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"In the Shoes of an Algorithm": Towards a Global Media Education Initiative Focusing on Recommendation Algorithms

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“Proposal Information/Research/Questions and Theoretical Approach” (350 [actually: 348] words)"

The present research and educational project addresses issues arising from the transformative consequences of recommendation algorithms on media practices. The overall problem can essentially be framed as a tension between the increasing importance of online platforms, whose recommendation algorithms select tailored contents for their users, and the difficulties encountered in discussing or reflecting upon recommendation algorithms, whose operations remain largely opaque (Burrell, 2016). The project consequently undertook (i) to design an educational pen and paper game that would allow participants to gain an intuitive and yet robust understanding of the problems raised by recommendation algorithms, (ii) to explore the problems brought up by participants whenever they were put in position of discussing recommendation algorithms, (iii) to address these problems through media education initiatives aiming to foster reflexive and empowered users.

The project crosses three main theoretical approaches. First, a “media education” approach that seeks to develop competences for establishing critical and autonomous relations to contemporary media environments (Jenkins et al, 2006; Fastrez, 2011) and digital technologies (Voogt & Roblin, 2012; Vuorikari et al., 2016). Second, a “critical technology education” approach that aims at fostering users’ capacities to reflect about technology and its role in our society and people's everyday lives (Saariketo, 2014). Third, a “science and technologies studies” approach, which provides insights on the properties of technical objects, i.e. algorithms, and on the status of explanations, i.e. opacity (e.g. Simondon, 1958; Keller, 2013).

A number of digital platforms have become unavoidable mediators in many different countries (e.g. Youtube, Facebook, Amazon). The internationalization of these platforms similarly calls for an international research and educational initiative studying and addressing the issues raised by recommendations algorithms, paying attention to both commonalities and specificities of problems and solutions experienced in different countries and contexts. The project, which started as a collaboration of researchers from the University of Namur and media educators for the Action Média Jeunes (ACMJ) association, is currently developing collaborations with Gyeongin National University of Education and the Gyeonggi Institute of Education (South Korea) as well as the Scripps College (United States).

“Methods” (150 [actually: 150] words)"

The research adopted a design based approach (The Design-Based Research Collective, 2003; Wang & Hannafin, 2005) which led to the creation of the serious game titled “In the Shoes of an Algorithm”. The pen-and-paper game comprises two phases: (i) participants are first asked to act as engineers and computers conceiving and executing a calculation rule for ranking a set of YouTube videos; (ii) participants are then invited to collectively reflect upon

their experiences, perceptions and concerns. The game was first used as a focus group technique to identify problems raised by participants and related to recommendation algorithms. The game has then been improved and turned into an autonomous educational support for media educators. The results, analysing the audio recordings of 6 game sessions held in Belgium (4 with teenagers and 2 with adults), allowed us to identify the core problems to be addressed by media education focused on recommendation algorithms.

“Conclusion & Findings, Scientific Significance” (250 [actually: 238])

The analysis of the audio recording of the 6 game-based focus groups revealed two main clusters of problems expressed by participants.

The first cluster has to do with data and computation. First, the formalization problem: the difficulty and the necessity to cast a flexible recommendation processes into a stable calculation rule. Second, the computation problem: the difficulty and the necessity to find a trade-off between an elegant calculation rule and a practical calculation scheme. Third, the intractability problem: the difficulty to foresee the actual outcomes of the designed calculation scheme.

The second cluster of problems has to do with recommendation processes. First, the design problem: participants discuss the relative interest of their respective algorithms, discussing the normative choices related to data selection and calculation rules formalization. Second, the platform problem: participants criticize some of the assumed objectives and the experienced failures of some recommender systems. Third, the recommendation problem: participants insist on the dynamic and interactive processes that shape people’s cultural taste.

These results gave rise to two further initiatives. First, the game designed, the data collected and the analyses produced have impelled us to initiate a broader international comparative study on discourses, experiences and concerns regarding recommendation algorithms — namely: collaborations have been established with South Korean and American Universities involved in media education initiatives. Second, the problems identified were used to refine the course of the game and to readjust the educational objectives, providing media educators with an autonomous support for addressing key concepts and problems related to recommendations algorithms.

References (up to 10 references)

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Also, a 250-word [currently 245 words] abstract suitable for publication must be included.

The present research and educational project addresses issues arising from the transformative consequences of recommendation algorithms on media practices. The overall problem can essentially be framed as a tension between the increasing importance of online platforms, whose recommendation algorithms select tailored contents for their users, and the difficulties encountered in discussing or reflecting upon recommendation algorithms, whose operations remain largely opaque. The project consequently undertook (i) to design a game that would allow participants to gain an intuitive and yet robust understanding of these systems, (ii) to explore the problems experienced by participants, (iii) to address these problems through media education initiatives aiming to foster reflexive and empowered users.

The initiative opted for a design based approach which led to the creation of a serious game, with the collaboration of Belgian media educators and titled “In the shoes of an algorithm”. The pen-and-paper game comprises two phases. First, participants are asked to act as engineers conceiving and executing a calculation rule for ranking YouTube videos. Then, participants are invited to collectively reflect upon their experiences, perceptions and concerns. The analyses of 6 game sessions held in Belgium (4 with teenagers and 2 with adults) allowed us to identify two clusters of problems to be addressed by media education, respectively related to computation and recommendation processes. The initiative is now developing

collaborations South-Korean and American universities, with the hope of better studying and addressing — specific and common — issues raised by recommendations algorithms.