

Characteristics of an authentic scientific discourse in social networks:

The case of drinking water fluoridation

Doris Asakly, Daniela Orr, Ayelet Baram-Tsabari

This study explores expressions of scientific literacy, user's positions and interactions between them in an authentic scientific discourse on social network. Further it examines how well do four models of science communication – Deficit, Contextual, Lay expertise, and Public engagement – describe this authentic online scientific discourse. The research setting is a content-driven Facebook group concerning fluoridation of drinking water. A topic that is controversial and timely, relates to the entire population, and raises broad discussions that are rich in scientific components.

In the first quantitative phase, about a thousand items (posts and comments) were analyzed by expressions of science literacy such as inquiry and nature of science, socio-demographic information, attitudes towards Fluoridation and towards science in general. Inter-rater reliability test was carried out on 100 items with a result of 0.77 Krippendorff Alpha. In the second qualitative phase, two posts, including their comments and "shares" will be analyzed. The analysis will concentrate on the positions and interactions between key actors in the debates.

The key findings from the analysis carried out so far on 319 items from June 2015, show that men have a clear dominance in the discussion. The common features of science literacy were questions about the natural and material world, analysis and interpretation of data. Great similarity was found in the quantity of items which supported and opposed fluoridation (23.9% for, 25.6% against), women were found to be more likely than men to resist fluoridation.

Our results confirm findings from the literature that consistently show that gender influences perception and that women are more likely to have reservations about science and tendencies to doubt the promise of science.