

02 Participatory Design of an Educational Escape Game about Alcohol and Partying – Lessons Learned from Co-Designing with Young Learners

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ABSTRACT

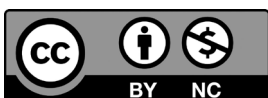
“Sober Escape: Find your Way Home” is a collaborative project with the aim of designing an educational escape game for drug prevention – in this case “alcohol and partying” – in a participatory design process with vocational students in Upper Austria. Originally planned with design frameworks in mind, the participatory design aspect aimed to provide a high level of freedom for the young designers. In this regard, they were able to influence the design process as well as the product, which led to new design challenges on the one hand, and interesting learning experiences on the other. By analyzing reflections from the workshop facilitators, the applicability of the mentioned frameworks for educational escape game design is evaluated when applied in a participatory design setting. This paper presents insights from the lessons learned in this design process regarding empowerment and project environments. Generally, a high level of freedom and democracy in participatory design results in less applicability of predetermined frameworks due to a considerable need for collective reflection on drug-preventive topics. Further, a high number of participants results in a wide range of ideas and input, whereas a small number of participants results in deeper exploration of ideas and sensitive topics.

KEYWORDS

Educational escape game, participatory design, drug prevention, alcohol, vocational education

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1. Introduction

- 1 Educational escape games (EEGs) and research about them are numerous and usually address questions asked and answered by educators. With a few exceptions¹, EEGs are designed and implemented by teachers, with concrete content and didactic considerations in mind. To this end, design frameworks (e.g. Room2Educ² or escapED³) arose to enable instructors to design EEGs for their students.
- 2 The project “Sober Escape: Find your Way Home” challenges this status quo of educators designing for their students: in this project young vocational apprentices themselves designed an EEG for drug prevention in vocational schools, featuring their real-life problems and struggles with alcohol and partying. The participatory design (PD) approach for this topic was chosen to create an authentic narrative and include facets of the substance and its use among the target group. This was deemed important for drug prevention in vocational schools. Thus, in order to include original insight into the topic and properly meet the needs and expectations of learners in vocational schools, participation in the design process was decided upon early in the project.
- 3 While this process was accompanied by the Upper Austrian Institute for Drug Prevention and the University of Vienna - Center for Teacher Education, participating apprentices were given much freedom in the spirit of PD⁴ and various dimensions of empowerment⁵. Thus, PD in this project included youth participation regarding the contents of the EEG, the design process itself and the development of software for use in vocational schools. This paper aims to show lessons learned from designing an EEG with young people. Using PD with a focus on genuine narratives, empowerment and reflection on alcohol, the applicability of two existing frameworks to this co-creative process is evaluated. Thus, it contributes to bridging the gap between EEG design and PD and shares insights from the perspective of workshop facilitators.

1 e.g. Bakkum, M., J.; Richir, M., C.; Sultan, R.; La Court, J., R. de; Lambooi, A., C.; van Agtmael, A., A. & Tichelaar, J. (2021): Can Students Create Their Own Educational Escape Room? Lessons Learned from the Opioid Crisis Escape Room. In: Medical science educator 31 (6), p. 1739–1745. DOI: 10.1007/s40670-021-01425-5.

2 Fotaris, P. & Mastoras, T. (2022): Room2Educ8: A Framework for Creating Educational Escape Rooms Based on Design Thinking Principles. In: Education Sciences 12 (11), p. 768. DOI: 10.3390/educsci12110768.

3 Clarke et al. (2017): EscapED: A Framework for Creating Educational Escape Rooms and Interactive Games to For Higher/Further Education. In: IJSG 4 (3). DOI: 10.17083/ijsg.v4i3.180.

4 Bødker, S.; Dindler, C.; Iversen, O., S. & Smith, R., C. (2022): Participatory Design. S.l.: Morgan & Claypool Publishers (Synthesis lectures on human centered informatics, 52).

5 Kinnula, M., Iivari, N., Molin-Juustila, T., Kesitalo, E., Leinonen, T., Mansikkamäki, E., Käkelä, T., & Similä, M. (2017): Cooperation, Combat, or Competence Building - What Do We Mean When We Are ‘Empowering Children’ in and through Digital Technology Design? Hg. v. International Conference on Interaction Sciences. Online accessible: <https://oulurepo.oulu.fi/bitstream/handle/10024/23119/nbnfi-fe2018121150380.pdf?sequence=1&isAllowed=y>.

2. Background

2.1. Educational Escape Games

- 4 The significant rise in published articles about educational escape games (EEGs) indicates a growing interest in the topic itself, as well as its applications in modern classroom settings.⁶ EEGs have been regarded generally positively in current literature and show a promising impact on learners' engagement, motivation and communication.⁷ Nevertheless, scholars researching escape games for educational purposes seem to agree that an appropriate, learner-centered design is crucial as well as mindful consideration learners' needs and proper implementation of the EEG in the classroom setting.^{e.g. 8,2}
- 5 In the context of "Sober Escape", two frameworks from recent literature were chosen to design the EEG: *Room2Educ8* by Fotaris and Mastoras² and *escapED* by Clarke and colleagues³. *Room2Educ8* describes a cyclical process and takes its form from the principles of design thinking. *escapED* is a tool for designing an EEG as well as a learning tool for design-students and roots itself in the Game-Based Learning Theory. What both concepts have in common is a step-by-step approach to designing an EEG. While *escapED* allows for flexibility in the necessary steps, *Room2Educ8* in the tradition of design thinking follows the steps more rigorously and iteratively. Another common factor is the strong focus of learning goals in the curriculum on one hand and the puzzles on the other hand. Puzzles should directly include the learning goals to ensure the connection to the curriculum. Further, both frameworks put emphasis on meeting the needs of the players and educators regarding organizational structures (e.g. embedding the EEG within a timed lesson, considering the room or other architectural conditions when planning the EEG) and the playing experience. Both frameworks suggest rigorous testing of the designed EEGs.
- 6 Neither of the frameworks, however, directly include the learners into the design process, albeit having them in mind and putting emphasis on their needs. To employ either of the frameworks, designers need to be knowledgeable about the respective topic

6 For a systematic review see: Fotaris, P. & Mastoras, T. (2019): Escape Rooms for Learning: A Systematic Review. In: Proceedings of the 12th European Conference on Game Based Learning. 2th European Conference on Game Based Learning, 3-Oct-2019: ACPI, p. 30.

7 Dietrich, N. (2018): Escape Classroom: The Leblanc Process—An Educational "Escape Game". In: *J. Chem. Educ.* 95 (6), p. 996–999. DOI: 10.1021/acs.jchemed.7b00690.

8 Eukel, H. & Morrell, B. (2021): Ensuring Educational Escape-Room Success: The Process of Designing, Piloting, Evaluating, Redesigning, and Re-Evaluating Educational Escape Rooms. In: *Simulation & Gaming* 52 (1), p. 18–23. DOI: 10.1177/1046878120953453.

of the EEG. Educators are knowledgeable in their own subjects and thus can design without firstly having to familiarize themselves with the topic. However, if learners are included in the design of an EEG, a designated step to learn and explore the topic itself would be needed. Notably, neither of the two frameworks have a designated “step” (in *escapED*) or “phase” (in *Room2Educ8*) to learn and explore the topic of the EEG, during the design process. Thus, it remains questionable whether learners can use the frameworks if they lack the respective knowledge beforehand.

2.2. Participatory design (PD) and empowerment

- 7 Participatory design – as the name indicates – involves people in design processes. Originally stemming from the field of Human-Computer Interaction (HCI), PD can be used as a method of “Research through Design”, which tackles inquiry on “Wicked Problems” through designerly activities⁹ (e.g. creating artefacts to learn about situations). Historically, PD leans on democratic design decisions, emancipation, mutual learning and the strong view that people are resourceful experts of their own lives and needs.⁴ However, in concrete project environments, PD can be understood on a spectrum: the focus lies somewhere between the solely pragmatic aspects (e.g. to come up with the best possible design by including user’s input) or the political/idealistic aspects (e.g. to practice PD for empowerment and sustained changes in the community and policies).¹⁰
- 8 Empowerment in this regard, especially when working on designs for digital technologies with youth, can also be understood in many nuances and signify different foci.⁵ While a mainstream/management or functional view on empowerment utilizes the concept to motivate people or improve their life- and/or working-conditions, empowerment in those contexts is limited by organizational boundaries and management-goals. If empowerment is used to motivate people, it is rather “handed out” or “allowed” by a managing instance to a hierarchically lower instance instead of empowering people to critically engage with the system itself. A democratic or critical focus on empowerment, however, often contradicts or criticizes existing organizational structures and goals. Power is then used by people on their own terms and may be used to reach democratic consensus or even fight the organizational structures. In the educational view of empowerment, people are empowered through knowledge and skills.

9 Zimmerman, J.; Stolterman, E.; Forlizzi, J. (2010): Proceedings of the 8th ACM Conference on Designing Interactive Systems. New York, NY: ACM (ACM Other conferences). Online available <http://dl.acm.org/citation.cfm?id=1858171&CFID=249137935&CFTOKEN=25478592>.

10 Kensing, F.; Blomberg, J. (1998): Participatory Design: Issues and Concerns. In: *Computer Supported Cooperative Work (CSCW)* 7 (3-4), p. 167–185. DOI: 10.1023/A:1008689307411.

While in this view education lays the foundation for empowerment, it is not in itself a means of facilitating empowerment.⁵

Finally, it should be noted that making conscious choices about the desired form of empowerment as a designer, researcher or PD-facilitator is advised. However, it is impossible to empower people who do not want to be empowered.

2.3. The Project: “Sober Escape: Find your Way Home”

- 9 “Sober Escape: Find your Way Home” is a collaborative project by the Upper Austrian Institute for Drug Prevention and the University of Vienna - Center for Teacher Education. The goal of this project was to design an EEG with drug preventive topics in a PD-process. Youth from Salzburg, Vienna, Linz and its surrounding districts took part in the design of the game over the course of 14 months in 2023 and 2024. The EEG should enrich drug preventive workshops which are held in vocational schools for young apprentices by said institute.
- 10 Thus, firstly the project aimed to advance drug preventive practices in schools and include elements of Game-Based Learning for enhanced motivation and understanding of healthy decision-making. Secondly, by choosing a PD-approach, further aspects became implicit goals of the process: empowerment, reflection about technology and substance abuse, and mutual learning.
- 11 This target group was chosen due to several reasons: firstly, the Upper Austrian Institute for Drug Prevention is governmentally tasked with designing and implementing drug preventive programs in the educational sector as well as programs for workers. Thus, vocational schools are an excellent target, as vocational students work in companies while simultaneously going to school. Secondly, this target group is in a transitioning phase from school to working life. For many young people, this means new challenges, new responsibilities and autonomy. Further, vocational students receive a salary, which expands the young people’s personal possibilities due to relative financial freedom. Typically, this group has higher consumption behavior compared to their peers in higher secondary education¹⁶.

2.4. Research question

- 12 The theoretical background of this project ties together PD on one hand and the design of an EEG on the other. As mentioned before, EEGs are typically designed by educators, knowledgeable in their field, for learners, who need to reach certain learning goals. Thus, this endeavor contributes to the growing field of EEG research by adopting a PD-view. Evaluation of this process therefore shows great potential to explore

the concepts of mutual learning, empowerment, and democratic decision-making in the design process of an EEG. Further, the ongoing and constant evaluation of the process at hand was important to ensure consistency, transparency, and fairness towards all stakeholders.

- 13 In order to foster and expand reflections on PD processes and EEG design the following research questions arise:

RQ1: What are the lessons learned from the perspective of workshop facilitators in a PD process for the design of an EEG about alcohol and partying with young people?

RQ2: To what degree can frameworks for EEG Design be used in a PD process with young people?

3. Method

- 14 The chosen method for this research was grounded theory as a qualitative approach to research in HCI¹¹. This particular project environment called for a flexible and open-minded approach. The many points in time where data could be collected in the workshops allowed for many “cycles of data gathering, analyzing and theorizing” (p.140) as well as forming and reforming theories and assessing their limits. In order to ask evaluative questions about the process while at the same time adjusting with the reflections in mind, this approach was deemed the most useful.

3.1. Data gathering

- 15 In 2023 and 2024, 12 PD-Workshops were held in Linz, Salzburg, and Vienna. Participants included young apprentices from vocational schools and workshop facilitators from the *Upper Austrian Institute for Drug Prevention*. The workshops were voluntary during weekdays in the evenings and took about three hours each. Each workshop consisted of group discussions and various designerly activities⁹, thus creating artifacts. At the end of seven of the twelve workshops, the workshop facilitators reflected on the process and happenings of the day. All workshops, including the facilitators’ reflections, were audio-recorded and later transcribed and anonymized.
- 16 Additionally, the researcher kept a research diary during the entire process for reflection on the one hand and considerations between the workshops on the other hand, allowing insight into the happenings between the workshop dates to provide context.

11 Adams, A.; Lunt, P. & Cairns, P. (2008): Research methods for human-computer interaction. Cambridge.

The data set for this paper consists of the transcribed reflections of workshop facilitators of seven workshops as well as a research diary, which was kept during the whole process.

3.2. Analysis

- 17 Adams and colleagues¹¹ describe three stages of coding when analyzing with a grounded theory approach: open, axial, and selective. Open coding identifies and compares concepts to fit into categories. Those categories exhibit dimensions and properties, which also need to be identified. Axial coding identifies the central ideas and events as well as conditions and participants' strategies. Note that in this instance, the word "participants" solely refers to the workshop facilitators instead of the young workshop participants, as the data set consists of their reflections after the workshops, leaving out the young participants' views deliberately. Selective coding identifies the core categories, around which all others can be integrated. Further, a descriptive narrative is found and tested against raw data. The selective stage also regards changes over time, which are essential in a design process spanning over a prolonged period of time¹¹.
- 18 In this analysis open coding was used to identify topics that were often discussed during the reflections of the facilitators. What was said and how it connects to the participatory design practice on one hand and project culture on the other led to a wide array of initial, interconnected codes and concepts. Axial coding was used to link the codes and concepts to categories and identify causal and intervening conditions as well as consequences. One example for this is the conceptualization of empowerment in its different forms in different occurrences within the data as well as the relationships to other codes. In the selective stage, the core categories were synthesized into a cohesive narrative that now directly refers to the lessons learned from "Sober Escape", which can be found in the following section.
- 19 It is of note that during the reflections, the workshop facilitators by reciting their experiences, already coded the behavior of the workshop participants and happenings in a way. They summarized and interpreted their own experiences, creating an abstraction of real-life events, thus coded openly. This also occurs in the research diary, where open and axial coding takes place. Adams and colleagues¹¹ argue that the lines between the stages of coding are artificial, and the types of coding should not happen in isolation from one another but be interwoven.

3.3. Limitations

- 20 Arguably, using a grounded theory approach comes with its own limitations, such as the critique of subjectivity. Furthermore, conducting and researching these workshops, as well as the reflections, are done by the same person, which increases the probability of bias. Those possible limitations are sought to be mitigated by meticulous coding and analysis as well as triangulation with other people involved in the project. Those people are the two main workshop facilitators, as well as two trainers from drug prevention, the project manager and, on two occasions, young participants. Thus, triangulation included multiple perspectives of stakeholders at many levels of the project. Further, by acknowledging and being mindful of subjectivity and bias, consciously taking a step back and bracketing out one's own experiences is possible during the coding process. At a later point in the analytic process, these insights enable a deep understanding of the process and changes over time.
This study does not include the viewpoint of young participants, as they are not represented in the data set. In the spirit of PD and empowerment, this can be regarded as a shortcoming of this paper. However, including young participants' views lies beyond the scope of this particular research endeavor.
- 21 Reproducibility of this study regarding the applicability of the named EEG-frameworks^{2,3} is limited by two factors: firstly, this project dealt with a rather sensitive topic, namely: young people's experiences and struggles with alcohol and partying. Those topics may have influenced the applicability of the named EEG-frameworks in this PD process, because revealing personal information in a group setting with peers can be uncomfortable. Gathering accurate and authentic information regarding excessive or illegal behaviors to later include in the EEG proved to be especially difficult. Sensitive and meaningful interaction was important to keep participants safe and include their narratives in a respectful way. Thus, the process required adding a layer of building trust and reflexivity between the young participants among themselves as well as the workshop facilitators. Those added layers, however, were not originally accommodated in the frameworks and diverted the focus from the frameworks. This also means, in "Sober Escape" Room2Educ⁸ and *escapdED*³ were tested under harder conditions. Less sensitive topics may hence adopt the frameworks more easily.
- 22 Secondly, PD can be conducted in various forms. It can put emphasis on the product instead of, as in "Sober Escape", a high level of empowerment for the participants. Less focus on empowering practices could increase the applicability of EEG-frameworks. It also needs to be noted that both frameworks originally were meant to create real-life EEGs (instead of digital EEGs).

4. Findings

- 23 The following section sheds light upon reflections, narrations and interpretations of the workshop facilitators. Furthermore, sections from the research diary are used to provide context both before and after the reflections. The codes have been selected and sorted into categories, which present the lessons learned over time. A visual presentation of the lessons learned and reflection about the frameworks can be found in Figure 1.

4.1 Empowerment

- 24 Very early in the process, the workshop facilitators realized, that “empowerment does not happen by itself” (reflection 1). Although at that point, empowerment and what it entails was not yet defined, a high level of assertion, engagement and creativity from the young participants was deemed necessary for this process to work and was thought to show empowerment. The young participants were expected to give input on all levels, thus influencing not only the tone and mechanics of the EEG but also the topics and learning goals. While the workshop facilitators initially hoped for a high level of democracy, assertion and richness of ideas, participants often asked what was expected of them or the final product to achieve the project goals. Thus, while the young participants asked for a frame, the workshop facilitators sought to define it together in the spirit of empowerment.
- 25 In order for the young participants to take action and ownership, as well as assert themselves and their ideas, appropriate design methods were sought early on in the process. This led to a guided yet open workshop plan, which allowed for talking and reflecting, as well as various methods to share ideas and stories to create a shared vision. The facilitators wanted to accommodate the need for a frame as well as allowing the young participants to push the workshops in their desired direction.
- 26 The facilitators often wondered how to balance planned workshop activities and apprentice input. On the one hand, many things about the design process as well as the topic itself often needed explanations from educated experts (e.g. drug preventive trainers). On the other hand, in the spirit of PD, the facilitators were eager to listen and wait for what came up naturally from the vocational apprentices in their narratives about real-life situations. Thus, the facilitators sought out and discussed playful idea-generating and design methods, with which the young participants were most comfortable: “We need to provide a stage where people can share their ideas. But the stage does not necessarily have to be the same for everyone – depending on what they need” (reflection 2).

- 27 Interestingly the data shows a relation of codes between “empowerment” and talkative practices. Also, “empowerment” and “activity” are connected, indicating the facilitators’ personal belief, that power is demonstrated or taken though talking, leading conversations and showing active engagement.

4.1.1. “In a process like this, no one knew where the journey goes” (reflection 4).

- 28 This statement comes from the project manager after joining one of the workshops, indicating the inclination of re-distributing power in order to achieve innovation. Although the project had a project goal, namely a playable digital EEG to be used in drug prevention in vocational schools, this statement suggests the openness towards the ideas of the young participants on how to achieve said goal and what it entices. Furthermore, this statement implies that from the management perspective, the youth’s input and efforts were not only appreciated but validated and considered valuable lessons for the organizational level of drug prevention.

4.1.2. Pragmatism

- 29 In the reflections, the facilitators indicate a pragmatic usage of PD at several points of time. One example is a conversation in reflection 2, where the facilitators argue for a “synthesis of youth’s ideas” to give a frame. Another such pragmatic choice takes place in reflection 7, where the researcher considers in hindsight, how “giving a frame was important to guide the process, but also potentially took away power from the youth...” (reflection 7). Those efforts to synthesize ideas and guide the process limited the freedom of the young participants and resulted in a concept made by adults. However, it was informed by youth and did emerge after working closely together for half a year. Thus, while this endeavor may have shut out certain possibilities, it opened the door to productively work within a frame of reference, which was demanded by the young participants themselves.
- 30 Pragmatism also accidentally led to a few unconscious, implicit decisions: firstly, participants took on various roles during the process. While at the beginning, the focus was put on their ideas, narrations and concrete struggles, the focus shifted to trying out designs with the tools given. From then on, the young participants were often asked to give feedback and improve the puzzles yielded by working with the software-tools provided. While those design efforts were based on early ideas of the workshop series, innovation and idea generation became secondary as the workshops progressed and participants took on a rather counselling role.

- 31 Secondly, using different groups of youth led to an unconscious distribution of tasks. Although the workshops were planned with room for input of youth participants, the different groups were tasked with different things due to different methods used, thus, resulting in a division of labor guided by the workshop facilitators. The group in Linz gradually became the main design group, as they were involved the longest and had a big picture in mind. They decided upon the contents together with training staff, worked with individual puzzles and were tasked with giving feedback more than the groups in Vienna and Salzburg. The other groups were focused on creating the non-playable characters who would later carry the story, writing dialogues, and generating assets, which in turn, were feedbacked by the main-design group. Pragmatically, it made sense to task the groups that were not involved for a prolonged period of time with different design activities which were more isolated from the big picture. However, this was not a democratic decision of all stakeholders but a result of the workshop-planning with different groups in mind.

4.2. The number of participants

- 32 The workshop facilitators often discussed the number of participants in their reflections after the workshops. Notably, the early workshops featured a large number of young participants ($n=14$), while the number of participants decreased rapidly within the first three months leaving a core group of 4 participants, who stayed until the end of the workshop series. The reasons discussed for this decrease were a heavy workload, the late hours of the workshops, the slow progress of the project as well as individual connectedness and engagement with the project. Further, the participants also attended vocational school, and some were currently attempting their driver's licenses, implying periods where they were too busy studying to attend the workshops.
- 33 While the large number of participants at the beginning was appreciated and showed potential for a variety of ideas and views, the workshop facilitators often mention the benefits of working with a smaller group. The smaller group meant more speaking time for each individual participant as well as better building of rapport and more time to explore individual ideas brought forward. Additionally, working with the same small group for a prolonged time allowed the participants to become more assertive over time. Participants that were involved for a long period of time, who could directly see how their participation shaped the process and product, asserted themselves and their individual visions and wishes explicitly.

4.3. Sensitive Topics

- 34 By designing an Escape Game about alcohol, partying, and young people’s struggles, it was possible to talk about sensitive topics and bypass taboos regarding alcohol and drugs once rapport and trust was built. In advance to the workshop series, the facilitators were warned that young people would give “socially accepted answers” and pledge for abstinence from alcohol, when talking to adults. During the workshops, however, young participants shared a lot of information about their consumption-behavior as well as drinking culture among their peers in the designerly activities, which facilitators explicitly reflected upon after the workshops. On the one hand, this allowed for reflexive practices with the target group within the PD workshops. On the other hand, there was much material for appealing narratives, scenes, and puzzle design. The facilitators reflected how the young participants seemed to struggle to realize how their experience can translate into puzzles of an escape game. Further, while discussing alcohol and partying, it often became clear that the young participants were subject to misconceptions and needed to learn about the topic, while at the same time engaging in design. Oftentimes, the facilitators reflected on how PD practices could enrich drug-preventive work with young people in other settings too (e.g. design workshops as drug-preventive workshops, social work with youth). However, in this data set, there is no distinctive empirical evidence of which aspect of the design process helped the young participants to open up. The facilitators reflected that a combination of the playful, yet sensitive and respectful tone helped facilitate those dialogues as well as openness and appreciation of the young people’s stories (also see section 4.5 “tone of the workshops...”).

4.4 Time

- 35 Time was a challenging factor in three ways: firstly, the participatory process took a lot of time and went much slower than anticipated in the project plan. The first results were expected after 2-3 workshops, but took much longer, as people needed to adjust, create a shared vision and build trust. Negotiations about the content also took a lot of time at the beginning of the workshop series.
- 36 Secondly, time was discussed regularly in regard to the set dates of the workshops. They usually took place once a month in the evening from 17:00-21:00. However, during certain periods of time the young participants were not available due to their education, which is blocked into intense learning units of roughly two consecutive months. Additionally, there was a long break in summer 2023, where communication with the participants only happened online and without a workshop-frame. Thus, during sum-

mer and prolonged educational absences, the process went on with different groups. Switching up the participating youth sustained the process, but was difficult, as the news groups needed time to adapt as well. Returning participants also needed time to get back into the loop after longer breaks.

- 37 Thirdly, as the process itself took longer than expected and some participants had long breaks between the workshop dates. Thus, many people gave up on the process entirely. Whether this was due to a lack of motivation or otherwise heavy workload in their personal lives remains unclear.

4.5. “The tone of the workshops...”

- 38 The workshop facilitators often reflected about the tone of the workshops and the stance they themselves represented regarding alcohol and partying. Instead of judgement or criticism of the young participants’ alcohol usage, they repeatedly agreed to take on an open-minded approach to youth’s consumptive behaviors. That said, they did not actively encourage risky drinking behaviors but rather tried to advocate for reflection on consumption. In their reflections they found that this helped to build trust among the group. With their own stance, they wanted to create an atmosphere, where opening up and coming forward with stories and struggles would lead to empathic conversations and constructive sharing of ideas.
- 39 Further, they found it important to show appreciation for the sharing of – sometimes difficult – stories. Coming forth with those topics, in the facilitators’ view, showed bravery and trust, which was deemed important for the whole process. Additionally, the workshops accommodated lots of opportunities for exploration and playfulness. Trying to make the workshops a fun and enjoyable experience was hoped to engage participants for a long time and foster teambuilding, without taking away the seriousness for the topic.

4.6. EEG-Frameworks

- 40 The frameworks of Room2Educ8 and escapED were introduced at the beginning of the workshop series in early 2023. Originally, the frameworks were believed to guide the process with the participants, allowing for one step/one segment at each workshop date. In an attempt to festively and playfully introduce the frameworks, they were the prize found in a break-in box on the second workshop date. The participants quickly discarded the frameworks, however, in order to actively engage with designerly activity of creating paper prototypes of the puzzles.

- 41 Later in the workshop series, the frameworks were referred to again in order to visualize the process and allow an overview of what has been done and what was yet missing as well as showing the iterative nature of the process. The participants, however, usually stirred the workshops towards actively creating something, leaving the planning and overview to the workshop facilitators.

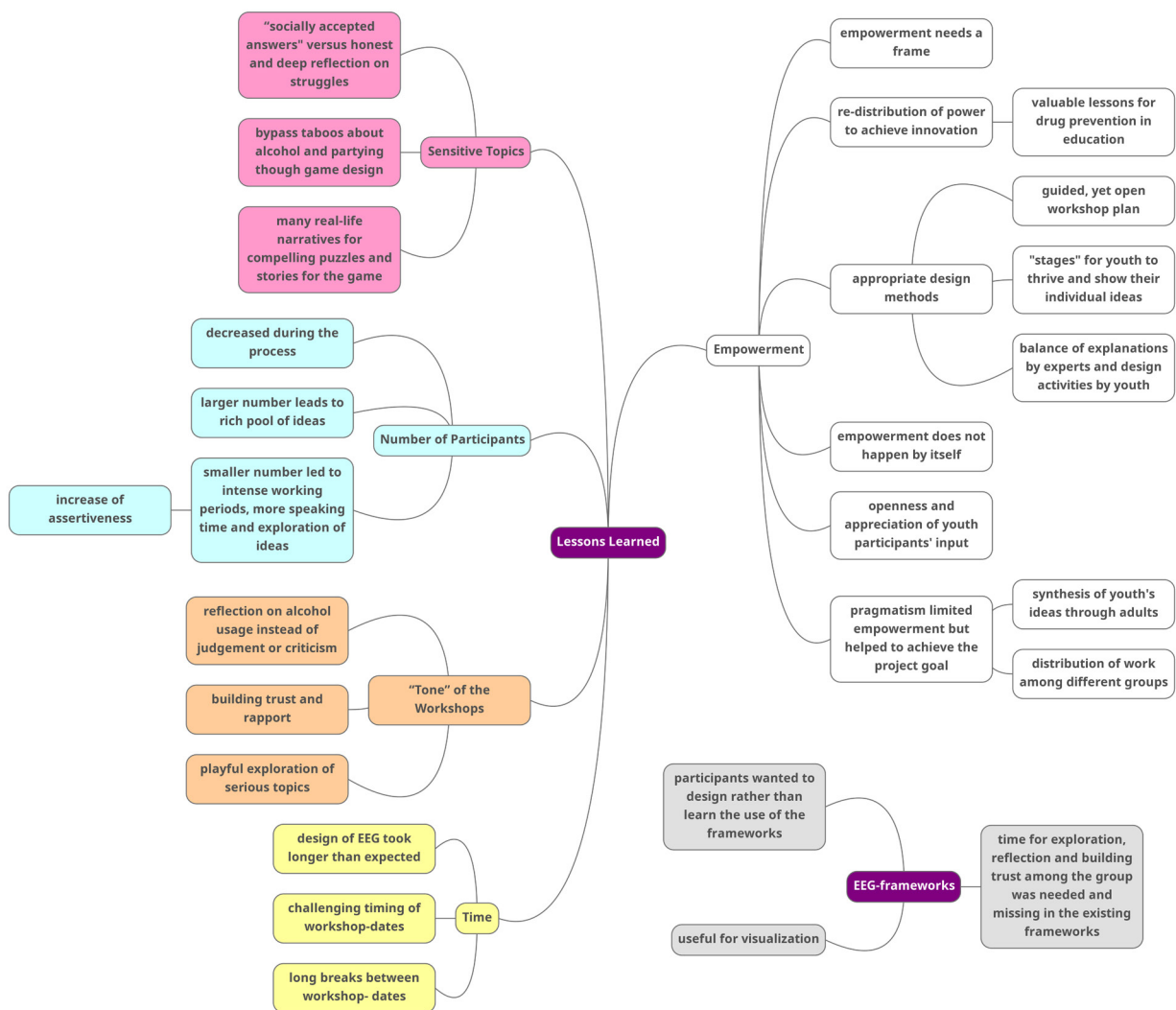


Figure 1. Lessons learned about the PD process when designing an EGG and reflections of usability of existing frameworks für EEG-design

5. Discussion

- 42 The lessons learned of this project refer to opportunities and challenges of the conduction of PD on one hand and design of EEGs on the other. Further, lessons learned in this project informed the work of teaching staff for drug prevention and highlighted new possibilities for their educational work in vocational schools. Many considerations that were made after the workshops were used to design consecutive activities in the workshops, resulting in regular changes and adjustments according to the needs at the time.
- 43 PD opened channels of communication about sensitive topics and personal experiences made by young apprentices. By trying to find ways to translate real-life experiences into game elements (e.g. puzzles or storytelling elements), young people with various degrees of drinking experience could reflect upon the topic on a meta-level, which indicated opportunities of mutual learning⁴ of teaching staff and young learners alike. Further, within the design workshops many misconceptions about alcohol could be tackled through designerly activities⁹, showing promising opportunities for PD for drug prevention. By creating a story and puzzles about fictional characters on a drinking night, taboos regarding drinking and partying could be bypassed. This somewhat connects with the PD method of “fictional inquiry”, which has been researched in design work with children.¹² Fictional Inquiry “entails bypassing existing socio-cultural structures of a given context by creating partially fictional situations, artifacts, and narratives” (p.232). An open and appreciative attitude towards the narratives of young people is necessary, however, to allow for the stories to emerge.
- 44 While frameworks for the design of EEGs are a useful tool and provide reasonable guidelines for designing, the usage of such frameworks in PD remains questionable. When designing with the aim of democratically or critically empowering young people, a tight framework can lead to power-imbalances. Room2Educ8 and escapED informed the PD process in “Sober Escape” and provided a checklist to ensure all individual parts of an EEG were considered. However, as those frameworks come with their own manuals and instructions on how to use them properly^{2,3}, they were not useful for the designing youth in this project due to time constraints, changing of youth participants as well as them not being familiar with all content within their own design.

12 Dindler, C.; Iversen, O., S. (2007): Fictional Inquiry—design collaboration in a shared narrative space. In: CoDesign 3 (4), p. 213–234. DOI: 10.1080/15710880701500187, p.232

13 Österreichische Arbeitsgemeinschaft Suchtvorbeugung (2024): Österreichische ARGE Suchtvorbeugung. Österreichische Arbeitsgemeinschaft Suchtvorbeugung. Online available <https://www.suchtvorbeugung.net/>.

- 45 Strict adherence to the framework was deemed to hinder the creative process of the young designers, who needed to verbalize their own experiences and reflect on them, instead of formulating clear learning outcomes. Abandoning the frameworks can be considered a success considering critical empowerment⁵ of the young participants, who implicitly decided not to follow the framework chosen by someone else beforehand. Instead, they steered the design process in a direction that gave them time to share and reflect on their experiences with peers and trained personnel in drug prevention. In this regard, they used the design workshops for “capacity-building”, which is one goal of Austrian drug prevention¹³.
- 46 From an empowerment-aspect, the data suggests several forms of empowerment described by Kinnula and colleagues⁵, which varied over time. Arguably, mainstream empowerment informed the first workshop dates, where facilitators tried to empower youth to create a shared vision among all participants. Gradually, however, awareness of other forms of empowerment can be found in the reflections of the facilitators and project management, who noticed a push from the participating youth and felt they did no longer know where the project went. Reflections shifted from focusing on viewing empowerment as taking on the lead through talkative practices to being aware of youth taking influence in other ways than expected or offered by the facilitators.
- 47 Until the publication of a paper about the EEG “Escape Addiction”¹⁴, the research on EEGs did not cover EEGs about drug prevention. Thus, in the beginning of this project in 2022, a major issue was how to formulate EEG-puzzles with the topic for drug prevention. EEGs generally need puzzles with concrete solutions in order to progress the game². For this project, however, participants aimed for players to reflect on their own behavior and facilitate discussion, which does not easily comply with the demand for concrete and clear puzzle solutions. It was important for the design team to implement universal messages about the usage of substances without taking a moral or patronizing stance. This resulted in messages to the players (e.g. “Plan Your Evening”, “Know Your Limits”, “Get Home Safely”, etc.), which were decided upon in cooperation of young apprentices and teaching staff for drug prevention. Those messages became the passwords to progress the game as well as the learning goals for the EEG at hand.

14 Bezençon, V., de Santo, A., Holzer, A. & Lanz, B. (2023): Escape Addict: A digital escape room for the prevention of addictions and risky behaviors in schools. In: *Computers & Education* 200, p. 104798. DOI: 10.1016/j.compedu.2023.104798.

6. Conclusion

- 48 The frameworks Room2Educ8² and *escapED*³ were partially useful for the PD-process of “Sober Escape”. Much of the workshop time was spent exploring young people’s experiences and struggles with alcohol as well as negotiating certain aspects and standpoints that they wished to be featured in the game. To this end, the PD-workshops were drug preventive workshops within themselves as much as design workshops. This left little time to properly learn the use of the mentioned design frameworks, which were then modified and selectively implemented during the process. If such frameworks are to be used in a PD-process with people not yet educated in the field of the EEG, it is advised to set aside time to firstly explore the “Wicked Problems” together and research the topic at hand to find solutions through designerly activities⁹.
- 49 The project at hand shows interesting connections between drug prevention and participatory design, as designerly practices allow critical reflections and discussion about drug preventive content taught at school. However, considering the various forms of empowerment, the question arises, as to how a more tightly structured form of PD with less freedom for participants would affect this dynamic.
- 50 In this regard, there seems to be a need for yet another framework for the design of an EEG in a PD-setting, as participants and facilitators both looked for guidelines for this design process. However, such a framework needs to combine the step-by-step or design thinking approach with the exploration and open spaces for shared communication and empowering practices of PD. A combined framework for PD of an EEG needs to serve the creative and collaborative process, give guidelines and a frame for the process, but needs to be adaptable to the needs of the design team. PD has been facilitating empowering practices as well as learning⁴ and, thus, such a combined framework shows a promising prospect to enhance formal and informal education.

AI-Disclaimer

This text was crafted by the researchers and reviewed by OpenAI's GPT-4 to ensure near-native English quality, in accordance with the journal's requirements. The changes made were minimal and carried out manually.

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