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PROCEEDINGS
GAMES AND SOCIAL IMPACT MEDIA RESEARCH
CONFERENCE

GLOW 2021

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Editors:

Carla Sousa,
Filipe Luz,
Micaela Fonseca,
Pedro Neves

Universidade Lusófona, Portugal

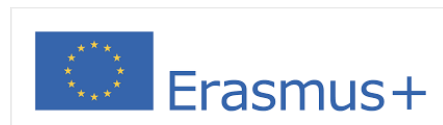
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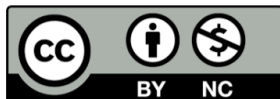
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Foreword

It is our great pleasure to welcome you to the First Conference on games and Social Impact and Media Research. The conference will be hosted by Lusófona University as a joint initiative between the CICANT and HEI-Lab research centers. Due to the current pandemic context, the conference will take place online.

The potential of games for social impact and inclusion is vast and ever evolving. The Games and Social Impact Media Research Lab (GLOW) was created at Lusófona University to research, discover, and foster links between games studies in academia and civil society through educational and knowledge exchanges. GLOW's main research interests are the social impact of games and play and how this impact can be transformed and advanced. A number of social groups continue to be underrepresented in the games industry's priorities, and design knowledge needs to expand in relation to these groups and their specificities. GLOW is meant to advance existing research in the relationship between games and social outcomes, strengthening the sharing and production of new data evidence, new methodologies, and approaches in the field.

The GLOW2021 conference is a way of introducing GLOW and its initiatives and projects to academics and non-academics alike across games-related fields, as well as creating a space for discussion and knowledge transfers on the social impacts of playable media.

We would like to thank the authors, reviewers, session chairs and symposiums for ensuring the quality of the GLOW21 conference, despite the difficult circumstances. We look forward to a engaging and fruitful GLOW21 conference.

Carla Sousa & Micaela Fonseca, General Chairs
Filipe Luz & Pedro Neves, Program Chairs



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Keynote

Carlo Fabricatore



Learning to cope with wicked consequential problems: the central role of meaning-making, and the mediating potentialities of games

by Carlo Fabricatore

Abstract

We live in times dynamised by consequential problems that call for an urgent reconsideration of what “learning” means. These problems are global issues originated by the complex interplay of societal, economic and environmental factors. Their implications propagate across time and space, so that they determine the present and future of our world, and our own existence in it. Global pandemics, financial crises, social equity, climate change and global warfare are but a few examples of such consequential problems. They unfold as ever-evolving scenarios which cannot be fully understood, predicted nor controlled. There is no definitive solution to them, nor can they be stopped. For this, they have been dubbed wicked problems. We can all be closely and deeply affected by wicked problems, as the COVID-19 pandemic is demonstrating us. Nonetheless, however daunting wicked problem scenarios may seem, we all have possibilities to influence and improve them. In fact, we have the responsibility to do so. But how? By learning to continuously and purposefully cope with problematic situations through engaging in collective problem management endeavours, driven by a sense of connectedness with each other and our broader environment, and concern and responsibility for the common good. The capability to engage and manage wicked problem situations should be promoted from as early as possible, continuously, within and outside formal education.

Fostering this capability requires promoting learning as a meaning-making process which (i) integrates the development of relevant knowledge, skills and attitudes, (ii) unfolds through purposeful action in meaningful contexts, and (iii) is interpersonal. To this end, bespoke learning contexts are needed. These should be suitable to allow learners to experience the complexities of real-world wicked problems safely but realistically, engaging in endeavours underpinned by conditions of change, uncertainty and conflict, and requiring collective decision-making and action. Games can play a crucial role to address these needs, due to their potential to promote social connectedness through meaningful activities, develop capacities and sensibilities required to tackle wicked problems, and offer opportunities to collectively explore realistic scenarios and devise possible better futures. This keynote address will explore the nature of wicked problems and the challenges that they present. This will be followed by an examination of the nature and outcomes of learning intended as a meaning-making process, and the importance that this has to promote the ability to tackle wicked problems. Finally, game-based learning will be discussed as an effective approach to foster learning as meaning-making, highlighting game features key to mediate players' thinking, feeling and doing, and consequently promote their integrative development in desirable manners.

Keywords

Wicked problems; consequential problems; meaning-making; game-based learning; games

Carlo Fabricatore

Carlo is an industrial engineer, human factors researcher and game designer. His work is driven by a profound interest and concern for complex problems in socio-technical systems, and how to leverage technology to enable people to build better futures together. Carlo has an extended academic experience in human factors, serious games and game-based learning, leading numerous international research projects and developing multiple international game design education programs. Carlo is currently Full Professor of Serious Gaming at E.H.E. Europa Hochschule EurAka (Switzerland), where he oversees advanced research on the application of human factors engineering, gamification and ubiquitous computing in mental healthcare, education, and sustainable development. He is also Visiting Professor of Human Factors in Technology-Enhanced Healthcare at Tuscia University (Italy), where he leads cutting-edge research in music and game-based interventions to foster healthy aging and social integration in elderly

populations. Carlo has also a significant industrial experience in information technologies and digital games, collaborating with organisations including Microsoft, Accenture, Nintendo, Ubisoft and the United Nations. Outside of work, Carlo is a keen guitar player, and a passionate sports angler who enjoys venturing in remote places in the pursuit of the ultimate immersion in nature.

Communications

Living Colors: decolonial game design for empowerment

by Eliane Bettocchi, Leticia Perani and Carlos Klimick

Abstract

In a previous paper (BETTOCCHI, KLIMICK, PERANI, 2020), we described the framework we created to elaborate an educational method that aims at the empowerment of minorities to become professional game designers. In this paper we continue our investigation by describing the actions in our exploratory research within the process of designing a game, applying it to students and gathering the results. As shown in the Google Form (<https://forms.gle/uJ2MxGJUPqRrdnMP7>) used during classes and workshops, we apply our threefold principle of understanding, applying, and disseminating to help students design their own decolonial game concept. Bell Hooks (2013) compares the Educator with the Healer in a process of rescuing the traditional knowledge of the original peoples, making teaching sacred so that the teaching-learning process is no longer limited to the transmission of knowledge, becoming a means to contribute to the continuity of society, transgressing and then improving it. Ahmadou Ampate Bá (2010, p. 169) states that the African oral tradition “is, at the same time, religion, knowledge, natural science, initiation into art, history, fun and recreation, since every detail always allows us to go back to Unity primordial.” Thus, one of the games we use in our method is LIVING COLORS: WHAT SHIP IS THIS? (<https://historias.interativas.nom.br/coresvivasgame/>) which simulates the experience of building an African-Brazilian identity from the concept of Orisha and from there to activism. Luis Fernandes de Oliveira weaves comparisons between being an African-Brazilian devotee and being a socialist activist bringing to mind a possible analogy or elective affinities (Löwy 1988, 1991). He comes to the conclusion that these analogies – faith and utopia (as conscience), tradition and future (as a goal) and Ashe (magic power) and militant ethics (as a practice) – can help us understand that some elements of religion can contribute to a process of fighting the oppressions of this world and encouraging a militant practice ethically perfect (Oliveira 1997, 7). We believe this cyclic and healing method may reinforce our commitment to defy colonialism not only in the themes we choose, but also in the ways we choose to design and teach, bringing into the academy speeches and thoughts so far invalidated. BA, Ahmadou Ampate. *Tradição viva*. In. *História Geral da África I Metodologia e pré-história da África*. 2 ed. Brasília: UNESCO, 2010.

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Leveling the playing field: Exploring opportunities for inclusiveness and participation through gaming.

by Aurelia Ayisi

Abstract

Video gaming has grown exponentially with the advent of the internet also referred to as online gaming because it is played over the internet. Crawford, et al., (2011) note that gaming has gained prominence in a relatively short time and has become a cultural phenomenon. There is growing interest and consequent research into how games can be used as tools for teaching and simulating real-life scenarios. What has been lacking however is conversations on how gaming can be valuable sites and tools for fostering social inclusion and participation of cultures and societies both online and offline.

While gaming is not a new phenomenon in the Global South, it is only in the past decade that we have seen an uptake in video games, partly due to new media, the proliferation of the internet, and improved access and internet connectivity.

This research brings into focus the operations of Leti Arts, a multimedia organization that uses video games and animation to tell stories from Africa using characters from diverse backgrounds and cultures. The research uses in-depth interviews to explore the success, motivations, impact, and challenges of Leti Arts. Finding from the study will have implications for the future of game development in Ghana and the world at large. It will also be useful to game developers and policymakers in Africa's creative industries as well as a contribution to the limited literature on gaming in the Global South.

FEMcast - Feminist critiques in videogame podcasts

by Rui Vieira Cruz and Carla Cerqueira

Abstract

Videogames as a culture industry have an immense potential for inclusion and social transformation. Although the academic focus in gaming studies is often the games, being serious games, educational, indies or Triple A games, the content creators are often disregarded and somewhat ignored, namely their preponderance transmitting ideas and in acting as a vocal minority for social issues to a large audience. The growth of the gaming industry in Portugal brought alongside with it some of the debates that are taking place in the international sphere, their consequent reorientation to the Portuguese scope and the formulation of new questions or topics that could be transposed to the international discussion. Therefore, it is considered fundamental to investigate without neglecting the situated knowledge that shapes realities. This allows us to look at the specialities of a given context and contribute to social change. Among others, these emerging debates focused on women's roles in gaming industry, whether as video game producers, online content creators (youtubers, twitchers etc) and as consumers. It is also in this perspective that it is central to observe the pandemic scenario emanating from Covid-19 that increased the number of hours played on videogames on a global scale. Topics such as women's roles in video games, their roles in the industry, issues of harassment and different manifestations of toxic masculinities, started emerging on Portuguese speaking podcasts thus fostering feminist debates and to the birth or deepening of gaming communities. These communities, often established in social media sites, such as Twitter, Discord and Facebook are a continuous effort from their actions in video or live streaming platforms such as YouTube and Twitch. These actions and combined efforts triggered the creation of online and presential social groups and meetups. With regard to the forms of communication currently in use, podcasts assume great relevance. Podcast culture is growing in Portugal, along with strategies for promoting them and making them visible to a greater audience. This relation to podcasts gained expression due to their non-controlled and conversational format, allowing for broadcasters and their guests to address topics and centralize the conversation in their fields of interest and in their discussion patterns, instead of following guided interviews or journalistic pieces. Hence, podcasts created a somewhat controlled space for debates on the social impacts of gaming. With a qualitative approach, sustained on

content analysis technique, we analyzed portuguese gaming podcasts, produced in the last 2 years, given their market and sustained growth and that addressed feminism and social issues that content creators and producers dealt with. Main topics addressed sexism, online harassment, and creative strategies for dealing with these problems.

The Portrayal of Women in games of the Survival Horror Genre on Playstation 2.

by Patrick Dourado Ribeiro

Abstract

This work aims to study how female characters are portrayed in games of the Survival Horror genre, focusing exclusively on Sony's PlayStation 2 console. The reason for this choice is based on the premise, through initial analysis, that there was a considerable number of survival horror videogames which feature female characters as protagonists. Games such as Fatal Frame, Haunting Grounds, Resident Evil, among others that will be described in the final version of this paper. This paper aims to provide an insight into how female protagonists are portrayed, considering the initial hypothesis that, in this particular genre, it is possible to observe a certain empowerment of female characters, especially if compared to other genres, such as fighting games, which uses sexualization as a central resource to engage players, male ones in particular. One of the motivations for writing this work is the increasing visibility of video games as a contemporary cultural element. Currently, video games are one of the main entertainment media, also being used as a vehicle for culture and education. The concept of digital games – previously a target of prejudice due to the preconceived notion that they were simply toys – has changed, as their prestige begins to gain momentum. Nowadays, the cultural role of video games in society is perceived by various research areas. It is possible to affirm that video games have reached a new paradigm on a global scale. Such expansion allowed the development of technologies that made games more accessible, especially indie games, due to the use of complex narratives and greater freedom. Based on this premise, videogames started to allow reflection on the most diverse social themes, such as racism, gender equality, and female portrayal, which are the focus of this study. This role came to be widely discussed by theorists of the topic, and even though women are already acknowledged as regular game buyers, they still face barriers – as consumers, developers, or even protagonists in the stories. Such battle for

recognition in this area is still challenging and stained by prejudice and stereotypes. In this work, we will use Game Studies concepts, associated with academic research focused on horror and the female gender, in order to analyze PlayStation 2 games of the Survival Horror genre. In addition, based on such concepts, we will try to identify certain elements to be discussed, concerning women's representation. Being a theoretical-conceptual work, we have decided to choose to review the traditional literature, using articles and books in the aforementioned areas. Other media formats will also be used, such as game covers, manuals, specialized magazines, as well as images (screenshots) of the games. We will try to develop a questionnaire for field research purposes, to be filled out by players of different genders to achieve tangible data.

Are serious games on the topics of migration suitable for raising awareness and empathy?

by Sonja Gabriel

Abstract

Especially for young people, but increasingly also for adults, digital games are part of everyday culture. Games do not only belong to the area of leisure and entertainment but are also often used to bring (political) messages to the players, to make them think, to increase empathy with certain groups of people or to bring about changes in behavior. These are often serious games or games - with a purpose - digital games whose primary purpose is not entertainment (Michael Chen, 2005). Newsgames, which represent a hybrid form between journalism and computer games, are another special form (Bogost, Ferrari Schweizer, 2010). Characteristic for newsgames is that they are produced quickly to process current events in a playful form (Sicart 2008). In recent years, more and more serious games and newsgames have been created that deal with the topics of asylum seekers and migration. These games are often developed by NGOs, indie developers, often with the involvement of refugees or migrants or some refugees are able to process their traumatic experiences in the form of game development. The potential here is seen primarily in achieving civic engagement and greater popular awareness of the issue (Stokes, Seggerman Rejeski, 2014). Bogost (2007) sees computer games as an expressive and persuasive medium, as they can represent real and imaginary systems and invite the players to interact and judge. From a narrative point of view, many games deal with similar themes and put the players in the role of migrants or refugees in

order to generate empathy and understanding for this group. However, when having a closer look, there are more serious differences that can be attributed to the game design, i.e. the interplay of mechanics, rules, narration, game goal and purpose. The research uses the SGDA (Serious Games Design Assessment) framework by Mitgutsch Alvarado (2012) to analyze the games showing that a game can only "work" with the target group if the purpose of the game is reflected in all other five elements (content, narration, mechanics, aesthetics and graphics and framing). SGDA was chosen for the analysis of the games because of its focus on purpose, underlining that these serious games aim to provide much more than entertainment. The presents results of the research by discussing some of the analyzed games.

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A Survey on Procedural Generation of Player Objectives in Video Games by Nélio Codices

Abstract

Automated generation of content has been employed in video games to create bigger and richer worlds for a fraction of the authoring work. It has also been a fruitful research topic in computer science. There are multiple surveys on procedural content generation covering its many different applications and approaches in video games. However, the automated generation and adaptation of player objectives is usually barely mentioned, despite the active research on the subject. This survey centers its attention on the academic efforts on procedural generation of player objectives. A definition and taxonomy for player objectives are here proposed, as well

as an aggregating taxonomy for procedural content generation. A comprehensive list of case studies is presented and analyzed, providing a clear picture of the current research in the topic and shedding light into its future direction. Despite this survey's aim for completeness, multiple paths for further growing and improving it are also presented.

RehbBrain: a platform with serious games for perceptual and cognitive rehabilitation

by Sandrina Rodrigues, Ricardo Vigário, Carla Quintão and Claudia Quaresma

Abstract

Introduction: Stroke sequelae significantly affect the individual's functionality, namely at the level of their perceptive and cognitive skills. Consequently, these patients require rehabilitation therapies that are adapted to their dysfunctions. Currently, conventional rehabilitation methods consist essentially of traditional board games and paper games. These conventional therapies are disadvantageous because they are poorly suited to the specific dysfunctions of each patient, making the rehabilitation process unstimulating and demotivating. To bridge this gap, RehbBrain was developed, which is a platform with serious games adapted for all patients whose rehabilitation process focuses on stimulating perceptual and cognitive skills. RehbBrain aims to help therapists monitor their patients by promoting a systematized and standardized assessment, and the games on the platform are intended to complement conventional rehabilitation methods.

Objective: The main objective is to present the RehbBrain platform that was designed and adapted to the specific needs of patients, to make therapy sessions more dynamic, leading to a faster and more patient-oriented stimulation process. RehbBrain's serious games simulate individuals' daily activities and present various themes and levels whose difficulty increases progressively. **Methodology:** The platform was developed in Django, a framework for web development in Python, with support from HTML, CSS, and Javascript. When developing the platform, a co-creation methodology was adopted with occupational therapists from the Hospital Curry Cabral (HCC), who supported the whole process of themes creation and level complexity, to make the games as suitable as possible. Subsequently, for feedback on the usability of the platform, a SUS usability questionnaire was applied to a group of therapists from HCC and to a group of 30 individuals without associated cognitive impairments. **Results:** The platform features a home page with access links to all stakeholders' websites, an add patient

page, a history, and a patient list page with access to the games menu. The platform has 42 therapeutic games, with the hygiene and cooking games being about selecting images according to the instruction requested or ordering images that illustrate the completion of a particular task. The visuospatial orientation theme consists of organising objects on a grid according to their changes in shape, colour, or orientation in space in relation to other objects. The platform records the time, the score based on the type and level of the game played, the number of moves, the images submitted (in order), and all the images selected (besides the ones submitted). Additionally, the platform makes available for consultation the mouse path performed during the gaming session, allowing the analysis of path irregularities. RehbBrain was applied to a group of 35 individuals without associated pathologies to create a normative database with performance values for later comparison with the results achieved by patients. All participants completed the SUS questionnaire to assess the usability of the platform and the average score obtained was 88.6, which classifies RehbBrain as "Excellent". Conclusion: We conclude that the RehbBrain meets the proposed objectives and reinforce that this project is the result of a partnership between the NOVA School of Science and Technology and the HCC.

Making Modern board games useful: two workshops about introducing and exploring new designs for purposes

by Micael da Silva Sousa

Abstract

Modern board games are a growing trend worldwide. Only the COVID-19 pandemic outbreak halted the exponential growth of new game releases and sales. In a post-digital context, the face-to-face experiences of multiplayer gaming are unique, delivering experiences that digital games cannot do. These physical experiences are being explored in serious games projects, applied to education, health and even participatory decision-making and spatial planning. Despite being a novelty, Modern board game designs are fuelling these approaches. Modern board games can support formal and informal teaching activities. Although modern board games are growing in notoriety, they are still a niche, and the majority of education professionals still ignore their features and potentials to use as teaching tools. Considering the novelty of modern board games, in the EJML2020 that occurred during the COVID-19 lockdowns, two workshops were conducted online.

One was related to modern board game design, and the other was about the use of modern board games to establish collaborative processes. The workshop sessions were conducted in Zoom software and by using multiple cameras, some games like Dixit, Ikonikus, Imagidice! and others that allowed fast playability with simple rule systems. Besides the game activities, the workshops delivered expositive content through formal presentations. The workshop sessions were recorded in video. The participants filled pre-tests and post-test to collect data about their knowledge about modern board games and the potentials of using games for serious purposes. Participants also stated what they consider to be the differences between analog and digital games. The workshops and the related data collection allowed us to conclude that the knowledge participants had about modern board games was low and that they realize the potential of using games for serious purposes, although not in a clear way about what could be achieved through the use of modern board game designs. After the session, the perceptions about using, modifying or creating new modern board games to build new serious games or gamified applications increased. The participants considered that the online mode reduced the potential and quality of the workshops. Participants considered the workshop to be better and with more impact if it was face-to-face. This perception from the participants is also a relevant insight. Our findings help to support the research about the materiality and social experiences analog games provide. Modern board games designs appear as a trend and make analog games relevant even when digital rules.

Developing a serious game to communicate about nanoparticles

by Diogo Santos, Carla Morais and Nelson Zagalo

Abstract

Video games exist in plenty of fields and with diverse objectives and goals: from pure entertainment to serious games, simulations, educational games, and artistic or technological experiences. The medium can offer a rich and interactive way to explore and experiment, can be fun and metaphorical, inviting players to embark on easygoing journeys even when dealing with complex topics. Studies show that students can learn science concepts through digital games by translating game learning to science learning. Some approaches suggest that story-based video games can be a powerful tool to attracting participants to citizen science tasks. Games can be immersive, and experiments indicate that this aspect can be a powerful teaching

science strategy. Authors have analyzed video games' impact outside the classroom and how they can enhance science education by promoting inclusive education, civic scientific literacy, and global citizenship. Hot topics like climate change can also benefit from video games, mainly when targeting younger audiences. Science gamification also appears as a different way of communicating science with the public. Video games can also inspire people to engage in scientific activities, with data showing, per example, that girls who play video games are three times more likely to study for a STEM degree. We believe that in this multimedia space, scientists and science communication practitioners can look at video games as an ally to communicate scientific topics and inspire a wide and varied audience to engage with science. This article presents the work in progress of a plan to develop a serious game to communicate science, aiming to motivate people to know more about chemistry and show some of the work produced in the lab. By looking to the Design Pattern Canvas as a guideline, the game to be developed with direct collaboration from scientists at CIQUP (Chemistry Research Center of the University of Porto) will tackle nanoparticles application' in medicinal chemistry as the main topic. Today, nanoparticles are being implemented in vaccines such as the ones based on m-RNA to fight Covid-19. Other applications are the use of nanoparticles to fight cancer or degenerative diseases. The mechanics will try to put the player in a platforming and exploration space, controlling nanoparticles. The target audience is young kids (from 12 to 17 years old) on the verge of choosing academic and other journeys, and the game is to be accessed via web browser. We envision that the players will know more about nanoparticles, became aware of the importance of chemistry to day-to-day life, and have the curiosity to know more or even consider embarking on a journey in the field of chemistry. The data to be collected from observations, interviews, and focus-group, will help us evaluate how players play and if the game can deliver on the outcomes envisioned. This being a project also focused on the development of science communication content from within a research unit, the evaluation is to be extended regarding the involvement of the research unit and its scientists in every task.

See Me Play! An autoethnography of self-portraiture as adult play in immersive playscapes

by Katriina Heljakka

Abstract

Play is seen as ingrained in everyday life (De Souza e Silva and Sutko, 2008), in adult life, and playful physical space (e.g. Heljakka 2013; Stenros 2015; Saker and Evans 2016). One key aspect of contemporary play is its oculo-centric, or vision-based quality; the documentation and social sharing of one's own play experiences—photographed and video-recorded autoplay. Another is performative participation, or “to be part of the art” by selfie-taking, invited and encouraged by many cultural institutions and entertainment spaces, such as museums. So far, research attempts to determine the degree of immersion in the aforementioned entertainment spaces seems nonexistent. To bridge this gap, the study at hand takes an interest in analyzing and deconstructing the concept of interactive and immersive environments, which seem to be all about making the self-documenting player the main exhibit, or spectacle. Selfies “show a self, enacting itself” (Frosh 2015, 1621). Moreover, as a locative media—selfies “are about the placement of one's self in a place at a time” (Hess 2015). This paper focuses on self-portraiture as a prominent play pattern of adults engaging first, with immersive experiences offered by entertainment spaces dedicated to the making and taking of selfies and second, with the social platforms for photosharing such as Instagram, where the self-portraits produced are shared with hashtags after selecting, modifying and editing, or digitally manipulating them. The research material collected through an autoethnographic approach consists of photographs and videos evidencing the author's visits and adult play in three temporary museums dedicated to selfies during pre-pandemic times (2019-2020), namely the Museum of Ice Cream in San Francisco, N.Y., and Happy Place and The Selfie Museum in Las Vegas. Contrary to zoos, natural history museums or living history museums in which naturalism, realism and authenticity are considered important (Bitgood et al. 1990), museums dedicated to selfies aim to represent the fantastic and unreal. In this way, it is possible to hypothesize that immersive playscapes of the present aim to function as backdrops for selfie-taking in situations ‘out of this world’—like being inside of a box of toys, a movie scene, or inside a digital game. The study is guided by the following research questions: Which strategies of playful persuasion are commonly used in the immersive playscapes dedicated to self-portraiture, and: How does solitary vs. so-

cial play emerge through adult interaction within these designed spaces? Furthermore, the research extends to explore the social impact of shared self-portraiture in making the adult player a more visible figure in contemporary society and the ludic era (Sutton-Smith 1997). Some preliminary insights of the autoethnography include an understanding of that the experience is to some degree dictated and directed by the recognition of how to pose in the best way, what makes a good picture, the role and interest of a potential spectating audience and consequently the underlying imperative of seeing one interact with the designed immersive space, in other ways, the essentiality of seeing one play. Consequently, taking a selfie is making a toy out of yourself.

Transforming spatial practices through play

by Eszter Tóth

Abstract

This paper explores the transformative potential of games in the context of built environment education (BEE). This emergent field of pedagogy at the intersection of spatial practice and education aims to foster learning about spaces and co-creating places. These two core aspects of learning and transforming merge in Dewey's theory of learning that considers learning as a result of the continuous transaction between humans and their environment. In the active process of transaction both learners and their environment transform. In the context of BEE, the question raise how games can foster transaction between children and youth and their built environment? How can transformative gameplay contribute to the change of young people's spatial practices and spaces themselves? The question is explored on the basis of educational design research conducted in Pécs, Hungary. The core of the research has been the evolution of the transformative game ParticiPécs. The game was developed in a collaborative design process involving youth aged 12-16 and experts (architects, planners, youth workers). ParticiPécs is a place-based educational game that simulates and triggers small-scale real-world interventions in public spaces. Players can collaboratively design and implement urban interventions within the magic circle of the game and transfer them to real spaces. The final evaluation of the game was implemented in seven different secondary schools in Pécs with youth aged 14-18, and seven urban interventions have been implemented in public places.

Reimagining Hamlet: Elsinore and its exploration of margins

by Angshuman Dutta

Abstract

The video game medium, in its affording the player an agency in traversing the playtext, creates an immersive environment that can be used to have a lasting impact on the player. Transmedial approaches to texts of Shakespeare open up the variable possibilities in the narrative that either has been erstwhile overlooked. Shakespeare in video games have ranged from simple point and click, to references to the Bard, and then worlds built in his oeuvre. Elsinore, Golden Glitch's 2019 game, nuances the representation of Hamlet's medieval world. The primary criticism of the play focuses on the women characters in the play, especially in Ophelia. Ophelia, who drives the narrative forward, is only found in relation to Polonius, Hamlet, and Laertes and later on killed off-stage. Elsinore follows the canonical narrative, but also provides the possibilities of alternative endings. Set in a time loop, Ophelia, the protagonist, dies repeatedly as she learns further about the happenings in Elsinore and tries to stop them. Ophelia's actions write the narrative. In it, not only the player is provided with an agency in performing the narrative, but also Ophelia, the marginalised catalyst in the canon, is imbued with an agency she lacked. The developers also fleshed out other marginal characters present in the play – filling the gameworld with a diverse set of characters of 'a multitude of races and ethnicities, economic backgrounds, gender identities, sexual identities, and personalities', as one of the designers states. The game introduces a genderqueer character struggling with their identity, two genderswapped characters of the actual play in love, and ponders over the relationship of Hamlet and Horatio. The most distinctive change is that Ophelia, here, to be a person of colour, with the possibility of ending up in a seat of power or with a person she loves. Such reimagining of Shakespeare's texts in a medium like video games provides the opportunity to explore marginal interpretations and understandings of the text and strives to be more inclusive in populating its world. This paper wishes to look at Elsinore in its problematisation of a canonical text and its inclusive reimagination of marginal characters of the medieval world.

Ethics, Videogames La Dolce Vita: Becoming Morally Competent through Moral Complexity

by Benjamin Hanussek

Abstract

Ethics have come a long way since the advent of civilisation. From thinking about ourselves as in need of virtues (Aristotle), we have realised that we need to think about our fellow human beings with a sublime form of dignity (Kant), while today, we consider our planet as an object of moral concern (Jonas). In light of these advancements, Kant's idea that history can only be understood as morality in progress seems sound.

At the same time, however, we still experience planetary violence, exploitation, intolerance and depression. How does it come that our theoretical foundations on ethics seem so advanced, ready-at-hand, but apparently ineffectively in use? In one of his lectures, the philosopher Achille Mbembe stated that we might have provided the conditional social frameworks for democracy and morality. Still, we have done little to provide responsible and autonomous subjects to use these frameworks properly.

It seems reasonable to assume that we may not lack moral principles but, eventually, moral competence. According to the psychologist Georg Lind, moral competence is the ability to solve conflicts non-violently and non-deceitful through the translation of one's moral principles into action. Lind argues that moral principles do not need to be taught because every human inhibits them already. What needs to be taught is moral competence to make use of these principles when it counts.

Which spaces would be more suitable to test, train and expand one's moral competence than simulacra, simulations or simply videogames?

Many videogames inhibit a sense of morality as a game design element to trigger engagement within their human-machine interactions. Morality appears in the form of moral dilemmas or moral commentary. This form of artificial morality can be more accurately regarded as moral complexity. Moral complexity is the degree to which a game provides these dilemmas or commentary. To understand moral complexity means to grasp how it relates to moral competence and how games or educative frameworks can be designed to strengthen moral competence effectively. Giving people the chance to enhance their moral competence effectively strengthens their democratic and moral decision-making processes, consequently supporting more enjoyable and less conflicted lives.

In my paper, I intend to briefly recapitulate the theoretical foundations of videogame ethics as a subfield of game studies. Moreover, I will provide through Lind's concept of moral competence an empirical device allowing me to define moral complexity in videogames. Regarding both notions in interrelation, I will apply them to the game Civilization VI (2K Games 2016). Based on my findings, I will discuss potential avenues for game developers and educators to effectively use the moral moral complexity/competence loop to craft more engaging moral encounters and nourish the moral competence of payers sustainably.

Moral competence is crucial to make autonomous and satisfying choices in one's life. And *la dolce vita*, so the good life, remains since Aristotle, the ultimate goal for most humans. If videogames could help us achieve this, we ought to interrogate this approach rigorously.

Media and Education: Inclusive Games in Classroom

by Sofia Vital Henrique, Maria Leitão, Cláudia Nunes and Catarina Garcia

Abstract

In 1948, the "Declaration of Human Rights" stated that school should be for all, so children must go to school, having or not disabilities, for an Inclusive School.

Games pull people together and since the XVII century assume a role in pedagogy. For Piaget (1978), games help in building intelligence and motivating the student to learn different aspects. For Vygotsky (1999), social interaction with the construction of the knowledge of reality is experienced, assuming the student the role of protagonist-builder of its story. Nowadays, Virtual and Augmented Reality and Massive Multiplayer Online Role-Playing Games are used as social and other skills learning students inputs (Alves, Hostins, 2019; Alharthi, Bonsignore, Spiel, Toups, Hamilton, 2018; Barendregt, Börjesson, Eriksson, Torgersson, 2017; Egusa, Inagaki, Kusunoki, Mizoguchi, Namatame, Tamaki, 2016; Ehlenz, Heinemann, Schroeder, 2021; Ghasemifard, Oori, Mirzaie, Riazi, 2020; Israel, Wherfel, Shehab, Melvin, Lash, 2017; Mettatra, Bardot, Cullen, Serrano, Joufrais, 2020; Neto, Paiva, Nicolau, 2021; Nonnis, Bryan-Kinns, 2019; Ramos, Garcia 2019).

Within the spectrum of Special Health Needs (SHN), under the Portuguese Law number 54 at 16-07-2018, "children may have Autism Spectrum Disorder, Cognitive Disorders, Visual Incapacities, Attention Deficits and/or

deafness. For the World Health Organization (2011; pg.3) “Inability” consists in the restriction or inability to perform an activity within the limits considered normal for a human being. “Disabilities” can be temporary or permanent, reversible or irreversible, progressive or regressive and are always present.

In this study a Systematic literature review (SLR) was conducted to answer the following research questions: “a) Can digital games enhance enthusiasm, excitement, group interaction and become inclusive? b) What games can help overcome learning difficulties? c) What is the importance of game design and technologies in the acquisition of different skills in learning?”.

The Prisma model was used as a methodology for the SLR and NVivo Plus Software was used for content analysis. This is based on the “PRISMA methodology” (Moher, Liberati, Tetzlaff Altman, 2009). Date criteria was 2016-2021 english and portuguese articles, accounting 17 quality full-text, with the following search criteria, combined the following keywords: video games AND special needs AND collaboration AND emotion AND group interaction with 17 eligible records at the identification phase - Records identified through b-on (n=3), Records identified through ACM Digital Library (n=10), Records identified through SCIELO (n=3), Records identified through Google Scholar (n=1). At the end, Records excluded were 5, remaining 12 studies included in qualitative synthesis.

In our sample, the studies are conclusive that inclusive games, among children with SHN and without it, promotes learning and develops creative and social skills in the target population through co-design, collaboration and cooperation. The technological supports addressed are diversified, and the most recent ones present robots as a means of enhancing mobilization and interaction skills. It was also concluded that although the number of studies carried out in this area is growing, they lack the same scientific approach to all disabilities in children, youth, and adults.

Posters

System Architecture Proposal for Distance Learning Applications

by Rui Varandas and Hugo Gamboa

Abstract

Learning involves the aggregation of new information, the recollection of memories, and the thought processes required to integrate the new information into the old belief system. Moreover, learning depends on attention, engagement, and even the emotional state of learners. These aspects are usually assessed using subjective measures (e.g., questionnaires), hindering the objective evaluation of learners' state and the generalization of the results since, for example, different people perceive similar levels of engagement and attention differently. On the other hand, e-learning has become a common format of dissemination of educational content over the Internet and allows experts to share their knowledge and experience while learners access it in a ubiquitous way. This content is usually centralized in Learning Management Systems (LMS), with such features as authoring tools, forums, chats, and gamification features. The integration of LMSs with recommendation systems, which aim to recommend content given the preferences and the history of users is now a reality, with platforms being able to suggest classes and courses to users based on those parameters. Besides, biosignals have been applied in multiple research fields, such as brain-computer interfaces, telemedicine as well as in medicine. In this case, we intend to use biosignals, namely, functional Near-Infrared Spectroscopy and Electroencephalogram signals for cognitive monitoring, Electrodermal Activity, Electrocardiogram, and Respiratory Inductive Plethysmography for emotional monitoring, and accelerometry signals for course posture monitoring, to infer the state of learners. Moreover, human-computer interface (HCI) features (e.g., mouse movements and keyboard strokes) will be included, which may inform about how comfortable a learner is with the learning content. Thus, we propose a system architecture that includes three distinct modules: the student module, the knowledge module, and the recommendation module. The student module will include the previously described acquisition data (biosignals and HCI) as well as base information about the learner, such as preferences, background, and demographic data. The knowledge module will include the learning content, i.e., questions for evaluation and the learning objects, and the learning standards, which corresponds to the expected knowledge someone must have in

each course/lesson before moving to the next. Finally, the recommendation module will integrate the information of the other two modules by using Machine Learning algorithms, to adequate the contents over time for each user and their state. For example, if the learner is feeling overwhelmed, the difficulty should be lowered, and if the learner is feeling bored, it should increase to keep high levels of engagement. Moreover, the format of the lesson (theoretical vs. practical) should be different for learners with different preferences. With this, we intend to improve current e-learning systems by including objective data to assess the engagement and quality of learning of the users. Moreover, we propose the development of course materials adapted to various preferences, namely by distinguishing the complexity of each learning object, but also its format. Then, we will be able to automatically address the needs and preferences of learners in real-time to optimize engagement, attention, and the emotional and cognitive states to optimize learning.

RoaZ: A multiplayer video game to promote ecological awareness and prevent social alienation

by Fausto Mourato, João Morais and Diogo Sousa

Abstract

RoaZ is a multiplayer competitive video game designed around two important matters: ecological awareness and social alienation. Around campus, one can normally observe students sitting next to each other with their heads down using their smart phones. Frequently, groups of colleagues gather around during intervals and keep their eyes focused on the phone's the entire time, with rare interactions or share of content during that time. This type of behavior has been described as "alone together" and arises with technology dependency, fear of missing out, and other possible issues. While it is barely impossible to directly promote a different behavior, we decided to tackle this problem indirectly, aiming to slightly change that behavior to a more dynamic one, namely by increasing the social relation outside the screen between colleagues and to make the zones visibly more social. Our intent is not to fight technology but to extract more from its potential. For this, we decided to emulate a pre-technology scenario with people gathered around. We considered horse racing games, common in carnivals, a socially active environment with players and spectators. The players play a simple game in their spot (normally a roll-a-ball game) in which the points that the player scores are translated into movements of the horse that is physically present in the game tent. The better the score,

the more the horse moves and the first horse to cross the finish line determines the winner. To emulate this scenario in a technologic context, we designed our game with a social screen (for instance a TV on a social room), where the horse race occurs, and the mini game is played on the player's phones. To play, a person installs the game on his/her phone and connects to the social screen using a code shown on a pre-game phase. Then, during the game, the players play the mini game competitively. For the game theme, we focused the issue of ecological awareness. Regarding the mini game, we searched popular casual titles with mechanics comparable to rolling balls to holes and found Paper Toss as a good match. We adapted it to have three separate recycle containers (for card, glass, and plastic/metal) and the player must gather and toss items to the correspondent container. With this focus on cleaning the sea from pollution, we changed the social screen representing a race with dolphins instead of horses. For our first prototype, the mini game was developed in Unity, currently compatible with Android Phones, and the social screen is a separate application, also developed in Unity, currently running on PC. The communication between the game and the social screen uses a Node.JS Server. Due to the Covid-19 pandemic, the system was not yet tested in the field. Although the game can be played with social distancing and without sharing devices and/or surfaces, it motivates clusters of people in halls or rooms. However, it has been tested in smaller context, as a family game (such as the Jackbox Party series or Melbits World).

Ecopoly: A game to raise environmental awareness

by Fausto Mourato and Francisco Leal

Abstract

Ecopoly is a strategy game designed to stimulate environmental awareness. Even though it was designed as a videogame, the set of rules are based on tabletop games to promote a future adaptation for that media. Regarding its design, the game aims to represent the selfish capitalist nature of the contemporary society and the possible consequences of that kind of behavior. Even though not exclusively, our game was developed taking into account the MDA Framework. Considering that framework, the main aesthetics behind tabletop games are normally fellowship and submission around a challenge or a fantasy/narrative. Regarding fellowship, some are designed to be competitive (for instance Monopoly and Risk) or cooperative (for instance, pandemic). While some cooperation arises in some games (for instance, alliances and trades), it is not that common a game to be both competitive and

cooperative. Our goal was to build the game like that. Also, we aimed to insert the environmental component of the game in an indirect manner, in opposition to more direct approaches such as the video game Block'hood. The premise behind the goal of our game is simple: each player tries to win by being the wealthiest and everybody lose if the planet is destroyed due to pollution. The gameplay evolves around the balance of cooperative and competitive dynamics. Those are applied by a set of simple mechanics. In the game map, the players can build factories to generate income for further rounds. Pollutant factories are always cheaper, and they generate more income. At each turn, pollution can spread across regions and the players can also adjust the ecologic policy of each region to restrain opponents' excessive pollutant behaviors. The main principles to win are straightforward, however the existence of pollution policies and the "everybody lose" rule provide a rubber band dynamic for difficulty and tension situations regarding game theory analysis. Also, there are no incentives or bonuses for being ecological. This is an intentional design element to transmit that sustainability is an effort and that it is frustrating to be behave ecological when others don't. However, in the end, that behavior is important for the greater good. We have currently implemented the first functional prototype of the game and performed an initial set of tests for usability analysis and rule balancing. In the next stages of rule balancing, we intend to dig deeper in perceiving the players' emotions as we believe it is particularly important in the context of an awareness game.

Eco Arcade – Ecological Arcade Machine

by Fausto Mourato, Bruno Silva and João Zeferino Silva

Abstract

Recycling is one of the most popular human efforts regarding environmental consciousness. However, there is still much to do in this matter, especially regarding plastics. Our work focuses on encouraging the recycling of plastic bottle caps using the pervasive power of video games. It is common to have, in some commercial areas or working places, some initiatives on the subject, typically in the form of voluntary deposit of the plastic caps in specific containers. Some of those initiatives have been directed to other social causes, allowing, for instance, to fund investments in wheelchairs. This work intends to incite this type of behavior by adding "value" to the plastic caps. Our idea consists of a retro-styled arcade machine in which plastic bottle caps are used to earn playing credits in the machine, instead of coins. The related research consists of the following topics: (i) physical

structure of the machine and its components; (ii) bottle cap recognition algorithm; and (iii) the social impact of the idea. We have built a prototype of the system for our initial studies. The physical structure was built using the framework of an old arcade machine, retrofitted to include a regular PC, an Arduino board, and a set of sensors/actuators, namely, a pressure sensor, a capacitive sensor, an inductive sensor, an IR sensor, a servo motor and LDR sensors. The initial coin slot was designed with Styrofoam and later updated with 3D printed components. The coin recognition system is based on a neural network, whose input is the sensors data and the output a confidence percentage that the inserted object is a plastic bottle cap. Rejected objects are stored in a deposit inside of the machine that can still be recycled by the person in charge of the machine. We intend to carry out a first validation phase at the campus of our faculty. We will assess the efficacy of bottle cap recognition and further use the collected data to improve the neural network model. Naturally, we will also assess the impact of the arcade machine regarding its primary goal - to encourage recycling. We believe our work has merit towards sustainability and it also paves way to other systems that rely on adding value to recycled materials.

User Experience: Usability and Engageability study in a serious game

by Afonso Lage and André Santos

Abstract

This project's goal was to observe and analyze the players' experience when playing "Otherworldly Math" (OWM), a puzzle game made for children with difficulties in mathematics' learning, while also being accessible to deaf and hard of hearing (DHH) children. To achieve it, we recruited participants who were willing to participate in a playtest session, where we collected data related to Usability and Engageability. Its analysis not only allowed us to evaluate game elements such as interaction, attitude, and clarity but also provided direct feedback to the game developers by revealing possible game design problems. Our sample for this study was composed of 6 participants with a uniform gender distribution, aged between 19 and 21 years old and possessing a rich variety of overall experience and availability to play videogames. All the tests were performed online, via Discord video call, and followed the format: 1) Prototype download; 2) Digital signature of a Sound and Image Capture Consent; 3) Answering the pretest questions of our test form; 4) Gameplay capture – max of 30minutes; 5) Answering the posttest questions of the test form – a multiple selection grid which formed

an Engagement Scale capable of measuring the player's Engageability playing the game; 6) Thanking the participants and ending the playtest session. Afterward, each participant's gameplay would be reviewed, and we'd fill their respective Got it/Don't Got it grid, a table containing various gameplay key moments/objectives where we ticked if the player had or not managed to complete said objective. Our results showed that the participants mostly found the game challenging, while sometimes also feeling a lack of purpose. This is held up by the results of the Engagement Scale, where the Challenge category scored the highest ($M = 3.55$; $SD = 5$), while the Purpose category scored the lowest ($M = 2.72$; $SD = 5$). Furthermore, while the Got It/Don't Got it grid results were mainly positive, they also reveal that the need to rewatch the tutorial was quite common, especially during the second challenge. Keeping these results in mind and considering that our participants had an average age of 20 years (over 10 years higher than the target audience) we find these results worrying, which is why future studies need to address if these problems won't get even more significant when the game is played by the actual target audience, children, assuming it as the main limitation of this study. A possible explanation for the low Purpose value is the fact that this prototypes' challenges were given without any context, purposely adapted to facilitate fast playtesting. Although this is to be expected in a prototype, we think that investing time in developing a sense of progression that immerses the player in the narrative is crucial for the final version of this game. To add to this, to us, it seemed that the tutorials had some problems transmitting information, often leaving the player lost. In future studies, we believe that an overhauled tutorial alone should be sufficient to guarantee better results.

Ogre-Ler: Development of an application to promote oral language skills in children entering primary school

by Fábio Dias

Abstract

Oral language skills are deeply connected to our ability to understand and communicate with the world around us, playing a crucial role in both academic and social success of children upon entering the educational system. Given its prolonged influence in professional growth, the implications of such skills are also notably accentuated in later stages of life.

Early and active interventions from caregivers, which are often done through reading related strategies, have shown to positively affect the development

of brain structures related to language skills. However, this approach takes a substantial amount of time, as it normally requires many language components to be effective, such as phonology, phonetics, and reading comprehension. Over the last few decades, technology has been increasingly used to assist in the development of reading skills, not only due to its growing presence in households and schools, but also to the convenience of accessing high quality materials.

In order to provide a rich and engaging tool for primary schools to use as extracurricular activities, an application is currently being developed to help promote oral language skills in first-graders in a more holistic approach. OGRE-LER is a 2D game developed with Unity that follows the principles of game-based learning, aiming to offer a more dynamic way to assess and promote lexical, syntactic, and phonological skills both at a receptive and expressive level.

In OGRE-LER, children play as teachers of Ogres, fictional beings who have very limited language skills. Each child plays as a teacher that must help their class throughout the school day in activities such as book reading, phonetic contests and marathoning. Engagement is done predominantly through speech recognition and a scoring system, which in turn provides a measurable way to evaluate and gradually increase the exercise's difficulty. This difficulty increase will also have visual and audible progression levels, further characterizing in-game growth of the Ogres.

The underlying exercises' structure is based on Inês Sim-Sim's pencil-and-paper battery for assessment of oral language, hoping in turn to provide a more enjoyable activity that also boosts digital literacy. While a proof-of-concept demo has already been developed, existing exercises still require proper validation from primary school teachers to ensure an adequate difficulty adjustment and interconnection with the school's formal learning path.

Demos

“Space adventure: Defend the planet!” - a research-based video game for an inclusive education in primary maths.

by Fernando M. Soares, Conceição Costa, Jose Neves and Lilia Marcelino

Abstract

The Space Adventure: Defend the Planet is an adventure and puzzle game, where the player controls a commander who has to rebuild a space base on a planet destroyed by pirates. To achieve their goal they have to use their cunning, management, and mathematical skills to solve challenges and collect resources to evolve the base and spaceships to defeat the evil pirates. The video game was developed under the [project Name] to explore the impact of a research-based video game in Deaf and Hard of Hearing (DHH) children’s primary maths’ learning in a school context. Our initial sample was composed of 28 DHH students (2nd and 3rd cycle) of Basic Education from partner schools.

[project Name] research design included the design of engagement and immersion in a human-centered process, where students have been involved in game user research since the conceptual phase, in order the The Space Adventure: Defend the Planet could match the children’s expectations in terms of aesthetics and playability. Therefore, accessibility and intrinsic integration of mathematical content in playability were major concerns. Our framework started with defining the learning objectives and an active learning approach strategy in tandem with game design: challenges that enable the magic loop in video games. The first challenges need basic math knowledge and the next ones demand more complex game levels when the previous math knowledge is consolidated. Failure is a motivational tool-Play it again!.

Games User Research was conducted to grant a playful and accessible learning experience. Moreover, a primary maths pre and post-test (GMC) was applied to measure the impact on maths’ achievement. Due to the pandemic situation, a convenience sample was used in the final intervention within the video game. Ten participants, one deaf and nine hearing students with diverse special needs: 9 aged 10 to 14 years old and one girl aged 22 years old played The Space Adventure: Defend the Planet between the pre and post-test. Four children played it in twelve sessions and five in ten sessions. One ten-year-old deaf boy (with home education) played six-game sessions, accomplishing the consolidation criteria that means three

consecutive successful trials in each difficulty level in each game challenge, and improved 12%. One girl (12 y.o) diagnosed with dyscalculia improved 20% on mathematics achievement. One girl (13 y.o) attending grade 8 and a ten-year-old boy diagnosed with ADHD and the cognitive deficit increased 8%. A ten-year-old boy with Asperger Síndrome improved 4%. Four children, one autistic and three with cognitive deficits including the girl with Dravet syndrome did not have any math improvement after playing the video game. Special educational teachers enhanced children's motivation to play and corroborate the results of the emotional scale applied at the beginning (M1), middle (M2), and end (M3) of game sessions. The children felt "very" satisfied (M1: MD=3.8; M2: MD2=4.4; M3=3.8) and showed a willingness to continue the sessions, which is an important result to improve the intervention towards a more successful education.

Would you denounce your neighbour?" Representing 1980's Hungarian society through walking simulator

by Agnes Karolina Bakk and Bendeguz Szatmári

Abstract

In 2020, the Budapest-based Vera and Donald Blinken Open Society Archives commissioned the creation of a video game aimed at educating teenagers about surveillance and censorship in Hungary in the 80's. The purpose of the game titled 1986 was to offer a visceral experience about the systemic changes of the era and to point out how the unfolding of historical events were a result of complex political and civilian factors. An important aspect of the game's design was to create certain reference points for young players: the narrative is set in 1986, a time some players might already be familiar with, due to the recent hit TV series about Chernobyl. The game is a 3D first-person, story-based, walking simulator - style game where the players embody two characters throughout 6 chapters that take place in three different locations. The characters represent two different viewpoints: Judit, the young sociology student writes articles for the samizdat periodical 'Besz'elő' ('Speaker') about a violent police incident that happened on the 15th of March, 1986. Her neighbour, György - who also happens to be her uncle - works for a state newspaper and is a career party man. He is motivated to pursue a career in journalism in order to raise his quality of life. The player can compare and understand the conflicting motivations of these two characters, and feel empathy towards both Judit and György. The player faces several situations where they have to make moral choices in order to unfold the story. With the help of environmental storytelling

elements, the player receives bits of information about the characters' backstory, which enables them to be engaged with both perspectives. All locations include several items, players can pick up and inspect, our goals with these was to enhance immersion and to showcase some bits of history. In the final chapter, the player has to make the ultimate choice and decide the fate of both protagonists.

Since the commissioner of the game is a historical-archival institution, it was a special requirement to use real historical sources and embed them into the narrative, the environmental design and the character design as much as possible. The creators worked closely with historians and fact-checkers of the archive while writing the dialogues, designing the interiors and building up the game flow. One challenge of the design process was finding the right balance between historical truthfulness as reflected by assets that are featured in the game (e.g. newspaper snippets, photographs, radio shows) and playability, without presenting superfluous information, relying on the mechanisms of "stealth learning" (Dörner et al., 2016). The puzzles in the game were also based on historical elements (e.g. an old radio) that had to be embedded into the game in a way that the player's flow remains uninterrupted. As a participant of the design team, I will describe the design process by detailing the challenges of the interdisciplinary approach and I will also address the outputs of the playtesting, by taking into consideration the specific expectation of the target group.

Symposiums

The Games and Social Impact Media Research Lab: Projects and Approaches

GLOW (<http://glow.ulusofona.pt/>) is a research laboratory for creating synergies between the fields of game-based learning, game design, and games psychology, and focused on promoting knowledge exchanges between different stakeholder communities and academics. GLOW was founded as part of the overall strategy of Lusófona University's Film and Media Arts Department overall for aggregating research projects and initiatives related to the ever-evolving inclusive potential of games. This symposium showcases GLOW's best practices in inclusivity as well as GLOWs ongoing non-commercial projects for fostering change in emergent areas that are insufficiently addressed by the games industry, such as inclusion, education, and human rights. By inviting representatives from each project, this symposium intends to frame the discussion about action-research in games and their serious applications, through representative and social change-driven strategies.

Members:

Asimina Brouzou,
Conceição Costa,
José Neves,
Regina Lautinyecz,
Sara Hasani Darabadi.

Extra Symposium: School as Playground

We aim to present the discussion on the ongoing doctoral design research project School as Playground – Alternative Pedagogies for Higher Design Education. The educational space/process is explored as a play structure. We intend to question the fragility of the traditional teaching structure and to study the construction of an alternative teaching-learning process centred on playful thinking: dialectics, critical reflection, imagination and intuition. Theory development is based on a qualitative methodology, through rigorous exploratory and speculative research and cross-referencing of theoretical and visual data regarding play spaces and playful thinking, and data collected from three case studies – three higher design education schools / courses with alternative methodologies: Werkplaats Typografie (Netherlands), Sandberg Instituut / Gerrit Rietveld Academie (Netherlands) and DELLI – Design Lusófona Lisboa (Portugal). We hope to design a flexible information platform that stimulates discussion and enhances the practice of new pedagogies in design education that are more integrated and effective, without barriers between different areas of knowledge, learning spaces, students and teachers, school and society.

Members:

Chair: Marta Guerra Belo

Invited Speakers:: Luís Alegre da Silva, Filipe Luz, Miguel Vieira Baptista and Ana Jotta

GLOW *g*ames *a*ND *s*OCIAL *i*MPACT *m*EDIA *r*ESearch *L*ab