

Introduction

Research shows that algorithms have become a vital part of individuals' daily lives in today’s digital age (Butcher, 2015). While social media serves as a convenient source of information—such as political campaign posts on Instagram, step-by-step tutorials on TikTok, and inspiration on Pinterest—users generally believe that algorithms effectively curate relevant content for their feeds (Oeldorf-Hirsch & Srinivasan, 2022). However, few studies examine how students actively engage with and influence algorithms beyond passive consumption.

Recently, studies on students’ algorithmic literacy and awareness have expanded. Previous studies have primarily focused on students' algorithmic awareness (Brodsky et al., 2020; Koenig, 2020) and users' perceptions of algorithms (Shin, 2021; Zarouali et al., 2021). However, further research is needed to explore how students design and manipulate their algorithms, ultimately enhancing their media literacy skills.

This study uses algorithmic imagination, defined as “the way in which people imagine, perceive and experience algorithms and what these imagination make possible” (Bitcher, 2019, p. 31), as a theoretical lens to conduct a systematic literature review of existing studies.

Research Questions

This study aims to answer the following research questions:

- **How do users perceive and understand the algorithms that govern social media and search engines?**
- **What strategies do users employ to influence or manipulate the algorithms they interact with?**
- **What methodologies are most effective in studying algorithmic imaginaries?**

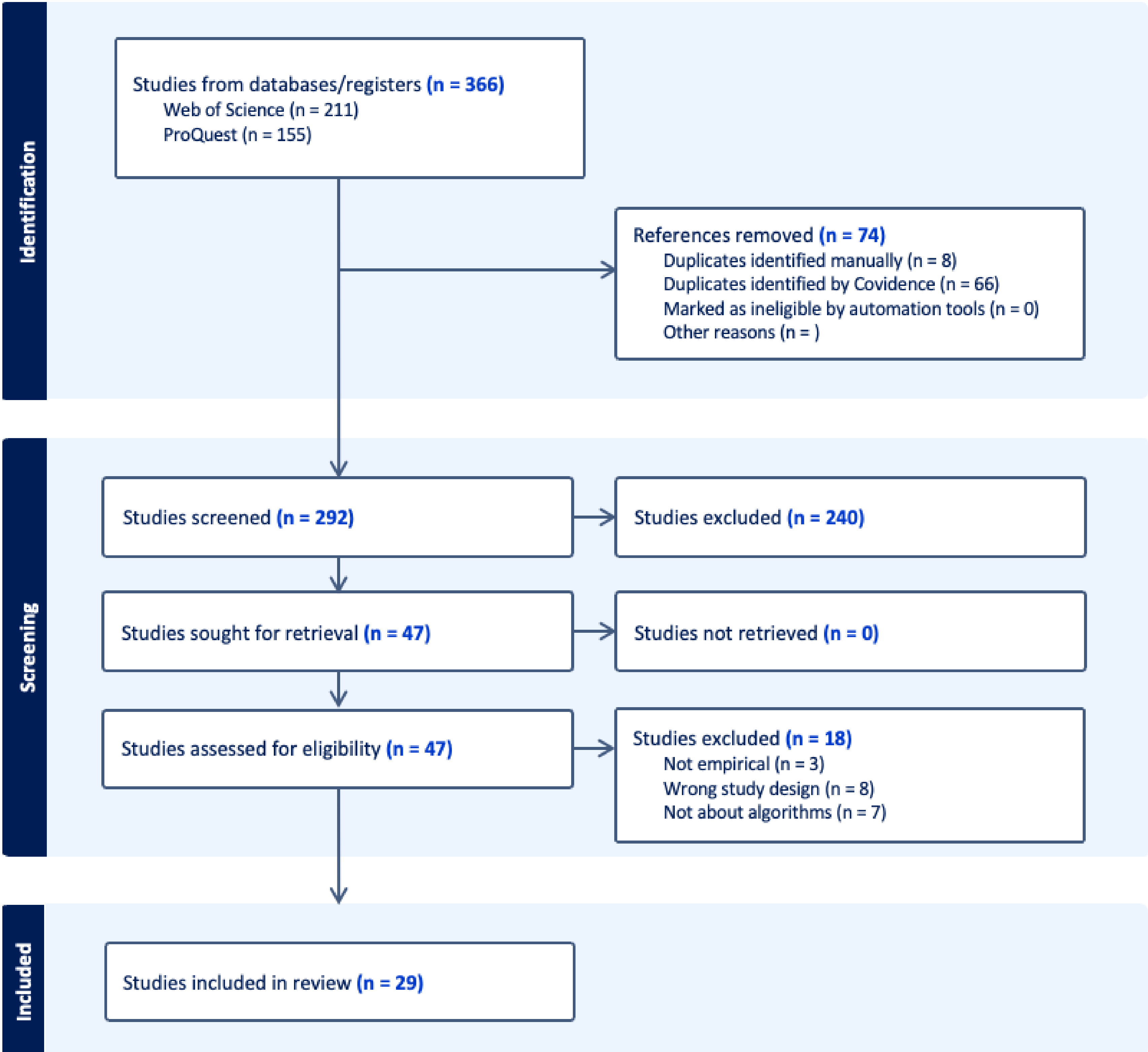
Methods

We searched electronic databases (e.g., Web of Science, ProQuest) for relevant studies using the search terms “algorithm” AND “social media” AND “perception.” This search resulted in 366 initial studies. Covidence was utilized as a screening tool for both the initial and full-text reviews. A study was included if:

- It was written in English
- It was published as a peer - reviewed journal article
- It focused on people’s actions to manipulate algorithms
- It conducted survey or interview for collecting data
- It was observable or measurable
- It focused on people’s description and perception of social media or Internet algorithms

A study was excluded if:

- It was a review articles (e.g., systematic reviews, meta-analyses)
- It focused on algorithm development
- It examined the application or manipulation of technology or people



Results

- The preliminary findings reveal varying levels of user understanding regarding algorithms, ranging from limited awareness to a more positive perception. Users **experience emotional reactions** such as surprise and anger upon realizing algorithmic influence, which leads them to perceive a sense of control and adjust their engagement accordingly. Additionally, users **actively employ strategies** to manipulate social media algorithms, including identifying trending videos, adapting their scrolling behavior, and altering engagement metrics to influence recommendations in their favor.
- To study these algorithmic imaginaries, researchers have found that **qualitative methods**, such as interviews, focus groups, and thematic analysis, provide nuanced insights into user attitudes and behaviors.
- Meanwhile, **quantitative approaches**, including surveys and content analysis of textual and visual data, offer a broader perspective on trends and patterns. These findings highlight the complexity of user interactions with algorithms and the diverse methodologies required to analyze them effectively.
- While the research is ongoing, these results provide valuable insights into **user engagement strategies and perceptions** of algorithmic influence, laying the groundwork for further exploration into the evolving relationship between users and recommender systems.

Conclusion & Implication

Data extraction will be performed based on criteria related to study design, population characteristics, and findings regarding users' strategies and their implications. A quality assessment will be conducted to ensure the study's rigor. The extracted data will then be analyzed using thematic coding.

The second phase of this study involves collecting undergraduate students’ perceptions and manipulation of algorithms through an online survey via the institutional research pool. Building on the findings from the systematic literature review, we aim to explore how students engage with and shape algorithms in their daily practices.

References

