

Implicit Learning in Video Games – Intergroup Contact and Multicultural Competencies

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Abstract. Multiplayer online games (MOGs), which are played in real time over the internet, can be considered a widespread leisure time activity but also a learning opportunity for individuals. Studies have shown playing MOGs to have several potential benefits including motivation and learning among others. These can include multicultural competencies (MCs), as MOGs unite players from all around the world, and, players form their opinions of other cultures based on their own contact experiences instead of preconceptions or prejudice. We propose MOGs bring people from various cultures together and act as a medium for learning MCs implicitly. In order to formalize an understanding of the phenomenon, we consult the contact hypothesis. We will use a quantitative survey to derive a model capturing the interplay between intergroup contact and MCs.

Keywords: Please list your 3-5 keywords {style *keywords*} here. They should be separated by commas.

1 Introduction

Societies all around the world are becoming increasingly globalized. Thus, multicultural networking and communication constitute ordinary activities and multicultural competencies (MCs) are required to ensure functioning interactions and social co-existence of different cultures. MCs can be understood a specific form of crystalized intelligence acquired through previous education and experience [1,18]. Accordingly, they are a composite of skills increasing the chances for effective and appropriate interactions with other cultures [2].

Consulting research showed that an effective way to acquire MCs is intergroup contact (i.e., contact between members of different cultures) [3]. In doing so, individuals can increase their knowledge of other cultures [4] as well as remove prejudices towards others [5]. Depending on the valence of the contact, contrary effects can emerge. Positive intergroup contact has the potential to facilitate knowledge and more positive attitudes and emotions towards other cultures [6] while

negative intergroup contact can impede positive or even strengthen negative attitudes and emotions [7].

During the last decade, new forms of digital communication emerged, which provide innovative opportunities for intergroup contact mediated through technology. One such instance is the wide dissemination of video games as a leisure activity. For example, in 2018 one third of the world population (i.e., 2.3 billion) played video games [8]. Contemporary popular genres of multiplayer online games (MOGs) games such as Battle Royale and Multiplayer Online Battle Arena (MOBA) are interactively played in real time over the internet with people from different cultures all around the world. MOGs include both competitive and cooperative elements, as players on the same team need to work together to beat the opposing team. In order to thrive in the game, players are forced to get to know and understand each other, thus, providing the ideal playground for people of all ages to learn not only MCs, but also cooperative skills. outcomes, with intergroup contact facilitating learning about other groups and influencing MCs [9–11]. However, holistic models about how MCs can be acquired via MOGs due to different forms of intergroup contact are missing. Therefore, the current study proposes four different types of intergroup contact (i.e., friendship, direct contact, indirect contact, imagined contact) to have an influence on MCs based on their valence and frequency. As cases for our study, we look at the most successful games of the Battle Royale (i.e., Fortnite) and the MOBA (i.e., League of Legends) game genres. Methodologically, we will carry out a quantitative survey. Taken together, the study is guided by the research question:

RQ: What influence do different forms of intergroup contact in MOGs have on MCs?

The research question is addressed by gathering together evidence from previous studies in neighboring fields, and, based on the findings, a holistic model of how MOGs can scaffold players' MCs will be created. This model will help to better understand the interplay between intergroup contact and MCs and also aid game developers in incorporating design, which will help players experience with others. Additionally, the insights can add value in neighboring contexts (e.g., health, education, work) and the growing concepts of playful interventions (e.g., gamification, serious games).

2 Theoretical Background

2.1 Contact Hypothesis

We adopt the contact hypothesis, which proposes that intergroup contact can increase the knowledge and the ability to take the perspective of the other group, which in sum reduces prejudice [10]. Ever since its initial conception, the contact hypothesis received additional extensions. First, negative forms of intergroup contact indicated potential for unique intergroup experiences of contact [7]. Second, indirect forms of intergroup contact were proposed to have similar effects as direct intergroup

contact [6]. Third, different forms of indirect intergroup contact were distinguished: Extended contact (e.g., having a close relationship with a member of an outgroup; [12]), imagined contact (e.g., imagination of intergroup contact; [13]), and electronic contact [14].

2.2 Intergroup Contact in Online Multiplayer Games

During the last decades, MOGs experienced a remarkable upturn in their popularity and diffusion indicating their meaningful and increasing role as a leisure activity [15–17]. For the purpose of our paper, we understand MOG play as a specific form of technology use that is particularly interesting for research in information systems due to the amount of users [18–20]. MOGs can be regarded as one of the most diverse places of interaction in a contemporary society, which indicates different implicit learning outcomes and in every game players meet others from foreign cultures [21, 22]. Accordingly, intergroup contact in MOGs is a social intervention in real time that has various effects on players perception of other cultures [23, 24]. As games are complex systems, it is no surprise that intergroup contact present in them comes along in different shades [25]. First, players have the opportunity to write text chat to interact in MOGs to communicate among each other. Second, the majority of MOGs (e.g., Fortnite, League of Legends) provides the possibility to verbally talk to other players in real time. For the purpose of our paper, we differentiate forms of intergroup contact (i.e., friendship, direct contact, indirect contact, and imagined contact towards members from other cultures) [26].

2.3 Multicultural Competencies

Human intelligence is a psychometric construct that consists of cognitive abilities on different levels of abstraction [1, 27, 28]: a superordinate factor of intelligence (i.e., called g factor); the broad concepts of fluid (i.e., use logic and solve problems in novel situations) and crystallized intelligence (i.e., use previously acquired knowledge); a variety of narrow and subordinate abilities (e.g., comprehension-knowledge, fluid reasoning) and extensions (e.g., domain-specific knowledge, psychomotor ability and speed). MCs can be understood as a subordinate ability of domain-specific knowledge and a multidimensional construct [29].

3 Methodology

3.1 Research Design and Data Analysis

We are planning to carry out a quantitative survey to explore the relationships.

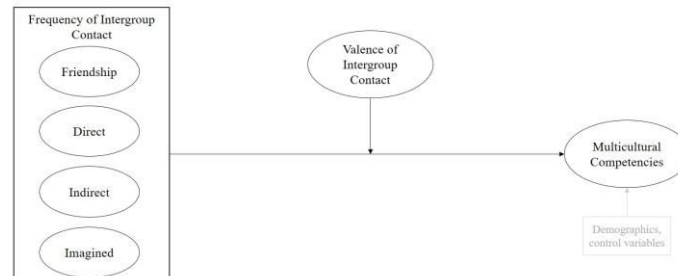


Figure 1. Research Model

3.2 Participants and Data Collection

We plan to use an online survey to ask individuals who play MOGs about their past experiences, the perceived valence of intergroup contact, and their MCs. In order to acquire a significant number of respondents, we will use the crowdsourcing marketplace Mechanical Turk (MTurk). We will use MTurk to have the chance to collect a reliable sample for the ordinary player of MOGs that we are interested in exploring. We plan to collect data from at least 385 MOG players (we used an algorithm to derive this number) and the completion of the survey will take around ten minutes.

3.3 Measurements

Forms of intergroup contact. We will measure the variables by asking participants for their frequency of intergroup contact with players from other cultures in MOGs on a six-point Likert scale ranging from 1 (“never”) to 6 (“very frequently”).

Valence of intergroup contact. To measure the valence of intergroup contact, we will ask participants for their positive and negative contact experiences, using an adapted item [30] for positive and negative intergroup contact. Both items will use a six-point Likert scale ranging from 1 (“never”) to 6 (“very frequently”).

Multicultural competencies. We will use a validated scale comprising of comprising the dimensions: (a) cultural openness and desire to learn, (b) resentment and cultural dominance, (c) anxiety and lack of multicultural self-efficacy, (d) empathic perspective-taking, (e) awareness of contemporary racism and privilege, and (f) empathic feeling and acting as an ally [29]. The scale will use a seven-point Likert scale (1 = “strongly disagree”, 7 = “strongly agree”).

Demographic and control variables. With the aim to prevent our results from confounding effects, we will include various demographic (i.e., age, gender, education, country, origin) and control variables (e.g., cooperation type, attitudes and emotions towards other cultures, multicultural contact in real life, social desirability, bogus items) to increase the quality of collected digital data [23].

4 Conclusion and Outlook

This study proposes an approach to derive a model connecting different forms of intergroup contact to explain MCs. Disjunctive forms of intergroup contact (i.e., friendship, direct contact indirect contact, imagined contact) in relation to their valence (positive, negative) can be compared in relation to the societal challenge of multiculturalism and the value creating effect of the use of MOG artefacts. Future studies in practice and academia can build on our findings, integrate them within their own frameworks, and conduct follow up investigations, e.g. to test causality in a field or laboratory experiment to deductively test identified relationships from our study [31].

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