Co-designing Citizen Social Science for Collective Action

#4.2
Inclusive Toolbox for Citizen Social Science.
Beta Version.

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List of Abbreviations

#	Hashtag
CSS	Citizen Social Science
E&T up to 18	Education and Training up to 18
GIF	Graphics Interchange Format
GDPR	General Data Protection Regulation
GmbH	Engl. Limited Company
KC	Knowledge Coalition
PAR	Participatory Action Research
QR-Code	Quick Response Code
R&I Action	Research and Innovation Action
UNIVIE	University of Vienna
YPAR	Youth Participatory Action Research
ZSI	Centre for Social Innovation

Executive Summary

This deliverable describes the Beta Version of the *Inclusive Toolbox for Citizen Social Science,* developed by the CoAct research team at the University of Vienna. The Toolbox allows for young people to independently conduct a social science research project on the topic of education and employment. The Toolbox is developed in two formats – a digital version using the app "Actionbound" and a non-digital version in form of a card game.

This report describes the theoretical and methodological foundations of the Toolbox, as well as its guiding principles. It outlines the development processes to date and presents the general concept of the Toolbox, including the digital and non-digital version. It also provides initial insights into the content and structure of the digital Toolbox. After the experiences from first trial rounds with young people are shared, the next steps for the upcoming months until the completion of the Toolbox are outlined.

1. Introduction

The present document outlines the *D4.2 Inclusive Toolbox for Citizen Social Science. Beta Version* created by the CoAct research team of the University of Vienna (UNIVIE) in the context of CoAct *Research and Innovation Action #2 Youth Employment* (R&I Action #2). CoAct is proposing a new understanding of *Citizen Social Science* (CSS) as participatory research co-designed and directly driven by citizens and citizen groups sharing a social concern. CoAct aims to implement new or improved science-related policies and to advance the CSS approach in regard to its applicability to concrete fields of research. Within this framework, the R&I Action #2 on Youth Employment is conducting a participatory research project with young people of Vienna, Austria, who are taking part in training measures within the legal framework of *Education and Training up to 18* (E&T up to 18). This policy prescribes compulsory participation in the educational landscape of Austria until the age of 18. The educational measures offered to young people enable them to enter school or vocational training, acquire social and technical skills, and increase their employability. The main objective of the R&I Action #2 is to involve young people affected by E&T up to 18 in the conceptualisation and improvement of measures in order to develop services that are better adapted to their needs and circumstances. For this purpose, the CoAct research team of UNIVIE works together with an array of programs such as "AusbildungsFit", which provide low threshold offers for skills development and job coaching. To discuss and implement research results, a *Knowledge Coalition* (KC) of key stakeholders has been and will continue to be engaged throughout the research project. The KC is an integral part of the R&I Action #2, combining a diverse range of representatives from the federal and regional level, as well as social workers, people from the grassroots level, and youth organisations. The members of the KC assist the research project with their expertise on how E&T up to 18 is implemented in practice, and provide the researchers with insights on recent developments and challenges in this area. In the course of the research, the members of the KC have become addressees for project and research results, such as the Inclusive Toolbox for Citizen Social Science, and have been invited to directly discuss possible developments of new measures or adaptations of existing ones.

In this report, we outline our activities from October 2020 to June 2022 (M10-18 of the project), geared towards the creation of an Inclusive Toolbox for Citizen Social Science for young people. The Toolbox is

a means for young people to independently conduct a social science research project in the fields of education, training, and work. In its final version, the Toolbox will entail two low-threshold instruments: an analogue card game and an interactive mobile adventure guide playable via the app Actionbound. Both incorporate step-by-step guides, which take the individual through a social science research process, from finding a research topic, posing research questions, conducting first research activities, and collecting and analysing data, to disseminating findings. The aim of the Toolbox is for the contents and singular steps to be self-explanatory, so that users will not need to rely on academic researchers to conduct a research project. Young people can use the Toolbox as a means to independently explore questions surrounding education, training, and work, and address issues relevant to them. As a result, the Toolbox will contribute to the greater goals of CSS to involve citizens in (social) science research activities and to democratize research by opening it up to the wider public. While the primary target group of the Toolbox is young people from age 15 participating in measures within E&T up to 18, young people in other contexts such as youth centres, schools, or self-organised spaces are also possible users of the Toolbox.

The present report gives a transparent overview of the current status regarding the planning for and implementation of the Toolbox. In Chapter 2, we outline the theoretical and methodological foundations and underlying principles guiding the development of the Toolbox. Chapter 3 follows with a description of the general concept of the Toolbox, explaining the chosen methods and approaches in more detail, and addressing issues such as informed consent, data security, and open access. This is followed by a description of the steps in the development process and the according timeline. In Chapter 4, the digital beta version of the Toolbox, "Action Research on Education and Employment", is presented. Finally, Chapter 5 illustrates the implementation process of the Toolbox, including a first review by young people, the lessons learned from the testing phase, and further steps planned for the revision and the creation of the card game.

2. Theoretical and Methodological Foundations of the Toolbox

In this chapter, we describe the theoretical and methodological foundations for the Inclusive Toolbox for Citizen Social Science. We argue that, in order to further develop collaborative research approaches such as CSS, it is necessary to develop methods that can be used independently by all participants, regardless of their prior scientific skills or experiences. In this sense, the Inclusive Toolbox for Citizen Social Science further democratizes the research process, making it accessible for citizens usually excluded from the active production of scientific knowledge.

2.1 The Concept of Research at the Heart of the Toolbox

CSS aims to enhance citizens' participation in research on societal issues. Based on the social concerns of people, CSS forms collaborative research groups with civil society organisations, citizens, and researchers. These groups work together to devise solutions that can be put into practice within the societal and political sphere. By this rationale, CSS is a platform to involve people in research, particularly those who are socially marginalized and excluded from decision making processes (Albert et al., 2021; Bonhoure et al., 2019). In part, CSS derives from *Participatory Action Research* (PAR), an approach that has been in development since the 1940s and engages people in social research. PAR is based on the valorisation and acknowledgement of practical knowledge – knowledge acquired through everyday experiences – and uses it as a point of departure for research fostering social justice (Freire, 1992; Fals Borda, 1991; Kindon et al., 2007). PAR involves lay people throughout the entire research process, from defining the research topic and formulating the research question(s), to gathering and analysing data, to making decisions about publications and deriving actions based on findings (Hart, 1992; von Unger, 2014; Wöhrer et al., 2017). The knowledge about research (e.g. the knowledge about theoretical perspectives or methods) is seen as complementary to the knowledge about, or everyday practices within, the respective community. Both types of contributions are valued equally. One of the aims of PAR is to make academic knowledge accessible to lay people and to 'teach' them how to do research. So while involved academics learn about the community, the community members simultaneously learn about research. As Fals Borda (1991, p. 3) notes, "it is useful to recall from the beginning that PAR is not exclusively

research oriented, that it is not only adult education or only sociopolitical action. It encompasses all these aspects together as three stages or emphases, which are not necessarily consecutive." Furthermore, PAR is committed to reflecting on and deconstructing power relations, and to contributing to a more equal and just social environment and society (Desai, 2019).

Within the general concept of PAR, strands of research have emerged that focus specifically on collaborative research with young people, aiming to include them in the production of knowledge about their own lives. These research approaches support the idea that young people need the possibility to voice their concerns and thoughts and have the right to be heard by decision-makers. These research streams usually draw on the *UN Convention on the Rights of the Child*, which states that children have the right to be involved in decision-making about aspects regarding their life. Child-led research approaches (Kellett, 2005; 2010) even go beyond these suggestions: they aim not only at involving children in the research process, but also designate children as the lead researchers and adult academics as the supporters. The umbrella term *Youth Participatory Action Research* (YPAR) consolidates approaches that focus particularly on power structures and social inequality (Cammarota & Fine, 2008). Through YPAR, young people choose a research topic that is directly related to and affects their lives. The goal is to transform the oppressive life circumstances of young people, which means that they should be empowered to lead, contribute to, and bring change and justice to their environment and community (Desai, 2019; Mirra et.al., 2016; Branquinho et al., 2020). Therefore, YPAR is about empowering young people to think critically, claim space, and own their experiences and stories in order to actively promote social change (see Desai, 2019, p. 126-127).

To summarize, the underlying research concept of the Toolbox perceives young people as capable actors who can use research to question hierarchies of power and advocate for their interests. In this context, research is a multi-actor, collaborative activity driven by real world challenges, aiming to promote social justice. We understand social science research as a means to view social issues from a unique perspective, enhancing our understanding of social structures and relationships, the meaning of behaviours, and the connection of individuals to their surroundings. By developing an Inclusive Toolbox for Citizen Social Science, we promote the exploration of this perspective and foster a differentiated perspective on social contexts.

2.2 Developing Shared Methods

PAR can draw on a range of methods and guidelines for conducting collaborative research. In collaborative research processes, methods are not only tools for gaining or analysing data, but must also be practicable for certain groups and contexts. There are a vast number of guides explaining and exploring the implementation of methods and the facilitation of participatory research projects (e.g. Chevalier & Buckles, 2019; Gubrium et al., 2015; Bradbury, 2015), including online resources, which are often available as Open-Source Guidelines, such as the YPAR Hub[1] or the CBPR Toolkit For Domestic Violence Researchers[2]. Besides describing concrete research steps, the guides discuss important aspects such as research ethics and research group power dynamics and provide an important framework for research projects to build on. According to Kindon et al. (2007, p. 17) the methods used in PAR have changed over the years:

> "In the last twenty years with falling technology costs, arts and media-based methods have become popular, as have visualisation techniques such as participatory diagramming and mapping where participants create charts, pictures and maps to explore issues and relationships. In work with marginalised or vulnerable people, one of the most important features of these types of method is their 'hands-on' nature, and their ability to enable people to generate information and share knowledge on their own terms using their own symbols, language or art forms."

As is well illustrated in the above quote, methods and tools in PAR are continuously evolving. In addition to the general aim of adapting methods to a collaborative research setting, an important impetus of PAR is to explain, restructure, and create broadly applicable methods that may be used by and with diverse groups of people; for instance, those who do not use written language, or who use different vocabulary or means to express themselves. Especially in the field of inclusive research (Nind, 2014; Koenig et al., 2016), the adaptation of methods is explored to ensure a low-threshold of accessibility to scientific modes of knowledge production for people with disabilities or learning difficulties. This might also mean creating new methods that allow people to participate in research (e.g. Weinstein, 2019). However, it is important to note that PAR does not require all methods to be equally usable by all members of a research project. As a practical example, all participants of a research project need not be able to

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[1] http://yparhub.berkeley.edu/
[2] https://cbprtoolkit.org/sections

transcribe an interview on a computer, but methods should be chosen that make the content of the interview accessible to all persons of the research group.

Although there is an increasing range of tools and approaches that are oriented towards designing collaborative research between social actors and researchers, there is still a lack of toolkits that promote independent, interest-driven research conducted by persons who are not scientifically trained. Many participatory research toolkits and handbooks in social science and other disciplines are either designed for researchers who want to conduct a collaborative research project, or communicated to professionals (teachers, social workers, community researchers) rather than individuals within communities. With our Toolbox, we aim to develop research tools that can be used by young people independently.

2.3 Principles of the Inclusive Toolbox for Citizen Social Science

The development of the Toolbox is guided by several principles, including inclusion and accessibility, self-determination and empowerment, gamification, and co-creation. These principles guide the chosen tools, language, style, and content of the Toolbox and are intended to ensure that the design is tailored to the target group.

2.3.1 Inclusion and Accessibility

Inclusion is an important guiding principle of R&I Action #2. In the field of education, "inclusion is regarded as an extension of a comprehensive approach to education, in which children's rights and social justice are positioned at the forefront of educational thinking; one that goes beyond tolerance and compensating for pupils' perceived 'disabilities'" (Winzer, 2009, p. 183). Accordingly, inclusion encompasses the idea of recognizing and appreciating diverse resources (Winzer 2009). In the context of research, the principle of inclusion increases young people's participation in research and highlights their competencies rather than deficits (Nind, 2014). We view accessibility (of content and format) as an important factor in taking an inclusive approach to research. Accessibility, as a broader concept, often involves the use of plain language and the provision of content in a variety of formats. Plain language refers to short sentences, common words, and simple grammar, as well as layouts that use more line spacing and images, for example (Schriver et al., 2010). The content of our Toolbox is supported by visual

materials such as GIFs, explanatory videos, and information text for difficult words or concepts. By including these features, we aim to make the content of the Toolbox accessible to a diverse range of young people.

2.3.2 Self-Determination and Empowerment

The principle of empowerment means including young co-researchers in the process of knowledge creation. In doing so, their perceptions and practical knowledge are acknowledged and valued. Additionally, young people involved in the creation of the Toolbox have the opportunity to share their ideas and strategies, and to create content for other young people affected by similar social issues. In this way, co-researchers are empowered to engage with their social environment and better understand social structures. In addition, they are able to understand their own circumstances through a more critical lens and to advocate for social justice (Desai, 2019). In the context of the Toolbox, young people learn that they already have immense knowledge; we simply provide them with a tool to leverage this knowledge, tackle self-chosen topics, and think about ways of transformation.

2.3.3 Gamification

The Toolbox uses the principle of gamification to make social science research accessible and usable for young people. Gamification can be defined as "the use of game design elements in non-game contexts" (Deterding et al., 2011, p. 2). Accordingly, gaming elements are used for a different purpose and in a different context than in typical games. Games are usually connected with the idea of entertainment, whereas gamification uses elements of games for educational purposes (Deterding et al., 2011). The goal of using gamification in this context is to help users gain knowledge and improve skills such as problem-solving, collaboration, and communication (Dicheva, 2015). Another advantage of gamification is its power to create strong engagement and motivation to grapple with complex issues (Dicheva, 2015). By putting scientific research into the framework of a game, the image that research or research projects can only be carried out by academically trained persons is opposed. Barriers that exist due to notions of elitist research practice are, thus, reduced. However, it should be noted that the Toolbox is not designed to have users 'play' research, but rather to facilitate their research through the medium of a game.

2.3.4 Co-Creation

Co-creation is an important guiding principle of CoAct in general and, more specifically, structures the development of the Toolbox. Co-creation, or co-design, is an "umbrella term to describe different processes of involving multiple partners in the development and/or provision of interventions" (Albert et al., 2021, p. 122). In our case, co-creation describes the joint shaping of the Toolbox in collaboration with young people, who are involved in the creation and evaluation of media, tools, and texts of the Toolbox. Co-creation is an important way to ensure that the Toolbox is attractive and usable for young people and their concerns.

3. The Concept

As discussed above, we are developing the Inclusive Toolbox for Citizen Social Science in two formats that can be used independently of each other: a digital app and an analogue card game. These two variations are intended to expand the applicability of the Toolbox to different social settings and individual preferences. In both cases, the primary target groups are young people from age 15, as well as institutions that work with young people of the same age group, such as E&T up to 18 organisations, schools, or youth centres.

3.1 Actionbound

3.1.1 What is Actionbound?

Actionbound is an application introduced in 2012 by Actionbound GmbH, a company based in Germany. Actionbound is a tool that enables users to design and play interactive tour games on a variety of topics using a smartphone or tablet. The individual games are also termed "Actionbounds" or "Bounds," and may have different purposes, such as private scavenger hunts for children and adults, historical walks, learning units, and other activities. Educational institutions such as schools, universities, museums, or libraries may use Actionbound to design museum tours, learning tasks, and other such activities in a playful manner. Referring to the school setting, Vogler (2021, p. 248) defines Actionbound as follows:

> „Actionbound ist ein browserbasierter Editor, der im Rahmen institutionellen Lernens eine fachlich bezogene Narration erzeugt, um fachspezifische Räume und Umgebungen außerhalb des Territoriums der Schule angeleitet oder selbstständig zu erkunden. ["Actionbound is a browser-based editor that creates a content-related narrative, in the context of institutional learning, to explore content-related spaces and environments outside the territory of the school in a guided or self-directed way. (translation by authors)"]

A Bound, therefore, tells a story about a topic and invites the players to follow the narration and complete tasks as they go.

3.1.2 Setting up a Bound

Actionbound consists of a modular system in which different elements can be combined to create a Bound. These elements include quizzes, information boxes, or tasks such as uploading a photo, writing a text message, or scanning a QR-Code. The Bound can only be created via a computer or laptop and played only on a smartphone or tablet. Once the Bound has been assembled, it is made available to players via an a number code, and a QR-Code. The players download the app onto their smartphone or tablet and activate the Bound by scanning the QR-Code, or entering the number code, making it available on their specific device. The game is presented in single steps, predefined in the creation process, and thus supports a design philosophy that breaks tasks down into manageable pieces. A visual explanatory video about how Actionbound works can be watched on the website[3].

3.1.3 The Bound "Action Research on Education and Employment"

The Bound developed at CoAct was termed "Aktionsforschung zu Ausbildung und Beruf" (translatable as "Action Research on Education and Employment"). Young people are invited to undertake a small social science research project about a topic they choose in the areas of education, training, and employment. As further illustrated in Chapter 4, young people are led through an entire research cycle, including the definition of a topic, the collection of data via either a qualitative interview or photovoice, the write-up of results, and the formulation of statements on how to improve things for young people in this area. Data protection, consent and ethical research are discussed throughout the whole Bound.

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[3] https://en.actionbound.com/?setlang

The Bound, "Action Research on Education and Employment", has a number of purposes. First of all, it encourages young people to critically engage in their topic(s) of interest from the unique perspective of a research process. By breaking this process down into three levels and guiding the players through the investigation, data creation, and analysis of an issue, an in-depth examination is facilitated. Second, the game encourages independent exploration of issues related to education and work and, thus, promotes the capacity for agency and empowerment. Finally, by conducting their research via Actionbound, young people contribute to the goal of R&I Action #2 of improving the educational landscape for youths.

3.1.4 Why Actionbound as a Research Tool?

The mandates of social distancing due to Covid-19 brought significant changes, not just to our research design in R&I Action #2, but also to the way E&T up to 18 measures were implemented within partner organisations. On the one hand, we were not able to conduct research directly in physical cooperation with young people, as outside visitors were not allowed on site. Additionally, young people and their trainers at e.g. AusbildungsFit institutions themselves faced considerable restrictions in their daily operations. For a while, much of the teaching took place online. Eventually, young people were able to return to the facilities on a part-time basis, but at a great distance from each other, in smaller groups, and constantly wearing masks. It was not until the end of May 2021 that the restrictions were slowly lifted and activities such as excursions or group work became possible again. As described by Vogler (2021, p. 247), Actionbound combines online or digital elements, such as videos or links, with physical elements, such as QR-Codes or tasks, to be fulfilled face-to-face, thus opening up a "hybrid pedagogical space" (translated by the authors) in which learning processes happen at different places. Actionbound seemed a promising tool for creating collaborative research that could be adapted to the current circumstances, not least because it allows for the flexibility of including more face-to-face activities if possible, but also because it can be played by a single player without the need for physical presence.

During our meetings with members of the KC, a recurring theme was the challenge of switching to distance learning and setting up online work environments. This was especially the case since many young people taking part in E&T up to 18 services do not have sufficient access to computers at home, share a device for the entire family, live in confined spaces that make it hard to focus, or struggle to navigate programmes such as online communication platforms and writing programs. According to the

JIM-Studie 2020, 94% of young people in Germany own a smart phone, whereas only 72% own a computer or laptop. This was another reason for using an app as a tool, as most young people have access to a smartphone and are independent of adults when it comes to using it. Furthermore, most young people are used to downloading and installing apps, and the format including quizzes and explanatory videos is known to those who use social media like TikTok, YouTube, or Instagram.

In conclusion, the advantages of a Toolbox as a tablet/mobile phone-based app are:

- Can be used both at home and within institutions
- Covid-19 safe (individual use)
- Co-research process can be started despite distancing mandates
- Uses a familiar technical device amongst young people
- Uses a popular format amongst young people
- Low-cost and maintenance

The disadvantages of a Toolbox as a mobile phone-based app can be summarised as followed:

- Not all research methods can be adjusted to the system of Actionbound
- Extends screen time for young people
- Needs to be connected to the internet at least twice

To counterbalance the disadvantages, we opted to also create the Toolbox as an analogue card game, which will be described in detail in Chapter 3.2.

3.1.5 Informed Consent and Data Privacy

Informed consent and data protection have a high priority in the implementation of the Bound, "Action Research on Education and Employment". Therefore, participating young people are led through an informed consent process at the very beginning of the Bound, in which they are informed about how the data they upload will be used by the CoAct research team at UNIVIE. All players of the Bound are encouraged by UNIVIE to upload only data (such as photo or texts) that is fully anonymised. The Informed Consent Process is supported by target group-oriented pieces of information, such as videos and short texts, which explain and illustrate how players should treat content within the application. A risk management plan mandates that if any non-anonymised data appears, it will be immediately

anonymised by the research team at UNIVIE. Furthermore, when our team created the Bound, the strictest privacy settings available in Actionbound were chosen, which means that all uploaded data is only visible to the UNIVIE research team and the creators of the inputs (the young people themselves). Young people are owners of their own data and can revoke the right of UNIVIE to use it at any time. Furthermore, Actionbound GmbH is based in Germany and therefore bound to GDPR regulations, which means, for example, uploaded content can be deleted on request by the creators. Regarding the metadata of uploads and identity of the players, Actionbound automatically deletes all metadata of photos uploaded on their server. The IP addresses of users are saved for one day only in a log-file and are not connected to other data or analysed in any way.

As part of the Bound, all players are informed:

- That the Bound "Action Research Education and Employment" is created by the CoAct research team of UNIVIE
- About the research project CoAct and where to find more information
- About the research in R&I Action #2
- About the meaning of "data" and what can be considered data
- That the research team at UNVIE is seeing, saving, sharing, and disseminating content uploaded in Actionbound in an anonymous format
- About how to upload data anonymously to Actionbound
- That anonymous data is saved for 10 years
- That they have the right to delete their own data and how to do that
- About the role and contact information of the Data Protection Officer at UNIVIE

3.1.6 User Group and Dissemination

The primary user group for the Bound are young people at E&T up to 18 institutions, as they are generally encouraged to reflect on topics of education, training, future job options, and other related topics. With this in mind, the Bound was created to allow for an independent and creative examination of such issues in an easy and fun manner. As a secondary user group, all German-speaking young people from 15 years onwards can use the Bound to conduct a small research project as well. Although the Bound aims to be realisable by young people themselves without outside support, there is a high probability that the

implementation will be mediated by institutions such as schools, educational agencies of E&T up to 18, youth centres, and others, which motivate or even organise young people to use the application. Therefore, these institutions will also be a specific target group for the dissemination of this digital version of the Toolbox.

After the testing phase, the Bound will be disseminated via official communication channels of E&T up to 18 institutions, email lists such as jugendarbeit@netbridge.at, which is a freely accessible resource for sharing information on youth work in Vienna and Austria, as well as the CoAct Community *Open*Citizen*Social*Science. To reach young people, independent youth organisations will be approached directly, while social media, especially Instagram, will be used for the publication as well.

3.2 "Your Turn" - The Card Game

The card game "Your Turn" (working title) will be an off-line version of the Bound, sharing similar goals as the digital, application-based game, but with some differences in applicability, methods, and style. Both versions share the idea of gamification to make social science research attractive to young people, and to encourage them to tackle challenges within the field of education and training and employment.

3.2.1 The Concept

The card game will be modelled on the basis of crime-solving card games. The cards give the players instructions on what to do next, (e.g. turn over the next card, look at cards number 9 and 11). The game follows the research cycle of a qualitative research project and includes a number of activities for each phase, such as doing some research about a topic, discussing personal experiences, or watching content online available via QR-Codes. The card game will therefore take a hybrid approach, using a diverse range of online and offline sources and activities.

3.2.2 Hybrid Approach

The card game will include additional material to be discovered in the course of the game, such as additional "games within the game" (e.g. motoric exercises) or templates for analytical steps. Providing guidance through concrete templates makes it easier for young people to understand a task, and supplies further creative stimuli. This also enables the inclusion of other, more complex research tools that could

not be adapted to the confines of the Bound. As we progress with the co-creation sessions with young people, the final concept of the card game will be determined. In this context, different hybrid formats (e.g. QR-Codes, videos, templates, etc.) will be tested in order to determine which materials to include within the card game.

3.2.3 Conceptual Specifics

Unlike the Bound, the card game is played in a group of two to four players who form a research team. Playing as a group allows for elements of discussion and reflection from several perspectives. Even though Actionbound is a great tool to reach young people for doing social science projects, it lacks the collective interpretive element which supports intersubjective understanding in qualitative research (Steinke, 2004). Through the card game, young people are encouraged to discuss different world experiences and interpretations of data, with the goal of collecting different kinds of knowledge through comparison.

3.2.4 Informed Consent

In case personal data is collected in the course of the creation and execution of the card game, all data processing is subject to the GDPR and is administered through consent forms provided by UNIVIE. The informed consent process implemented by the CoAct Team went through a review by the Ethics Committee at UNIVIE.

3.2.5 Target Group

Compared to the application-based Toolbox, the card game targets institutions such as schools, E&T up to 18 agencies, or youth centres, which can provide a supportive setting with time structures and quiet environments for game play. Based on our experience, most young people will need a facilitator to encourage the group to play the game. However, the goal is that young people can play the game independently if they wish to do so.

3.2.6 Example

These are prototypes of cards to illustrate how the game could be conceptualised:

Figure 1: Prototype of a Card (1)

Figure 2: Prototype of a Card (2)

Translation Prototype (1): Drawing a map. Open box 10 (containing a template sheet). Who or what is important for your research topic? People (e.g. mum, social worker, teacher, my friend…); things (desk, pencil, work trousers, book, …); ideas/opinions (What are others saying about your topic?); organisations (Are there institutions which are important?)

Translation Prototype (2): Super quick survey. How many people can you interview on your topic in 10 minutes? Start the stopwatch and ready, set, go!

3.3 Open Access

Actionbound offers different licences for different user groups. For users of a Bound, playing is always free, but an appropriate licence must be used when creating a Bound. Private users can create a Bound for free with limited features; for example, not being able to download the results. Educational institutions can purchase paid licences to access the additional features of the program. Commercial use is prohibited in this case, as there is a separate license available for companies which allows commercial use. The CoAct research team of UNIVIE has acquired a licence for educational institutions. In any case, Actionbound is not open source. The Bound, "Action Research on Education and Employment" is therefore only available as Open Access to a limited extent. However, the content created by the CoAct research team, such as videos, graphics, etc. is reusable and adaptable for other users. There are two ways of allowing this: First, the Bound can be set to "publicly visible", which allows anyone to search for

and find the Bound via the app; second, the Bound can be set to "reproducible", which allows other Actionbound users to copy the Bound, including the media content, and integrate it into their own Bound. As the media content is loaded from the original account, this option is only available as long as the content is online (see Chapter 3.5). In addition, all content produced by UNIVIE for the Bound "Action Research Education and Employment" will be made available for download. Beginning in October 2021, the content (texts, videos, instructions, structure, etc.) will be retrievable from the Zenodo open research platform, the webpage of the CoAct research team of UNIVIE[4], or the webpage of the research unit "Education and Inequality" at the UNIVIE Department of Education[5]. The card game will be available at the latest in June 2022 as a self-print version, retrievable from the same sources, or in a printed format for a contribution to the research team at UNIVIE. All content will be published under a CC BY-NC-SA licence, therefore allowing others to download, adapt, and distribute all content for non-commercial use.

3.4 Data Ownership, Data Processing, and FAIR Use

All players of the Bound "Action Research Education and Employment" or the card game are co-owners of the research data they produce themselves. Anonymous data uploaded in Actionbound or generated through the card game in review sessions with young people will be processed by the CoAct team at UNIVIE. Data consisting of pictures, texts, drawings, and answers to questionnaires will be processed for online dissemination via the diverse webpages of CoAct, Instagram, and scientific and popular publications. Anonymous data will be openly accessible following the FAIR principles (meaning Findable, Accessible, Interoperable and Reusable) in order to facilitate its reusability within the scientific research scope. Therefore, anonymous data will be published via Zenodo and the project webpage mentioned above under the CC BY-NC-SA licence in accordance with the Data Management Plan of CoAct.

3.5 Continuing Support and Maintenance

UNIVIE is prepared to maintain the Bound "Action Research on Education and Employment" until 2025, which means keeping the educational licence and service the players inputs. Unlimited open access to

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[4] https://coactproject.univie.ac.at/
[5] https://bildungswissenschaft.univie.ac.at/bildung-und-ungleichheit/

the material created by the CoAct research team of UNIVIE for the Bound as well as the card game is provided via the webpages mentioned above of UNIVIE or Zenodo.

3.6 Steps of Development and Timelines

Collecting Inputs from Co-Creation Sessions with Young People & KC Meetings	First Version of Bound/ Card Game	Internal Review	Testing Phase with Young People	Revision	Official Release & Continuing Maintainance
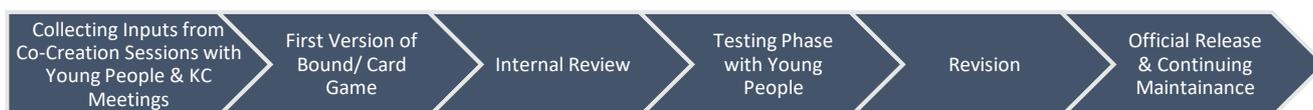
Figure 3: Steps of Development

The co-creation of the Toolbox is undertaken through several steps, with the Actionbound and the card game being developed in a similar way: In the first step, co-creation sessions are held with young people in E&T up to 18 institutions, as are discussions with the KC, to derive insights on the language, interests, and motivations of young people. These insights are used to draft a first version for each Toolbox element, the Bound and the Card Game. This step is followed by internal and external testing phases, in which young people of E&T up to 18 institutions try the Toolbox, give feedback, and offer suggestions to further improve it. Furthermore, the accompanying trainers or social workers are invited to provide feedback as well. These trial runs are followed by a period of revision, during which the feedback is implemented. As a final step, each version of the Toolbox is officially released and opened to public use. Thus, the timeline for the creation of the Toolbox is as follows:

Developing the Bound   Testing of Bound   Revision of the Bound   Official Launch of the Bound

OCT2020-MAR2021   APR2021-OCT2021   OCT2021
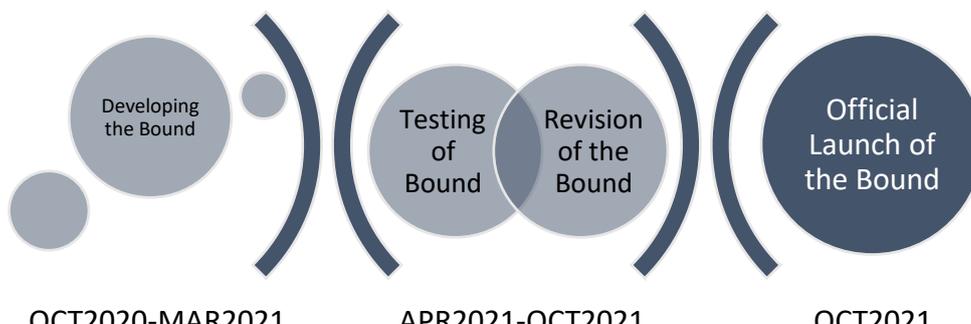
Figure 4: Timeline Bound

The Bound "Action Research on Education and Employment" is created between October 2020 and October 2021 with an entire cycle of reflections and revisions in between. During the final phase of the Bound development, the design of the card game begins and lasts from September 2021 to June 2022.

3.7 Support for Implementation and Incentives

The Bound is accompanied by a handbook for trainers of E&T up to 18 institutions. The handbook consists of technical and content descriptions. Trainers are guided through the process of initiating a project with young people and are made aware of possible support from UNIVIE, such as the provision of online access where otherwise unavailable. As a further incentive, young people playing the Bound can participate in a prize game in which they can win a voucher for local shops. Additional support is provided by the research team of UNIVIE within the first phase of the Bound, especially for the testing groups. In the final version, the Bound should be independently usable by young people and institutions alike. The card game
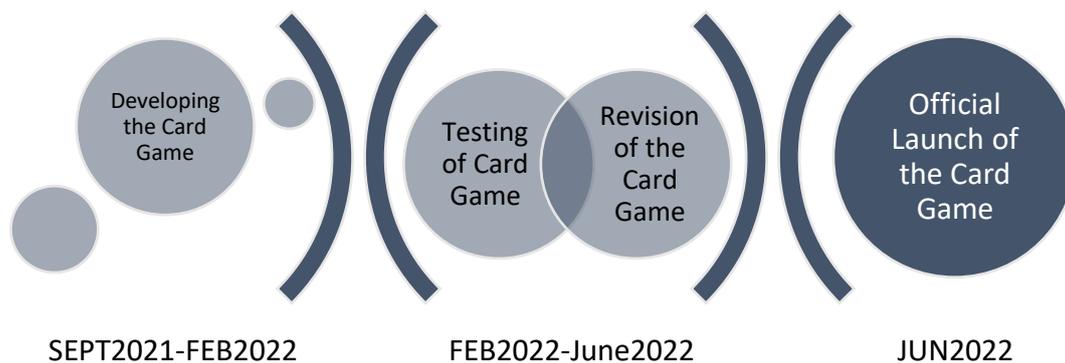

Figure 5: Timeline Card Game

will be accompanied by an information booklet for trainers, explaining the content and goal of the card game and tips for facilitation in their educational context. For young people, an easy to read instruction manual will be part of the game.

4 Bound "Action Research on Education and Employment"

The following chapter describes the content of the Bound "Action Research on Education and Employment" in detail, including screenshots to give better insights into the workings of the Bound, which will be activated for public use as of October 2021. The slides in the next chapters are chosen to represent the Bound, selected specifically to show its general approach, purpose, and structure. The pictures, graphics, and videos used in the Bound are either embedded via giphy.com or created via the graphic design platform Canva. After presenting the content of the Toolbox, we discuss the first insights from the testing phase with young people and describe the resulting next steps.

The graphic below shows an overview of the Bound "Action Research on Education and Employment". It represents the structure and elements chosen for each step of the research process.
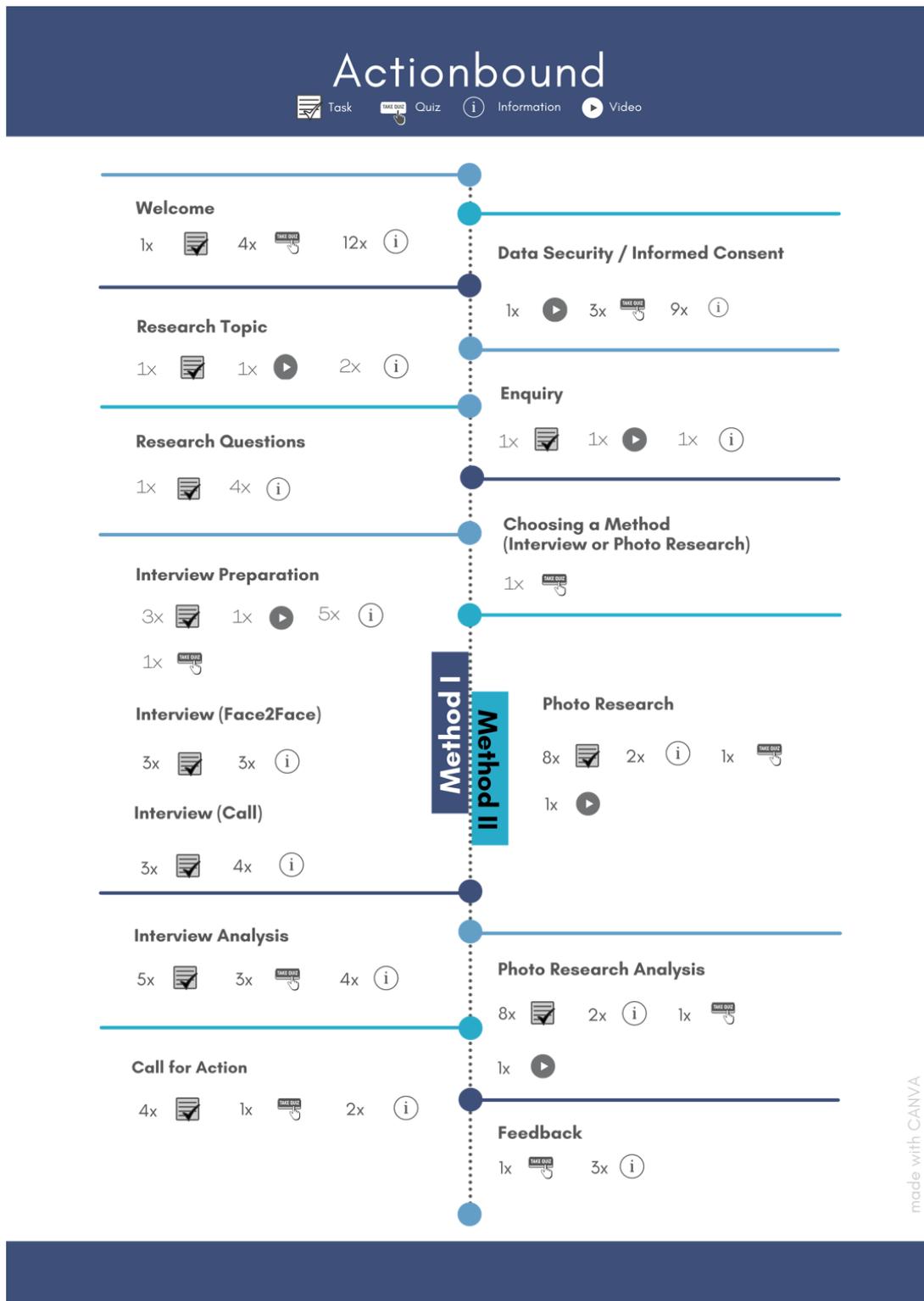
Figure 6: Overview Structure of the Bound "Action Research on Education and Employment"

Start Page

Figure 7: Start Page

The Bound can be started via a QR-Code or an ID number. When officially published in October 2021, the start page will be publicly accessible. Also available on the start page will be a short description of the content, the average time for completing the Bound, and the rating assigned to it by previous users.

Section 1: Welcome

On the first slides of the Bound, the CoAct Vienna junior research team and the general research project are introduced. The duration, topic, and purpose of CoAct and R&I Action #2 are explained.

Figure 10: Introduction Junior Research Team


Figure 9: R&I Action #2
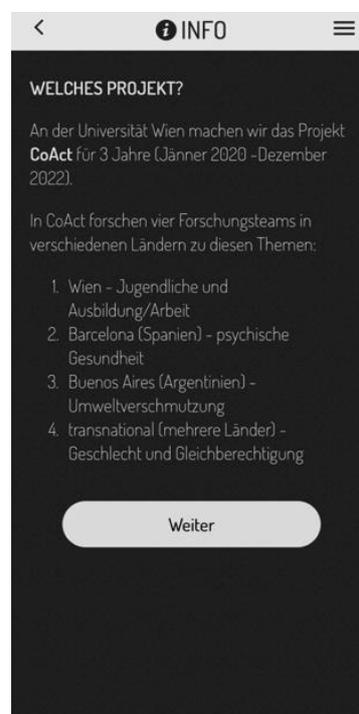

Figure 8: What is CoAct?
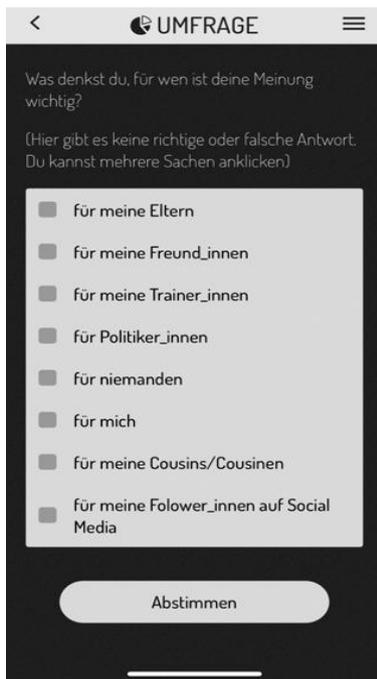
Figure 11: Who do you think your opinion matters to?

These introductions are followed by a first opportunity to actively engage in the Bound.

Who do you think your opinion matters to?

(There is no right or wrong answer. You can choose several options)

- *My parents*
- *My friends*
- *My trainers*
- *Politicians*
- *Nobody*
- *My cousins*
- *My followers on social media*

Section 2: Participation

The next section explains some reasons for young people to play the Bound. Besides the chance to win the prize game, participation and co-determination are important aspects mentioned.

Figure 12: Definitions of Participation

Section 3: Informed Consent

Although the CoAct research team of UNIVIE only collects anonymised data and, therefore, does not fall within the scope of GDPR regulations, the Bound notifies young people about informed consent and the use of their contributions, and provides information on data ownership, the right to withdraw consent, and the relevant contact information to do so. Furthermore, the topic of how to ethically collect research data in their own research project is discussed. The explanations are supported by a video[6] produced by the CoAct research team of UNIVIE that shows how to create and upload only anonymised data within Actionbound.
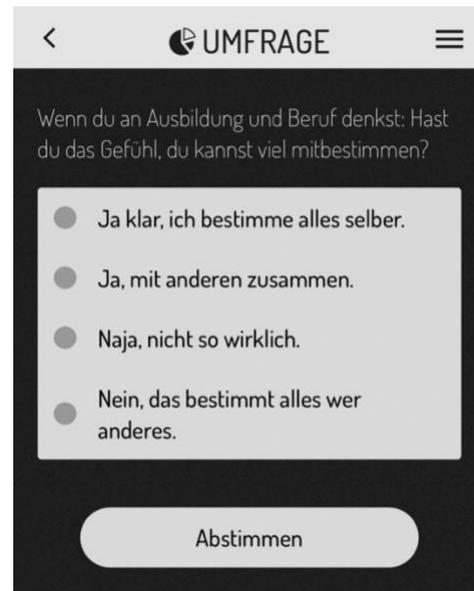

Figure 13: Do you have a say?

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[6] https://www.youtube.com/watch?v=aQaCFg-tQDM

*Figure 14. Explaining data protection*
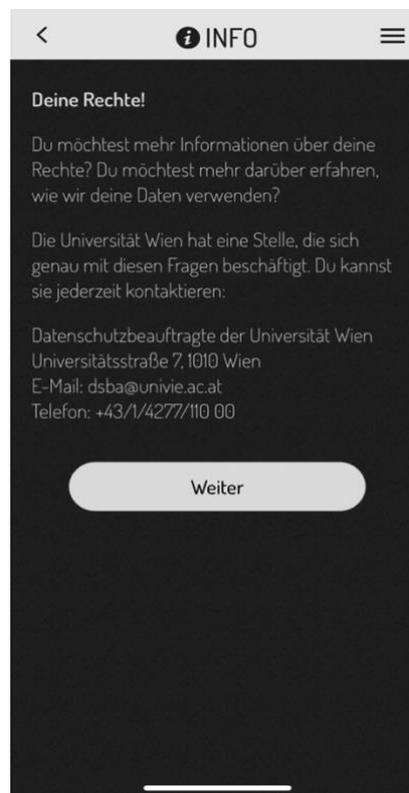
Figure 15: Your Rights

Participants' comprehension of how to collect and upload anonymised data is reviewed via several short Quizzes. For example:

What do I have to pay attention to when I take a photo of other people?
(2 answers are correct here)

- ***I always have to ask permission***
- ***The faces of the people must not be recognizable***
- *I can photograph all people if they do not notice it*
- *I am only allowed to take photos of myself.*

Figure 16: Quiz about the rules for taking pictures

Section 4: Finding a Research Topic

Beginning in Section 4, the participants start to create their own research project. In a video[7], the scope of the Bound "Action Research on Education and Employment" is illustrated, and the research cycle followed within the Bound is explained. As a first step, young people are then invited to define their personal research topic. Throughout the next sections, they are guided through each phase of the research process and are informed each time they complete a step.
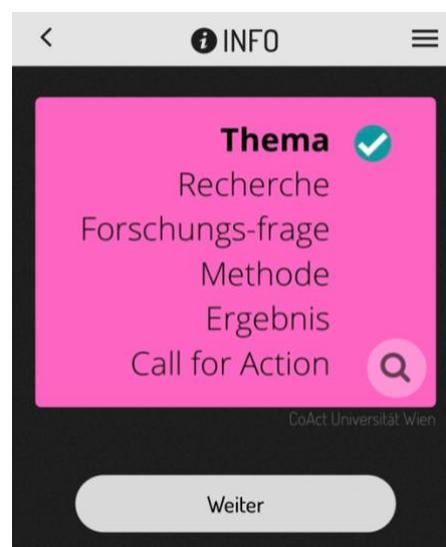
Figure 17: Progress Indicator

Section 5: Getting Familiar with the Research Topic and Finding Research Questions

The next two tasks are designed so participants can become familiar with the research topic. The first task is to create a logo for the chosen topic and upload it to Actionbound. The next task is to create a collage on the topic by gathering information in different ways, such as through internet research or through conversations with others. A video[8] is used to show what a collage actually is and how and where one can find out more information on a research topic. In a next step, young people collect and write down specific research questions.

Figure 18: Create a Logo
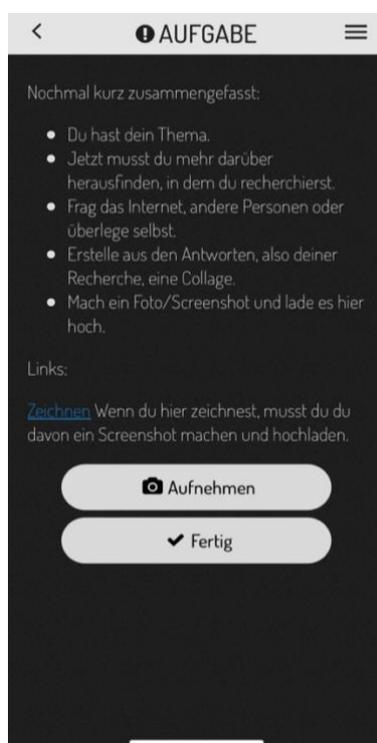
Figure 19: Instructions for the Collage
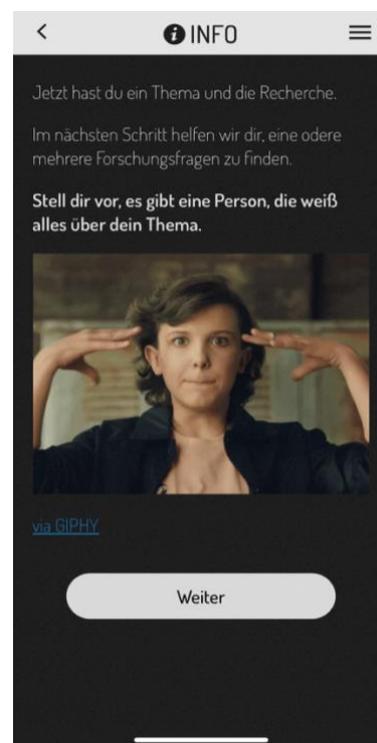
Figure 20: How to Find Research Questions

Section 6: Interview & Photo Research

In Section 6, each player can choose between two research methods: conducting photo research or an interview. Depending on the method, different content and activities are then included in the Bound.

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[8] https://www.youtube.com/watch?v=-_qApGvsk-w

Since the contents of the research projects are diverse, young people are encouraged to choose a method that fits their topic and their preferences:

Figure 21: Choosing a Method

*In photo research, you take photos to go with your questions. **You are creative and like to edit photos?** Then photo research is the right thing for you!*

*In an interview, you ask others for their opinion. **You have the courage to talk to other people (e.g. a friend or your trainer)?** Then the interview is the right thing for you!*

Section 6a: Photo Research

Photo research starts with activities that help the player become familiar with taking pictures and editing them. This step is supported by a video[9] created by the research team of UNIVIE and a quiz about pictures and ownership, privacy, how to anonymise photos in a creative way, and how to edit pictures to give them more meaning. All tasks are accompanied by examples.

Figure 22: Using Filters and Texts for Meaning
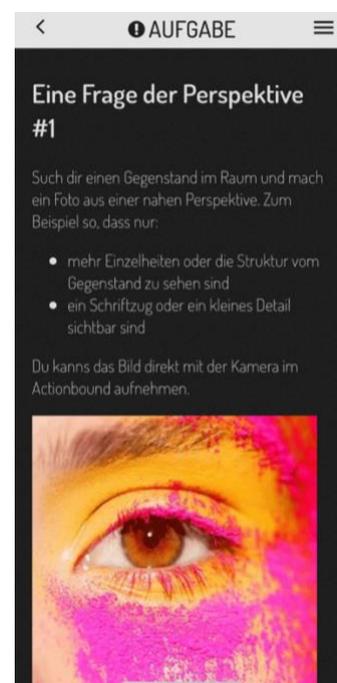
Figure 23: Changing the Perspective

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[9] https://www.youtube.com/watch?v=3kEgj5qroEg

As a next step, the players are tasked with taking three photos, which they first edit and anonymise, then upload to the platform. As a second step, they create hashtags (#) for each photo as an accessible form of coding. As a third step, players further describe the photo, either by explaining what it shows and why they chose the photo, or by connecting it with emotions.
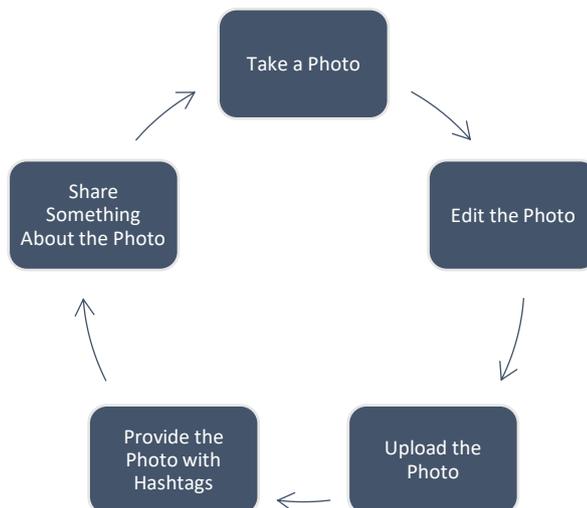
Figure 24: Process of Photo Research

Section 6b: Interview

After players have chosen the interview as their research method, they brainstorm whom to interview and are guided through the creation of a short questionnaire. The players can choose whether they want to do their interview face-to-face or via telephone. They are supported with examples of a research project conducted by other young people within R&I Action #2 on "Corona and the Job Search".
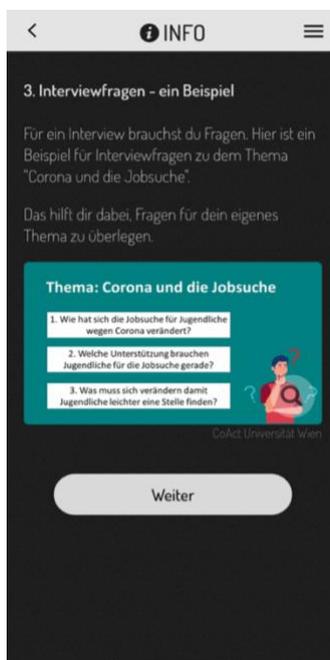
Figure 25: Example for Interview Questions

Figure 26: What do You Need for an Interview?

Furthermore, a short video[10] produced by the research team at UNIVIE shows how to ask others if they want to do an interview. Here, aspects such as recording and anonymisation are addressed as well. After conducting their interview, the players describe their questions and write down the answers of their interview partners. They connect this content with their own experiences and experiences of other people they know.
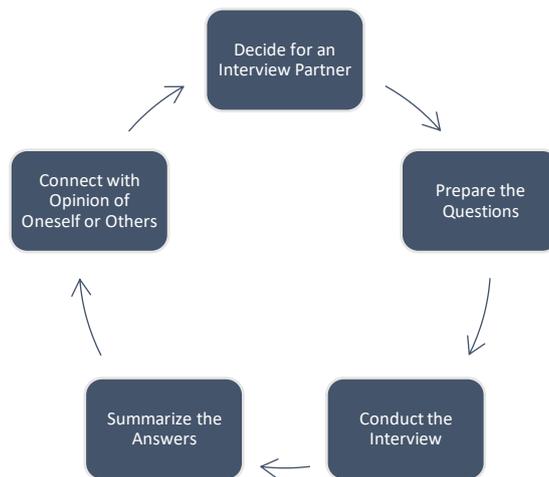
Figure 27: Process of Interview Research

Section 7: Call for Action

Both the photo research and interview approaches finish with a Call for Action, a term that was used in the collaborative professional video creation that took place in the course of research activities with young people in November 2020 for R&I Action #2. The players of the Bound are invited to explain why they chose their topic and what they would like to say to other young people and people in charge, such as trainers or politicians, about their research topic. In a second step the players can voice their opinion about what should be improved in society for young people in general.

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[10] Not yet publicly available.

Figure 28: Call for Action
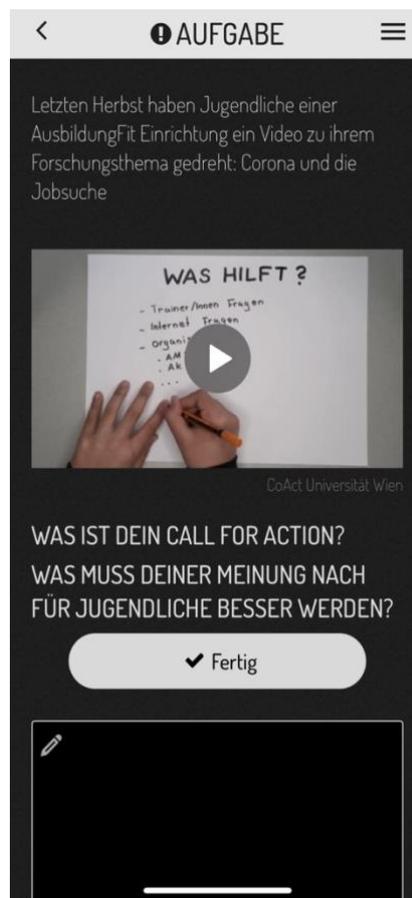
Figure 29: What Should be Better for Young People?

Section 8: Co-Evaluation & Finish

At the conclusion of their research, young people are invited to formulate needs, ideas, and demands they want to share with other people regarding their research topic. In collaboration with the Centre for Social Innovation (ZSI), the CoAct research team of UNIVIE included two co-evaluation elements in the Bound. One asks young people about their expectations before starting their research, and another one asks them for their feedback at the end of their research.

At the end of the Bound, the players are reminded of the option to participate in the prize game. Before the final slide, they are invited to visit the webpage and Instagram account of the CoAct research team at UNIVIE, where their contributions will be shared.

5 Implementation Process – from Creation to Revision

The following section describes the implementation of the Bound, "Action Research on Education and Employment" at the time of the submission of this report in June 2021. The steps thus far include the creation of an initial version, internal revisions, and three testing rounds with young people. In the final chapter, lessons learned and future steps are described.

5.1 Co-Creation Sessions

Our first pilot study, conducted face-to-face in November 2020 with three young people participating in an "AusbildungsFit" programme, gave us important insights into current issues and topics, media preferences, and language use amongst young people in this educational field. Based on this experience, we started to create the first version of our Bound. As an additional input, we approached trainers working with our target group and asked for ideas on creating a Bound for young people. In two meetings, they shared important insights and made suggestions on how to improve our concept. They talked about the importance of simple and understandable language and the necessity of maintaining the concentration and focus of young people, and provided us with feedback on the types of methods that work best for young people. We were also able to gather information about the available infrastructures and circumstances in which young people participating in "AusbildungsFit" institutions would play the Bound. As it turned out, we had to prepare for a variety of different circumstances, further exacerbated by changing Covid-19 restrictions. For example, in some cases where young people could all be present at once in the facility, they could not use the Wi-Fi because access was restricted to professionals only. As a solution, we organized a mobile internet box that we could bring to institutions for the testing phase if necessary. In other cases, the young people were at home, some using their laptops and others their phones to be online with us. In case the participants did not have Wi-Fi at home or did not have enough mobile data, we offered to buy mobile credit.

5.2 Internal Review & Testing Phase

After we finished the first version of the Bound, it was reviewed by researchers from the Department of Education and the ZSI. As a next step, we started the testing phase with three small groups of young people from "AusbildungsFit" institutions.

The **first testing session with five young people** was divided into two meetings, each lasting two hours, and held one week apart. While the players were on-site with their cell phones with the supporting trainer, the CoAct team was connected via a laptop, which was accessible to all participants in the room to support them and answer questions. In addition, the trainer supported and encouraged participants to engage the UNIVIE research team if there were any questions that the trainer could not answer. As the trainer had prepared the participants in advance, they all had the app installed and were ready to go. Before the testing session, we brought a mobile internet box to the facility, as there was no Wi-Fi- available for their use.
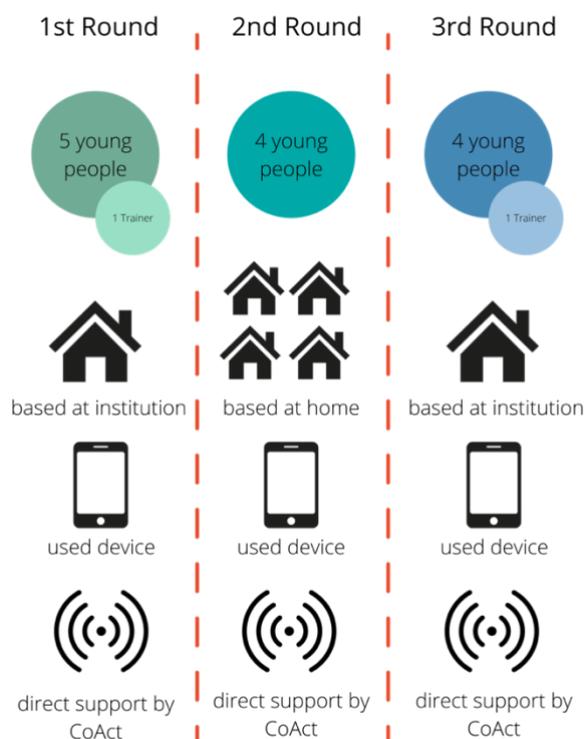
Figure 30: Overview Testing Sessions

In the **second testing session, four young people** participated. Instead of being together in one place, the young people worked from home with no supporting trainer present. The CoAct team was connected via a digital communication tool and guided the youth through installing the Actionbound app and supported with the tasks of the Bound if necessary. This session was held all at once and lasted for four hours.

In the **third testing group with four young people,** the set up was very similar to the first session. The participants were at their respective institutions with their trainer and used their mobile phones to play the Bound. The CoAct research team of UNIVIE was connected via a computer using an online communication tool. As before, a mobile internet box was provided for the session.

5.3 Feedback & Lessons Learned

All in all, the feedback that participating young people shared on the Bound "Action Research on Education and Employment" was very positive. They perceived it as an interesting way to find out more about education, training, and work, and highlighted that they learned things they had not known before. Along the same lines, the supporting trainers gave appreciative feedback. They were surprised by how well young people put the research tasks into practice, and thought of the Bound as a tool that could add a new perspective to their work.

Finally, we are of course interested in what you think of the Actionbound and the research. Please give us some feedback!


- I had a lot of fun!
- I thought it was great.
- I still don't understand what this is for.
- Huh? Totally boring!
- I want to continue researching.
- I want to know who thinks up something like that.
- Gladly again to another topic.
- I found this topic stupid.
- I liked the topic.
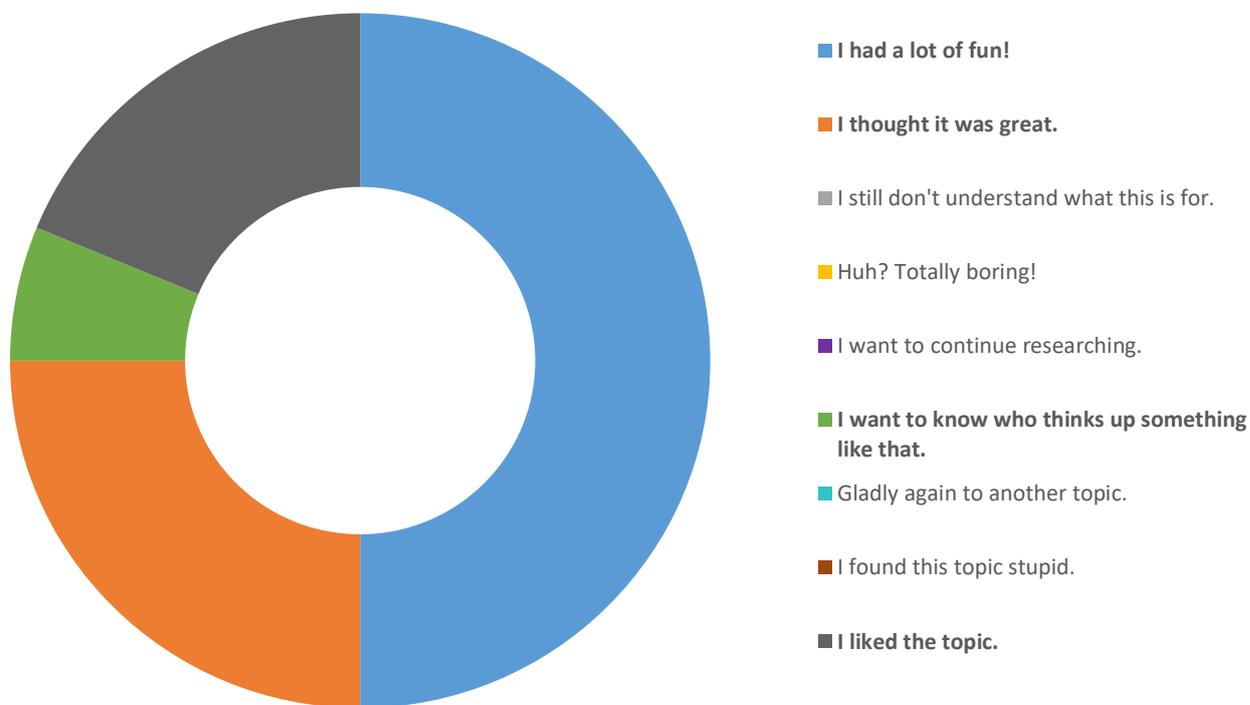
Figure 31: Feedback of Players of the Bound "Action Research on Education and Employment"

n=16; we got feedback from 13 young people testing the Bound. Since some of them played the Bound twice, we received more feedbacks than there were players

In our experience, creating content tailored to the worlds and contexts of young people worked well for the Bound, "Action Research on Education and Employment". For example, the videos we created to explain PAR, research processes in general, and how to conduct an interview or photo research were well received and seemed understandable. Young people are accustomed to watching tutorials and content

on YouTube, TikTok, and Instagram, so the format is familiar to them. The task of editing photos was also a success, as many young people are used to engaging in this activity on their phones or via messengers.

However, working in a context-specific way also means that there are improvements to be made on some of the content. For example, the language we used was still too complicated. One solution to this is to use more terms and concepts that young people already know, such as "mind map" instead of "collage". The sessions showed us that we need to simplify the language to make it more accessible and that it is important to shorten the written inputs we provide throughout the Bound. Furthermore, some words were not understood and needed further explanation, such as the term 'logo'.

A further aspect that needs to be revised concerns tasks where young people can decide whether to design their activities online with digital tools, or offline with pen and paper. In the case of the "collage" (mind-map), the vast majority of young people opted for the offline approach. Therefore we decided to reduce this task to the offline possibility, making the description shorter and more accurate.

Other findings from the testing phase were that the order of certain tasks should be adjusted and that some steps need to be more guided, either through additional videos or short texts. We will suggest, for example, three different sources for research when participants are creating the collage so that it is more accessible for people who never have done a research task before.

One aspect that is particularly difficult for participants to realise is the task of finding a research topic without having a discussion or a common reflection about it. Since this cannot be solved in a Bound, which is designed for playing alone, we are trying to find ways to improve this step of the process. Here, we also contemplated giving some examples or setting predefined categories, such as job, future, or everyday life, to give participants an idea of what a research topic might be. Initially, we tried to set as few parameters as possible, but quickly realised that certain conditions may need to be pre-set to make the Bound playable.

When it comes to the amount of time young people need to play the Bound, we found out that two sessions of two to three hours each would be best. During the first session, the trainer suggested doing the research method (i.e. interviews or photo voice) in between the sessions. So, the participants had a week to complete the task and it worked well: some interviewed people from their families and one

player even did an interview with a person from her desired profession. The second trial did not work as well as the first, because the session was not split in two and most people did not want to or could not do an interview at home; instead, participants chose to do photo research. Therefore, we conclude that the best option is to introduce a break in our Bound to give the participants time to collect their data and then come back for analysis.

Another lesson learned concerns potential technical difficulties when using online tools. Some of the young people had technical difficulties and could not stay connected to the supporting CoAct research team of UNIVIE. Even though this was solved creatively by opening up a third communication channel among the participating youth themselves, it shows that participation in an online setting still has its challenges and can potentially be exclusionary.

Nevertheless, we deem the test phase an overall success, as it gave us valuable insights into the accessibility and usefulness of the Toolbox as developed so far. It is also notable that some young people were able to complete a whole research process on their own, while others struggled slightly. This reflects the nature of our target group, which is quite heterogeneous in terms of language abilities, digital skills, and resources at their disposal. When revisioning our Bound, it is essential to acknowledge that the inclusiveness of digital youth work always depends on the access to resources and support, a circumstance which needs to be reflected upon when aiming to improve the accessibility of our Toolbox.

Finally, the knowledge we gained from the Bound test phase will be valuable for the creation of the card game. A great deal of the feedback we received can be transferred to the context of the card game, since many of the activities offered there will be congruent with the Bound. Since the card game will be created using a hybrid approach, we can also make use of the materials already developed as online resources, such as the explanatory videos, and make them reachable though QR-Codes.

5.4 Next Steps

Our next step will be the revision phase, in which we will implement the feedback from young people and trainers, and smooth out the issues that were observed by the research team. This includes, but is not limited to:

- Adapting the language

- Shortening paragraphs

- Re-ordering certain tasks

- Adding more guidance where needed

- Editing videos with professionals

We aim to have the revisions finished by October 2021 when the Bound will be officially released and made publicly available. In parallel, the creation of the card game will begin based on further co-creation sessions with young people.

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