Designing a Bulletin Board-Type Art Game for the Collection and Resolution of Conflict

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Abstract. In this paper, we present a new type of bulletin board game designed for the collection and resolution of various types of conflict or personal concerns that can occur in organizations or groups. Particularly, we focus on visualization of conflicts that students may encounter in schools. In the proposed bulletin board game, individual problems and suggested solutions form a set of clusters consisting of cards with images and texts. We exemplify three aspects that the players can choose when attaching a card for clustering - shape, color, and typeface. We envisage that our game design can promote players' interactions, and contribute to inducing positive aspects of games, as well as visualizing the players' problems through design.

Keywords: Bulletin board game · Conflict · Gestalt psychology

1 Introduction

Conflict is social by nature and it is everywhere in our everyday lives. Conflict, as a social phenomenon, can be broadly defined as "a process which begins when one party perceives that another has frustrated, or is about to frustrate, some concern of his" [9]. In general, conflict and attempts to its resolution entail both a negative side (e.g., stress and negative affect) and a positive side (e.g., mental health and social adjustment) [5].

In this paper, we present a new type of bulletin board game designed for the collection and resolution of various types of conflict or personal concerns that can occur in organizations or groups. Particularly, we focus on visualization of conflicts that students may face in schools.

The main contribution of this paper is threefold. First, we suggest an outline of a 2D interactive game platform to provide a virtual or online space where multiple users can share their concerns or conflict situations through iconic image cards. Second, we provide an approach to visualize the collected conflicts and (attempts to their) resolutions, particularly based on Gestalt theory by arranging the bulletin board in a symmetrical balance. Finally, we provide a platform where all the game participants can present both problems that they may have and

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solutions for any problem that others have posted, such that participants can empathize with each other, finding ways to view their lives and their problems from a different or more positive perspective.

2 Related Work and Background

2.1 Conflict Resolution in Games and Narrative

Serious games refer to "any piece of software that merges a non-entertaining purpose (serious) with a video game structure (game)", which cover a wide range of domains including education, sciences, military, politics, etc. [3]. In terms of conflict, a number of serious games and studies have been proposed. For example, Fearnot! [1] deals with bullying, a type of conflict that can occur in elementary schools, with a purpose of evoking the player's empathy towards the victims. Another video game Quandary[1] focuses on decision making, especially in ethically conflicted situations. Village Voices [2] also teaches how to handle conflicts by playing a collaborative video game, targeting young children age 9–12.

Conflict is also a key factor in narrative, as building-up and maintaining tension is important for a reader to continue reading the whole story. Here, tension can be either inter-personal (e.g., a conflict between protagonist and antagonist) or intra-personal (e.g., a protagonist's inner conflicts). In Façade [7], the player continuously encounters high tension situations related with conflicts of two non-player characters. Ware and his colleagues also employed the concept of conflict for narrative generation using narrative planning techniques [11].

2.2 Gestalt Psychology

Gestalt psychology states that "a whole is not simply the sum of its parts, but a synergistic whole effect" and embraces various domains and disciplines including art and design [8]. In our proposed bulletin board game, we focus on visual perception according to the principles of Gestalt psychology; the players of the bulletin board game may not be aware of the whole but will recognize it at the end of the game.

We design a bulletin board game by selecting and integrating several laws of Gestalt psychology: proximity, similarity, closure, continuity, and past experience principle [10]. To represent conflicts that can possibly occur in a specific social relationship at school (e.g., between students and faculties/staffs, among students themselves), we create iconic image cards with different shapes, colors, and typefaces that are parts of a whole as Gestalt. At first, the bulletin board may appear rather chaotic with the different icons attached. But at the end of the game, the cards are classified by the law of grouping (See Figs. 3 and 4).

[1] https://www.quandarygame.org/.

3 Design Procedure and Exemplification

3.1 Design Procedure

Our study includes a three-phase development pipeline. The first phase is a conflict-collection stage where real conflict cases that students experience are collected and categorized into several clusters under common topics (e.g., grades, relationship, etc.).

In the second phase, based on the categorized clusters, we design a 2D bulletin board game with a number of iconic image cards using different shapes, symbols, and typefaces.

Finally, players can decorate the bulletin boards by choosing appropriate image cards. Players can pick a triangle image card with a certain conflict situation written on it. If they cannot find a particular conflict among the pre-designed triangle card, they can write down their concerns or conflicts in text. The players' texts are automatically attached to the bulletin board as a new triangle image card. Other players can provide possible solutions to a particular conflict. The possible solutions are presented in round image cards. Like the players who posted their conflicts, the other players can select pre-defined round image cards with possible solutions to a problem or present their own solutions using square post-its. (See Fig. 1).

Fig. 1. Exemplified visualization of conflicts and resolution in the proposed bulletin board-type game.

3.2 Exemplification

In the proposed bulletin board game, players can communicate concurrently with each other in real time. Individual problems, posted by the crowd of players, form a set of clusters consisting of cards with iconic images representing different problems. We present three aspects for the cards that the players can choose when clustering - shape, color, and typeface.

We first focus on *geometrical shape*, such as triangle and circle that are emphasized in the Bauhaus [4]. Each shape can represent a player's emotional state (e.g., triangular shape for conflict, round shape for resolution).

As the second facet, we define *color* as a subjective factor as was the case with the use of color by Claude Monet. At this stage, colors chosen by the players may have different meanings depending on the ethnic cultures of the players.

Lastly, players can choose different *typefaces* to best describe their conflicts. In our design, the typefaces used are calligraphy and graffiti style. We posit that graffiti font (e.g., bubble font, old and new school style) and calligraphy typefaces(e.g., italic font, script style) can give different impressions - either friendly or aggressive. The two typefaces can also symbolize the young generation's ideals of freedom and peace, with their informal, emotional appeal and be representative of the times. Figure 2 shows some exemplifications of ideas and methods for visualization.

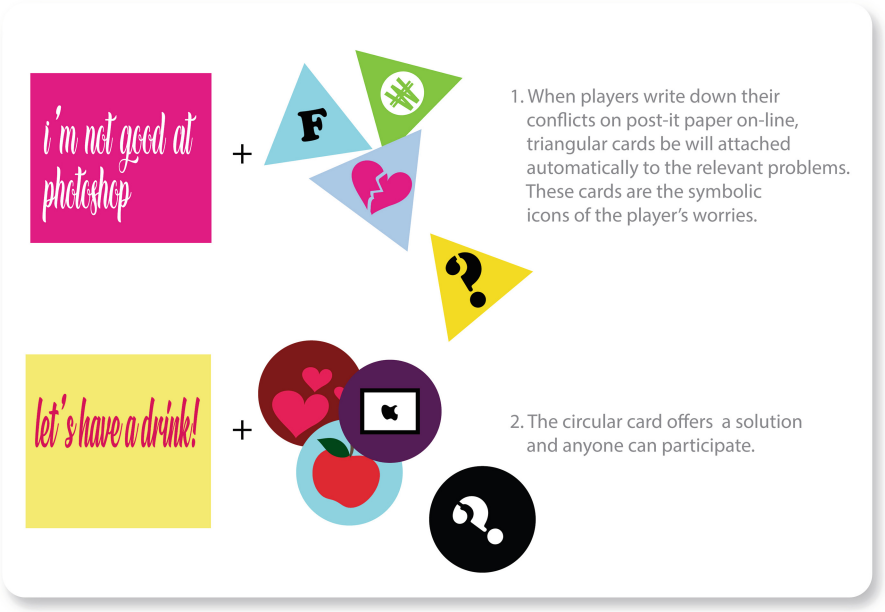

Fig. 2. Visualization idea using square post-its and iconic images with different shapes (triangle-shaped cards for conflicts or concerns; round-shaped cards for possible solutions).

At the end of the game, the players who posted their conflicts can identify all the solution cards that are attached to the posted conflicts. They can accept or reject the provided solutions. Currently we designed two solution signs using the well-known peace symbol and a Möbius strip as an infinity symbol. No matter what the problem is, if the player's problem is solved, it will show the peace symbol (Fig. 3). For the players who have not resolved their problems, they will have all their cards arranged in the shape of a Möbius strip in achromatic colors (Fig. 4). It symbolizes that the players will eventually come back to the game to resolve his or her conflict and try to escape the endless Möbius strip.

Fig. 3. An exemplified visualization of collected image cards on the bulletin board game based on Gestalt psychology.

3.3 Discussion

It might be questionable whether the proposed bulletin board game can be called a *game*, as there are no explicitly specified goals or competitions for winning in this game. We expect, however, the players' emotional states can be altered by playing this game from negative (e.g., discomfort or anxiety, anger, etc.) to positive (e.g., comfort or relaxation, cheerfulness, etc). In this regard, we consider our game as a kind of art game with '*serious fun*' or '*altered states*' [6].

The main purpose of our game is to promote voluntary participation of the players as a hidden helper. Our game is a healing game, and thus does not have any form of attack or defense in it. In this game, any player can be an unknown helper and encourage other participants to solve the presented problems together. The players acting as hidden helpers can receive an intrinsic reward through this process.

The game prototype is currently under development through Unity[2] game engine with two different versions - one with Android platform for smartphone and tablet devices; the other with Web-based platform for any Web browser.

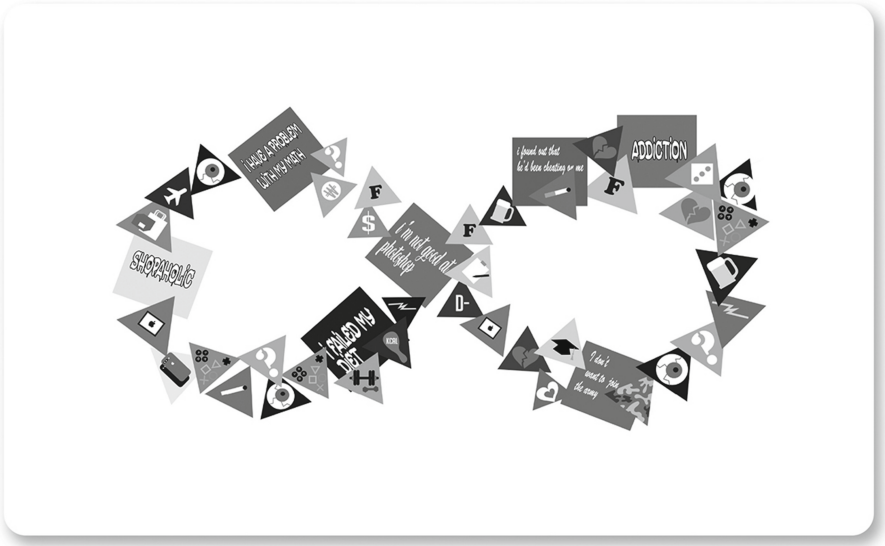

Fig. 4. An exemplified visualization of collected image cards at the final stage without any solutions.

4 Conclusion and Future Work

In this paper we proposed a bulletin board-type board game where the players (e.g., students) can communicate with each other by attaching either predesigned cards or writing down their concerns on post-its.

We envisage that our game design can promote players' interactions, and contribute to inducing positive aspects of games, as well as visualizing the players' problems through design. As a follow up, we plan to conduct a pilot study focusing on the investigation of the relations between game design and the possible alteration of the player's emotional state.

[2] https://unity.com/.

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