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# Towards a Research Agenda for Gameful Creativity

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**Abstract**

We propose a one-day workshop that focuses on the intersection of gamefulness and creativity. The objective of this workshop is to bring together both researchers and practitioners interested in this field to discuss a research agenda that will explore the relationship between game-related aspects (e.g. game play, game genres) and creative thinking. Embracing the interdisciplinarity of creativity, we invite researchers from a variety of fields including but not limited to games, gamification, playfulness and creativity research. In a highly interactive format, we aim to consolidate previous work, identify relevant areas for future research, and discuss methods to assess the effectiveness of gamefulness on individuals' creative potential. As outcomes of the workshop we hope to set a research agenda and establish a vibrant community around the domain of gamefulness and creativity.

**Author Keywords**

Creativity; gamefulness; games; gamification; creative processes; creative tools; divergent thinking.

**CCS Concepts**

•Human-centered computing → Human computer interaction (HCI); *User studies*;

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## Background

In light of social and economical structures becoming more global and essentially dynamic, creative thinking and creativity as a trait in general are becoming ever more valuable [11]. For ideas (e.g., for products or services) to be successful nowadays requires the ability to come up with solutions that are competitive in a rapidly changing environment [9]. Relying on innovation, various industries have identified creativity as key driver for their (industrial) development [12, 2]. This increasing demand for creative individuals calls for infrastructures and measures to activate, promote and harness creative thinking. As a consequence from the statement from the UNESCO that creativity can be taught, several educational approaches have been put forward [19]. We argue that such creativity courses do not necessarily have to a) take place in educational settings and b) be all serious. To that end, we argue that gamefulness could be an approach to activate, explore, and promote creativity.

We employ the term "gamefulness" to reflect both gamification approaches and games. Oriented on the matrix of entertainment design [4], we distinguish between gamification, games and play as potential strategies to enhance creative thinking. To that end, we see play as free exploration, games as rule-driven activity where a goal is pursued, and gamification as utilization of a selection of game elements to direct behavior [1, 16]. There are no sharp lines between those concepts as they are usually subjective. Both axes of the matrix (play-game, whole-part) should hence be seen as continuum.

A starting point to the intersection of gamefulness and creativity might be the early 1900s when test-like conditions were compared to play-like conditions in the context of creativity tests [7]. With the attention now increasingly on the effect of video games on creativity [8, 20], the notion of

"play-like conditions" has shifted to a more entertainment-based approach to promote creative thinking.

Research on the relationship between video game play and creativity warrants further exploration; not only because existing studies seem to show contradictory results [6, 10] but also since there is a lack in studies investigating differences in the effect of game types (e.g. console vs. mobile) and genres (e.g. puzzle vs. simulation) as well as the role of collaboration. Furthermore, in the context of creativity game play and play have been discussed as one entity, but little attention has been on the exact composition and structure (i.e. game-related elements; cf. [11]). With this workshop, we hope to establish a research agenda for implementing gamefulness to enhance creative thinking that is grounded in previous work.

Moreover, recent work suggests that the impact of game mechanics on motivation is closely linked to users' game profiles [15]. Not everyone looks for the same experiences in games; for instance, some prefer working in teams over competing against each other [5, 15]. Reflecting on this, various scholars have introduced conceptual models to describe different aptitudes for experiences in games (e.g., Bartle's or Marczwieski's player types [3, 13]). Seeing that creativity is influenced not only by motivation but also individual needs such as autonomy [17], we argue that tailoring for individual preferences when adding gamefulness to foster creativity might increase the effectiveness. To that end, also personality traits have been shown to affect both preferences for games/game-play and creativity [18, 14]. In the proposed workshop, we hence want to explore how recent insights regarding personalisation strategies can be applied to enhance gameful creative processes.

At this stage of the development of a research agenda, we are not focusing on evaluating any of the proposed meth-

ods or discussed approaches to spark creative potential through gameful approaches. Similarly, while we understand creativity as an ability to produce something new and meaningful, we are not set on one definition of creativity. To that end, we postpone the debate on whether and how creativity can be measured to a later point in time; potentially as a continuation of the proposed workshop.

### Workshop Goals and Themes

The overall objective of this workshop is to bring researchers interested or experienced in the intersection of creativity and gamefulness together to jointly develop a research agenda focusing on the question of how gamefulness can be used to foster creative potential. This should not result in a once-only activity, but create a community that brings life to a jointly developed research agenda through activities such as collaborating on user studies and publications.

By keeping the call for participants open to researchers from various backgrounds, we aim to gain a broader overview of relevant aspects and existing work as well as encourage interdisciplinarity in the field of gameful creativity. One central aspect of the workshop's activities will be a gameful ideation exercise, connecting all the different backgrounds of workshop attendees together. Building on the principals of card-based innovation games, this gameful ideation exercise will allow us to illustrate the potential of combining gamefulness and creativity.

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