

LEARNING TO COPE WITH TOMORROW'S REALITY: SERIOUS GAMING FOR CIVIC PARTICIPATION AND SOCIAL INCLUSION

Daina Gudoniene¹, Tomas Blazauskas¹, Peter Fruhmann²,
Maria Kyriakidou³, Maria Patsarika³, Alicia García-Holgado⁴,
Valentina Zangrando⁴, Francisco José García-Peñalvo⁴,
Afxentis Afxentiou⁵, Vitalija Kersiene¹

¹ *Kaunas University of Technology, Faculty of Informatics, Lithuania*

² *ZB&V, Netherlands*

³ *Educational Association Anatolia, Greece*

⁴ *GRIAL Research Group, University of Salamanca, Spain*

⁵ *Center for Social Innovation, Cyprus*

Abstract. Europe 2020 is the European Union's growth strategy for the coming decade and its targets include innovation, education and social inclusion. The combination of innovation and education is even more novel and forthcoming in the European context. Especially in the out-of-classroom field, informal education for young adults, the available learning opportunities are still very limited. Furthermore, the addition of the third target of Europe 2020, that of social inclusion is essential to the growth-leading path Europe needs to follow within the next decade because cohesion, interaction, mutual understanding, non-discrimination are key parameters for the realization of a well-developed society. In this context, the INGAME project, funded through the Erasmus+ Programme, proposes the development of a serious game for young adults. This work presents game design focused on social and civic inclusion. The interactive game aims to generate growth, and skill-building and at the same time address social challenges.

Keywords: Game, social, civic, inclusion, digital game.

1. INTRODUCTION

In general, the youth studies field contributes to healthy, prosperous, and sustainable democracies by trying to support the social and civic inclusion of young people. To achieve social inclusion means to ensure all young people's human rights are protected, that all young people have the (human, cultural, social and financial) capacities and available opportunities to participate fully in the various life spheres (economic, social, cultural and political life), and attain a good standard of living and quality of life within their respective countries. The youth field takes up this challenge, and pays attention to those socially excluded,

vulnerable or at risk, and seeks to ensure their greater participation in decisions that affect their lives (EU 2018).

The creation of games is an opportunity to gain practical experience and thereby build up valuable knowledge. Digital games in the form of serious games [1] on the one hand, or commercial games with didactic guidance on the other, have a highly positive influence on the lessons in the classroom, after-school care or leisure activities. Game based learning [2, 11] and gamification [3], if used correctly, can also achieve motivational effects in education. However, a potentially very strong use of play and games in education is still widely underrated in the literature and applied projects: the use of game design as a teaching method and especially the role of students as educational game designers [4].

Games and gamification are widely used to motivate children and increase learning outcomes. However, how games can motivate are quite varied and much more complex than saying that games simply increase "fun." Teachers often value games to motivate low-performing students and students with learning difficulties. The effect study shows that the co-op game Torchlight II used in combination with analogue gamification tools may be used to increase at-risk students' social participation and decrease their sense of external regulation [5].

Another paper presents Social inclusion as a complex and often misunderstood concept [10]. For children with disabilities, research has documented the degree of loneliness, bullying and exclusion they often experience in their social lives. This paper presents the findings of a critical literature review on the social inclusion of children with disabilities [6].

Reducing social gaps between neurodiverse individuals by encouraging and supporting social inclusion is enabled by digital technology, which improves individual's quality of life. The increasing accessibility of high fidelity VR (Virtual Reality) technology allows the creation of VR-based tools for social and academic skill development. Engaging multisensory stimuli, embodied interactions and communication allow users to experience social settings in entirely new ways with great possibilities in customization of user preferences. At the same time, the sensation of presence may become a means to increased enjoyment of educational activities [7].

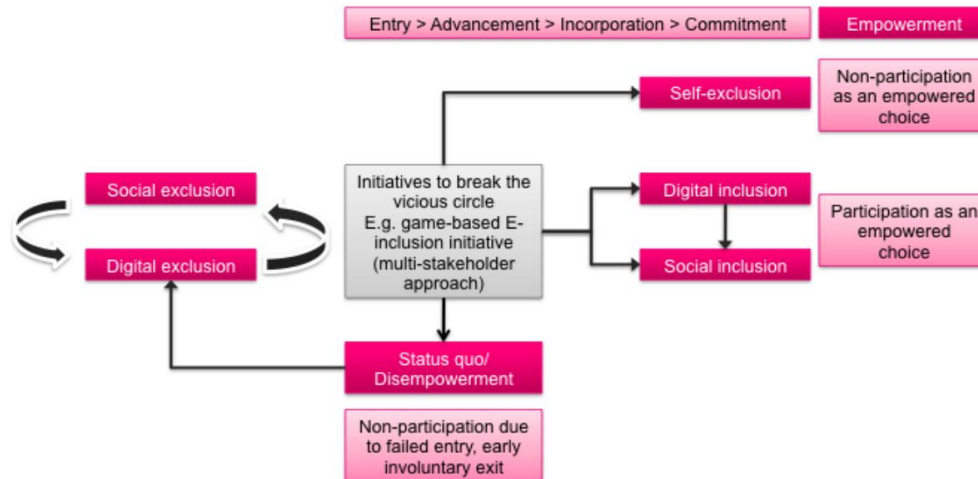


Figure 1. Visualizing our conceptualization of inclusion and empowerment and the relationship between these concepts [8]

Having elaborated on the concepts of inclusion, empowerment and digital games, we will now zoom into how these are related. This begins with a general overview of the rationale for and conceptualization of using digital games as an engaging means to induce change. This is followed by a discussion of the characteristics of digital games (e.g. interactive, motivational, social aspects) that are perceived as particularly suitable for supporting empowerment and inclusion [8].

However, the main challenges related to social inclusion of young people are youth unemployment and integration in the labor market and youth entrepreneurship. Socially excluded young people usually come from socially vulnerable families, families with limited parental rights, orphanages, youth living in remote/rural areas, children of migrant workers and immigrants, children of ethnic minorities, and young people with any physical or mental disabilities and unemployed young people.

Furthermore, there are more (general) challenges: online environments (i.e. social media) have fragmented our focus, the value of information and empathy towards each other. Global tensions are rising due to pandemics, the threat of global warming, housing, depletion of natural resources, and more. Democracies are in danger of being undermined by polarizing politicians or disruptive demagogues who are putting pressure on 'endangered' identities (individual, group, national). Furthermore, there are still advocates of an ever-growing economy and consumption. "We treat the future like a distant colonial outpost devoid of people" [15]. All that places a heavy burden on the current school-going and studying generation and their future offspring. Some of them are

already aware of that and act accordingly, although they often find their justified arguments (i.e. climate measures) bogged down in political wrangling or stalling.

The 'silver lining' might be co-operation. It is a product of human evolution: group cohesion is one of our most important survival strategies [13]. We are able to create networks that extend beyond 'our group' [14].

Civic participation is such an example. It refers to participating in community affairs, including contributing one's knowledge, skills, and values, to make a difference in society and potentially bring about positive change. Civic participation aims to raise the standards and quality of life in one's community through commitment and motivation. Young people are considered very important in civic participation because they bring new and innovative ideas. Civic participation is crucial because it teaches us how to live and work together, to appreciate different opinions, values and beliefs in a tolerant manner. Through civic participation we become aware of difficulties, social problems and moral questions in society, and are aware that there are possibilities to change and build stronger community ties. Only through active engagement do people get involved in their communities to make change for a better future. One very important factor that gets people involved in various civic activities is whether their social circles, friends, acquaintances or family members, include people who would invite and encourage them to get involved. Finally, civic participation can increase – bottom-up - collaboration between citizens and governments and improve policies (i.e. petitions, Right To Challenge). There is a word of warning, though: "...the level of participation in Western democracies can be seen as a continuum: at one end of the spectrum citizens have no interest at all – they do not read, are not or do not want to be informed, they do not vote, petition or demonstrate, at the other end are informed, vote, get involved in civic associations..." [16]. The group of young citizens who are on the 'one end' deserve the most attention and are the group where awareness and readiness for action can be generated.

Next to citizen participation, citizen *engagement* – an initiative initiated by a government - should be mentioned as well as a collaborative goal. Its challenge is identifying what is important for citizens, convincing (and inviting) them to engage, and offering them the necessary support/information to make well-founded decisions [12]. Some authors promote this idea as a stepping stone to a 'deliberative' democracy [17].

2. METHODOLOGY

INGAME (Gaming for Social Inclusion and Civic Participation – A holistic approach for a cultural shift in education and policy) [9] is a project that incorporates all of the above three targets and by its very innovative, digital nature it brings down barriers to knowledge, explores new headways to adult education and promotes favorable attitudes towards social inclusion among youth who have completed their formal education and training. Furthermore, it assists the building of cooperative competences that are useful not only as civic engagement tools but also as life skills. For instance, civic engagement and governance involves members of the general public to be concerned citizens and active contributors to public affairs. For this level of civic participation to occur, the development of specific competences is necessary. In response to this need, INGAME works with notions of social awareness, responsible decision-making, self-management, and self-awareness to strengthen competences such as critical and inventive thinking, as well as civic literacy and cross-cultural understandings. Finally, though INGAME can be of value to local societies, it eventually evolves beyond the national level to the European dimension and presents a comprehensive response to the European problems that are tackled through the Europe 2020 action plan.

The European future growth should come from innovative ideas that will be turned into products and services that could provide genuine benefits for its citizens in all social, professional and civic environments. Novel ideas based on a new space, cyberspace, fast and easily accessible from people all over Europe facilitate how we assess and envisage our social and political contexts and point to new directions in European cooperation with better quality of life. In addition, recent years have seen an appreciation of games' educational and learning benefits. Specifically, gamers' involvement in virtual environments that simulate authenticity is associated with the development of practical skills, especially concerning setting clear and achievable goals and operating actively within the environment provided by the game. A game's educational setup adds to traditional "written-text" approaches seen in formal education settings, as the former moves away from the latter's static limitations and capitalizes on the visualization and presentational potential of online multimedia environments.

Providing a platform that allows young learners to engage in a compelling gaming activity with many other gamers from different European countries and providing access to trans-national assessment, exchange of good practices and regular feedback and maintenance of this platform could be best achieved by well-matched partners from different countries working together for a common goal. INGAME is a project with European importance; the successful realization of

the project will certainly benefit not only European society but also individual partner organizations, which can gain from the experience of transnational collaborative environments, trans-national partnership and teamwork.

The INGAME project draws on several emergent proved-effective methods/approaches, linked with the latest advancement in game-based pedagogies, that, put together by an experienced and multiverse partnership (which not only represents end-users but will also foster a close relationship with relevant stakeholders although the project) will allow systemic changes towards inclusive societies. The basis of the proposed adventure for the creation, proliferation and preservation of positive environments, that respect, embrace and celebrate diversity, includes: a role-playing adventure, online game build based on several innovative pedagogical methods (such as project-based learning, cooperative learning and peer learning), a participatory approach (targeting a large spectrum of stakeholders), and a fluid and adaptive approach of educational games development methods (where participants can co-develop their narratives and game missions).

Through its innovative methodological design, the project priorities are to:

- Create and promote meaningful culturally sensitive curricula, in the form of an attractive game narrative, encourage the adoption of holistic approaches to learner development, creating and mainstream effective innovative pedagogies which help unite learners and facilitate cooperation;
- Empower the educators and the youth workers and trainers by reinforcing their sociological, socio psychological and socio-educational knowledge and competencies, raise awareness of specific difficulties facing disadvantaged learners and generally the youth, and identify and apply methods that most effectively increase the motivation and improve educational attainment of youth;
- Foster a democratic and inclusive culture which values diversity and allows space for dialogue and discussion on controversial issues at the local and the wider community, and actively engage all members of the community;
- Establish and maintain cross-sectoral alliances and stronger cooperation between a wide range of actors (educational institutions and learning providers, youth organizations, public authorities, stakeholder and civil society organizations, business, etc.) in the field of inclusive learning.

Two members of the INGAME consortium are educational institutions, namely, the lead partner University of Salamanca (USAL) from Spain and Educational Associational Anatolia (EEA) from Greece. The EEA team suggested the importance of including an advisory board made of college students that will assist the development of the game. For this reason, the leader agreed and two advisory groups of volunteer students were created (one in EEA and another in

USAL). The first one started to contribute to the design of the game's narrative and the different action fields significantly. The young students belong to the target age group of the INGAME project, they offer insightful inputs to the development of the INGAME. The students from Educational Associational Anatolia have so far been sharing with the researchers of the consortium their ideas about how to best develop INGAME as an engaging educational game to counteract civic apathy. This is still an ongoing project but the students in Greece were presented with a qualitative questionnaire that shows that young adults discuss peer civic engagement in a reflective way. They are well aware of current challenges but they are sometimes hesitant to be actively involved with civic matters because of outdated participation modalities while they acknowledge and disapprove of youth's lack of motivation to act on major social problems.

3. INTERACTIVE GAME

INGAME Educational Design, Storyline and Narrative of the game and the overall content is focused on fostering EU citizens' positive attitudes towards social inclusion, gender equality, civic participation developing intercultural skills and competencies. The INGAME design process will be developed and presented for youth social and civic inclusion. The game storyboards and content outline are divided into thematic topics comprising sections with specific learning objectives, learning activities, related learning material and tools based on the philosophy of adventure games and role playing, such as the Food Force, Choices and Voices, Immigration Nation. The curriculum (which outlines the overall learning process of the game) and the content (developed within the storyboards) will be integrated into the technological (web, visuals, digital and graphic designs) infrastructure of the game, which will be developed in parallel with the content.

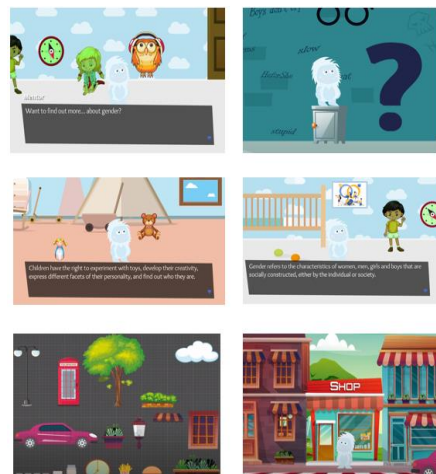


Figure 2. Narrative development

The content development should comply with the following standards, addressed by the Curriculum and Content Outline Design/Templates/Storyboards/Formats:

- **Curriculum Adequacy.** This standard addresses whether the INGAME content under development is compatible with the styles of learners, easily incorporated into existing structures, and compatible with activities and procedures foreseen. Critical aspect of this standard is the ability of the content to be adapted in various contexts, cultural, social, affordances envisioned for the game;
- **Instructional Adequacy.** The instructional adequacy component refers to the extent to which the content under development provides the necessary support for learning and meeting the instructional objectives as set in the theoretical framework and the curriculum;
- **Visual Adequacy.** This component refers to what the INGAME content under development actually looks like. Areas of concern include the interconnection of images, animations and text, and the type and format of content communicated to the user;
- **Technical Adequacy.** This component refers to the actual content delivered online and how it is interconnected with the game's technical features.

4. FRAME NARRATIVE – STRUCTURE PROPOSAL

The game' structure is designed to create and/or enhance awareness of the 'big themes' in current society and incite engagement and action readiness in young adults. It is a 'coming of age journey' of a young (somehow humanoid) refugee (the avatar) from outer space, who has landed on our planet because it needs an oxygen-rich atmosphere. Despite its undoubted idiosyncratic (technological) knowledge, it must survive on Earth, an unknown and perhaps hostile environment. It will require knowledge of its inhabitants as well, thus human (social) behavior, individually and collectively. How do they grow up, what are the benefits and pitfalls of educational systems, do they cooperate, how do they stand to one another, in small or larger communities and societies? How much freedom of movement does one allow 'the other', and what about a total stranger? What are successful sustainable ways of living and surviving together? How much does one care about a healthy environment and climate? What to do when you find yourself in an endangered environment? How does one react to crises, is one prepared for them? What are the (long-term) opportunities and (short-term) threats?

The inquisitive and curious avatar (the player) is assisted by a mentor (a 'guiding' star) who gives him a nudge now and then to explore and who asks helpful or reflective questions. During the game, the avatar learns to understand human nature, the problems and challenges that can arise in communities and societies, not only socially, economically and technologically but also what the consequences of human activities can be for the planet, their precious habitat. However, the avatar also meets (young) others and learns actively which (collaborative) initiatives and activities can lead to healthy long-term solutions. With the growing knowledge (by trial and error), it grows (literally and figuratively) level by level into a world citizen, capable of cooperating and putting knowledge into action for the common good.

When clicking on objects, a mix of information and (within object) additional/facilitating questions will appear. All questions are intended to promote reflection (maybe sometimes there can also be asked: "What do your friends think about that? Have you ever asked your friends / parents/ etc. about that?") or invite/challenge to investigate/click further

Levels. When one level is finished and the player wants to continue (walking further to the right (to the next scene) seems possible, the mentor blocks the way and asks assessment questions (multiple choice). If a question is not answered correctly, the player has to return to the object in question to check once more (a little bit of 'frustration' built in but easily solved). Sometimes assessment questions will be in the course of a level as well. Sometimes questions are 'merely' inviting to reflect and nudging to share with peers or other acquaintances. When all questions are correct, the player / avatar will grow a bit bigger (reward 1, "Wow, you have grown!") and the mentor will put a puzzle piece (reward 2, "We'll save this for later...") into the players 'vault' (not yet accessible). The mentor will shrink or fade away so that the player can move on to the next level.

The levels' objectives and content in short: 1. Gender Equality (Gender and sex; gender identity and gender roles; gender (in)equality); gender norms and exclusion (discrimination)). 2. Education / Equity & Equality (how cultural and socio-economic backgrounds, political and social trends and discourses (and prejudices) can shape the education process and the self-perception up to finding a place in society and the job market). 3. Social Inclusion / Integration (prevention of social exclusion (including stigmatization, stereotyping, discrimination, racism) in different spaces: the labor market, participation in communities, in public policy). 4. Urban Life / Civic participation and engagement (awareness of neighborhood (citizens') initiatives that promote cohesion and sustainability, and the potential resourcefulness of mixed, diverse neighborhoods, awareness of gentrification, future (sustainable) cities), 5. Environment / Climate /

Sustainability (Water and air pollution and its consequences for the atmosphere, political and business procrastination, greenwashing, innovative and sustainable solutions and potential citizens' initiatives) 6. Global Issues / Crises (awareness of the possibilities citizens have to influence governments and governance, learn about different (democratic) governance styles, and which can be useful in decisions in the long term, benefits and pitfalls of migration, alternative (sustainable, climate-friendly) economy, being a 'good ancestor').

The last reward and ending. The mentor disappears after receiving the last puzzle piece (= reward) in the vault. Now it is possible to enter the vault and see the puzzle pieces come together in something beautiful and precious.

5. CONCLUSIONS

INGAME Educational Design, Storyline and Narrative of the game will deliver an overall content for fostering EU citizens' positive attitudes towards social inclusion, gender equality, civic participation developing intercultural skills and competencies.

The INGAME invites and stimulates people to engage and participate. It corresponds to the challenge of empowering and building resilience in young people to participate in society on many levels, and develops capacities to socially and culturally engage and enter the labor market, etc.

The digital transformation of society offers new challenges and tremendous opportunities to achieve social and civic inclusion.

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REFERENCES

1. Crookall, D. (2010). Serious games, debriefing, and simulation/gaming as a discipline. *Simulation & gaming*, 41(6), 898-920.
2. Pivec, M. (2007). Editorial: Play and learn: potentials of game-based learning. *British Journal of Educational Technology*, 38(3), 387-393. doi:<https://doi.org/10.1111/j.1467-8535.2007.00722.x>.
3. Llorens-Largo, F., Gallego-Durán, F. J., Villagrà-Arnedo, C. J., Compañ-Rosique, P., Satorre-Cuerda, R., & Molina-Carmona, R. (2016). Gamification of the Learning Process: Lessons Learned. *IEEE Revista Iberoamericana de Tecnologías del Aprendizaje*, doi:10.1109/RITA.2016.2619138.
4. Wernbacher, T., Reuter, R. A. P., Denk, N., Pfeiffer, A., König, N., Fellnhöfer, K. & Jannot, E. (2020, November). Create Digital Games for Education: Game Design as a teaching Methodology. In *Proceedings of ICERI2020 Conference (Vol. 9, p. 10th)*.
5. Hanghøj, T., Lieberoth, A., & Misfeldt, M. (2018). Can cooperative video games encourage social and motivational inclusion of at-risk students?. *British Journal of Educational Technology*, 49(4), 775-799.
6. Koller, D., Pouesard, M. L., & Rummens, J. A. (2018). Defining social inclusion for children with disabilities: A critical literature review. 32(1).
7. Thomsen, L., & Adjorlu, A. (2021, March). Designing a collaborative virtual reality system to assess social inclusion among neurodiverse students. In *2021 IEEE Conference on Virtual Reality and 3D User Interfaces*.
8. Bleumers, L., All, A., Mariën, I., Schurmans, D., Van Looy, J., Jacobs, A., & De Grove, F. (2012). State of play of digital games for empowerment and inclusion: A review of the literature and empirical cases.
9. McLoughlin, S. (2018). Connecting the dots: young people, social inclusion and digitalisation-Reflection Paper.
10. Protopsaltis, A., Panesse, L., Pappa, D., & Hetzner, S. (2011). Serious Games and Formal and Informal Learning. *eLearning Papers*, 25.
11. Lodewijckx, I. (2020). The difference between citizen engagement and participation. www.citizenlab.co.
12. De Waal, F. (2019). *Mama's Last Hug. Animal Emotions and What They Tell Us About Ourselves*, W.W. Norton & Company.
13. Harari, Y.N. (2015). *Sapiens, A Brief History Of Humankind*, Anchor Books.
14. Krznaric R. (2020). *The Good Ancestor*, WH Allen.
15. Magnette, P. (2003). European Governance and Civic Participation: Beyond Elitist Citizenship?. *Political Studies*: 2003 Vol 51, 1-17.
16. Van Reybrouck, D. (2018). *Against Elections – The Case For Democracy*, Seven Stories Press, U.S.