



Co-designing Citizen Social Science for Collective Action

#D4.3

Inclusive Toolbox for Citizen Social Science



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Author – Teresa Wintersteller

Reviewers – Dayna-Lee Stewart, Veronika Wöhrer, Isabelle Bonhoure, Josep Perelló

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List of Abbreviations

CoAct	Co-designing Citizen Social Science for Collective Action
CS	Citizen Science
CSS	Citizen Social Science
E&T up to 18	Education and Training up to 18
FAB!	FAB! Das Forschungsspiel zu Ausbildung und Beruf/ FAB! The Research Game on Education and Employment



KC	Knowledge Coalition
PAR	Participatory Action Research
R&I Action	Research & Innovation Action
ZSI	Zentrum für Soziale Innovation / Centre for Social Innovation



1. Executive Summary

CoAct (Co-designing Citizen Social Science for Collective Action) proposes a new understanding of Citizen Social Science (CSS) as participatory research co-designed and directly driven by citizens and citizen groups who share a social concern. As part of this project, the R&I Action on Youth Employment is conducting participatory research with young people in Vienna, Austria, who are taking part in educational measures within the framework of *Education and Training up to 18* (E&T up to 18).

Based on this collaborative research, the Inclusive Toolbox for Citizen Social Science was developed by the research team at the Department of Education of the University of Vienna. Its target group is young people who can use the Toolbox without the assistance of scientists or adult trainers. The Toolbox consists of two tools as a means for making social science research on education and employment experiential for adolescents and young adults. The first tool is a game playable via the app *Actionbound*. It offers a step-by-step guide through a small social science research process: finding a research topic, posing questions and doing initial research, collecting data and analysing it, and handling issues about disseminating the findings. The second tool is a board game that allows young people to learn and experience social research through the game. It incorporates aspects of social science research (such as collecting data, coding, and doing research) and introduces information and research results concerning education and employment. The game is based on the co-research process with young people in R&I Action #2.

This Deliverable D4.3 Inclusive Toolbox for Citizen Social Science describes the tools of the Toolbox, the development processes as well as includes practical examples and reflections.

2. Introduction

This document constitutes D4.3 Inclusive Citizen Social Science Toolbox (Work Package 4) created by the University of Vienna within the Research and Innovation Action #2 Youth Employment (R&I Action



#2) of CoAct (Co-designing Citizen Social Science for Collective Action). CoAct proposes a new understanding of Citizen Social Science (CSS) as participatory research co-designed and directly driven by citizens and citizen groups who share a social concern (see Figure 1).



Figure 1: Citizen Social Science in Action, with citizen groups, a specific concern, and the support of the Knowledge Coalition.

In all CoAct R&I Actions (Mental Health Care, Youth Employment; Environmental Justice and Gender Inclusion), citizens in a vulnerable situation are actively involved in the research process and recognised as co-researchers. In practice, every R&I Actions co-researchers participate in all stages of the research cycle. The project aims to implement new or improved science-related policies and to advance the CSS approach in regard to its applicability in concrete fields of research.

2.1 R&I Action #2 Youth Employment

The R&I Action on Youth Employment involves conducting participatory research with young people of Vienna, Austria, who are taking part in educational measures within the framework of *Education and Training up to 18* (E&T up to 18). Austria legally requires young people to pursue some form of education until they are 18 years old. The E&T up to 18 framework offers measures to young people aged 15 years and older who do not attend regular school or a regular apprenticeship. The measures are designed to enable participants to enter school or vocational training, acquire social and technical skills, and increase their employability. The main objective of the R&I Action is to involve young people targeted by E&T up to 18 in the conceptualisation and improvement of such measures, with the aim of developing services that are better adapted to their needs and circumstances. E&T up to 18 participants are invited to conduct research projects as co-researchers about topics that are relevant to



them. In order to discuss and implement the research results that were collected together with young people, a Knowledge Coalition (KC) was organised as part of the research project. The KC is an integral part of the R&I Action #2, and combines a diverse range of representatives from political, social, and administrative institutions at the federal and the regional level as well as people from social work, grassroots levels, and youth organisations. Regular meetings with the KC ensure that the information and findings by the co-researchers are exchanged with ideas and reactions given from the practitioners in the field.

2.2 Overview of the Deliverable

In this deliverable, we outline activities carried out between November 2020 to June 2022 (M10-M30) regarding the creation of an Inclusive Citizen Social Science Toolbox for young people. The Toolbox consists of two tools as a means for making social science research on education and employment experiential for adolescents and young adults. The first tool is a game playable via the app *Actionbound*. It offers a step-by-step guide through a small social science research process: finding a research topic, posing questions and doing initial research, collecting data and analysing it, and handling issues about disseminating the findings. The second tool is a board game that allows young people to learn and experience social research through the game. It takes aspects of social science research (such as collecting data, coding, and doing research) as well as the content of R&I Action's co-research with youth in E&T up to 18 measures.

In contrast to many other toolboxes that are directed at (social) scientists or adult trainers, young people can independently use this Toolbox to explore questions around education, training, and work and address issues relevant to them. Hence, the Toolbox contributes to a greater CSS goal of involving citizens in (social) science research activities and also democratising research by making it usable by the general public. The primary user target group of the Toolbox is young people who are participating in measures within E&T up to 18. However, interested young people from other contexts such as youth centres, schools, or self-organised spaces are also defined as potential users. Furthermore, professionals who work with young people in the fields of E&T up to 18, youth centres, or schools form another primary user target group.



The D4.3 Inclusive Toolbox for Citizen Social Science builds on the preceding beta version (D4.2 Inclusive Toolbox for Citizen Social Science. Beta version),¹ which was submitted in June 2021 as a deliverable. This preceding version addressed the foundations for the Toolbox in detail and outlined why there is a need for more low-threshold methods for collaborative research. Additionally, it introduced a preliminary version of the *Bound* “Action Research on Education and Employment” as a first tool. D4.3 now presents the Toolbox in its entirety, includes practical examples of its application, and demonstrates the second tool from the Toolbox that was developed in 2021 and 2022. To ensure clarity, the Actionbound (Chapter 3.4) description was adopted from Report D4.2.

3. The Inclusive Toolbox for Citizen Social Science

3.1 Introduction

Citizen Social Science is a “powerful practice for both the inclusion of marginalised communities and the design of new evidence-based policies supported by the participation of citizens” (Albert et al., 2021, p. 120). To achieve this goal, CSS uses existing participatory methods developed in Citizen Science (CS), Participatory Action Research (PAR), and adjoining research fields, and is committed to developing new tools. CoAct is contributing to this endeavour by creating new open-access tools that support co-researchers and researchers in doing participatory research together (see, e.g., digital and non-digital tools for conducting research).² Although an increasing range of tools and approaches is directed 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.

Developing tools that are independently usable, is especially of importance when working with young people who are often perceived as incapable of understanding or conducting research themselves. The Inclusive Toolbox for Citizen Social Science incorporates principles of child-led research (Kellett 2005;

¹ <https://zenodo.org/record/6079208-.YsPZNcHP2qA>

² <https://zenodo.org/record/6078916#.YsbqCcHP3vU>



2010) and youth participatory research (Cammarota & Fine, 2008), which argue for the appreciation of young people as active, self-determined researchers in participatory research. In doing so, it acknowledges young people as capable actors who can use social research to challenge hierarchies of power and advocate for their interests and social change. The development of the Toolbox is guided by several principles, including inclusion and accessibility, self-determination and empowerment, gamification, and co-creation.³ These principles guide the chosen tools, language, style, and content of the Toolbox and are intended to ensure that the design of the tools is tailored to the target group.

3.2 Tools of the Inclusive Toolbox for Citizen Social Science

The Inclusive Toolbox for Citizen Social Science consists of two tools that can be used either independently or complementarily:

1. “Aktionsforschung AusBildung und Beruf” (translatable to: “Action Research on Education and Employment”) is an app-based tool that uses the Actionbound platform to guide young people through a social science research process.
2. “FAB! Das Forschungsspiel zu Ausbildung und Beruf” (translatable to “FAB! The Research Game on Education and Employment”) is a board game-based tool that introduces information and research results concerning education and employment and enables players to acquire social research skills in a playful way. “FAB!” is based on the co-research process with young people in R&I Action #2.⁴

The following table presents an overview of the two tools:

	Actionbound “Aktionsforschung Ausbildung und Beruf”	FAB! Das Forschungsspiel zu Ausbildung und Beruf
Description	App-based tool for doing a small research project about education and employment	A board game about social research about education and employment
	Teresa Wintersteller, Shenja Danz, Mariam Malik	Teresa Wintersteller

³ See D4.2 Inclusive Toolbox for Citizen Social Science. Beta Version; for more detailed remarks <https://zenodo.org/record/6079208#.YuGJu8HP2Et>

⁴ Some results of the co-research process are featured here <https://coactproject.univie.ac.at/wien-par/einblick-ins-projekt/> and here <https://coactproject.univie.ac.at/wien-par/einblick-ins-projekt/roundtables/>



Authors of the contents		
Purpose of the tool	Allow young people to conduct a small social research project on education and employment by themselves. The tool features an entire research cycle.	Allow young people to learn about research results, legal regulations, organisations, and concepts concerning education and employment in Austria; acquire skills necessary for doing social research.
Users of the tool	Young people aged 15 and over	Young people aged 15 and over
Language	German	German
License	Content provided by UNIVIE is published under a CC BY-NC 4.0 license. This content is openly accessible via the UNIVIE project webpage ⁵ The platform Actionbound itself and integrated materials from external sources have their own terms of use and licences.	CC BY-NC 4.0
Digital repository	Playable for free via the Actionbound app ⁶	Openly accessible via Zenodo as a self-print version ⁷

Table 1: Overview of the tools of the Inclusive Toolbox for Citizen Social Science

3.3 The Target Group for the Inclusive Toolbox for Citizen Social Science

The primary user group for the Inclusive Toolbox for Citizen Social Science is young people aged 15 and over. The Toolbox was specifically created for young people taking part in E&T up to 18 measures in Austria, as they are encouraged to reflect on education, training, future job options, and other related topics. With this in mind, the game “FAB!” and the Actionbound “Action Research on Education and Employment” were created to support the independent and creative examination of such issues in an easy and fun manner. The content of “FAB!” is especially relevant to young people living in Austria (e.g., due to the described organisations and data specific to the Austrian context). The Actionbound “Action

⁵ <https://coactproject.univie.ac.at/wien-par/actionbound/open-access-resources/>

⁶ <https://de.actionbound.com/bound/aktionsforschungausbildungundberuf>

⁷ <https://doi.org/10.5281/zenodo.6884420>



Research on Education and Employment”, however, because it is not region-specific, is usable by all German-speaking young people aged 15 years and older for conducting a small research project.

Although the Toolbox aims to be independently usable by young people themselves, its implementation will likely be mediated by institutions such as schools, educational agencies of E&T up to 18, and youth centres, which can motivate young people to use the application and the board game. Therefore, these institutions will also be a specific target group for the dissemination of the Toolbox.

3.4 Actionbound “Action Research on Education and Employment”

3.4.1 What is Actionbound?

Actionbound is an application introduced in 2012 by Actionbound GmbH, which is a company based in Germany. It enables users to design and play interactive tours and scavenger hunts 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:

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 author)”]

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

3.4.2 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 desktop or laptop computer and played on a smartphone or tablet. Once the Bound has been assembled, it is made available to players via 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 viewed on the website.⁸

3.4.3 The Bound “Action Research on Education and Employment”

In “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 Chapter 3.4.8 further illustrates using practical examples, the Bound leads young people through an entire research cycle, including defining a topic, collecting data via either a qualitative interview or photo research, writing the results, and formulating statements about how to improve the situation for young people in the area of education and employment. A full overview of the Bound’s structure is available via the UNIVIE webpage⁹, while Report D4.2 contains a graphical representation of the structure. Several explanatory videos¹⁰ as well as visual and written instructions guide the young co-researchers through every step of the research process. Data protection, consent, and ethical research are discussed throughout the whole Bound. The Actionbound also incorporates methods from social research that are helpful in a research process, like mind maps, to present complex coherence and structure the phenomenon under research (Weischer, 2007, pp. 126-127).

⁸ <https://en.actionbound.com/?setlang>

⁹ <https://coactproject.univie.ac.at/wien-par/actionbound/open-access-resources/>

¹⁰ <https://www.youtube.com/playlist?list=PLopHT-ee99L3K2xkFW8S4WlpFd7TCVTK4>





Figure 2: A page from the Actionbound “Action Research on Education and Employment” that invites players to create a logo



Figure 3: A page from the Actionbound “Action Research on Education and Employment” about mind map instructions

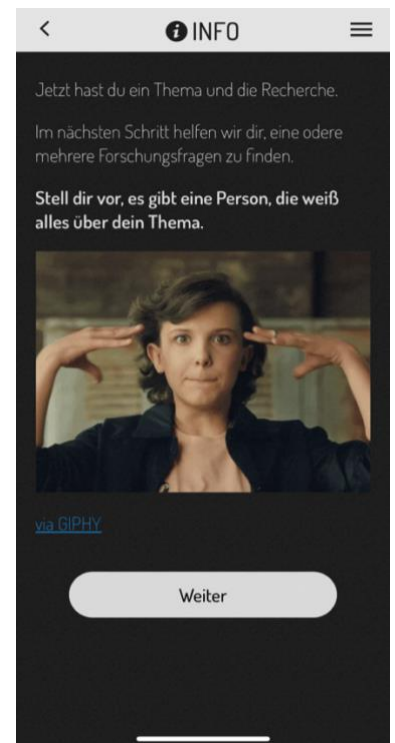


Figure 4: A page from the Actionbound “Action Research on Education and Employment” about finding research questions

The activities in the Actionbound “Action Research on Education and Employment” are structured in a linear manner—each completed step leads to a new task. The one exception is the task of either doing photo research or a qualitative interview, which is structured as a sequence that repeats three times. This means that the players are asked to repeat certain steps to process their data. For example, during photo research, the players are tasked with taking three photos, which they first edit and anonymise before uploading to the platform. As a second step, they create hashtags (#) for each photo as an



accessible method of coding. Third, players describe the photo by either explaining what it shows and why they chose it or by connecting it to emotions (see Figure 5).

In collaboration with the Centre for Social Innovation (ZSI), the UNIVIE CoAct research team included two co-evaluation elements in the Bound. One asks young people about their expectations before starting their research, and another asks for feedback at the end of their research.

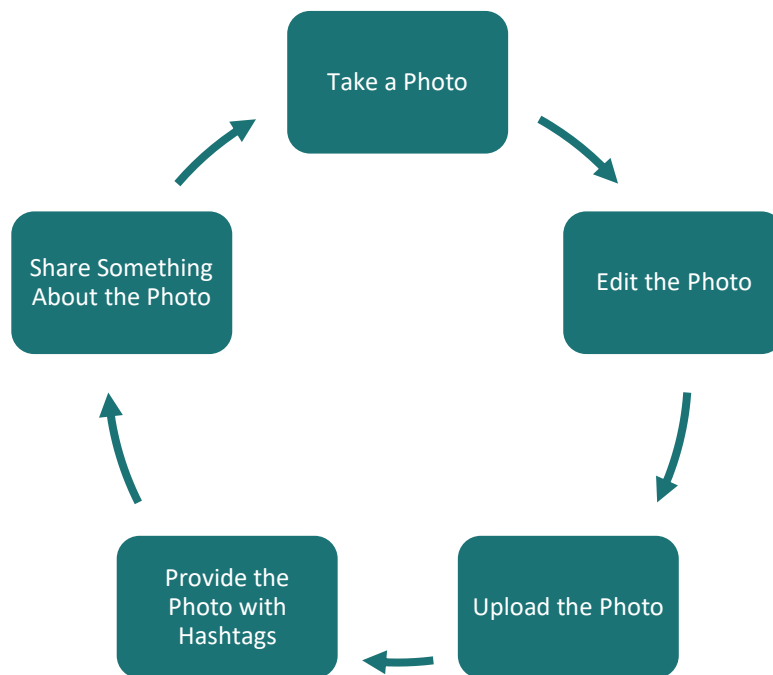


Figure 5: Process of photo research in the Actionbound “Action Research on Education and Employment”

The “Action Research on Education and Employment” Bound has multiple purposes. First, it encourages young people to critically engage in their topic(s) of interest from the unique perspective of a research process. Breaking this process down into small steps and guiding the players through the investigation, data creation, and analysis of an issue facilitates in-depth examination. Second, the game encourages the independent exploration of issues related to education and work and, thus, promotes 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.



3.4.4 Why Actionbound as a Research Tool?

During the COVID-19 pandemic, social distancing mandates brought significant changes to both our research design in R&I Action #2 and the way that E&T up to 18 measures were implemented within partner organisations. On the one hand, we were unable to conduct research directly in physical cooperation with young people for an extended period of time, as outside visitors were not allowed on-site at E&T up to 18 measures. Additionally, the young people and their trainers at their training sites 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 e.g., two-metre distance from each other, in smaller groups, and constantly wearing masks. The restrictions were slowly lifted in 2021 and activities such as excursions or group work became possible again.

As Vogler describes (2021, p. 247), Actionbound combines online or digital elements, like 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 author) in which learning processes happen at different places. Actionbound seemed like a promising tool for creating collaborative research that could be adapted to the circumstances during the pandemic, not least because it offers the flexibility to include more face-to-face activities when 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 Knowledge Coalition—a network built in R&I Action #2 with various stakeholders in the field of E&T up to 18—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, may share a device with 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 desktop or laptop computer. 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 using it. Furthermore, most young people are accustomed to downloading and installing apps, and the Actionbound format that includes



quizzes and explanatory videos is known to those who use social media like *TikTok*, *YouTube*, or *Instagram*.

In conclusion, the advantages of a tool as a tablet or 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 technical device familiar amongst young people
- Uses a format popular amongst young people
- Low cost and maintenance

Despite the many advantages, a few disadvantages were identified as well:

- Not all research methods can be adjusted to the Actionbound system
- Extends screen time for young people
- Needs to be connected to the Internet
- Lacks interactive elements between players

To counterbalance the disadvantages, we opted to also create “FAB!” as an analogue board game, which Chapter 3.5 describes in detail.

3.4.5 Informed Consent and Data Protection in the Actionbound “Action Research on Education and Employment”

Informed consent and data protection have a high priority in the implementation of the Bound, “Action Research on Education and Employment.” Therefore, at the very beginning of the Bound, participants are led through an informed consent process that informs them about how the data they upload will be used by the CoAct research team at UNIVIE. Young people under 18 need the consent of their parents or legal guardian, which is asked of all players at the beginning of the Bound. An information sheet for



guardians and parents is available on the UNIVIE webpage¹¹ and incorporated as a link in the Bound itself.

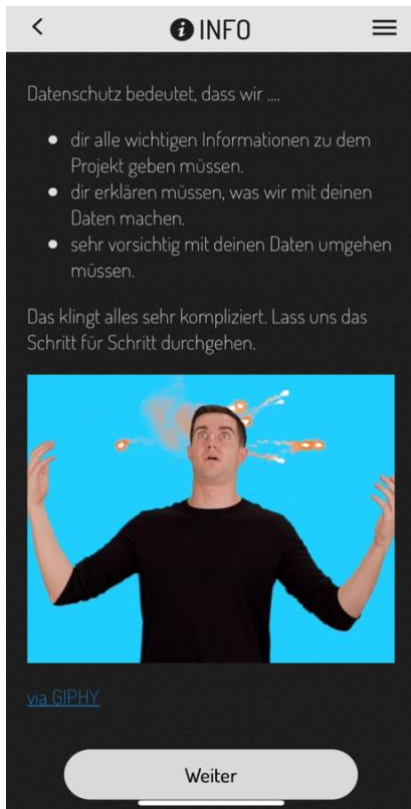


Figure 6: A page from the Actionbound “Action Research on Education and Employment” about data protection

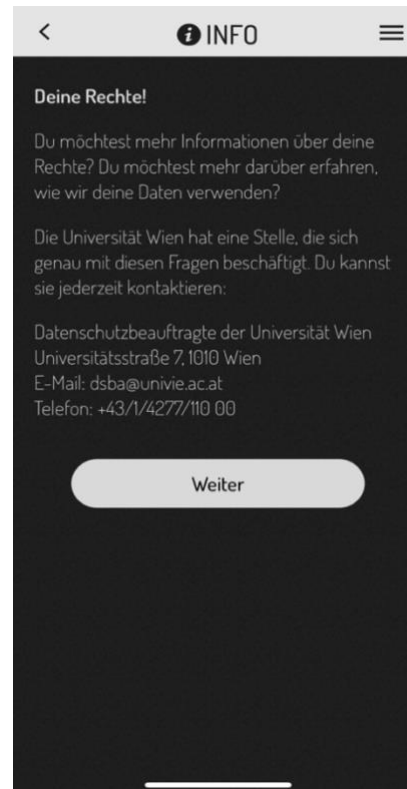


Figure 7: A page from the Actionbound “Action Research on Education and Employment” about the players’ rights and contact information

The UNIVIE research team encourages all Bound players to only upload 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, we chose the strictest privacy settings available in Actionbound, which means that all uploaded data is only visible to the UNIVIE research team and the creators of the inputs (the young people themselves). The young people are the owners of their own data and can revoke the

¹¹ <https://coactproject.univie.ac.at/wien-par/actionbound/jetzt-spielen/>



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 from uploads and the players' identities, Actionbound automatically deletes all metadata of photos uploaded on their server. User IP addresses are saved for fourteen days 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” was created by the CoAct research team at UNIVIE
- About the CoAct research project and where to find more information about it
- About the research in R&I Action #2
- About the meaning of “data” and what can be considered data
- That the research team at UNIVIE 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 delete it
- About the role and contact information of the Data Protection Officer at UNIVIE

3.4.6 Practical Examples of Research Done with the Actionbound “Action Research on Education and Employment”

The following chapter provides insights about the research projects done through the Bound “Action Research on Education and Employment.” The Bound also contains additional information, quizzes, and surveys that are not discussed in this outcome-oriented section.

In total, 25 young people have played the Bound “Action Research on Education and Employment” as of June 2022. The players chose a variety of topics to do their research on. While some chose topics based on their own interest, others chose one of the given examples that were provided based on the topics picked by young people in earlier trial runs. Our experience of playing the Bound with young



people also showed that people who played the Bound together in class sometimes influenced each other and exchanged ideas for research topics.

After the informed consent section, the first research step is deciding on a research topic. The following topics are some examples chosen by the players:

- Why do parents decide which profession their child should learn?
- My favourite profession
- Gardener
- Bullying at work
- Racism in the job search
- Anime
- Gaming
- Computers and programming
- Running a business independently
- Cemetery gardening

Since the Bound is about education and employment, most of the research topics revolved around specific education or jobs. However, as illustrated in the examples, the young people also brought up and researched other serious questions.

As a first step after deciding on a research topic, the players are asked to design a logo for their project—either digitally or with pen and paper.



Figure 8: Logo for a project about cemetery gardening by a co-researcher in CoAct UNIVIE



Figure 9: Logo for a project about games by a co-researcher in CoAct UNIVIE

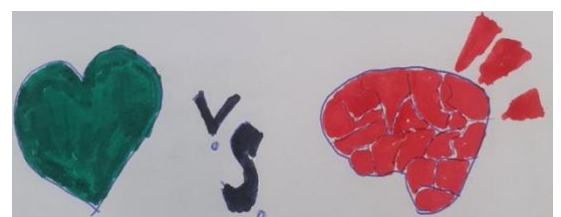


Figure 10: Logo for a project about the question “what is more important to employers: grades or likability” by a co-researcher in CoAct UNIVIE



Next, the young people are asked to create a mind map¹² about their research topic and search for a YouTube video and a newspaper article about it.

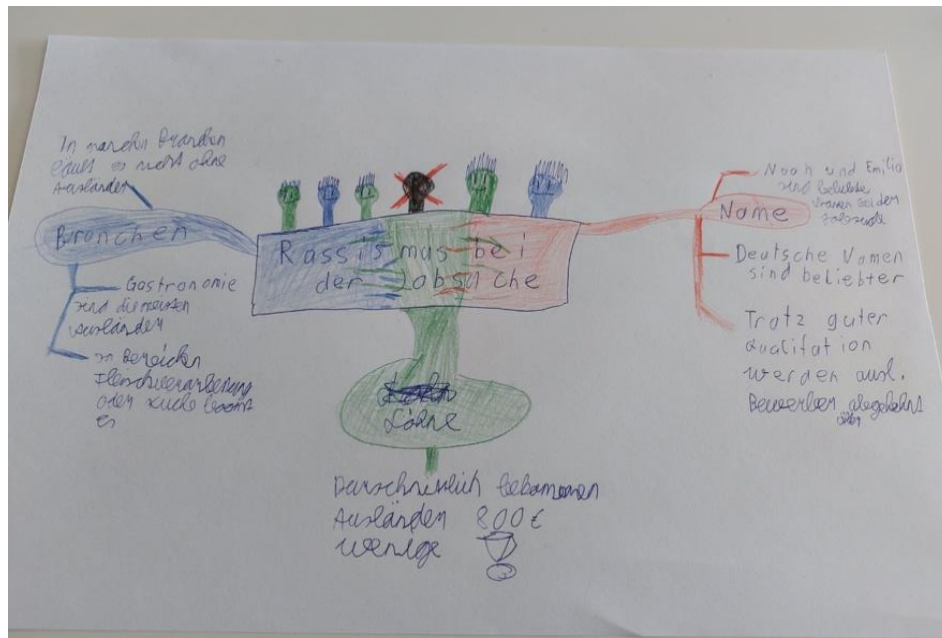


Figure 11: Mind map about racism in the job search by a co-researcher in CoAct UNIVIE

Translation of the mind map from Figure 11:

Title: Racism in the job search

Industries

- Some sectors cannot do without foreigners
- Gastronomy has the most foreigners
- There is a boom in the meat processing and kitchen sectors

Wages

- On average foreigners get 800 Euro less [per month]!

¹² The following contributions about the co-researcher’s mind maps were translated by the UNIVIE research team from German to English.



Name

- Noah and Emilia are popular names when looking for a job
- German names are more popular
- Despite good qualifications, foreign applicants are rejected more often

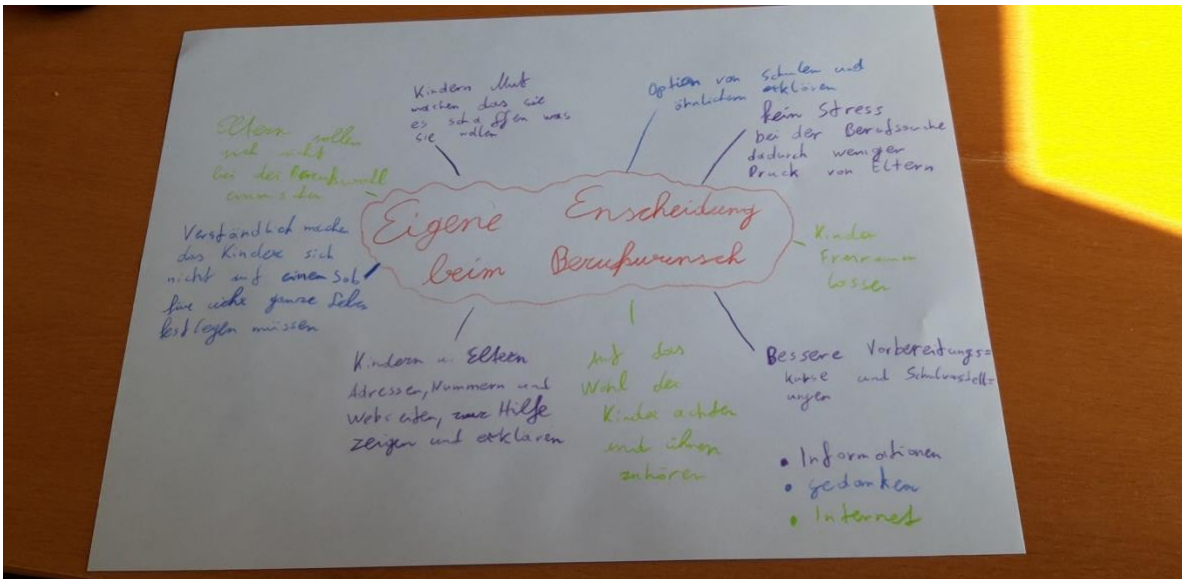


Figure 12: Mind map of a project about making your own career choices by a co-researcher in CoAct UNIVIE

Translation of the mind map from Figure 12:

Title: Making your own career choices

- Information
- Thoughts
- Internet

Parents should not interfere with career choices

Make it clear that children do not have to commit to one job for the rest of their lives.

Show and explain addresses, numbers, and websites to children and parents.

Pay attention to the children's well-being and listen to them.

Encourage children that they can achieve what they want to do

Explain options about schools and the like

Not stressing about finding a job so there is less pressure from parents

Children / freedom / knowledge

Better preparatory courses and introductions about schools



Most of the young people chose photo research as their research method. This consists of tasks related to taking close-up photos and doing exercises about editing photos before players are asked to take three photos for their research. The players are asked to add hashtags and a description about why they chose each photo or what it means to them. The following excerpts from some research project exemplify how young people use hashtags to elaborate upon the meaning of the photos:


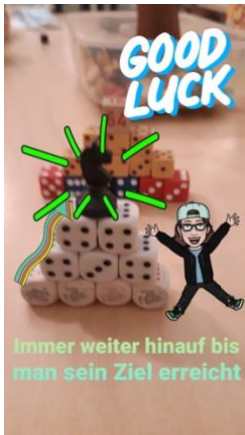
Task as described in the Bound “Action Research on Education and Employment”	Contributions ¹³	
	By a CoAct UNIVIE co-researcher	By a CoAct UNIVIE co-researcher
What is your research topic / What would you like to research?	Racism during the job search	Why do the parents decide which profession the child should pursue?
The last photo! Find a cool photo that fits your research! Edit it with filters, smileys, etc.! People should not be recognisable! Upload your photo here!		
Add one or more hashtags (#...) to the photo!	#stick together	#BELIEVE IN YOU #Don'tGive Up

Table 2: Examples of photo research contributions

¹³ The contributions and descriptions were translated by the UNIVIE research team from German to English.



Some young people chose to do a qualitative interview and designed questions they wanted to ask their chosen interview partner. Here are two examples of interview results: one with a cemetery gardener and one with a self-employed person:

Task as described in the Bound “Action Research on Education and Employment”	Contributions ¹⁴	
	By a CoAct UNIVIE co-researcher	By a CoAct UNIVIE co-researcher
<p>Think of three questions you will ask your interview partner!</p> <p>Remember: questions always start with What, How, Why, Which,</p> <p>Write the questions in the text field. It is best to write down the questions on a piece of paper so that you have them in front of you during the interview.</p>	<ul style="list-style-type: none"> • Why did they want to learn this profession? • What do they like very much about this profession? • What are their main tasks? 	<ul style="list-style-type: none"> • What was your motivation to be self-employed? • What about holidays and working hours? • Do you earn well enough to live on? • Do you really have to take care of everything?
<p>How was it for you to do the interview?</p> <p>(There is no right or wrong here. You can also click on several answers)</p>	<p>I was nervous It was hard at the beginning but then it was ok I had fun</p>	<p>Was okay</p>
<p>Questions 1-3</p>	<p>A lot of interesting things I didn't know, but also things I did know. She told me she enjoyed it and had</p>	<p>What was your motivation to be self-employed?</p>

¹⁴ The contributions and descriptions were translated by the UNIVIE research team from German to English. For the purpose of readability, spelling errors were corrected.



<p>What did the person interviewed say?</p> <p>Write it in the text box. Spelling does not matter.</p>	<p>fun doing it. She would recommend the profession. So that others could enjoy being in the cemetery instead of shitting their pants in fear.</p> <p>She learned the profession for 3 years and then the company took her on. (...) She can empathise with people and how they feel when a person dies.</p> <p>She does not mind the weather at all. She says sometimes the work is exhausting and she is not afraid to get dirty.</p> <p>Her tasks in this job are customer service, shop sales, lawn mowing, flower watering, moss removing, leaves removing.</p> <p>Equipment, cemetery gardener knives, lawn mower, flower scissors, calculating, hot glue guns, decorating materials</p>	<p>The love of cooking and the desire to be my own boss.</p> <p>What about holidays and working hours? I always work longer than the fixed working hours because I have to prepare everything and holidays are a bit complicated.</p> <p>Do you earn well enough to live on it? Yes, definitely.</p> <p>Do you really have to take care of everything? Yes, pretty much.</p> <p>What about the staff do they have more of a friendly relationship? Yes, many are good friends.</p>
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Table 3: Examples of interview research contributions

At the end of their research, the young people are asked what they would like to tell other youth about their research. Some players used this opportunity to share something about their research while others commented about the Bound itself.



Task as described in the Bound “Action Research on Education and Employment”	Contributions ¹⁵
<p>We would still like to know from you: What would you like to tell other young people about your research topic? Write the answer in the text box.</p>	<p>Answers regarding the players’ research:</p> <ul style="list-style-type: none"> • I think plumber is the best profession in terms of pay and field of work. Because you simply work in a variety of ways and do different things every day. • Stop bullying others. It doesn't do you any good and it doesn't do the person any good. It harms both sides. Clarify the ambiguities in private. • It's okay not to know right away what you want to do for the rest of your life—you can and should try out different things and find out what fits and what doesn't and what you can possibly change—many paths only open up once you've set out in a certain direction. • That everyone should stop discriminating. <p>Answers about the Bound itself:</p> <ul style="list-style-type: none"> • It's not that hard • It's super • So it was really cool to work with the app and I would recommend it to others.

Table 4: Examples from young people of messages to others about their research

The insights into the research projects show how Bound invites players to engage with topics that are particularly important to them at the moment, whether a specific profession, bullying, or discrimination when looking for a job. The Bound’s specific elements provide both the opportunity for players to

¹⁵ The contributions and descriptions were translated by the UNIVIE research team from German to English. For the purpose of readability, spelling errors were corrected.



design a detailed project end-to-end or to only use individual elements, e.g., the mind map, for their own reflection. This underlines the self-determined and autonomous nature of the Bound.

3.5 “FAB!” The Research Game on Education and Employment

“FAB! Das Forschungsspiel zu Ausbildung und Beruf” (translatable to: “FAB! The Research Game on Education and Employment”) is a board game that uses elements of social research methods as well as results from research related to education and work. It is published under CC BY-NC 4.0 licence and downloadable via Zenodo.¹⁶ “FAB!” is based on the co-research activities done with young co-researchers in E&T up to 18 measures and takes up the topics most relevant to the young people who participated in the R&I Action #2 research project. These topics included work and expectations posed on young people when searching for apprenticeships and education, mental health, and discrimination—especially racism—as important issues in young people’s educational careers and life-worlds. The game aims to enhance relevant skills for doing social science research and furthermore reduces the barrier between (social) science and young citizens that are not usually actively involved in research activities.

3.5.1 Origination Process

As described earlier, COVID-19 created a need for digital methods, which led to the creation of the Actionbound “Action Research on Education and Employment.” However, digital methods and tools always entail some form of exclusion, e.g., not having Internet access, the need for a special device to install an app, or the time and space to play. Therefore, we aimed to create a tool that could be played analogously. COVID-19 contact restrictions were scaled back during our research, which allowed young people to physically return to attending the educational measures. Doing research with these young people in person made it evident that they were eager to work with and discuss their topics with others. This supported our decision to create a tool that could be played as a group and would support the engagement and debates between the players. Furthermore, based on the collaborative work with young people, we decided that we wanted a low-threshold tool that was appealing to young people

¹⁶ <https://doi.org/10.5281/zenodo.6884420>



and trainers (e.g., social workers, youth coaches) alike. This meant acknowledging that the idea of doing social science research is daunting for many.

In our first outline of the game, as described in D4.2 Inclusive Toolbox for Citizen Social Science. Beta Version, we aimed for a hybrid form by integrating, for example, explanatory videos into the game. However, we found that mobile phones posed a big distraction for the young co-researchers and that phone access was sometimes restricted due to regulations within an institution. In order not to fall into the error of converting pictorial content that we could use in Actionbound into text, we changed the basic idea of going through a complete research process into communicating and exploring social science content and methods. This had the positive effect that the game, in its current form, is a lower threshold tool than the Actionbound “Action Research on Education and Employment” because it is more directive and can be played successfully with less individual initiative.

3.5.2 Trials of “FAB!” and Feedback

A first version of “FAB!” was created and tested by social science researchers, who evaluated the playability of the game as well as its content. After a first revision, two groups of young people in low-threshold E&T up to 18 measures were invited to play the game and give feedback about its contents and

playability. Two trainers read the game’s instruction and had a look at the game. Based on the feedback of all participants, another revision took place before a graphic designer illustrated the game.

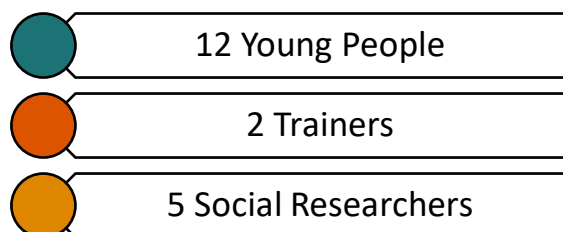


Figure 13: Structure of the test group



The young people provided overwhelmingly positive feedback about the game. During the game, they got excited about the more playful elements such as stealing each other’s tokens. However, they also shared in their reflections that they found it interesting to ask questions, while many appreciated the quiz element. In one group, all young people liked the “Search” and “Doing Research” elements best, although they contain the most text. For improvement, the young people mentioned some hard-



to-understand words and that there should not be so many free tokens so the game becomes harder to win.

The trainers also found the game interesting because it features relevant topics about employment and education. One youth trainer commented that they liked how young people got in touch with social science and its vocabulary. Both accompanying trainers stated that they would use the game in their lessons. They also made important comments about the practicality of the final design, e.g., having a laminator that goes up to A3 paper size would make it easy for them to print the game themselves. Additionally, one trainer mentioned that they would add a glossary to the game manual so the young people could look up words’ meanings themselves.

These recommendations were taken up when revising the game. In addition, QR codes were added to the playing cards to make the sources used in the game accessible to the players.

3.5.3 “FAB!” Game Description

The goal of “FAB!” is to collect tokens as quickly as possible by completing tasks. The players roll the dice and move their playing piece accordingly on the game board. Depending on which field they land on, they have to complete a certain task. If they complete the task, they receive a token for their collection.¹⁷

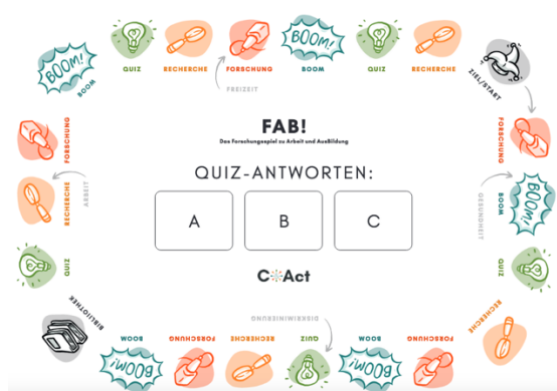


Figure 15: Game board from “FAB!”



Figure 16: Card for collected tokens from “FAB!”

¹⁷ The game instructions (in German) can be downloaded via the UNIVIE webpage: <https://coactproject.univie.ac.at/wien-par/fab-das-forschungsspiel-zu-ausbildung-und-beruf/>



Tasks are presented as cards that describe what the players have to do. There are four tasks to accomplish:

1. Search (looking up a topic)
2. Doing Research
3. Quiz
4. Boom

Search: When a player lands on *Search*, they draw a Search card and either read it to themselves or aloud. The text on the card is an excerpt from a study or a webpage featuring one or two of the game’s topics. Next, the player has to decide which category the card’s topic belongs to. Four categories are displayed on the board: leisure, work, discrimination, and health. The player then moves their playing piece to the respective tile and collects a token for their accomplishment. If two topics are represented in the text, the player can choose where to put their playing piece.

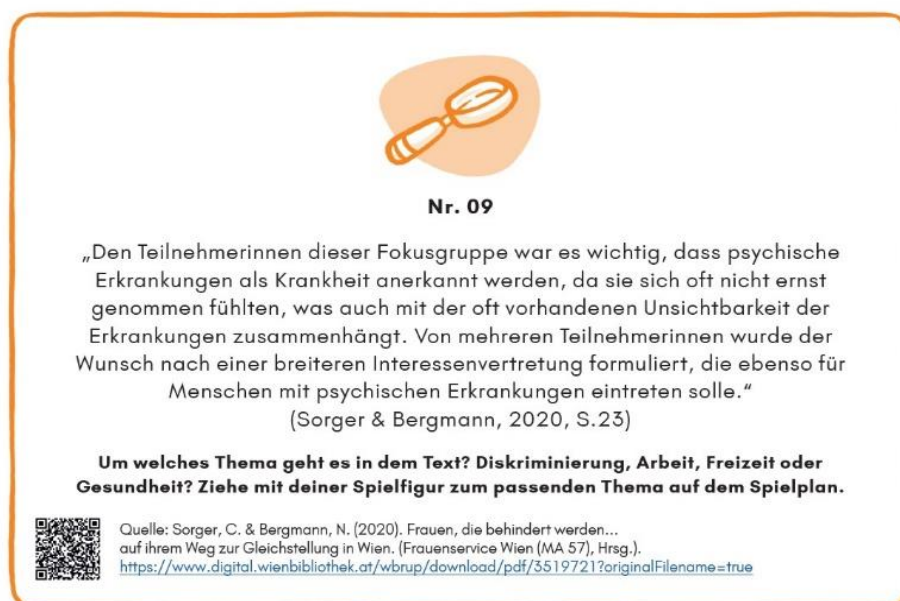


Figure 17: Example of a Search card from “FAB!”

Translation of Figure 17: “It was important to the participants in this focus group that mental illness is recognised as an illness, as they often do not feel taken seriously, which is also related to the often-existing invisibility of the illnesses. Several participants expressed the wish for a broader representative body that would also advocate for people with mental



illnesses.” (Sorger & Bergmann, 2020, p.23) **What is the topic of the text? Discrimination, work, leisure, or health? Move your playing piece to the appropriate theme on the game board.**

The Search game element focuses more on qualitative content such as excerpts from featured research reports, but also includes definitions of phenomena studied by our co-researchers in R&I Action #2 such as discrimination or labour unions. Furthermore, the cards provide information on institutions that deal with these issues such as the Austrian Chamber of Labour, ZARA (an organisation working against racism), and others.

The Search activity introduces a form of coding by asking the player to identify the topic or topics of a text. Coding is an important task in different approaches to qualitative analysis and can be defined as “(...) a word or a short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data” (Saldaña, 2011, p.5). The game



Figure 18: Example of a Doing Research card from “FAB!”

simplifies this process by supporting young people with pre-given topics. While this coding exercise might seem simple to professional researchers to accomplish, it is often challenging for the target group to simultaneously understand and categorise textual information. Often, language barriers and negative personal experiences with reading texts can further complicate this process. In our experience, the young people were frequently surprised about themselves in how well they understood the content of a piece of text that was ‘official’ research, thus fostering positive connections to research content.

Doing Research: When a player lands on a *Doing Research* field, they draw a Doing Research card and read it. The card instructs the player to either to ask a question to all other players or to choose a second player to find arguments or ideas for a question. The player then writes the answers down on notepad that is part of the game and collect a token for this activity.

Translation of Figure 13: Who is supporting you with education and work? Ask your fellow players and write down their answers on your notepad. Then place a research token on your point card.



Doing Research invites the players to ask questions and cooperate with others to collect ideas. Through asking the other players questions, they familiarise themselves with addressing abstract topics in form of an interview and grasp relevant information while listening to the answers. Additionally, note-taking is an essential part in qualitative research, which the game features in the form of a notepad for each player. Another significant aspect of research in this game category is that it invites the players to discuss topics deemed relevant by the co-researchers from our research project. The game instructions include a section that addresses how teachers or social workers can accompany the game pedagogically if played in an educational setting, since discussing certain topics might call for further elaboration and discussions.

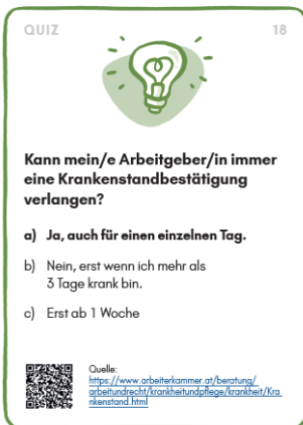


Figure 19: Quiz card from “FAB!”

Quiz: When a player lands on *Quiz*, they draw a Quiz card and read it aloud. It contains a question and three answers, of which one is correct. The other players take their guesses and put their playing piece on the voting field in the middle of the board. Those who guess correctly or know the answer receive a token for their collection along with the current player. The quizzes mainly feature information about work, such as the highest-paid apprenticeship or if one can get fired when on sick leave. During our co-research activities, co-researchers shared questions as well as knowledge about the fields of education and employment. The Quiz element of “FAB!” refers to these discussions and conveys it to the players.





Figure 20: Boom card from “FAB!”

Boom: When a player land on *Boom*, they draw a Boom card. Boom cards can have either a positive effect for the player (e.g., they can take a token from another player and use it for their collection) or a negative effect (e.g., losing a token or having to visit the library and missing the next turn).

The game also provides the opportunity to gain a token by just passing the *Start* tile. The first player to receive all their tokens and reach the *Goal* tile wins the game.

3.5.4 Concluding Remarks

In terms of content, “Fab!” uses research results and statistics that revolve around the game’s primary topics. Regarding the players’ own experiences with social research, the game promotes a low-threshold approach to studies and data. Through the game, young people hear and learn to understand new words and concepts that are usually used in research, e.g., data, focus group, and interviewees. In line with our principle of gamification, learning these concepts is not the main focus of the game, but is promoted in an implicit manner.

When it comes to skills development, Doing Research and Search are the main game activities that promote young people’s interest in doing social research: All the best (qualitative) researchers once had to learn how to conduct qualitative interviews. Listening to the respondent and jotting down notes are integral to this research method, and “FAB!” invites the players to experience the feeling of doing an interview.

Through knowledge transfer and hands-on activities, these play segments support an approach to social research. Taking up the topics raised by the co-researchers in R&I Action #2 and the young people’s participation in the game development ensured that the scientific content was oriented towards the life-world experiences of young people in E&T up to 18 measures.



3.6 General information about the Inclusive Toolbox for Citizen Social Science

The following section provides general information about the Toolbox, including open access conditions, data processing, promoting the tools, and how the Toolbox is maintained. This is important information for potential Toolbox users as well as people who want to develop new tools based on it.

3.6.1 Open Access of the Inclusive Toolbox for Citizen Social Science

Actionbound offers different licences for different user groups. Playing is always free for Bound users, but Bound creation requires an appropriate licence. Private users can create a Bound for free with limited features; for example, they cannot download the results, while educational institutions can purchase paid licences to access the program's additional features. Commercial use is prohibited in this case, as there is a separate license available for companies that allows commercial use. The CoAct research team at UNIVIE has acquired a licence for educational institutions. Nevertheless, Actionbound is not open source, meaning that the "Action Research on Education and Employment" Bound is only available as open access to a limited extent.

However, the content created by the CoAct research team, such as videos and graphics, is reusable and adaptable for other users. This is enabled in two ways: First, the Bound can be set to "publicly visible," which allows anyone to search for and find it via the Actionbound app; second, the Bound can be set to "reproducible," which allows other Actionbound users to copy the Bound, including its media content, and integrate it into their own Bound. Because the media content is loaded from the original account, this option is only available as long as the content is online (see Chapter 3.6.4). In addition, all content produced by UNIVIE for the "Action Research Education and Employment" Bound is available for download and published under a CC BY-NC 4.0 licence. The content (e.g., texts, videos, instructions, structure) is retrievable from the webpage from the CoAct research team at UNIVIE.¹⁸

¹⁸ <https://coactproject.univie.ac.at/wien-par/actionbound/open-access-resources/>



“FAB!” is available as a self-print version from the Zenodo open research platform¹⁹ and the webpage from the CoAct research team at UNIVIE.²⁰ The game is published under a CC BY-NC 4.0 licence, therefore allowing others to download, adapt, and distribute all content for non-commercial use.

3.6.2 Data Ownership, Data Processing, and FAIR Use

All “Action Research Education and Employment” Bound players 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 are 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. Part of the anonymous data will be openly accessible following FAIR principles (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 under the CC BY-NC 4.0 licence in accordance with the CoAct Data Management Plan.

3.6.4 Continuing Support and Maintenance

UNIVIE is prepared to maintain the “Action Research on Education and Employment” Bound until 2025, which includes keeping the educational licence and service the players inputs. Unlimited open access to the material created by the CoAct research team at UNIVIE for the Bound as well as “FAB!” is provided via the webpages mentioned above of UNIVIE or Zenodo.

3.6.5 Dissemination of the Inclusive Toolbox for Citizen Social Science

The Inclusive Toolbox for Citizen Social Science will be continually disseminated (and has already been partly disseminated) via official E&T up to 18 institutions’ communication channels, email lists such as *jugendarbeit@netbridge.at* (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

¹⁹ <https://doi.org/10.5281/zenodo.6884420>

²⁰ <https://coactproject.univie.ac.at/wien-par/fab-das-forschungsspiel-zu-ausbildung-und-beruf/>



Instagram—will also be used for promotion. The “Action Research on Education and Employment” Bound was already shared on the platform *young science*,²¹ funded by the OeAD—Agency for Education and Internationalisation that collected materials for teachers to teach science in their classroom. If possible, “FAB!” will also be offered on this website.

4. Concluding Remarks

The Inclusive Toolbox for Citizen Social Science offers two tools that aim to make social research tangible for young people who are often not seen as capable of being active researchers themselves.

The Toolbox is committed to the principles of inclusion, accessibility, empowerment, and co-creation. It therefore aims to provide young people with access to social research and encourages them to use it for their own interests and concerns.

Although the two tools differ in format and objective, they both encourage becoming familiar with the principles of social research. Both tools were well-received by the young people and generated engaging discussions and content.

Although the “Action Research on Education and Employment” Bound was created due to COVID-19 contact restrictions, it demonstrated how existing platforms can be used in Citizen Social Science to enable collaborative research. However, it should be kept in mind that digital services are always accompanied by certain exclusion criteria such as limited access to devices.

“FAB!” took a different approach: Building upon the results from the co-research process with young people in E&T up to 18 measures enabled us to create a game that not only allows young people to try out basic principles of social research, but that also links to issues and topics deemed relevant by young people in E&T up to 18 institutions themselves.

²¹ <https://youngscience.at/de/materialien#c48974>



Both tools in the Inclusive Toolbox for Citizen Social Science aim to change the image of social research only being a matter for a few highly educated persons by making the notion and the process of research accessible for young people in a variety of educational settings.



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