

DESIGNING A PEER-MEDIATION SERIOUS GAME

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ABSTRACT

Peer-mediation in a school environment, when carried out correctly, can benefit not only the parties of the conflict, but also their environment, including the school, the team, the family and the mediator. A serious game has been designed and a prototype developed for the training of minors and young adults as mediators. The core of the game is a simulation of mediation dialogues in which the trainee mediator is presented with choices of action along a conflict story. These choices affect the development of three variables that are instrumental to the mediation outcome: they are the trust of each party to the mediator, their feeling of anger about the conflict, and the validity of the information that the mediator gathers about the conflict.

KEYWORDS

Peer-Mediation, Mechanism, Trust, Anger, Information, Serious Game.

1. INTRODUCTION

The contribution of this paper is to present a framework of standards, on the basis of which micro-scenarios will be developed in a Serious Game (SG). The SG to be developed is aiming to educate and evaluate minors as mediators in conflicts that take place in the digital world.

Many definitions have been formulated for SGs and many gather common elements, such as those described as "*interactive computer applications*" and more specifically "*virtual game simulation*", which emphasize their dual role, educational and recreational (Mestadi et al., 2018).

There are several ways to resolve disputes (ADR: Alternative Dispute Resolution), such as negotiation where the parties in conflict negotiate with each other, arbitration where a third party decides (on behalf of) the parties in conflict, mediation where a third party facilitates the solution, as well as combinations of the above, and so on (Menkel-Meadow, 2015). Mediation has a wide scope (Condette, 2020), as it resolves conflicts concerning the workplace, the business field, States (Hartmann-Piraudeau, 2022), school (Artinopoulou, 2010) etc. Peer-mediation or School-based mediation is observed practised between peers, where the parties in conflict and the mediator are minors. Peer mediation training is provided through mediation programs. However, it does not have to be part of the school curriculum (Artinopoulou, 2010).

Conflicts between peers, such as classmates, friends or strangers, are largely unavoidable in adolescence and the treatment of these challenges varies, sometimes with a restorative action neutralizer (e.g. humour, a distraction etc.) and sometimes seeking resolution through demonstrations of resentment, outbursts, arguments, and even the use of physical force. The challenges of conflict faced by young people in the real world can also be addressed in the digital world (Novin et al., 2018).

2. MICRO-SCENARIOS IN MEDIATION

Different mediation models (e.g. Facilitative mediation, e-Mediation, court-mandated Mediation) are identified in the literature, which differ from each other according to various criteria (e.g. the scope, the number of intermediaries, the nature of the argument, the type of relationship) and the "best" model is what adapts and / or what combines models to meet the conflict needs. According to the type of the parties' relationship, there are at least two different models of mediation: the direct one, where the parties are met together with the

mediator, and the indirect model where the mediator meets each of the parties separately, in order to talk about the conflict and find potential solutions (Lohvinenko et al., 2021). Despite the existence of numerous studies related to factor for effective mediation training programs, there is no agreement on what these programs should include (Devinatz, 2018). One of the ingredients is the experiential activities with which mediators are practised, such as role play, analysis of case studies, supervised practice, etc. (Gentry, 1992). The simulation of mediation is made by case studies and role play studies, where the trainers give feedback to the mediator to be enhancing his understanding and choices (Walker, 1988).

SG, which is planned to be developed in the future, consists of 4 roles, the mediator, the two conflicting parts and the narrator. The player has the role of the mediator, who interacts with both parts of the conflict and the narrator provides information to the player.

More specifically, the narrator gives information to the player to create a "tactic" scenario scene. The information of the narrator may be the time of the conflict, the allegations of the involved parties, the previous actions of the mediator, the previous actions of the two parties, etc. That is, the narrator is responsible for presenting the situation in which mediation is located before the player takes on a role in the game. In addition, the narrator gives feedback to the player after completing their actions in mediation.

The player carries out individual-private sessions with parts of the conflict and if the result of these sessions allows, then the group session is carried out with a view to resolving the conflict by reaching an agreement between the parties.

The above brief descriptive interaction of the roles of SG mediation are similar to the education/training of the chess players with screenshots of chess games. In these snapshots the pawns in the Chess Board are depicted, while the moves the pawns have previously taken, are unknown to the player when asked to play. This type of workout is called "tactics", a subject which is broadly researched in the literature (Petrovic & Koprivica, 2014). The chess player is asked to play so as to achieve a specific goal (e.g. to attack Queen) with a specific number of movements (e.g. with 2 movements) (Lane & Chang, 2018). Mediation micro-scenarios, which are to be developed for the game are like to the Chess Tactics scenarios.

2.1 The Mechanism in Peer-Mediation Serious Game

Various models have been proposed, describing "mechanisms" in SGs, such as MDA (Mechanics, Dynamics, Aesthetics), where engineering refers to actions, behaviors and control mechanisms (e.g. bluff, bet) (Wigdor & Wixon, 2011), while the player understands the mechanisms in the game as "rules" (Pendleton & Okolica, 2019), the Game Experience Model, which refers to actions by objects of the game for various situations (e.g. Interactive storytelling) (Suovuo et al., 2020). This section describes the mechanism, which will be used to manage "actions" in mediation.

At the beginning of the mediator's session with one part of the conflict, the narrator informs with evidence describing the "regular" scene of the scenario. In the dendrogram of Image 1 the player is located at the Node1.

The player has two options, either to choose Acme-1.1, leading to Node-1.1 or to select Acme-1.2, leading to Node-1.2. The acmes describe to the player the acts, which can be carried out at every session with the party of the conflict. At the node that the player is driven, he/she can see the results that his/her choice of acme has caused in the party of the conflict. In the same way, from the new Node the player is located, they chooses a new acme from the two that are at his disposal, so as to be taken to the next new Node, which is the final one for the session. As the player is on one of the final Nodes, the narrator provides feedback.

Subsequently, the player proceeds to the 2nd session with the second part of the conflict, which takes place in the same way as the first. Finally, after the completion of the 2nd session, the player proceeds to the group session with both parts of the conflict.

The result of the 1st individual session with the first part of the conflict will judge whether to allow the player to proceed to the 2nd individual session with the second part. The results at 4 final nodes either approve or reject access to the next session. Rejection means that mediation stops while approval does not mean that the conflict is result. For the mechanism, "results" means an influence of variables, which is Trust, Anger and Information.

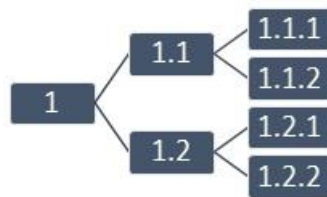


Figure 1. Evolution of the session in a "tactic" scene of mediation

It was reported that the "result" of a session will determine the access to the next session, whether it is going to be done with the 2nd part of the conflict, whether it is the group session. The result arises from the prices of variables, "Trust", "Anger" and "Information", which are in the mechanism.

Trust is a key factor in creating a conflict but equally important for its resolution. The appeal of the parts of the conflict to a mediator takes place because confidence has been disturbed (Stimec & Poitras, 2009). In mediation, the parties utilize the mediator's confidence as the means for achieving cooperative benefits between them. The mediator seeks to create a level of confidence, as it is necessary for a successful mediation (McGovern, 2016). Since mutual descriptions often occur in mediation, the mediator must be cautious, listen to the parties' information but also keep their reasonable doubts about their accuracy (Stulberg & Love, 2013). Understanding emotions is a regulatory factor in the process of mediation, as emotions affect but are also affected by the conflict. The feeling is not central in all contexts of mediation (e.g. interpersonal, international), but when this is central, the mediator also takes care of the emotions of the conflicting parties, comprehension and impacts (Jones & Bodtker, 2001). There are numerous and extensive studies on emotions, some more and some less complicated (Strongman, 2003), in which disagreement is found in the number of emotions, but most of them include the feeling of anger. (Gu et al., 2019) Regarding "Anger", there is no commonly accepted definition, but scholars, who examine the negotiations, the causes of anger, indicatively report the Low-Power position, promises, time pressure, feeling of mistreatment, etc. (Hunsaker, 2017).

The "Trust" variable in the mechanism is influenced by the factors that the Trustor's factors of perceived trustworthiness is discerned by the Trustee. These factors are Ability, Benevolence and Integrity. Ability is summarized as the group of skills and characteristics, which can affect specific areas, such as special knowledge / specialization (e.g. explanatory in the process, advise, focuses on finding solutions, etc.). Benevolence is a positive orientation, where for Trustee is believed to want to do good for Trustor, without any profit incentives for them (e.g. the parties to feel comfortable, courtesy, the instinct of the parties for trust by the beginning etc.). Integrity is the practice of being honest, sincere and display solid ethics, such as Trustor's belief that Trustee is fair and that his/her words coincide with his/her acts (e.g. impartiality, respect, right to choose without enforcement, etc.) (Mayer et al., 1995; Poitras, 2009).

The variables of the mechanism can take integer values 0 to 5. When Trust = 0, the part of the conflict has no confidence in the mediator. When Trust = 5, the part of the conflict has absolute confidence in the mediator. When Anger = 0, the part of the conflict is not exhausted by the feeling of anger. When Anger = 5, the part of the conflict has a strong anger. When the player selects acne seeking to collect information from the parts, the variable value is increased. As the mediator retains his doubts about the accuracy of the information, this is reflected in the difference between the information between the parties. If the difference in variable information values for the two parties is 0, then at the group session, resolving the conflict problem can be accepted by the parties. If the difference is 5, then the effort to resolve will fail, as the solution will not satisfy any place. However, the combination of variables may not allow acceptance of the collision solution, such as if Trust = 0 and Information = 5, the part of the conflict will reject the solution, as if Anger = 5 and Information = 5, the part of the conflict will leave mediation.

However, there is also the information collected by the mediator from which he could ascertain a misunderstanding either of the intention or the event, which is attributed to the erroneous communication channel and / or the incorrect encoding / decoding of the messages (e.g. by increased tone voice, misunderstanding when processing the message, unclear message of the transmitter) (Edwards et al., 2017). In addition, it can be found from the information that the dispute does not matter to the parties. In these cases, the difference in value of the variable remains great, but it is permissible to resolve misunderstanding rather than dispute.

To understand the functioning of the mechanism, the following example is listed and then commented. The node includes 3 "Trust, Anger, Information" variables. Let the player start at the 1st session with the 1st part of the conflict.

Table 1

Session with the 1 st part of the conflict conferences		
Narrator: <i>X mentions that Y publishes snapshots of the game in social media, of his worst moments of the game.</i>		
Node	Acmes	Nodes
Node Number: 1 1,4,1	Acme Number: 1.1 You make clarifying questions like: In which social media groups does he publish? Does this also happen to other members of your social group? (Trust through Ability +) (Information +)	Node Number: 1.1 2,4,2
	Acme Number: 1.2 You ask him about his feelings. When discussing with him, you explain to him that anger is possibly caused by distress, injustice, etc. Moreover, you make clear to him/her that resolving the problem and restoring the relationship will create happy feelings (Anger -). You ask if this is also happening to other teammates, that is snapshots of their bad moments in the game to be published without their permission. (Information +)	Node Number: 1.2 1,3,2

Annotations: The narrator gives information to put the player into a conflict problem. The player starts the session with X and knows that the variables for trust, anger, information is 1, 4 and 1 respectively. His/her two options, Acme-1.1 and Acme-1.2. The choice that the player will make will alter trust prices, anger, information and go to the next node. In the new node that the player will go, either at Node-1.1 or Node-1.2, will be invited to make a new choice in order to go to a following node, and so on.

3. DISCUSSION AND FUTURE WORKS

The aim of this paper is the presentation of a Framework of Standards. According to this, a number of micro-scenarios will be written which will meet the specifications mentioned. The purpose of the mechanism designed is to manage the micro-scenarios, which will be included in SG. Our next objective to carry out studies to determine the number of the micro-scenarios required for SG, designed / developed SG, to be given to the final users, and then to record SG results aimed at the training and evaluation of minor mediators in the conflicts of the digital world.

REFERENCES

- Artinopoulou, V. (2010). *I sholiki diamesolavisi: Ekpedevondas tous mathites sti diahirisi tis vias ke tou ekfovismou [School Mediation: Training pupils in dealing with violence and bullying]*. Nomiki Bibliothiki.
- Condette, S. (2020). *The Contribution of Peer Mediation to the Implementation of Human Rights Education* (pp. 159–172). https://doi.org/10.1007/978-94-024-1913-9_8
- Devinatz, V. G. (2018). What Makes a Good Mediator? Insights from a Mediation Training Program Participant. *Employee Responsibilities and Rights Journal*, 30(3), 181–201. <https://doi.org/10.1007/s10672-018-9315-y>
- Edwards, R., Bybee, B. T., Frost, J. K., Harvey, A. J., & Navarro, M. (2017). That's Not What I Meant: How Misunderstanding Is Related to Channel and Perspective-Taking. *Journal of Language and Social Psychology*, 36(2), 188–210. <https://doi.org/10.1177/0261927X16662968>
- Gentry, D. B. (1992). Using computer aided interactive video technology to provide experiential learning for mediation trainees. *Journal of Divorce and Remarriage*, 17(3–4), 57–74. https://doi.org/10.1300/J087v17n03_04
- Gu, S., Wang, F., Patel, N. P., Bourgeois, J. A., & Huang, J. H. (2019). A model for basic emotions using observations of behavior in *Drosophila*. *Frontiers in Psychology*, 10(APR), 1–13. <https://doi.org/10.3389/fpsyg.2019.00781>
- Hartmann-Piraudeau, A. (2022). Mediation. In *Mediators in the Leading Role - Understanding and Actively Managing Mediation* (pp. 1–15). Springer Fachmedien Wiesbaden. https://doi.org/10.1007/978-3-658-36253-9_1

- Hunsaker, D. A. (2017). *Anger in Negotiations: A Review of Causes, Effects, and Unanswered Questions*.
- Jones, T. S., & Bodtker, A. (2001). Mediating with heart in mind: Addressing emotion in mediation practice. *Negotiation Journal*, 17(3), 207–244. <https://doi.org/10.1023/A:1013283710190>
- Lane, D. M., & Chang, Y. H. A. (2018). Chess knowledge predicts chess memory even after controlling for chess experience: Evidence for the role of high-level processes. *Memory and Cognition*, 46(3), 337–348. <https://doi.org/10.3758/s13421-017-0768-2>
- Lohvinenko, M., Starynskyi, M., Rudenko, L., & Kordunian, I. (2021). Models of mediation: Theoretical and legal analysis. *Conflict Resolution Quarterly*, 39(1), 51–65. <https://doi.org/10.1002/crq.21315>
- Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An Integrative Model of Organizational Trust. *The Academy of Management Review*, 20(3), 709–734. <https://doi.org/10.2307/258792>
- McGovern, F. E. (2016). Trust and the SRBA mediation. *Idaho Law Review*, 52, 335–340. https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=6374&context=faculty_scholarship
- Menkel-Meadow, C. J. (2015). Mediation, Arbitration, and Alternative Dispute Resolution (ADR). *International Encyclopedia of the Social & Behavioral Sciences: Second Edition*, 70–74. <https://doi.org/10.1016/B978-0-08-097086-8.86083-3>
- Mestadi, W., Nafil, K., Touahni, R., & Messoussi, R. (2018). An Assessment of Serious Games Technology: Toward an Architecture for Serious Games Design. *International Journal of Computer Games Technology*, 2018. <https://doi.org/10.1155/2018/9834565>
- Novin, S., Bos, M. G. N., Stevenson, C. E., & Rieffe, C. (2018). Adolescents' responses to online peer conflict: How self-evaluation and ethnicity matter. *Infant and Child Development*, 27(2). <https://doi.org/10.1002/icd.2067>
- Pendleton, A., & Okolica, J. (2019). Creating serious games with the game design matrix. In *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics): Vol. 11899 LNCS*. Springer International Publishing. https://doi.org/10.1007/978-3-030-34350-7_51
- Petrovic, A., & Koprivica, V. J. (2014). *Tactics Factors in Chess: Theoretical-Empirical Aspects*. <https://www.researchgate.net/publication/339253534>
- Poitras, J. (2009). What makes parties trust mediators? *Negotiation Journal*, 25(3), 307–325. <https://doi.org/10.1111/j.1571-9979.2009.00228.x>
- Stimec, A., & Poitras, J. (2009). Building trust with parties: Are mediators overdoing it? *Conflict Resolution Quarterly*, 26(3), 317–331. <https://doi.org/10.1002/crq.235>
- Strongman, K. (2003). *The Psychology of Emotion (Fifth)*. John Wiley & Sons Ltd.
- Stulberg, J., & Love, L. (2013). *The Middle Voice : Mediating Conflict Successfully (2nd ed.)*. Carolina Academic Press.
- Suovuo, T. “bgt,” Skult, N., Joelsson, T. N., Skult, P., Ravyse, W., & Smed, J. (2020). *The Game Experience Model (GEM)*. 183–205. https://doi.org/10.1007/978-3-030-37643-7_8
- Walker, G. B. (1988). Training mediators: Teaching about ethical concerns and obligations. *Mediation Quarterly*, 1988(19), 33–42. <https://doi.org/https://doi.org/10.1002/crq.39019881906>
- Wigdor, D., & Wixon, D. (2011). Mechanics, Dynamics, and Aesthetics. *Brave NUI World*, 107–114. <https://doi.org/10.1016/b978-0-12-382231-4.00016-2>