

# Scrolling Science

Understanding how Audiences Engage with Short Science Videos on Social Media

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SCIENCE FEED

## Algorithms shape what science we see.

- Engagement**  
Likes • Shares • Watch Time
- Visibility**  
Algorithmic amplification
- Understanding**  
Narrative + emotion + accessibility

## INTRODUCTION

Social media platforms have transformed how scientific information is communicated publicly. Short-form videos on TikTok, Instagram Reels, and YouTube Shorts have become increasingly popular formats for science communication, especially among younger audiences, expanding the reach of scientific content beyond traditional media. However, the factors shaping audience engagement with this format remain underexplored.

### AIM

To identify the main factors influencing the consumption of short-form science videos on social media platforms.

## METHOD

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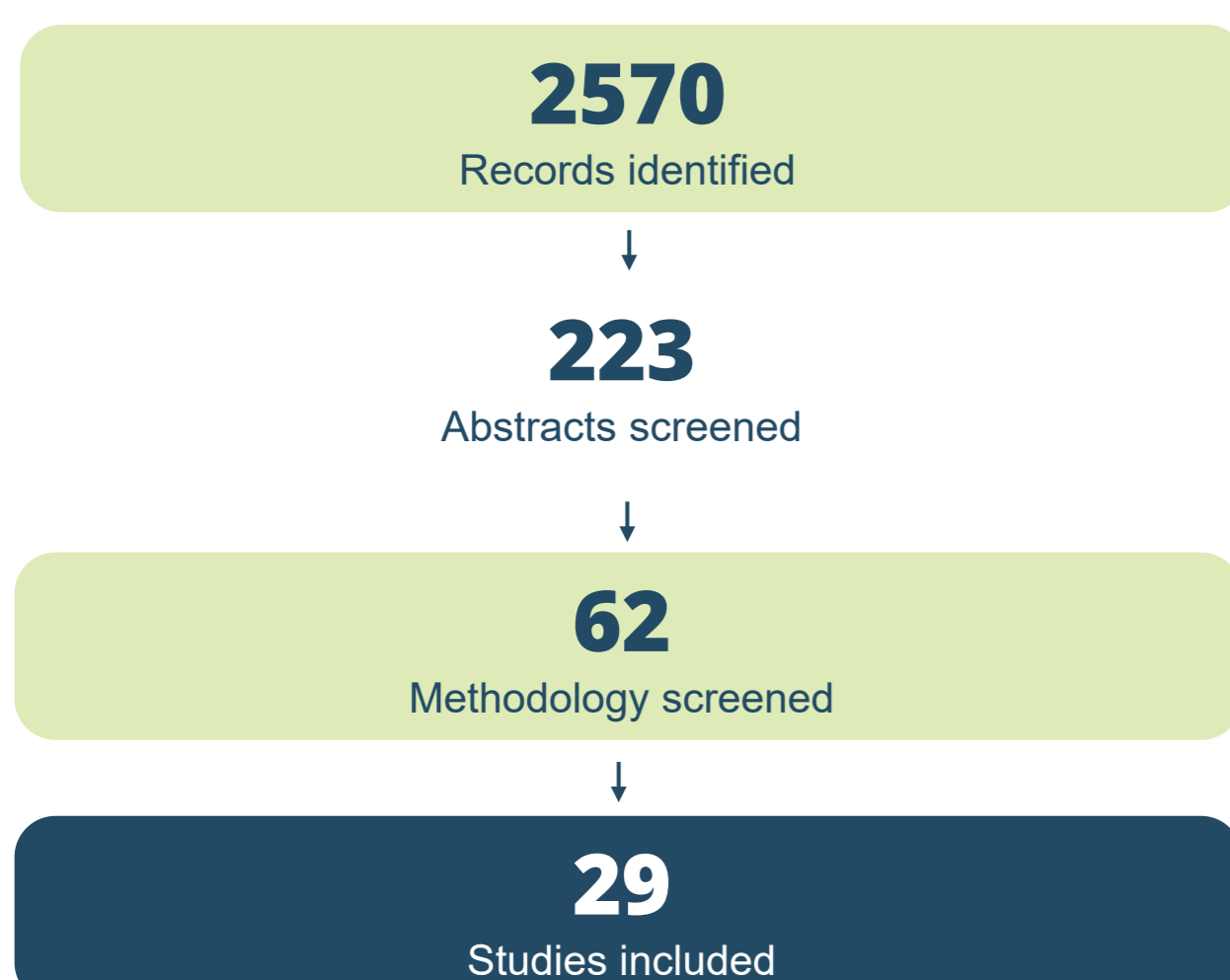
Studies Included

2019-2024

Publication Period

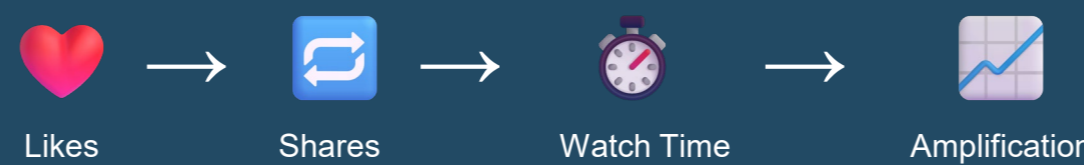
- \_ Systematic Literature Review following PRISMA guidelines
- \_ Databases: ACM, IEEE Xplore, Elsevier, Springer, Google Scholar
- \_ Quality assessment using adapted MMAT criteria
- \_ Focus on TikTok, Instagram Reels, and YouTube Shorts

### PRISMA Flow



## Results & Discussion

### Algorithms Drive Visibility



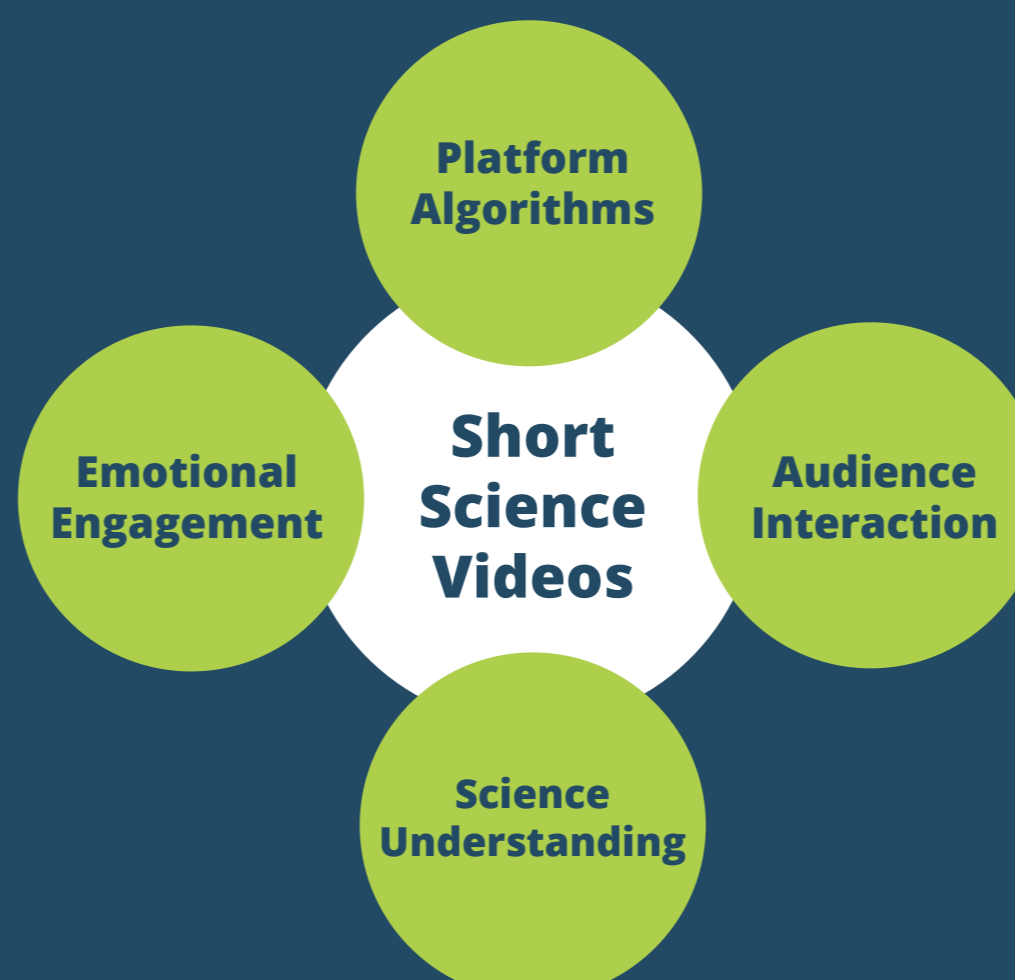
Social media algorithms prioritise highly engaging content, increasing the visibility of videos that generate interaction and emotional resonance.

### Storytelling Enhances Engagement



Narrative structures, emotional appeal, and visually dynamic content significantly improve audience retention and cognitive engagement.

### The Ecology of Short Science Video Consumption



## PLATFORM-SPECIFIC DYNAMICS

### TikTok

- \_ Fast-paced
- \_ Informal tone
- \_ Duets & interaction
- \_ Viral dynamics

### YouTube

- \_ Structured content
- \_ Educational focus
- \_ Longer retention
- \_ Recommendation systems

## RISKS & BARRIERS

- ⚠️ Misinformation and lack of verification
- ⚠️ Oversimplification of scientific concepts
- ⚠️ Algorithmic bias favouring entertainment
- ⚠️ Accessibility limitations
- ⚠️ Cognitive overload and reduced attention spans

## Conclusion

Short science videos are reshaping public engagement with science through algorithm-driven visibility, emotional storytelling, and platform-specific interaction dynamics.

While these formats expand accessibility and reach, they also raise concerns regarding misinformation, oversimplification, and the growing influence of digital platforms on how scientific knowledge is publicly understood.

## FUTURE WORK

- \_ Longitudinal studies on learning retention
- \_ AI-driven science communication strategies
- \_ Ethical implications of algorithmic dissemination
- \_ Accessibility and multimodal communication research

## SELECTED REFERENCES

- Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & The PRISMA Group. (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *PLoS Medicine*, 6(7), e1000097.
- Nguyen, H., & Diederich, M. (2023). Facilitating knowledge construction in informal learning: A study of TikTok scientific, educational videos. *Computers & Education*, 205, 104896.
- Van Dijck, J., & Poell, T. (2013). Understanding social media logic. *Media and Communication*, 1(1), 2–14.