000). This difference is statistically significant, meaning that LFI improved the students' skills in analysing issues, choosing from options available, and making sound and intelligent decisions.

Active Citizenship Literacy (Community Engagement). The higher mean (8.28) increased to a mean score of 12.48 with SD of 3.94 (SD = 4.27), (t = -5.223, p = .000). This difference is statistically significant, meaning that the LFI improved students' awareness of civic responsibility, community involvement, and engagement in societal issues.

According to the research of Sappaile et al. (2023), problem-based learning (PBL) is a methodology that develops problem-solving ability, improves systematic and analytical thought, and benefits students as cooperative learners. With PBL, children learn how to maturely tackle problems, a strength that lends itself both to academic success and the development of active citizenship literacy. What this study demonstrates is that learning from incidents by using problem-solving techniques makes students aware of good solutions, but also makes them critical of public issues and thus active citizens. Overall, there was strong evidence that LFI improved brainstorming, communication, decision-making, and active citizenship literacy, all aspects of problem-solving, as well as civic engagement. The lack of statistical significance in analytic thinking suggests they improved, but they might need more strategies or reinforcement in order to show a stronger effect on this skill. That said, LFI was a powerful intervention for developing everyday problem-solving and active citizenship skills related to creativity, collaboration, decision-making, and engagement with community issues.

These results lent support to the earlier study by Lee (2020), which demonstrated the benefits of a learning-from-mistakes approach by experimentally studying it as a method to improve teaching. This fits neatly within the Learning From Incidents (LFI) concept that promotes increased understanding through reflection on mistakes as a basis to bolster future performance.

4. Summary, Conclusion, and Recommendations

4.1. Summary of Findings

The data show the subsequent effects of Learning from Incidents by comparing the pre-test and post-test scores, which included five specific skills. Each variable was treated with mean, standard deviation, t-test, df of 49, and Sig. 2-tailed.

Analytical Thinking increased, mean pre-test = 12.36 (SD = 4.72), mean post-test = 13.56, (SD = 3.84). While there is an increase and decrease of variability, the t value = -1.444, $p > .155$, indicating that the change is not significant, thus indicating some gain, but not one large enough to consider the effect of Learning from Incidents as consistent on analytical thinking.

Communication improved markedly, mean pre-test = 8.58 (SD = 3.79), mean post-test = 12.24 (SD = 3.47). The t value = -5.545 and $p < .000$. Since the SD is lower at post-test, it indicates a more consistent group improvement, thus indicating that Learning from Incidents was a help in improving communication.

Brainstorming. This domain showed one of the largest increases (Mpre = 6.30, SD = 4.38 to Mpost = 11.70, SD = 3.55). The t-value -8.419 and $p < .000$ denotes a large statistically significant effect. The fact that SD decreased denotes that the participants not only improved but improved with less variance thereby indicating the strong impact of the intervention in creative thinking and idea generation.

Decision-making improved from a mean score of 7.80 (SD = 2.91) to 11.04 (SD = 4.17) by t = -4.589 ($p < .000$). The SD is larger, suggesting the scores are more spread out than the pre-test scores, indicating that the decision-making aspect was improved.

Active Citizenship Literacy (community engagement) increased from 8.28 (SD = 4.27) to 12.48 (SD = 3.94) post-LFI. The t-value of -5.223 and $p < .000$ indicates that the difference between the two sets of means is statistically significant.

The slight decrease in SD indicates that the levels of engagement among participants were closer to one another on average after the LFI intervention.

The results showed that students at baseline possessed limited problem-solving skills as well as active citizenship literacy. After placing the LFI into application, students clearly improved in their ability to analyze the issues, communicate their ideas, generate and evaluate solutions, and make informed decisions. Students exhibited increased awareness and engagement with respect to community issues. Students also found the LFI to be relevant and useful in grappling with societal issues. Overall, the results of the study suggest that the Learning from Incidents approach used in this study was an effective strategy to improve both problem-solving and active citizenship literacy in students.

4.2. Conclusion

The null hypothesis, which states that there is no significant difference between the pre-test and post-test scores of the respondents using Learning from incidents in improving their problem-solving skills and active citizenship literacy, is not accepted as LFI made a significant improvement on the respondents' problem-solving skills and active citizenship Literacy.

4.3. Recommendation

Based on the summary of findings and conclusions about the effect of the Learning from Incidents (LFI) approach on Grade 10 students' problem-solving and active citizenship literacy in Araling Panlipunan in Sta. Filomena Integrated School for the School Year 2025-2026, the following recommendations are made so that students, teachers, administrators, and future researchers will be able to strengthen the teaching and learning process.

1. This study suggests strengthening students' analytical thinking through longer and more structured Learning from Incidents (LFI) activities. Although improvements were seen, they were not statistically significant and suggest that longer exposure and the use of structured tools such as guided questioning and evidence-analysis frameworks could have developed further higher-order thinking and ensured that students achieved stronger, more consistent analytical skills.
2. To help make students feel they could make up and apply interventions, schools were encouraged to take advantages of more 'hands-on' means of learning like real-life simulations, role-playing, and guided practice. These helped students turn their analysis of the incidents they learned about into practical solutions, increasing their efficacy to act on problems and feeling greater confidence about making decisions and getting involved.
3. The study suggests that ideally teachers should always use LFI as a teaching strategy. Teachers, particularly those who are teaching Araling Panlipunan, should regularly insert LFI into classes and not just occasionally use it. The sustained and continuing use of the LFI enables the pupils to remember more, make improvements in brainstorming, communication, decision making, and civic participation thus making learning more real and applications to everyday life.
4. Educators are encouraged to promote communication and interaction through groups, pairs, and dialogue, while simultaneously utilizing clear evaluation tools such as rubrics, reflection guides, and feedback systems to help students better evaluate their choices and solutions. These strategies improve the ability to articulate as well as evaluate.
5. Schools help students exercise their right to be active citizens through service learning experiences, project-based learning opportunities that involve working with the community and engaging in analysis of local issues. Professional development and teacher education programmes focused on LFI will assist in successful implementation of these activities.

6. Future researchers are encouraged to broaden the scope of studies with larger samples, longer intervention periods and further variables, to help fill this gap to witness the continued establishment of LFI as a sustainable impactful learning approach.

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