Teenagers and AI on Social Media

CHUN-HAN (ARIEL) WANG, Indiana University Bloomington, USA

CHIA-FANG (CHRISTINA) CHUNG, Indiana University Bloomington, USA

1 INTRODUCTION

Artificial intelligence (AI) is used in social media platforms to curate personalized feeds that fit the users' preferences, and probably the AI that was most broadly and frequently experienced by teenage users. As teenagers are in a stage of first gaining agency, taking responsibility, defining themselves, and developing habits that would influence their adult lives [3, 4, 6], we find it important to understand child-centered AI from their experiences. Of the social media platforms, TikTok has become the second most popular for teenagers following Youtube [2]. On TikTok, the *For You Page* serves as the landing page that affords endless scrolling through videos on the platform. Of the content on TikTok, food content is one of the most popular [1]. Past research has shown how food images influence emotions and trigger certain reactions in viewers. Creating food content also has an impact on eating behaviors [5]. Even though the TikTok algorithm is still a black box, in our study, we learned from teenage interviewees their experiences of interacting with it.

We learned that while teenagers are experiencing and exploring relationships with their peers, other users on social media, and their families, they also hold a unique relationship with social media algorithms. They experienced power dynamics and interactions that we describe as collaboration, negotiation, and control.

Collaboration: Teenagers experienced a sense of collaboration when they saved, liked, and shared content that they enjoyed. They were aware of how these actions were recognized by the algorithm and anticipated that the algorithms would show them similar content that they like in the future. They felt satisfied when the algorithm pushed things that they like onto their feed and believed that their collaboration with the algorithm contributed to the results. To support teenagers develop agency and learn about their relationships with AI technology, one relevant research question is: How can the design of artificial intelligence technology support this collaboration and allow AI to serve as a collaborative agent that is helpful in the exploration of entertaining or educational content?

Authors' addresses: Chun-Han (Ariel) Wang, ariewang@iu.edu, Department of Informatics, Indiana University Bloomington, Bloomington, IN, USA; Chia-Fang (Christina) Chung, cfchung@iu.edu, Department of Informatics, Indiana University Bloomington, Bloomington, IN, USA.

Negotiation: Teenagers negotiated with the algorithm when they saw things that they did not enjoy on their feed. Functions on the platform, such as reporting or clicking not-interested, were ways teenagers mentioned using when they decided to keep certain content off their feed. At the start of curating their For You Page, They were afraid of the algorithm because it might show them things that they did not want to see. For example, some teenagers were conscious about weight management, and videos with strong opinions or advice would bring stress and anxiety. Such negotiation was experienced through trial and error, and was reported as fearful, which brought us to a discussion of the control over AI on social media. How should design support teenagers' understanding and interaction with AI to achieve their desired goals? How can design enhance the negotiation experience more meaningful and enjoyable?

Control: We learned that the power dynamics between teenagers and social media algorithms can be tricky. While collaboration represents a more equal relationship, negotiation and control represents a more unbalanced power between technology and humans. When teenagers were satisfied with the outcome of the interactions they had with AI, they felt they had control over it, and the proactiveness of the algorithm gave a sense of collaboration. However, when they talked about negotiation, they were sometimes afraid of the algorithm's misinterpretation of their actions. Control is a complicated issue. While TikTok offered users some sense of control over their For You Page, it is not fine grained nor clear how certain videos were recommended for them to watch. While transparency and more control over desired and unwanted content could contribute to better user experience, too much control could also eliminate the fun element that is crucial to social media platforms like TikTok. How can technology design balance the control of artificial intelligence with fun? How can AI design encourage teenagers, who are gaining agency in their lives, to explore and enable them to have control over what they interact with?

We learned this relationship between AI and children from our context of studying teenagers using TikTok, but we believe these dynamics could be applied toother contexts as well. We hope that this revelation of the interactions can inspire discussion on design and policy guidelines for child-centered AI. In the future, how should we design for a healthy relationship between a user and artificial intelligence? How do we balance users' control and the element of fun?

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