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A Quantitative Analysis on the Influence of Watching Science Documentaries in Reducing Scientific Misconceptions among Stem Students at College of the Immaculate Conception

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ABSTRACT

This study examined the perceived influence of science documentaries in addressing scientific misconceptions among Grade 11 and Grade 12 science, technology, engineering, and mathematics (STEM) students at the College of the Immaculate Conception in Cabanatuan City. Employing a quantitative descriptive research design, the study involved 50 students from ten STEM sections selected through quota purposive sampling. Data were collected using a researcher-developed, face-validated questionnaire and analyzed through frequency distributions, percentages, weighted means, and rankings. Findings revealed that intelligibility received the highest weighted mean (3.26), followed by fruitfulness (3.20), plausibility (3.19), and dissatisfaction (2.87). Students particularly valued visual explanations and narration for clarifying complex scientific concepts, while recognizing weaknesses in previously held misconceptions received comparatively lower assessments. The findings indicated that science documentaries were perceived as valuable supplementary instructional resources for improving conceptual clarity, encouraging critical reflection, and supporting scientific reasoning. Teachers should integrate documentaries with guided discussions, reflective activities, evidence evaluation, and practical applications to strengthen conceptual understanding. The study was limited to a single institution, a nonprobability sample, and self-reported perceptions without direct measurement of changes in misconceptions. By examining documentary-supported learning through four dimensions of Conceptual Change Theory, the study contributes context-specific insights into audiovisual science instruction and provides a foundation for developing instructional strategies and future investigations of measurable conceptual change.

Keywords: *Audiovisual Learning, Conceptual Change, Science Documentaries, Scientific Misconceptions, STEM Students, Student Perceptions*

1. INTRODUCTION

1.1. Background and Context of the Study

Scientific understanding is essential to students' ability to interpret information concerning health, the environment, and technological developments. For learners in science, technology, engineering, and mathematics (STEM), meaningful learning requires more than memorizing facts; it involves explaining phenomena through concepts consistent with scientific evidence. However, students enter classrooms with ideas shaped by daily experiences, previous instruction, and informal information sources. When these ideas conflict with accepted scientific explanations, they may interfere with subsequent learning. A systematic review by Guerra-Reyes et al. (2024) identified everyday experiences, instructional practices, and decontextualized explanations among the factors associated with misconceptions in natural science education. Evidence demonstrates that these difficulties extend across scientific disciplines. Goshu et al. (2024) documented misconceptions in biology, chemistry, and physics among students in Dire Dawa, Ethiopia. In the Philippine context, Rogayan and Albino (2019) identified misconceptions among junior high school students in genetics, ecology, botany, and zoology. Such findings suggest that instructional approaches should examine learners' existing explanations rather than assume that exposure to correct information automatically replaces them. Conceptual Change Theory provides a basis for this approach. Posner et al. (1982) proposed that changing established conceptions involves dissatisfaction with an existing explanation and recognition that an alternative is intelligible, plausible, and fruitful. Science documentaries may offer opportunities to support these conditions through observable phenomena, visual explanations, and coherent narratives. Research on documentary science films has associated narrative engagement with greater knowledge and interest in science (Howell et al., 2025). Nevertheless, these outcomes do not by themselves demonstrate correction of specific misconceptions. This distinction motivates an examination of science documentaries among STEM senior high school students at the College of the Immaculate Conception in Cabanatuan City.

1.2. Research Problem

The central concern of this study is whether science documentaries can help STEM learners reconsider scientifically inaccurate explanations rather than simply increase their interest in science. Misconceptions may persist even when students have received formal instruction, making their identification important for teaching. Soeharto and Csapó (2022) found differences in misconceptions by grade level and gender among Indonesian learners, supporting examination of learner characteristics alongside conceptual understanding. Existing intervention studies show that instructional content and its presentation matter. Shidik and Tae (2023) reported reduced misconceptions about energy and matter following a scientific teaching approach. Pickett et al. (2022) found that readings challenging intuitive explanations reduced misconceptions more effectively than factual accounts alone. Akmam et al. (2025) reported improved science literacy following cognitive conflict-based physics instruction. These findings support purposeful confrontation of prior beliefs but do not establish that watching a documentary produces equivalent results. At the College of the Immaculate Conception, the manuscript identifies STEM senior high school learners as the population of interest; it does not establish a measured local prevalence of misconceptions. The unresolved issue is how students perceive documentary-based explanations in relation to conceptual change and, within the specified assessment scope, whether conceptual understanding changes following exposure.

1.3. Research Gap

Previous research has documented science misconceptions and evaluated strategies intended to address them, but the evidence does not resolve the instructional question posed here. Shidik and Tae (2023) examined a scientific teaching approach, while Pickett et al. (2022) tested

targeted reading interventions. These studies support challenging prior explanations, but neither examined documentary viewing among Philippine STEM senior high school students. Research on science films addresses a related but distinct issue. Howell et al. (2025) linked engagement with short documentary films to knowledge, interest, and identification with science among adults. However, greater engagement or factual recall cannot automatically be equated with replacing an entrenched scientific misconception. The missing connection is an examination of documentary-based learning through the four conditions of Conceptual Change Theory in a formal senior high school setting. By focusing on students at the College of the Immaculate Conception, the present study provides context-specific evidence relevant to this instructional question without presuming that results from other settings apply unchanged.

1.4. Purpose and Objectives of the Study

This quantitative study aimed to determine the influence of science documentaries in reducing scientific misconceptions among STEM senior high school students at the College of the Immaculate Conception in Cabanatuan City. It sought to describe respondents by age, sex, section, and grade level and examine the perceived influence of documentary viewing through dissatisfaction, intelligibility, plausibility, and fruitfulness, consistent with Posner et al. (1982). The scope covered selected concepts in biology, chemistry, and physics and specified researcher-prepared pre-tests, post-tests, and perception surveys for assessing conceptual understanding and students' responses. The inquiry remained confined to the identified STEM population and formal classroom context rather than other academic strands or informal learning environments.

1.5. Significance and Practical Contribution of the Study

The study may inform science teachers seeking to use audiovisual materials as deliberate instructional resources rather than as supplementary viewing activities. Its focus on conceptual change can help teachers consider whether documentaries expose weaknesses in prior explanations, present understandable alternatives, establish scientific credibility, and show applications of revised ideas. For school administrators, the findings may guide decisions about selecting documentary materials and integrating them into science instruction. Students may benefit from learning activities that invite them to examine their existing beliefs critically instead of accepting information without reflection. The research also offers a local basis for further investigation of documentary-supported instruction, particularly studies comparing students' perceptions with demonstrated changes in conceptual understanding.

1.6. Sustainable Development Goals (SDG) Alignment

The study aligns with Sustainable Development Goal (SDG) 4: Quality Education, which calls for inclusive and equitable quality education and effective learning opportunities (United Nations, n.d.). Its emphasis on scientific misconceptions relates particularly to Target 4.1, concerning meaningful secondary education outcomes, because accurate conceptual understanding is a component of effective science learning. The study also has relevance to Target 4.7, which emphasizes knowledge and skills for sustainable development: interpreting scientific evidence supports informed consideration of health, environmental, and technological issues. By examining whether documentary-based instruction can strengthen conceptual understanding in a senior high school setting, the research may contribute to better-informed teaching practices. These contributions are educational rather than claims of measurable progress toward national SDG indicators.

2. METHODOLOGY

2.1. Research Design

The study employed a quantitative descriptive research design to examine the perceived influence of watching science documentaries on scientific misconceptions among senior high school STEM students. It described respondents' profiles and their assessments of four conceptual-change dimensions: dissatisfaction, intelligibility, plausibility, and fruitfulness, based on Posner et al.'s (1982) framework. This design allowed numerical survey responses to be summarized without manipulating documentary exposure or assigning experimental conditions. Consequently, the findings described students' perceptions rather than establishing that documentaries caused reductions in misconceptions.

2.2. Research Locale, Population, and Participants or Respondents

The study was conducted at the College of the Immaculate Conception in Sumacab Este, Cabanatuan City, Nueva Ecija, during the first semester of academic year 2022–2023. Participants were 50 Grade 11 and Grade 12 STEM students from ten sections: St. James, St. Jeremiah, St. John, St. Joseph, St. Jude, St. Patricia, St. Paula, St. Philomena, St. Phoebe, and St. Priscilla. All selected respondents watched science documentaries. The institution was selected because suitable respondents were available and its educational setting aligned with the study's science-learning focus. The manuscript did not state the total STEM enrollment.

2.3. Sampling Technique and Sample Determination

Quota purposive sampling was used to select respondents. Five students were drawn from each of the ten STEM sections, yielding a sample of 50 with equal representation by section. The quota component established each section's numerical allocation, while purposive selection limited participation to Grade 11 and Grade 12 STEM students who watched science documentaries. An online pre-survey was administered to establish the availability of enough eligible respondents. The sample was determined through fixed section quotas; no probability-based calculation or schoolwide sampling frame was described.

2.4. Research Instrument and Validation

A researcher-developed questionnaire was aligned with the study's research questions. Its first part collected age, sex, grade level, and section, while the second examined students' perceptions of dissatisfaction, intelligibility, plausibility, and fruitfulness. The instrument contained five core questions and used a four-point Likert-type response scale: 4 for strongly agree, 3 for agree, 2 for disagree, and 1 for strongly disagree. Research adviser Mrs. Julina Del Moral conducted face validation, and Mr. Justine R. Madrelejos provided an additional review. Their suggestions informed revisions before administration. No numerical reliability coefficient was reported.

2.5. Data Gathering Procedure

The researchers prepared questions corresponding to the research objectives, sought feedback from the two validators, and finalized the questionnaire after revision. An online pre-survey was conducted to confirm sufficient documentary-viewing STEM students were available. Permission to conduct the research was secured from the school principal and assistant principal. The finalized questionnaire was then distributed exclusively through Google Forms to the 50 selected students across ten sections. After responses were submitted, the researchers collected and tallied the data for descriptive statistical analysis and interpretation.

2.6. Data Analysis and Statistical Treatment

Frequency and percentage distributions were used to summarize respondents' characteristics and documentary-viewing frequency. Weighted means and rankings described responses concerning dissatisfaction, intelligibility, plausibility, and fruitfulness. Mean scores were interpreted as strongly disagree (1.00–1.75), disagree (1.76–2.50), agree (2.51–3.25), or strongly

agree (3.26–4.00), following the questionnaire's four-point scoring system. This treatment supported comparisons of perceived influence across the four conceptual-change dimensions. The uploaded methodology specified neither inferential tests nor pre-test and post-test analysis; its statistical treatment was descriptive.

2.7. Ethical Considerations

The researchers obtained permission from the school principal and assistant principal before distributing the questionnaire. Eligibility was limited to Grade 11 and Grade 12 STEM students who watched science documentaries, and responses were gathered using Google Forms. The source methodology did not describe an ethics review, individual informed consent, voluntary participation procedures, withdrawal rights, confidentiality arrangements, or data storage safeguards. Accordingly, no undocumented ethical clearance or respondent protection measures are claimed here.

3. RESULTS AND DISCUSSION

3.1. Demographic Profile of the Respondents

The demographic characteristics of the 50 respondents were examined according to age, sex, grade level, and section. In terms of age, 24 respondents (48%) were 17 years old, representing the largest group, followed by 22 respondents (44%) who were 16 years old. Four respondents (8%) were 18 years old, while none were 19 years old or 20 years and above. These findings indicate that most participants were between 16 and 17 years old, reflecting the age composition of the selected senior high school students. Regarding sex, 31 respondents (62%) were female, while 19 (38%) were male. This distribution indicates that female students constituted a larger proportion of the selected respondents. However, the findings describe only the composition of the study sample and do not establish the sex distribution of the institution's entire STEM population. In terms of grade level, the respondents were equally distributed, with 25 students (50%) from Grade 11 and another 25 (50%) from Grade 12. This distribution ensured equal numerical representation of the two grade levels in the investigation. The respondents were also distributed equally across ten STEM sections: St. James, St. Jeremiah, St. John, St. Joseph, St. Jude, St. Patricia, St. Paula, St. Philomena, St. Phoebe, and St. Priscilla. Each section contributed five respondents, representing 10% of the total sample. This arrangement reflected the quota purposive sampling procedure, which maintained balanced section representation while selecting students who watched science documentaries. Soeharto and Csapó (2022) identified variations in scientific misconceptions across learner characteristics, including grade level and gender, demonstrating the importance of considering demographic factors when examining conceptual understanding. Nevertheless, the present study did not conduct statistical comparisons between demographic groups. Therefore, differences in the respondents' characteristics cannot be interpreted as determinants of their perceptions or scientific misconceptions. Overall, the demographic findings established that the respondents represented both senior high school grade levels and all ten identified STEM sections. The equal allocation across sections provided a structured basis for describing the perceptions of the selected participants, although the nonprobability sampling procedure limited the generalizability of the findings beyond the study sample.

3.2. Perceived Influence of Science Documentaries on Dissatisfaction with Prior Scientific Conceptions

Dissatisfaction represents learners' recognition that their existing scientific explanations may be incomplete, inaccurate, or inconsistent with newly encountered evidence. According to

Conceptual Change Theory, dissatisfaction with prior knowledge is an important condition that can motivate learners to reconsider previously accepted scientific ideas (Posner et al., 1982). The findings revealed a general weighted mean of 2.87, interpreted as Agree, indicating that respondents generally perceived science documentaries as encouraging them to question their existing scientific beliefs. The highest-rated statement concerned questioning the accuracy of previously accepted scientific ideas after watching documentaries, obtaining a weighted mean of 3.10, interpreted as Agree. This suggests that respondents associated documentary viewing with opportunities to reflect on the reliability of their previous understanding. The recognition that some previously held scientific beliefs were incorrect ranked second, with a weighted mean of 3.00, followed by dissatisfaction with previous knowledge that could not explain new documentary examples, with a weighted mean of 2.80. Meanwhile, recognizing inconsistencies between previous beliefs and documentary evidence obtained a mean of 2.78. The lowest-rated indicator concerned documentaries revealing flaws in earlier scientific understanding, with a weighted mean of 2.68. All indicators were interpreted as Agree, demonstrating consistently positive perceptions despite differences in their relative ratings. The findings suggest that respondents more strongly associated documentaries with questioning previous beliefs than with explicitly recognizing the limitations of their existing scientific explanations. This distinction is important because becoming uncertain about prior knowledge does not necessarily indicate that an inaccurate conception has been successfully replaced. Brod (2021) emphasized that prior knowledge influences learning by shaping how individuals process and interpret new information. When learners encounter evidence that conflicts with existing explanations, they may become aware of conceptual inconsistencies and reconsider their previous understanding. Similarly, Pickett et al. (2022) demonstrated that instructional materials designed to challenge intuitive misconceptions can support conceptual understanding more effectively than factual explanations alone. These perspectives help explain why science documentaries may encourage learners to reconsider existing scientific beliefs, particularly when factual explanations are presented alongside observable evidence. However, the relatively lower ratings for recognizing flaws in prior understanding suggest that documentary viewing may not consistently produce explicit awareness of misconceptions without additional instructional guidance. For science teachers, the findings highlight the importance of integrating guided questions, reflective activities, and classroom discussions into documentary-supported instruction. Such approaches may help learners identify specific inconsistencies between their previous explanations and scientifically supported concepts. Overall, the results indicate that respondents perceived science documentaries as useful for stimulating reflection and dissatisfaction with existing scientific beliefs. Nevertheless, the findings demonstrate perceived conceptual reconsideration rather than objectively measured correction of misconceptions.

3.3. Perceived Influence of Science Documentaries on the Intelligibility of Scientific Concepts

Intelligibility refers to the extent to which learners can understand newly presented scientific explanations. Within Conceptual Change Theory, an alternative scientific conception must be sufficiently comprehensible before learners can meaningfully evaluate or incorporate it into their existing understanding (Posner et al., 1982). The results revealed a general weighted mean of 3.26, interpreted as Strongly Agree, indicating that respondents perceived science documentaries as particularly useful for making scientific concepts understandable. Among the four conceptual-change dimensions, intelligibility obtained the highest general weighted mean, suggesting that clarity of presentation was the most strongly endorsed characteristic of

documentary-supported learning. The highest-rated indicator concerned the contribution of visuals and narration to understanding science, obtaining a weighted mean of 3.44, interpreted as Strongly Agree. This was followed by the presentation of complex topics in understandable ways, with a mean of 3.30, also interpreted as Strongly Agree. These findings suggest that respondents particularly valued the combination of visual representations and verbal explanations in communicating scientific information. The ability to follow step-by-step documentary explanations received a weighted mean of 3.24, while the simplification of scientific ideas without compromising accuracy obtained 3.22. Both indicators were interpreted as Agree. The lowest-rated statement concerned the general ease of understanding documentary explanations, with a weighted mean of 3.10, also interpreted as Agree. Although this remained a positive assessment, its relatively lower rating suggests that not all scientific explanations were perceived as equally accessible. Bobek and Tversky (2016) demonstrated that visual explanations can support scientific understanding by strengthening conceptual coherence and helping learners interpret complex information. Their findings provide a relevant basis for understanding why respondents valued the combination of images and narration in science documentaries. Similarly, Howell et al. (2025) found that narrative engagement with science documentary films was associated with knowledge-related outcomes and increased interest in science, highlighting the educational potential of narrative presentation. The present findings are consistent with these perspectives because respondents strongly endorsed the clarity provided by documentary visuals and explanations. However, perceived intelligibility should not be interpreted as evidence that every scientific concept was accurately understood or retained. The descriptive questionnaire captured students' assessments of their learning experiences rather than independently measuring their conceptual mastery. The results suggest that science teachers may use documentary materials to introduce abstract concepts, illustrate scientific processes, and supplement explanations that are difficult to communicate through verbal instruction alone. Nevertheless, complicated concepts may still require additional clarification, discussion, and opportunities for learners to explain scientific ideas using their own words. Overall, intelligibility emerged as the strongest perceived dimension of conceptual change. The findings emphasize the instructional value of clear audiovisual explanations while indicating that documentary-supported understanding may benefit from guided classroom interaction.

3.4. Perceived Influence of Science Documentaries on the Plausibility of Scientific Explanations

Plausibility concerns the extent to which learners perceive newly presented scientific explanations as believable, reasonable, and consistent with available evidence. In Conceptual Change Theory, understanding a new explanation is insufficient if learners do not consider it credible enough to challenge an existing conception (Posner et al., 1982). The findings revealed a general weighted mean of 3.19, interpreted as Agree, indicating that respondents generally considered the scientific explanations presented in documentaries believable and supported by evidence. The highest-rated indicator concerned the greater believability of documentary explanations compared with previous misconceptions, obtaining a weighted mean of 3.28, interpreted as Strongly Agree. This suggests that respondents perceived documentary-based scientific explanations as credible alternatives to previously accepted ideas. The statement concerning confidence that documentary information reflected scientific evidence ranked second, with a weighted mean of 3.22. This was followed by the recognition of supporting evidence in documentaries, with a weighted mean of 3.20. Both indicators were interpreted as

Agree. Meanwhile, the perceived replacement of previous misconceptions with correct scientific explanations obtained a mean of 3.16. The lowest-rated indicator concerned the contribution of experiments and demonstrations to the perceived validity of scientific concepts, with a mean of 3.10. These indicators were likewise interpreted as Agree. The results suggest that respondents generally accepted documentary explanations as believable, although they expressed comparatively lower agreement regarding the role of experiments and demonstrations in establishing scientific validity. This pattern indicates that perceived credibility may involve the overall presentation of scientific information rather than reliance on demonstrations alone. Lombardi et al. (2016) emphasized that plausibility judgments influence conceptual change by shaping how learners evaluate competing explanations. Their work suggests that learners are more likely to reconsider prior conceptions when alternative explanations appear scientifically defensible. Similarly, Pickett et al. (2022) demonstrated the importance of challenging intuitive misconceptions through instructional materials that encourage learners to reassess their understanding. The present findings are consistent with these perspectives because respondents generally regarded documentary explanations as credible and acknowledged their potential to challenge previously accepted beliefs. However, students' agreement that they had replaced misconceptions represented a self-reported assessment rather than an independently verified change in scientific understanding. For science instruction, these findings suggest that documentaries should be accompanied by opportunities to examine evidence, evaluate scientific claims, and distinguish reliable explanations from unsupported information. Teachers may use documentary demonstrations as starting points for evidence-based discussions rather than expecting students to accept explanations solely because they appear convincing. Overall, the results indicate that science documentaries were positively perceived as sources of plausible scientific explanations. Their instructional contribution may be strengthened when credibility is supported by explicit examination of evidence and scientific reasoning.

3.5. Perceived Influence of Science Documentaries on the Fruitfulness of Scientific Knowledge

Fruitfulness refers to the usefulness of newly acquired scientific knowledge for further inquiry, understanding unfamiliar situations, and applying concepts beyond their original presentation. According to Posner et al. (1982), a fruitful scientific conception provides opportunities to explain additional phenomena and support further learning. The results revealed a general weighted mean of 3.20, interpreted as Agree, indicating that respondents generally perceived scientific knowledge acquired through documentaries as useful for critical thinking, continued learning, and understanding new situations. Fruitfulness obtained the second-highest general weighted mean among the four conceptual-change dimensions. The highest-rated indicator concerned the contribution of documentary information to critical thinking and questioning misleading claims, obtaining a weighted mean of 3.30, interpreted as Strongly Agree. This suggests that respondents particularly associated documentary viewing with increased willingness to examine the credibility of scientific information rather than accepting claims without evaluation. The ability to use documentary explanations to understand unfamiliar situations ranked second, with a weighted mean of 3.26. Although the original results labeled this indicator as Agree, the study's stated interpretation scale classified scores from 3.26 to 4.00 as Strongly Agree. The numerical finding nevertheless indicates a positive assessment of the perceived usefulness of documentary-based knowledge beyond the original examples. The motivation to explore scientific topics beyond the classroom obtained a weighted mean of 3.24, followed by the ability to correct misconceptions communicated by others, with a mean of 3.18. Both were interpreted

as Agree. Meanwhile, the ability to apply scientific concepts to academic tasks or real-life problems received the lowest mean of 3.02, also interpreted as Agree. These findings suggest that respondents more strongly associated documentary learning with critical reflection and interest in science than with the practical application of knowledge. Howell et al. (2025) demonstrated that narrative engagement with science documentaries was associated with knowledge and interest in scientific topics. Their findings support the potential of documentary-based learning to encourage engagement extending beyond immediate exposure to scientific information. Similarly, Hajian (2019) discussed the importance of learning transfer, emphasizing that applying acquired knowledge across situations involves processes beyond initial comprehension. These perspectives provide a basis for interpreting the comparatively lower rating for practical application. Although respondents perceived documentary content as understandable and useful, translating scientific explanations into academic problem-solving or real-life applications may require additional opportunities for practice, reflection, and contextual learning. The findings suggest that teachers may strengthen the fruitfulness of documentary-supported instruction by incorporating problem-solving exercises, real-life scientific scenarios, reflective questions, and evidence-evaluation activities. Such approaches may help learners connect documentary explanations with practical situations while developing their ability to apply scientific knowledge independently. When the four conceptual-change dimensions were considered together, intelligibility obtained the highest general weighted mean of 3.26, followed by fruitfulness at 3.20, plausibility at 3.19, and dissatisfaction at 2.87. This descriptive pattern indicates that respondents most strongly endorsed the clarity of documentary explanations, followed by their perceived usefulness and credibility. Dissatisfaction received the lowest overall rating, suggesting that recognizing weaknesses in prior scientific beliefs was less strongly endorsed than understanding and appreciating the presented information. These differences should be interpreted descriptively because the study did not employ inferential statistical tests to determine whether the observed differences among dimensions were statistically significant. Collectively, the findings indicate that STEM students positively perceived science documentaries across the four conditions of conceptual change. Their strongest assessments concerned understandable scientific explanations and the usefulness of documentary content for critical evaluation, while comparatively lower ratings involved recognizing flaws in existing beliefs and applying knowledge to practical problems. These findings suggest that science documentaries may serve as purposeful instructional resources when integrated with guided reflection, evidence-based discussion, and application-oriented learning activities. However, because the study relied on descriptive self-reported perceptions, the findings do not independently establish measurable reductions in scientific misconceptions. The principal contribution of the study lies in identifying how selected STEM students perceived documentary-supported learning in relation to the conceptual-change conditions of dissatisfaction, intelligibility, plausibility, and fruitfulness.

4. CONCLUSIONS AND RECOMMENDATIONS

The study concluded that science documentaries were perceived as useful educational resources for addressing scientific misconceptions among the 50 Grade 11 and Grade 12 STEM students at the College of the Immaculate Conception during academic year 2025–2026. Consistent with the four components of Conceptual Change Theory, the findings indicated that documentaries encouraged students to reconsider prior misconceptions (dissatisfaction), understand complex scientific concepts through visual explanations and narration (intelligibility), recognize scientifically supported explanations as credible (plausibility), and connect acquired knowledge to further learning and real-life situations (fruitfulness).

Collectively, these findings suggested that science documentaries supported students' understanding of scientific concepts while encouraging reflection, critical thinking, and engagement with scientific information. The results highlighted the educational value of documentaries as supplementary instructional materials within the study context. However, the findings primarily reflected students' reported experiences and perceptions rather than directly measured reductions in scientific misconceptions.

Teachers should integrate scientifically credible documentaries as supplementary instructional resources aligned with specific STEM learning competencies, particularly when discussing complex concepts and addressing common scientific misconceptions. Documentary viewing should be accompanied by guided discussions, reflective activities, quizzes, simulations, or experiments that encourage students to examine their previous understanding and evaluate scientific explanations. Teachers should also provide subtitles, translations, or simplified materials when necessary to support accessibility and comprehension. School administrators should strengthen documentary-based instruction by providing adequate audiovisual equipment, reliable internet access, and appropriate procedures for evaluating the usefulness of these resources in classroom learning. Students should be encouraged to critically examine scientific information, select credible educational media, and relate documentary content to classroom discussions and everyday experiences. Parents and community organizations may support scientific literacy by promoting access to reliable science-related materials and educational activities. Future researchers should consider assessing students' misconceptions before and after documentary viewing to examine conceptual changes more directly.

The study was limited to 50 Grade 11 and Grade 12 STEM students from the College of the Immaculate Conception during academic year 2025–2026, selected through quota purposive sampling. Consequently, the findings may not fully represent students from other academic strands, grade levels, or educational institutions. Data were obtained through a validated self-report questionnaire and analyzed using weighted means, rankings, and percentage distributions, primarily reflecting respondents' perceptions. Furthermore, the descriptive research design did not establish causal relationships or directly measure changes in scientific misconceptions. Future studies may involve broader samples, multiple educational settings, and before-and-after assessments to examine conceptual change more comprehensively.

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