Chapter 16
Understanding and Designing for Conflict Learning Through Games

Rilla Khaled, Asimina Vasalou, and Richard Joiner

Abstract Conflict resolution skills are fundamental to navigating daily social life, yet means to learn constructive conflict resolution skills are limited. In this chapter, we describe *Village Voices*, a multiplayer serious game we designed that supports children in learning and experimenting with conflict resolution approaches. Drawing on experiential learning as an underlying learning philosophy, and based on Bodine and Crawford's six-phase model of resolving conflict, *Village Voices* puts players in the role of interdependent villagers who need to work their way through conflicts and quests that arise in the game world. In this chapter, we first present *Village Voices* through the design qualities of *competitive collaboration*, *local familiar multiplayer*, *playing around the game*, *reimagining the real*, and *persistence*. We then present a case study that examines the learning experiences of players over four weeks, focusing on the role of time, emotion, the relationship between in-game conflict and learning, and requirements for learning moments.

Introduction

Conflict resolution skills are fundamental to navigating daily social life, but many of us acquire them only piecemeal and indirectly, over a lifetime of social interactions with others. In this chapter, we describe *Village Voices* [19], a multiplayer serious game designed to support children in learning the social skills necessary to constructively engage in conflict resolution. Drawing on experiential learning as an underlying learning philosophy, and based on Bodine and Crawford's six-phase model of resolving conflict [3], *Village Voices* puts players in the role

R. Khaled (✉)
Concordia University, Montreal, QC, Canada
e-mail: rilla.khaled@concordia.ca

A. Vasalou
Institute of Education, London, UK
e-mail: a.vasalou@ioe.ac.uk

R. Joiner
University of Bath, Bath, UK
e-mail: r.joiner@bath.ac.uk

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of interdependent villagers who need to work their way through conflicts and quests that arise in the game world. In this chapter, we first present *Village Voices* through the design qualities of *competitive collaboration*, *local familiar multiplayer*, *playing around the game*, *reimagining the real*, and *persistence*. We then discuss a case study drawing on examples of game play to show how the game developed children's social emotional skills.

Conflict Education and Games

Our work concerns expressing and learning about conflicts through game experiences. We understand conflict as a process that is initiated when two or more parties involved in an interaction perceive that one member shows or feels strong opposition to the interaction [27]. Such an opposition can arise in relation to parties having different goals. For example, Deutsch states that "a conflict of interests occurs when the actions of one person attempting to reach his or her goals prevent, block, or interfere with the actions of another person attempting to reach his or her goals" [5].

Bodine and Crawford, amongst the most influential voices in conflict resolution education for children, propose the following six-phase process to facilitate young people in dealing with their conflicts proactively and effectively: *Setting the stage:* Assuring students that they will be listened to and not judged, and that all the parties are equally valued; *Gathering perspectives:* Collecting as many points of view as possible; *Identifying interests:* Using communication abilities to determine the underlying sources of conflict, and to focus on people's interests rather than positions; *Creating options:* Using creative-thinking abilities to come up with imaginative, mutual gain solutions to conflict-related problems; *Evaluating options:* Using critical-thinking abilities to apply objective criteria for determining the suitability of a conflict resolution option; and, finally, *Generating agreement:* Coordinating integrated deployment between the two opposing parties, across all of the foundation abilities [3]. Crucially, Bodine and Crawford's process puts young people in the position of resolving their own conflicts.

In the early phases of our user research, we observed that little of Bodine and Crawford's advice was being put into practice in schools. Disputes tended to be settled by third party mediators, responses only came into effect once conflicts had reached critical points, and the breaking of school rules served as a key focal point for determining when a conflict was taking place. Additionally, we learned that many schools have no specific conflict education, and teachers often have no guidance on how to approach conflict resolution in the classroom [28]. This highlighted the potential contribution digital games could make in this space.

Games for conflict resolution have been the topic of previous research. In *FearNOT!*, which focuses on bullying, the player is an invisible friend of a non-player character (NPC) who is a victim of bullying. The player's role concerns advising the NPC on how to cope with bullying-related problems [1]. *Choices*

and Voices is a role-playing game in which players experiment with peer pressure management and resistance strategies, decision making in moral dilemmas, and critical assessment of advice [20]. The interactive scenarios are integrated into a narrative, where players must make a range of decisions and consider different points of view. *Quandary* is a digital card game that presents ethical issues and conflicts involving NPCs for the player to reason through from a mediator perspective, requiring critical thinking, perspective taking, and decision making [7].

In evaluating these existing serious games and how they approached teaching conflict resolution, we identified a number of shortcomings. First, while they included other characters, they were all single-player games, thus not requiring players to deal with other players in exploring and resolving emergent, shared conflicts. Conversely, best practice conflict resolution training frequently puts participants in activities involving other participants because it requires them to practice how to resolve conflicts with other (real) individuals. Second, the games placed players in an advisory or mediator role. On the one hand, this relieved players of encountering the effects of conflict directly, and invited them to approach decision-making in a more objective manner. On the other hand, it did not place players in situations in which they experienced conflict. Formulating and enacting conflict resolution behaviours when personal stakes are involved is considerably more complex than theoretically knowing possible desirable response behaviours. Finally, these games presented conflicts that had been pre-established and set during the game design phase. There was no adaptation to a particular player's sense of conflict: whether a player was experiencing low or high conflict, the game progressed the same way for all. In the next section, we examine the design of our game in light of the aforementioned design opportunities and the design qualities they give rise to.

Village Voices

Village Voices is a four-player open world game that takes place in a fictional village set in a pre-industrial society. It is designed to be played in a classroom setting by players who know one another, under teacher supervision. On the surface, the game is about survival and prosperity in the village. On closer inspection, however, the game is about friendship and reputation management in the village, and mastery of conflict resolution. The game makes use of player models that drive the adjustment and selection of quests for each player. As such, it provides a personalized learning experience for its players, providing them with game quests appropriate to their conflict resolution abilities. Here we examine how *competitive collaboration*, *local familiar multiplayer*, *learning around the game*, *reimagining the real*, and *persistence* inform the design of our game.

Competitive Collaboration

By *competitive collaboration*, we mean game dynamics that invite both competitive and collaborative strategies amongst players. While competition is synonymous with how many people think of games, mixes of competitive and collaborative game mechanics are not unusual in mainstream multiplayer games [30]. Notably, Garzotto points out that in the context of children's learning games, such mixes increase player motivation [9]. With regards to collaborative game mechanics specifically, El-Nasr et al. observe that common player behaviours include helping each other, working out joint strategies, and waiting for each other [23].

The competitive-collaborative combination resonates both with how conflict is understood and how conflict resolution skills are taught. Definitions of conflict, such as the ones we provided earlier, typically foreground the notion that involved parties pursue goals in ways that interfere with those of others [5, 27]. As such, competition is intrinsically connected to conflict, as it too concerns preventing others from obtaining goals. At the same time, best practice conflict resolution approaches advocate solution seeking that satisfies all parties, i.e. collaborative action [3].

We leveraged this mix in designing *Village Voices*, in order to highlight tensions between independent and interdependent goals. As part of daily life in the village, players are required to undertake various actions related to maintenance of their characters' livelihoods (see Fig. 16.1). For example, the alchemist character must tend to his crop of magic mushrooms, and collect and eat fruits to stay healthy.

Fig. 16.1 The Blacksmith in the process of mining for metal (Image used with permission from the FP7 Siren consortium [29])

Players must also complete quests related to their responsibilities within the village. Continuing the example, the alchemist may be in the process of collecting and processing items to build a wall to keep wolves out of the village, which involves trading with other characters. All the while, situations inevitably arise that trigger conflicts or exacerbate existing ones. For example, in order to complete the barrier wall, the alchemist may need to obtain an item from the innkeeper, who he is not on good terms with due to a previous theft incident involving the innkeeper helping herself to the alchemist's mushrooms. While players may initially be faced with simple quests involving no trades or only one trade with other characters, more difficult quests involve trades with all three of the other characters.

Importantly, the game itself does not preach to players about particular ways to behave. Indeed, the mix of competitive and collaborative goals problematises the notion that there is always a correct way to resolve a conflict.

Local Familiar Multiplayer

By *local familiar multiplayer*, we mean multiplayer games that are played by co-located players who have existing histories of social dynamics with one another. As various games scholars have noted, in learning contexts multiplayer games can lead to rich, meaningful, emotionally-charged, and memorable game experiences [6, 16, 24]. Also within the education literature, voices have argued for the merits of co-located peer learning [18], even if it involves arguments [22].

For reasons described above, we had decided to pursue a multiplayer game design. A concern raised by one of the authors, however, was that a multi-player design might lead to situations in which previous or ongoing conflicts between individuals could be exacerbated. Realising that there was no way to prevent this from happening, instead we embraced it as a design dynamic, and considered how we could safely expose existing uncomfortable social dynamics and transform them into learning opportunities.

Village Voices allows players to exhibit destructive as well as constructive behaviours. For example, it is possible to steal from other players and spread rumours about them, as well as give gifts. After each significant interaction with another player, players are asked to update their current feelings towards that player, as well as to gauge the current level of conflict they are feeling (see Fig. 16.2). This acclimatises them towards introspection and self-awareness of their own emotional states but also informs inform how quests are chosen. As players demonstrate progressive competence with regards to resolving conflicts, they are presented with increasingly complex quests relying on negotiation with other players with whom they might have traditionally had problematic relationships offline. We hypothesized that resolving conflicts in-game with known players would be dramatically more memorable and meaningful as learning experiences than those with unknown players, due to their heightened emotional importance and relevance.

Fig. 16.2 The Blacksmith player being asked to gauge the current level of conflict (Image used with permission from the FP7 Siren consortium [29])

Learning Around the Game

By *learning around the game*, we suggest that learning does not only take place while players are engrossed in a game world, or even while game software is running. Learning can take place around play, for example, as a result of reflection or conversation after play. In fact, in the context of simulation gaming, Crookall and Hofstede et al. point out that post-game debriefs, discussion sessions in which the learning implications of games are explicitly addressed, are an essential (and often overlooked) component of unpacking, contextualising, and making sense of simulation gaming experiences [4, 15]. Games with debrief stages are generally more effective in terms of learning transfer than games that lack such a stage.

In their six phase conflict resolution process, Bodine and Crawford place much emphasis on critical thinking and communication skills with either one or both required during the phases of *gathering perspectives, identifying interests, creating options, evaluating options*, and *generating agreement* [3]. But it is currently hard to intuit when critical thinking is taking place via game actions, and developing in-game communication systems that are as expressive as spoken communication remains an unsolved research problem.

Working within these limitations, as well as our research findings on the typical infrastructure of social and emotional learning lessons at school, we designed *Village Voices* play sessions to last approximately 30 min and to take place once a

week over a series of weeks. In each 30 min session, active "play time" was designed to last around 15 min, coinciding with the approximate length of time required to complete one quest. The remainder of the time was set aside for a debrief session to be led by a learning instructor. During the debrief, events that had taken place during play would be reviewed and discussed. Players would be invited to address issues raised, relate game experiences back to life experiences, reason through and advise one another on alternative resolution strategies, and collectively negotiate rules to guide future play sessions.

Needless to say, such a design places an onus on learning instructors to be actively engaged during play sessions and to be ready to unpack play behaviours in post-play contexts. While this may run counter to the vision of "learning in a box" that many teachers and parents have of how learning games function [6], it is reflective of contemporary theories of learning such as situated cognition [25] and distributed cognition [17], as well as ecological approaches to perception and learning [12]. In these paradigms, learning takes place as a result of rich social interaction, and media such as games are understood as tools for learning that exist within broader ecosystems.

Reimagining the Real

By *reimagining the real*, we mean recontextualising real world events within the game world by way of game mechanics, events, narratives, and language. As the literature on learning transfer shows, it is crucial that contextual similarities exist between learned content and application context for connections to be forged and learning to be transferred [8, 26]. At the same time, the idea of creating a school simulation was not appealing from an engagement perspective. In addition, the psychology literature on *minimally counterintuitive concepts* – concepts that are counterintuitive but not too much so – posits that they are easier to recall and repeat than either completely intuitive or completely counterintuitive concepts [2, 13]. Furthermore, Gee argues that what makes games a potentially powerful medium for learning is that they situate meaning in worlds of experience, associating meaning with actions, experiences, images, and dialogue [10].

We dealt with this in *Village Voices* by establishing a game world that was, in some ways, though not all, isomorphic to the school experience. In the *Village Voices* world, characters must act both independently and interdependently in order to survive and not be ostracized from the rest of the player community. Beyond this, however, we modelled many of the game's mechanics on events that we observed taking place at school during the user research phase. The most common types of conflicts we observed concerned accidental harm and jokes gone wrong, deception, friendship, and property disputes [28]. Accordingly, in *Village Voices* it is possible to destroy other characters' dwellings, to deceive others about trades or rumours, to "gang up" on others and also register dissatisfaction with them, and to steal from

others or eat food from their land. Likewise, we made it possible for players to respond in ways that we observed at school. As such, it is possible to be physically aggressive in-game by way of property damage as well as verbally aggressive in-game by spreading rumours and demanding particular friendship allegiances of other players. It is also possible to avoid other players by refusing to trade or collaborate with them.

In recontextualising familiar events within a fantasy medieval setting in which survival is the key objective, we created a minimally counterintuitive but situated learning experience that retained a shared context with daily school life.

Persistence

By *persistence*, we mean games with persistent state that continuously track and respond to player action, and are intended to be played over long periods of time. Serious games are frequently described as "safe environments" for risk-free exploration of behaviours [11, 21]. But an unintentional corollary can be that in-game behaviours have no consequences [14]. While in the context of conflict resolution learning, it is important that players are afforded some degree of safety [3], at the same time, we were wary of creating an environment that felt safe at the expense of feeling important.

We struck a balance by making *Village Voices* a persistent game world in which the same group of four players co-exist together in the village for weeks, and are required to continuously provide updates about their relationships with other players. In this way, both constructive and destructive in-game behaviours have lasting consequences, and players are reminded of their impact on the social climate.

Another motivation underpinning our use of persistence was to invite players to reflect on, and revisit their behaviours. Given that *Village Voices* is designed to be played over a number of weeks, we hoped that the lapses in time between sessions coupled with debriefs would give players a chance to observe their own behaviour from afar. Furthermore, we envisioned that players might plan strategies with other players, and even establish codes of conduct for everyone to follow.

Case Study

The *Village Voices* game was played by five groups in the UK, each with four children (a total of 20 children). In this chapter we present findings from one of those groups, composed of four late primary school students (three boys and one girl) between the ages of 9–10. Students played the game once a week for a period of 4 weeks in a private room at their school. Each session lasted approximately

60 min, of which 10 min were dedicated towards setup, 40 min of which involved gameplay, and the remaining 10 min of which were used for a debrief conversation. Students were seated across from each other such that they could engage in active dialogue during gameplay. Each play session was video recorded. At the end of each session, a research assistant who had been present as an observer conducted a post-game reflection. Our analysis is inductive, and draws on the dialogue during and around gameplay to understand the impact of the game on children's conflict resolution skills.

Conflict Experiences and Skills Become More Nuanced Over Time

Over the 4 week period, players' experience of conflict in the game evolved in pace with their involvement in it. During the first week, whenever players engaged in a conflict, they expressed detached amusement about their actions. By the second week, however, and until the end of the study, players were demonstrating emotional investment in their characters and had clearly defined relationships with other player characters in the game. As a consequence, they often became emotional about the conflicts they experienced with others, arguing during game play when they perceived themselves to be in the role of the victim. Initially, players defaulted to employing competitive strategies with one another. As the weeks passed, collaboration became more frequent as a strategy. Notably, it never fully replaced competition, but rather became progressively intertwined with competitive strategies during and between play sessions.

In-Game Conflicts Do Not Always Engender Learning Moments

During the first session, players began to play the game by applying competitive and collaborative strategies without actively reflecting on their choices. On application of the strategies, however, players did not necessarily pause to reflect on the consequences they engendered. For example, the innkeeper wanted wood from other players. The carpenter replied to say that he had wood, but before he had a chance to offer a trade, the innkeeper destroyed his house. The carpenter in turn responded, "Why did you destroy my house? That's it, I'm going to get the innkeeper, kill the innkeeper!" The carpenter mirrored the innkeeper's competitive strategy without considering the option of negotiation. Thus we suggest that encountering a conflict during play is a necessary but not sufficient condition in prompting players' understanding of the consequences involved, or the benefit of using more collaborative strategies.

Learning Moments Are Shared, Communicated, and Emotionally Challenging

Collective consequences: As players became more fluent with the game's competitive strategies (e.g. stealing), as a group they were often unable to progress in the game as each player employed a 'tit-for-tat' approach that led to intense episodes of conflict. But on observing the detrimental consequences of competition on the game as a whole, children started to use more collaborative strategies.

Communication skills: By offering a strategy for stealing, *Village Voices* also offered a zero-sum approach to conflict. Players often broadcasted their intention to steal with one another. For example, in one session the carpenter threatened, "Whose house is the innkeeper's house? If you don't tell me I will be stealing from a random house". After repeated exchanges between the carpenter and the innkeeper, the innkeeper communicated a negotiation strategy using game language that would fulfill the carpenter's goals: "Don't steal, don't steal from my house... Don't steal. Trade." He thereby convinced the carpenter to trade so that both parties could gain from the interaction.

Emotion as a learning trigger: During the first 2 weeks of play, the alchemist instigated the majority of conflicts. In the second session, after the alchemist had stolen grain from the innkeeper, the carpenter in turn stole it from the alchemist and offered it back to the innkeeper. This forged an alliance between these two players against the alchemist, which continued for the remaining sessions. Eventually this alliance escalated into a targeted theft from the alchemist's house. Imploring other players stop stealing his resources, the alchemist said, "Can everyone please stop taking stuff from me? Now the innkeeper is taking all of my stuff. This is getting ridiculous. Everybody is taking my stuff. If everybody keeps taking my stuff I'm going to quit the game." Despite the plea, by the end of the session the other players had stolen everything from the alchemist's house and he broke down in tears. The following week, when students returned for another session, they demonstrated that they had reflected on their own house rules, as the game system itself leaves many rules open to debate. Negotiating his boundaries, the alchemist argued that he was willing to accept some competition: "Okay guys, you have 2 min to steal whatever you want from me". In response to this, however, the innkeeper declined on the grounds that such an action might escalate into collective conflict: "No, don't steal or we're all going to end up stealing".

Discussion and Conclusion

Over the course of the 4 week evaluation period, our observations of player behaviour revealed that *Village Voices* invited behaviours from several of the phases advocated for in Bodine and Crawford's approach to conflict education. These included *communication, gathering perspectives, identifying interests, creating options*, and *generating agreement.*

In line with our design quality of *competitive collaboration*, we observed players using both competitive and collaborative actions in responding to conflict, with collaboration being the preferred strategy as the weeks progressed. For players to experience conflict, it was necessary for one or more players to make use of competitive actions. But competitive actions alone were not enough to create a perception of conflict, as players approached their conflicts with a sense of detachment during early play sessions. Instead, perception of conflict was tied to how emotionally committed players were to their characters and their relationships with other player characters. We suggest this arose as a result of the *persistence* inherent in the design of the game, which afforded enough time for players to become acclimated to the game and for character attachments to form, as well as the *local familiar multiplayer* design, which leveraged players' existing social relationships with one another.

Reflection on conflict, however, seemed to be largely prompted when players were able to draw connections between their actions in-game and their consequences, in keeping with *reimagining the real*. We observed this happening both in terms of game progress (e.g. when 'tit-for-tat' approaches stalled progress) as well as player responses to game events (e.g. when players ganging up against another player resulted in the target breaking down in tears). The latter highlighted the importance of *learning around the game* and *persistence*. Between the second and the third sessions, players who had previously been favouring competitive approaches clearly experienced a change of heart and began session three by collectively negotiating acceptable, constructive play strategies, drawing on their previous play experiences to justify their approach. Crucially, the decision to play more collaboratively and less competitively came from the players themselves, which stems from the *local familiar multiplayer* nature of the game.

In closing, in this chapter we have examined the design of *Village Voices*, our multiplayer serious game that supports children in learning and experimenting with conflict resolution approaches. Specifically, we showed how the qualities of *competitive collaboration*, *local familiar multiplayer*, *playing around the game*, *reimagining the real*, and *persistence* informed the game's design. We then presented a case study of the experiences of four student players between the ages of 9–10 over a four week period. As well as showing how the design qualities came to life, we observed that conflict experiences and skills became more nuanced over time, in-game conflicts did not always engender learning moments, and that the most powerful learning moments were shared, communicated, and emotionally challenging. We believe that the design qualities profiled here alongside our qualitative findings can help in the design of serious games beyond the domain of conflict education strengthening the growing and crucial design direction of learning games focused on soft skills, collaborative dialogue, and emotional intelligence.

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