

## What Happens When Science Fiction Is Introduced into Science Classes?

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*“Education is what remains after one has forgotten what one has learned in school.”  
-Albert Einstein*

SCIENCE fiction (sci-fi), whether in literature or films and comics, can always spark colorful visions in the audiences. Despite being a genre of speculative fiction, sci-fi works typically includes serious scientific elements. What impacts can they pose on science education if they are introduced in the classroom? Do they have the potential to become significant resources for science education, or will they probably be a source of distraction and causes of misconception in science classes? Extensive research has been conducted for addressing questions like these.

A program named “Science Fiction in Education (Sci-Fi-Ed)” was experimented in European Union countries between 2012 and 2014, which aimed to advance science education in Europe by integrating sci-fi narratives into teaching (Vrasidas et al., 2015). The program’s objectives include enhancing students’ interest and engagement in science learning and giving girl students and other marginalized groups more access to science learning opportunities. Vrasidas et al.’s (2015) study is a report on the Sci-Fi-Ed’s outcomes, highlighting the unique advantages of sci-fi subject matter in motivating students, heightening their immersive experience, and fostering their independent thinking, while also noting the challenges of integrating sci-fi into in science education, such as time constraints and complications to curriculum adjustment. Unlike research on Sci-Fi-Ed that targets primary and secondary school, Bowater et al.’s (2012) study involves four UK university professors who incorporated sci-fi into the teaching of biochemistry and other relevant science subjects, documenting their practices, outcomes, and lessons drawn, with the view to providing insights from the perspective of higher education. According to Bowater et al. (2012), posing questions like “which plots conform to biochemical principles” and “which are artistic imagination” during students’ in-class sci-fi film watching could effectively stimulated their discussions on scientific ethics and foster their critical thinking; at the same time, collaborating with humanities faculty (e.g., sci-fi film researchers) could help make up the science teachers’ knowledge gaps in sci-fi and its ethics while also assisting with interdisciplinary skill development in students.

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Asian researchers have also made contributions to the literature on sci-fi's role in science education. For instance, Surmeli (2012) examined the effects of sci-fi films on Turkish pre-service science teachers' attitudes toward the Science-Technology-Society (STS) courses, to find that sci-fi films significantly increased student engagement in the course, and that their benefits reported by the teacher candidates included deepening their grasp of scientific concepts, inspiring their imagination, and piquing their interest in research. Alghamdi and Alotaibi (2022) explored the effects of sci-fi writing on Saudi Arabian girl students' science learning in the 10th grade. The study reveals that sci-fi writing can notably enhance students' understanding of scientific concepts and their scientific creativity, as well as raising their awareness of social issues like environmental protection.

Although most studies in this area have exhibited the positive effects of sci-fi works in science education, certain studies have noted their drawbacks. For example, Hasse (2015) argues that hard science fiction (a subgenre grounded on scientific theories and often drawing heavily on natural sciences like physics) may bear gender biases, reinforcing the cultural stereotype in physics education that "*science is the result of technological fantasies of males.*" Topics in hard sci-fi, such as space exploration and technoutopias tend to appeal more to male students; using hard sci-fi as a teaching material can possibly discourage female students from engaging in scientific endeavors, which is unfavorable for ensuring gender equality and inclusivity in science education. To address this, Hasse (2015) suggests incorporating ecological sci-fi, social sci-fi, and particularly, sci-fi works by female and non-Western creators into science curricula to prevent the potentially new teaching material from becoming additional gender barriers to inclusive science education.

Even though sci-fi focuses on the portrayal of the future world, it can also provoke reflections on current human issues in the audiences. For instance, the speculative descriptions of harsh climatic environments on the future earth may draw their attention to the current environmental agenda. *Analysis of the Impact of Science-Fiction Films and Science-Fiction Books on the Environmental Literacy of 7th-Grade Students* in this issue is an investigation of the effects of sci-fi films and books on environmental literacy development in Turkish secondary school students, with mixed-method research design combining a controlled experiment and semi-structured interviews. Its research findings reveal that sci-fi films are more effective in enhancing students' environmental literacy than sci-fi books, and that inclusion of sci-fi works in science education curricula can significantly enrich teaching devices (Çakır Şik & Önen Öztürk, 2025). While the results of the controlled experiment with such a short duration can hardly demonstrate the long-term effects of sci-fi on students' environmental attitudes and behavior, the study provides empirical evidence for the positive role of sci-fi in science education.

## References

- Alghamdi, A. K. H., & Alotaibi, W. H. (2022). Bringing science fiction story writing to Saudi science education: Writing-to-learn exploratory case study. *Science & Education*, 31(2), 525-541. DOI: <https://doi.org/10.1007/s1191-021-00254-7>
- Bowater, L., Cornea, C., James, H., & Bowater, R. P. (2012). Using science fiction to teach science facts. *The Biochemist*, 34(6), 15-20. DOI: <https://doi.org/10.1042/BIO03406015>
- Çakır Şik, C., & Önen Öztürk, F. (2025). Analysis of the impact of science-fiction films and science-fiction books on the environmental literacy of 7th-grade students. *Science Insights Education Frontiers*, 29(2): 4765-4790. DOI: <https://doi.org/10.15354/sief.25.or812>

- Hasse, C. (2015). The material co-construction of hard science fiction and physics. *Cultural Studies of Science Education*, 10(4), 921-940. DOI: <https://doi.org/10.1007/s11422-013-9547-y>
- Surmeli, H. (2012). Examination the effect of science fiction films on science education students' attitudes towards STS course. *Procedia-Social and Behavioral Sciences*, 47, 1012-1016. DOI: <https://doi.org/10.1016/j.sbspro.2012.06.771>
- Vrasidas, C., Avraamidou, L., Theodoridou, K., Themistokleous, S., & Panaou, P. (2015). Science Fiction in Education: case studies from classroom implementations. *Educational Media International*, 52(3), 201–215. DOI: <https://doi.org/10.1080/09523987.2015.1075102>

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