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Game-Based Unlearning: A Novel Approach to Overcome Misconceptions about Jobs and Employers

Research Paper

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Abstract. Attracting potential candidates is vital for employers amidst an increasing shortage of skilled workers. This paper explores how employers can change job seekers' misconceptions about job roles and company culture through digital employer branding. Using a design science research approach, we iteratively develop and evaluate a digital game that aids job seekers in unlearning misconceptions. By recognizing, examining, reflecting on, and discarding inaccurate beliefs, they can gain a more realistic understanding of how a job or a company actually is and thus can make more informed application decisions. From an employer's viewpoint, the game serves as a digital tool to enhance hiring strategies by reducing the adverse impacts of a mismatch. Drawing on insights from human resources, serious games, and unlearning, our study contributes to the development of playful digital employer branding tools to help them navigate challenges in the dynamic landscape of digital recruitment.

Keywords: Human Resources, Employer Branding, Serious Game, Game-Based Unlearning, Unlearning Support System.

1   Introduction

Recruiting has become increasingly pivotal in human resource (HR) management (Yu et al., 2022). Companies can establish competitive advantages and position themselves as appealing through strategically appropriate recruitment (Ployhart, 2006). A favorable employer brand is able to attract talent, even in the face of negative word-of-mouth (WOM) (Stockman et al., 2020) or when offering lower wages (Cable and Turban, 2003). While employers, for example, need to adjust or gain the required skills to deal with disruptive digital technologies and new labor practices, job seekers are looking for flexible and purposeful work. A two-party negotiation arises, with employers and job seekers lacking complete information to make optimal decisions, resulting in skewed perceptions on both sides.

While the employer side of recruiting has been investigated with rich insights on 'hiring bias' as a source for a limited perception (e.g., Chamberlain, 2016; Yam and

Skorburg, 2021), the job seekers' views have drawn little to no attention. The job seekers' perspective is however of particular interest because they may hold beliefs about jobs and employers that are incomplete or wrong (Cable and Turban, 2001; Barber, 1998). Misconceptions may lead to difficulties in assessing if a job or an employer fits with one's expectations and needs (Carless, 2005) and can ultimately decrease the probability of applying. Companies are encouraged to address negative perceptions about their job roles and overall image, which are crucial aspects during the early phases of the search process for job seekers (Cable and Turban, 2001; Gilch and Sieweke, 2021). For instance, job seekers may be influenced by rumors or misinformation causing them to refrain from seeking further information about a job offer (Stockman et al., 2020; van Hoye and Lievens, 2009). This becomes even more critical in the digital realm, where both transparency and the potential for misleading information are amplified, especially through social media and employer rating platforms (Majchrzak et al., 2016; Schaarschmidt et al., 2021). To act on job seekers' misconceptions, well-crafted employer branding strategies can clear the 'noise' around employer reputations and set realistic expectations (Lievens and Slaughter, 2016).

At an operative level, this can be achieved by unlearning. Unlearning helps to intentionally reduce the influence of misconceptions, which are instances of counter-knowledge – flawed mental models arising from rumors and inappropriate knowledge that is incomplete, partially true or wrong (Thompson, 2008). Prior research on unlearning counter-knowledge has focused on managers' beliefs (Cegarra-Navarro et al., 2012) and misconceptions (Martelo-Landroguez et al., 2019), and gossip among employees (Cegarra-Navarro et al., 2014). As these studies show, unlearning is a daunting task since holders of counter-knowledge need to make great efforts to loosen their grip on misconceptions, indicating a need for appropriate tool support. Even though there is great potential in this area, literature on unlearning has so far neither investigated counter-knowledge in the context of HR nor devised practical tools to mitigate it effectively (Di Maria et al., 2024). This is problematic as it hinders employers from reducing these misconceptions and enabling job seekers to be motivated to confront and revise their false beliefs. Therefore, we ask: *How to design an unlearning tool capable of supporting job seekers in reducing misconceptions about jobs and employers?*

This paper presents our design science research (DSR) journey from conceptualization to prototype development, evaluation, and refinement, contributing an innovative artifact for recruitment. Situated in the HR context, we offer a novel approach with 'game-based unlearning' (GBU) building an unlearning support system (USS). We apply ideas from serious games as they have already been applied to various knowledge-related challenges, such as fostering sustainable behavior (Degirmenci, 2017). Our digital game is intended to help employers start "inside the heads of potential applicants" (Cable and Turban, 2001, p. 117) already at the early stages in a more playful manner.

Our work takes steps towards managing perceptions about jobs and employers existing outside the organizational sphere (Rezazade Mehrizi and Romero Velasco, 2013; Nystrom and Starbuck, 1984). It benefits both young job seekers and experienced professionals aiming to unlearn entrenched job beliefs to discover varied opportunities in a motivating and fun way (Heppner & Heppner, 2003). The 'quiz-and-guess' game – as an instance of GBU – is an engaging, versatile approach, facilitating job seekers in

aligning their preconceived notions with realities (Kaoud and ElBolok, 2023; Kashive et al., 2022). Drawing insights from HR management, individual unlearning, and serious games, our artifact for employer branding seeks to intentionally shape the employer image perceived by job seekers and facilitate new recruitment strategies that respond to the evolving landscape of skills, competencies, professional roles, and job identities.

The paper is structured as follows: Section 2 provides background on unlearning counter-knowledge and serious games. Section 3 details our collaborative research design with multiple stakeholders from academia and practice using *BAUSTEIN*. Section 4 presents the design process and the artifact created. Section 5 discusses the insights from expert evaluations and playtesting sessions. Section 6 reflects on the effectiveness of GBU and our research contributions. Section 7 concludes the paper.

2 Research Background

2.1 Counter-knowledge in the Application Process

Counter-knowledge refers to misinformation that appears factual, such as false beliefs and misunderstandings, internet gossip and intentional falsehoods, or media half-truths and parodies, all potentially amplified by the internet and social media (Thompson, 2008). These distortions, often accepted as true, can alter people's perceptions of reality, leading to changes in their mental models. This also applies to job seekers' pre-existing knowledge and perceptions about jobs and employers that can insert undesirable 'noise' into the application process, such as misconceptions derived from rumors or misinformation (Cable and Turban, 2001; Barber, 1998) established as a result of processing negative WOM (Stockman et al., 2020; van Hoye and Lievens, 2009). As a result, evaluating *person-job fit (PJF)* and *person-organization fit (POF)* becomes more challenging for job seekers (Carless, 2005); and ultimately decreases the chance of applying. Accordingly, it is vital to identify counter-knowledge in the application process and take measures against it. Recognizing the importance of job characteristics and employer traits for job seekers is pivotal in the application process (Saks and Ashforth, 1997). Realistic job signals and company information are crucial for recruitment success (Ployhart, 2006; Cable and Turban, 2003). By and large, these factors positively influence job seekers' perceptions if accurate (Yu et al., 2022; Wanous, 1973, 1989).

2.2 Unlearning Counter-knowledge through Serious Games

To mitigate the undesired effects of counter-knowledge in the application process, employers can apply **unlearning**. It refers to an intentional process of sensing, questioning, and abandoning ineffective knowledge structures (Grisold et al., 2020). Since job seekers apply individually, the challenge here requires supporting individual unlearning processes (Hislop et al., 2014), with a focus on exploration and reflection (Di Maria et al., 2023a) to achieve reevaluating and potentially discarding outdated beliefs as instances of counter-knowledge. Initiating the unlearning process with an open-ended search to identify specific knowledge structures is recommended (Grisold et al., 2020),

as it facilitates the examination and alteration of deep-seated beliefs which often are not easily identifiable from the outset (Klammer and Gueldenberg, 2019).

To achieve individual unlearning goals, **serious games** emerge as a promising avenue (Deterding et al., 2011), referring to gaming with purposes beyond mere fun. In the field of information systems (IS), serious games have already been applied successfully to various knowledge-related challenges, such as fostering sustainable behavior (Degirmenci, 2017), assessing ideas (Feldmann et al., 2014), and evaluating market mechanisms (Lang et al., 2009). However, only a few explicit serious games for unlearning exist (Scheiner, 2014), which leaves their potential unexplored.

In blending both streams, we developed a new approach called '**game-based unlearning**' (GBU) that helps job seekers reevaluate their compatibility with jobs and companies in an engaging environment based on the insights from PJF and POF. This approach benefits both individuals and employers as it helps match appropriate applicants with vacant positions (Barber, 1998; Rynes et al., 1991). Serious games are not fully new to HR (Küpper et al., 2021; Kashive et al., 2022). For instance, the 'Hays Challenge' helps enhance the quality of the applicant pool by addressing misconceptions about the consulting industry (Cullens and Water, 2014). Yet, there is a notable lack of rigorously generated design knowledge, particularly for unlearning purposes. We do not know how to effectively align organizational goals with unlearning tools to yield desired outcomes related to misconceptions held by job seekers (Di Maria et al., 2024). We found only one serious game (Scheiner, 2014) applied in a non-HR context for unlearning - an online ideation game designed to change players' attitudes towards various social topics by motivating them to challenge entrenched beliefs and understand their inappropriateness. Further studies are needed in organizational settings, such as in companies, with other challenges to explore the value of serious games to extend "the organizational toolkit in the context of continuous […] change." (ibid., p. 317).

3   Research Design

Building upon the foundation of serious games and their potential in IS design research (Nickerson et al., 2022), we built a game to address the problem of job seekers' incomplete or wrong beliefs about jobs and employers.
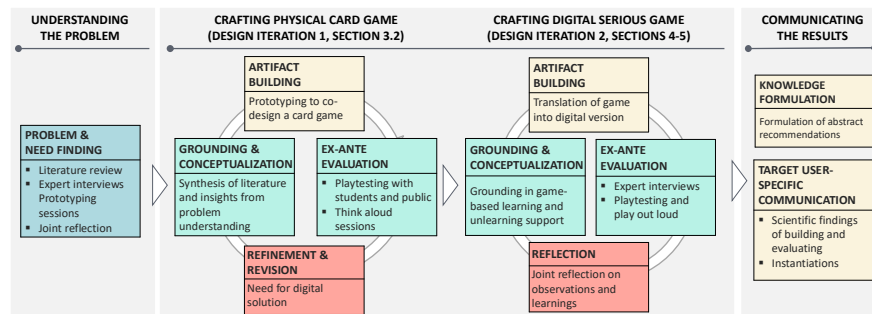

Figure 1. Problem-solving research design visualized using 'BAUSTEIN'

We followed the DSR paradigm (Hevner et al., 2004) as it is practice-oriented (Goldkuhl and Sjöström, 2018). Thus, we combine *DSRM* from Peffers et al. (2007) with *BAUSTEIN* (Schoormann et al., 2024) to address the complex collaboration with different stakeholders, and the 'messiness' of our overall procedure (see Fig. 1). This has already proven successful in projects with a high degree of practitioner involvement (Große et al., 2024). Our research plan spans two iterations over 1.5 years. Across all iterations, we worked with 13 different companies, two public institutions, five experts, and 20 job seekers. To understand the evolution of our DSR project, we briefly report on the first iteration and then focus on the latest iteration – the core of this paper.

3.1 Understanding the Overall Problem and Ideating a Solution

The core problem is job seekers' decisions not to apply to an employer. The more specific problem arises from processed inaccurate information that manifests as misconceptions. This is detailed by empirical studies in employer branding and recruiting, highlighting the importance of PJF and POF. The decision-making process of job seekers is influenced by their subjective perceptions of job characteristics and the employer. We deepened our **problem** understanding via working with SMEs and their HR/recruitment issues. We performed interviews and prototyping sessions with HR representatives and managers between 11/2022-02/2023. Through observations and joint reflection (Schoormann et al., 2023), we created an initial, shared understanding and, from there, inferred, that a challenge lies in little to no digital applications for organizations that target job seekers' misconceptions. We conceived this as an employer branding problem: SMEs suffered from being little to not known to the preferred target group of digital talent or from a bad image influenced by misconceptions. This meant that the earliest phase of 'attraction' in the hiring process needed to be addressed. We framed this as knowledge-related problem, i. e. perception and cognition of job seekers. In the words of one company leader: "*We need to get in the heads of potential applicants.*"

In response to this, the idea of a game emerged to assist employer branding in practice by helping job seekers unlearn misleading perceptions. To the benefit of job seekers, assessing PJF and POF should be facilitated. We therefore propose a **solution** in the form of an unlearning support game. The artifact should be designed and/or used by companies to (a) collect data on their image, (b) adapt the game to their purposes, as well as (c) adapt employer branding and recruiting measures to ensure a fit between the defined, desired employer brand identity and the brand perceived by job seekers.

3.2 Design Iteration 1: Crafting a Physical Card Game

In the first design iteration (03/2023-11/2023), we crafted an **artifact**. We engaged in several iterations of designing prototypes and testing them with IT students and employers. As a result, we came up with a card deck consisting of 24 cards using storytelling and guessing. Two card categories were differentiated: A *job story* consists of a short text covering hints about a certain job role in a company. The players have to guess what is the required job title. Players get a feeling rather than pure information to

increase their decision-making capabilities (apply: yes/no). In contrast, a *business challenge* provides information on a problem a company faced. Players should be motivated to think of the work environment, available technologies as well as strategies to solve the problem. Then, the problem-solving approach has to be guessed. Once solved, the players not only obtain the solution but also information on alternative solutions the company tried and failed. To ensure relevance and rigor, we performed multiple **play-testing sessions** (Eckardt et al., 2018) with students and guests of a public university career orientation event. Leveraging close contact with practitioners, we performed several rounds of think alouds (van Someren et al., 1994) with company managers and employees. We recognized that the idea of gaming can establish initial knowledge about employers and can modify existing knowledge about employers. For instance, one player argued after a business challenge card that he never thought that this company was offering a product that included virtual reality options. Furthermore, we observed how some players fell into stereotypical patterns to find a solution, for example, in roles such as SCRUM Master ("only schedules meetings"). We learned that incomplete prior knowledge and misconceptions could lead players to a solution. We asked employees from companies to what extent they are associated with stereotypes in their roles and their companies. Their feedback validated our observations to a greater degree than we had anticipated. As a result, we came up with two **refinements**: First, a digital version should be created to provide the game experience in a more scalable way. Second, the game hints should be changed to stereotypes mimicking false beliefs to make the game funnier and to trigger reflection about their beliefs about employers.

3.3   Design Iteration 2: Crafting a Digital Serious Game

Based on the previous findings, we built a digital solution (12/2023-02/2024). We performed three major steps: *First*, we reiterated to define the problem space more precisely (see Section 4.1). We **grounded** our endeavor in insights from serious games and unlearning support (Di Maria et al., 2023a, 2023b). This enabled us to leverage HR literature insights on employer branding and recruiting, identify key challenges job seekers face due to misconceptions, and derive effective solutions. We formulated the initial design requirements by integrating these literature insights with empirical observations made earlier. *Second*, we started with the **artifact building** (see Section 4.2) by adapting our card deck to the digital world. We collaborated with more than ten different companies and the German job agency taking a practice-focused (Goldkuhl and Sjöström, 2018) co-design (Bittner and Leimeister, 2014) approach over 1.5 years. Since the analog version (3-5 players, game master) was partly a hindrance to the goal of individual unlearning (Hislop et al., 2014) in a scalable and adaptable way, we redesigned it as a digital, single-player game. Thereby, we redesigned the previously solution-oriented game feature of 'hints', towards more misconception-oriented, serious but funny hints with false beliefs related to specific roles- and employer characteristics. *Third*, we employed methods from serious games (Eckardt et al., 2018) and DSR to **evaluate** the utility of our digital game, namely expert evaluation and playing aloud (Pellicone et al., 2022). We show that our game helps to solve the stated employer branding problem via supporting job seekers (see Section 5).

4 Artifact Description: A Game to Unlearn Misconceptions

4.1 Conceptualizing Design Requirements (DRs)

As previously presented (see Section 2), the critical aspects for job seekers are the signals about jobs and companies with PJF and POF being strong predictors of recruiting success (Ployhart, 2006; Cable and Turban, 2003). These signals should be realistic to be useful for job seekers (Wanous, 1973, 1989) to create a positive mental image of employers. Accordingly, we propose two requirements: ***DR1-signal realistic job-related information***; ***DR2-signal realistic employer-related information.***

Cable and Turban (2001) posit that successful employer branding for recruiting purposes heavily depends on job seekers' prior knowledge. This assumption is mirrored by Barber (1998) pointing out that job seekers are not a 'blank slate'. From unlearning, we know that existing knowledge can be harmful (Cegarra-Navarro et al., 2014; Martelo-Landroguez et al., 2019). This is exemplified by job seekers establishing employer knowledge based on gossip, or false information which is to be characterized as negative WOM signaling (Stockman et al., 2020; van Hoye and Lievens, 2009). Therefore: ***DR3-reduce false or harmful knowledge structures relevant for applications***. In unlearning research, Di Maria et al. (2023a) provide generic requirements for USS which can be partially instantiated. From these, we selected 'exploration' and 'reflection' to support individual unlearning. Since uncovering deep-seated beliefs is a sensitive and stressful process, open-ended unlearning (Grisold et al., 2020) is key to enable critical reflection (Matsuo, 2019) on these beliefs. Accordingly: ***DR4-provide space for the exploration of deep knowledge structures in a personal and reflective way.***

4.2 Instantiating Design Requirements through Design Features

We built a digital game that unfolds across three levels, each designed to provide insights into one job role offered by one partner company. The game includes puzzles to hint at aspects of jobs and practical tasks that mimic the everyday responsibilities one might encounter in such roles. We enriched the game with various forms of information about the company, as well as game elements for fun and, for the first half of our evaluation, also time pressure elements and points. This interactive experience is designed to engage players in a self-reflective process, challenging them to rethink and refine their understanding of jobs and employers, here in the ERP consulting field.

We instantiated ***DR1*** and ***DR2*** (signaling) at various points. During the job quiz, we provided practical tasks the player had to solve. Thus, they should experience what it would be like to work in that role (e.g., which knowledge is required?). These tasks in the digital version resemble the initial idea of 'business challenges' (see Iteration 1) to offer a holistic yet immersive, role-specific game experience (see Fig. 2, left). We offered further information on the job and the employer after completing the game in the form of audio podcasts, videos, and weblinks to the career sites of the employer.

To meet ***DR3*** (reducing counter-knowledge), we instantiated 'societal returns' (Robinson and Bellotti, 2013) for deliberately identifying and reflecting wrong or harmful beliefs related to jobs and employers. They are 'societal' because unlearning harmful

beliefs is a benefit to overall society fostering inclusion. This is demonstrated in Fig. 2, right for the job role of 'Full-Stack-Developer' (top) and 'SCRUM Master' (bottom).

To facilitate reflection of deeply held beliefs (**DR4**, exploring), we designed multiple triggers for reflection throughout the gameplay. As exemplified by the role of the SCRUM Master (see Fig. 3), players start the game by surfacing their beliefs about the role. After the game ends, they are presented with all false beliefs even if they have not encountered all of them in their game session as 'hints'. They are prompted to reflect on how these false beliefs apply to their thinking. Then, they are provided with realistic, valid information about the role at the given company. Finally, the players are asked to reflect on potential changes in their held beliefs.
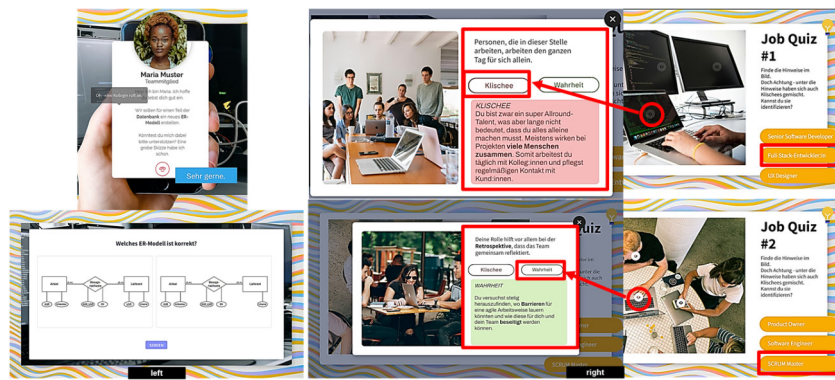

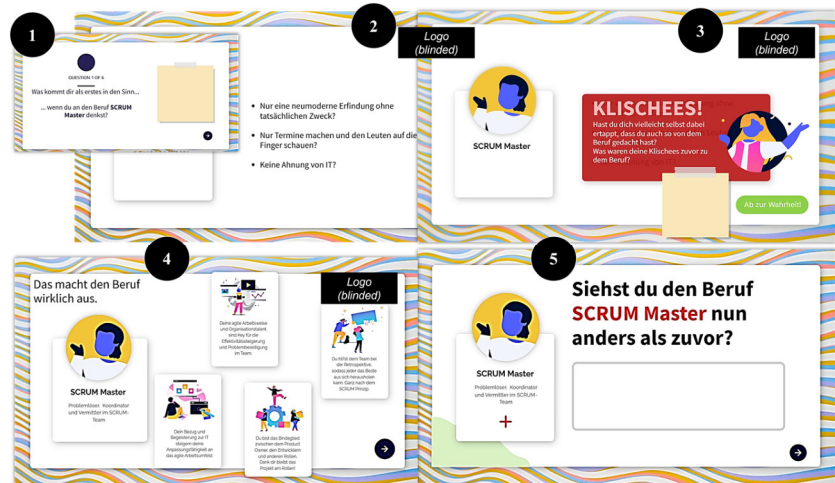**Figure 2.** Exemplary instantiation of DR1/DR2 (left) and DR3 (right)

Figure 3. Exemplary instantiation of DR4

5 Evaluation and Reflection

5.1 Investigating the Utility through Expert Interviews

We demonstrated the first digital prototype to five experts – two game designers, a recruiter, a managing director, and a career counselor – gathering qualitative feedback through think-aloud methods and interviews on the game's applicability. Each session was recorded for detailed analysis alongside our notes. All experts praised the prototype for its potential to reduce job seekers' misconceptions and improve decision-making. They noted the lack of tools targeting job-related misconceptions and the need for support. However, they asked for more use of media (e.g., videos), as one game designer said: "the look is still expandable". *HR professionals* stressed the urgent need for career guidance. The recruiter saw potential in using the tool to engage with prospective employees, especially for internships, and suggested that it could help assess candidate perceptions and reduce hiring costs by identifying mismatches early. However, concerns were raised about the potential to alienate less game-savvy candidates. As the career counselor put it: "The game should not exclude people. Maybe the language could be simpler." Similarly, *game designers* suggested more personalization and interactivity; less text and broader appeal beyond IT fields, for use in diverse settings, such as career fairs. In addition, they also thought the game was good at encouraging reflection: "I really like the triggers for reflection throughout the game, especially the 'lessons unlearned' in the end". In response to the feedback that the game was too text-heavy and impersonal, we enhanced it with a variety of media and allowed users to identify and reflect on their misconceptions.

5.2 Investigating the Utility and Funniness through Playtesting

After proving the suitability of our approach, we tested a revised version of our game in playtest sessions with 12 test subjects asking players to 'play out loud' (see Fig. 4). In order to have a comprehensive sample, we also invited people from outside the IT sector to participate. The goal was to test the applicability of our game. After testing with six people, we removed the time limit because it created too much pressure and resulted in less thinking about false beliefs and only superficial reflection, if any.

Based on the results, we explored the *unlearning* of false beliefs about jobs and employers. Regarding the achievement of **DR1** and **DR2** *(signaling)*, the positive impact of the game in signaling useful information on jobs and employers is illustrated. For example, P4 emphasized at the end of the game test that the game helped to better understand professional roles in advance. P6 highlighted that "you almost never get irrelevant information on jobs; to me it was very interesting." P9 welcomed the summary in the end and the 'lessons unlearned': "Very nice. This way I won't forget what is relevant to me that I found out about the job roles through playing the game." Apart from that, adding videos would be even more helpful in assessing whether a job fits one's needs. Overall, we read this as an indication that our game can help job seekers make decisions about the suitability of jobs (PJF) and employers (POF).

ID	Role	Age	Sex	Education (Study; Training)	Type of studies	Semester	Experience with Games	Experience with Career Orientation
P1	Student	27	M	Information Systems (S)	Bachelor	7	7	7
P2	Student	22	F	Information Systems (S)	Master	2	5	4
P3	Student	24	F	Information Systems (S)	Master	6	5	5
P4	Student	29	F	Information Systems (S)	Master	5	3	3
P5	Student	26	F	Information Systems (S)	Master	7	5	4
P6	Employee (Marketplace Manager)	26	F	Media Communications (S)	/		3	5
P7	Student	26	M	Information Systems (S)	Bachelor	9	4	7
P8	Student	28	M	Information Systems (S)	Bachelor	9	4	7
P9	Employee (Teacher)	27	F	Primary School (S)	Master	/	4	7
P10	Employee (Warehouse Logistics)	28	M	Warehouse Logistics (T)	/	/	5	7
P11	Employee (Food Technician)	29	M	Food Technology (T)	/	/	3	3
P12	Student	26	M	Information Systems (S)	Bachelor	5	5	6
	Average	*26.5*				*6.3*	*5.0*	*5.4*

Figure 4. Participant characteristics of playtest evaluation

In terms of **DR3 (reducing counter-knowledge)** and **DR4 (exploring)**, the game aids in supporting reflection on prior knowledge and unlearning misconceptions about jobs and employers. All testers perceived the principle of unlearning job- and employer-related beliefs as novel, positive, and innovative. For instance: "Just the thing with false beliefs […] I found it very positive that it addresses that issue." (P12), "never seen a game that works with false beliefs" (P11). P6 mentioned that the playful use of misconceptions helped her establish new perspectives about jobs and employers which she welcomed: "I have never seen anything like this game, pretty cool!". The same goes for P8 who said: "I have never seen a game before that works with misconceptions in such a way […] now I am more aware of that when deciding for a certain job in the future." Furthermore, we asked participants to provide feedback on the 'fun'. The game was mostly positively evaluated. For instance, P8 said: "It was fun and helped me although I assumed to have already good knowledge before." Particularly, the visual presentation of the game was appreciated. The memes were almost always verbally highlighted by the game testers with phrases like "[The memes] I find funny" or "Oh, amusing". The aesthetic balance between colors, icons, and illustrations and the interactive mini-games (practical tasks) was endorsed.

However, there is room for improvement. While individuals from the IT industry consistently described the game as "simple and understandable", those less familiar with IT terminology tended to struggle with technical terms. Furthermore, the game logic of identifying false beliefs and the guessing of jobs was sometimes confusing, regardless of background. Heterogenous feedback revolved around the puzzles. Some testers, regardless of their background, found the puzzles too difficult, while others found them too easy. However, all confirmed that they were able to understand and (un-)learn about the jobs through the mini-games and their playful and engaging nature.

5.3 Refining the Artifact and Formulating Design-relevant Knowledge

We refined our artifact after each evaluation. Based on the results of the *expert evaluation*, we switched from the software Twine to Genial.ly to overcome technology limits and enhance fun, interactivity, and media variety. We revised gameplay to focus on unlearning false beliefs, and transforming 'business challenges' into tasks related to job

roles. Based on the *playtest* results, we removed game timers. They caused stress leading to quick clue scanning rather than deep reflection of personal misconceptions.

The core aim of DSR is to generate knowledge about design (Gregor and Hevner, 2013), accomplished through a two-part, thoughtful process (Sein et al., 2011). This leads to concrete outputs such as the digital game, and also to indirect insights that improve our understanding of the problem and effective solution approaches, i.e. artifacts. To guide both designers and researchers involved in creating GBU support, as well as HR practitioners interested in its use, we present three observations and reflections together with recommendations to help navigate potential tensions (see Fig. 5).

Observation & Reflection	Recommendation
Starting with no specific requirements, we intuitively identified features and iteratively refined our approach iteratively based on feedback from employers and students to yield an effective outcome. Heterogeneous needs required multiple rounds of exploratory testing. The diverse backgrounds of playtesters, experts, and other involved researchers and practitioners posed great challenges.	**Exploration/Unknown | Exploitation/Known** ▪ Embrace iterative design ▪ Trust intuition for discovery ▪ Balance needs (players, designers, practitioners) ▪ Incorporate practitioners continuously
Initially, we focused on employers but then pivoted to engaging directly with job seekers, causing a brief misalignment with employers. We faced common challenges, like lack of applications, and specific ones, such misconceptions among job seekers. This led to the challenges, such as designing for different audiences and integrating serious games, HR, and unlearning. A notable example was job seekers' penchant for sarcastic memes – a potential image risk for employers.	**Employer-View | Job Seeker-View | Designer-View** ▪ Shift flexibly focus from employers to job seekers ▪ Identify and address disconnects promptly ▪ Recognize macro and micro-level issues ▪ Align design with multiple goals
Initially, we underestimated the complexity of game design and the need for multiple prototypes when faced with a vast array of design options and unclear constraints. Through extensive design, prototyping, and iteration, we identified effective combinations of features, but sometimes we simply favored simplicity over complexity and moved on.	**Simplicity | Complexity** ▪ Embrace simplicity amidst complexity ▪ Use trade-offs and tensions as productive forces ▪ Discard overwhelming features ▪ Stay adaptable and resilient

Figure 5. Observations and recommendations for designing GBU

6 Discussion

Our work holds significant **implications** for various stakeholders engaging with designing GBU in the context of employer branding/recruiting.

For *human resources*, our digital game offers employers a tool to identify existing, false beliefs in job seekers and facilitate their unlearning. It helps to extend employers' view of the recruitment process by truly starting 'in the heads of job seekers' (Gilch and Sieweke, 2021). Further, the game may act as a 'sensing mechanism' by collecting insights on current misconceptions, facilitating a deeper understanding and mitigation of negative consequences (Ryan and Ployhart, 2000; Carless, 2005). With this, employers can align job seekers' perceptions with their intended employer image. This potentially leads to better financial efficiency in recruiting, for instance, by reducing the probability of a mismatch early on. Apart from that, our game can complement the suite of HR tools for employer branding, such as the career page, use in lectures, use at career fairs, use embedded in digital job ads, and coupling with HR information systems.

To *serious games*, we introduce a novel approach with GBU integrating serious games with the concept of unlearning. This integration is promising given the extensive existing research on the design and evaluation of serious games within educational settings and beyond. We further provide preliminary design requirements, a digital artifact that embodies promising features together with reflections on the complex balancing of

goals of unlearning, enjoyment, and fit with the specific application context. As such, we advance serious games research with both practical outcomes and abstract design knowledge. Further research may apply established frameworks provided by Barber et al. (2021) for designing game-based information systems, or by Mitgutsch and Alvarado (2012) for assessing serious games, to achieve higher degrees of rigor.

To *unlearning*, we provide empirical insights on supporting individual unlearning (Hislop et al., 2014) of cognitive knowledge structures, i. e. beliefs. Our instantiation of the class of USS expands research and practical application of unlearning (Di Maria et al., 2023a) and extends existing work of unlearning 'counter-knowledge' (Cegarra-Navarro et al., 2012, 2014; Martelo-Landroguez et al., 2019), but in a novel way that is design-focused aimed towards practical support (Di Maria et al., 2023b). It is among the first attempts to systematically design and evaluate serious games for unlearning. Our game may serve as foundation for investigating how to measure unlearning appropriately, such as through digital trace data analysis: use of game data to analyze unlearning processes (Elbert et al., 2023; Wurm et al., 2023). Thus, our game allows us to derive context-specific explanations based on digital game data (Grisold et al., 2023).

This study is not without **limitations** which leaves space for **further research**. *First*, the design and evaluation process is based on our choices and the situations we encountered. *Second*, using the playing aloud method (Pellicone et al., 2022) in the evaluation posed challenges for test subjects as it hindered playing. Therefore, more inobtrusive techniques may enhance the evaluation. *Third*, speaking of false beliefs, the game may favor younger job seekers by design. Thus, we must acknowledge the possibility of inscribing biases into the design which, if progressed blindly without reflection, may lead to 'hiring discrimination' (Lippens et al., 2023). To ensure fairness, designers must pay special attention, for instance, when crafting stories and when dealing with negative WOM knowledge (e.g., gossip, stereotypes) so that false beliefs are not unintendedly reinforced by design. *Fourth*, while our findings show that unlearning is beneficial, it does not automatically lead to increased applications with the desired profiles. Even if employers act as "caring organization" (Carless, 2005, p. 426) that assist applicants, this does not directly lead to more or better-suited candidates. Therefore, GBU should be viewed as one ingredient for improved recruiting outcomes.

7 Conclusion

Our paper presents the outcomes of a practice-oriented DSR study conducted over two iterations spanning 1.5 years in which we explored the transformative potential of game-based unlearning, a novel approach to foster digital recruitment strategies. We designed a digital game to reduce job- and employer-related misconceptions in job seekers. This paper provides empirical research on serious games for unlearning in the context of employer branding as a starting point for further endeavors, such as at the intersection of serious games and unlearning support to leverage technology amid the rapidly evolving work landscape. As we navigate significant shifts in labor, including changes in professional profiles, job identities, and work practices, our game seeks to promote diversity, prevent discrimination, and ensure fairness in recruitment.

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