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Park, Solip; Hämäläinen, Perttu; Kultima, Annakaisa

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### Comic-making to Study Game-making: Using Comics in Qualitative Longitudinal Research on Game Development



Figure 1: Visualised summary of the method used in longitudinal research of "Game Expats Story": (a) interview data collection, (b) data analysis (codes) visualised in comic scripts and storyboards that were then checked again with themes, (c) academic publication and research popularisation through webcomic publishing, (d) comics being used again in the follow-up interviews as a visual recall tool.

#### ABSTRACT

This paper reports the research method of the "Game Expats Story (GES)" project that used qualitative longitudinal research ("OLR") incorporated with art-based research ("ABR") in the context of game research. To facilitate greater participant engagement and a higher retention rate of longitudinal participants, we created comic artworks simultaneously while researching the case of migrant/expatriate game developers ("game expats") in Finland 2020-2023 in two phases: (i) art creation as part of the qualitative data analysis to supplement the researcher's inductive abstraction of the patterns, and (ii) artwork as a communication and recall tool when periodically engaging with the informants over the multi-year project span. Our findings suggest that the method of QLR-ABR helps game research as it positively influences the researcher's abstractions of longitudinal data and participants' continuous engagement with a high retention rate of 89%. We conclude that incorporating artistic methods provides new opportunities for ethnographic research on game development.



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#### **CCS CONCEPTS**

- Applied computing  $\rightarrow$  Computer games; Arts and humanities.

#### **KEYWORDS**

Comic, Longitudinal research, art-based research, Qualitative research, Ethnography, Game Development, Game expats

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#### **1 INTRODUCTION**

Game development involves creative and cultural practices [37, 40, 80] that require highly complex interpersonal activities [69, 97]. Such complexity underlies the challenges to studying the long-term work experience of game developers [19]. One of the profound challenges is the difficulty of maintaining game developers' commitment to the research due to the precarious conditions of game work [44, 59, 75] and the fast-changing nature of the game industry that differs from the academic sector [16, 17, 25]. Similar to other reported cases of longitudinal research recruitment and retention [47], long-term studies of game developers require delicate attention to frequent communication and non-monetary rewards to maintain the participant's engagement with the research.

To address the retention problem, this paper introduces a novel methodological approach for researching the experience of game developers in a qualitative longitudinal research ("QLR") [76, 88] setting by combining QLR with art-based research ("ABR") [4, 45]. ABR is a practice that uses one or more types of art to document, reflect, understand and articulate human experiences. Here, art can be created as part of the research by the researcher and/or participants to build knowledge, disseminate the findings, or both. ABR may also serve as a personal non-monetary incentive for the participants, making them feel connected with each other and with the artist/researcher [29, 52].

We then reflect on the "Game Expats Story" (henceforth, "GES"), a QLR-ABR mixed method project that traced the work transition of migrant/expatriate game developers ("game expats") in Finland 2020-2023. Among various types of arts to perform ABR, for this project, we chose the medium of comics, adapting the Comicsbased Research method ("CBR") [43, 94] (see also the works of [81]). This was based on our available resources at the time and the lead author's previous experience in CBR [62]. Comics are a visually rich way to disseminate information for broader audiences [2, 50, 92] and already familiar to game developers as a source of ideation [39, 41].

This paper reports the methodological details of GES, supplementing research publications focusing on project results [63, 64, 66]. Our first research question is:

• RQ1: In what ways can ABR supplement QLR of game expats' work experiences?

We will discuss this based on the two phases of GES. Phase 1: Using ABR with thematic analysis [6] of interview data about migration intention and remote work during the COVID-19, and Phase 2: Using ABR as a recall tool for reoccurring longitudinal interviews about the cultural norms in game development, incorporating grounded theory analysis [78]. Then, our second research question is:

• RQ2: How does the ABR affect the retention of the QLR participants?

Although establishing a firm causal link is not possible without a control group, our achieved retention is exceptionally high (89%). Therefore, we discuss participants' responses, suggesting that ABR can positively influence participants' continuous engagement with long-term research.

To the best of our knowledge, GES is the first attempt in the game research discipline to incorporate artistic methods to study individuals' experiences of game development. Previous GES reports focused more on the analytical findings from the data while omitting details about our artistic process and artwork outcomes — treating research and art creation separately. To bridge the two domains, this paper is dedicated to introducing the artistic ethnographic method used in the research in detail, discussing what needs to be accounted for when using art to study professionals in the volatile creative industry of games. We hope our work can inform and inspire further multidisciplinary methods for game research.

In the following, we first review previous studies on game developers' work and previous methodological efforts in using comics for scholarly inquiry. Detailed descriptions of the QLR-ABR methodology used in two phases of GES 2020-2023 will then be outlined. We then proceed to the summary of research findings, followed by details of methodological findings derived using QLR-ABR. Lastly, we cover the methodological benefits and remaining challenges of QLR-ABR in the game research discipline. As of this writing, a total of 46 comics episodes (consisting of 452 images) were created in GES from 2020-2023, which are included as supplemental material and available on the Open Science Framework: https://osf.io/pfexu/?view\_only=11a4ce2cc8e6485dad00b6121495efcf.

#### 2 RELATED WORK

#### 2.1 Using art for research

The artistic research method of ABR emphasises the process of knowledge building through art [45, 52] coming from a critical awareness and resistance towards the power dynamics between researcher and participants (or teacher and pupils) [4, 54, 79]. Here, arts could be used as the researcher's method for ethnographic data collection or documentation [35, 45, 62] or researchers' emphatic self-reflection (e.g., A/r/tography) [34, 82]. It could also involve creating artworks co-constructively with the participants or by the participants [29, 54, 91].

Among the diverse formats of art in ABR, we adopted the medium of comics [43, 94]. The research and artworks of Flowers [27], for example, used active participatory fieldwork through comics that visualise and textualise the embodiment of physical movements of both the researcher and the participants, which Flowers describes as "I put myself in a unique and precarious position to experience a liveliness in my research that carries over into the finished comic" (for a similar case, see also [35]). Comics can also be used to visualise scientific knowledge, which has already been demonstrated in other research disciplines (e.g., HCI, humanities, philosophy). This includes comics for disseminating the information with a specific narrative purpose, such as "data comic" [3, 92, 93] and Sousanis's Unflattening (2015) the dissertation written and drawn entirely as comics [81]. To expand further, there is also a wide variety of comical illustrations that disseminate knowledge (such as [55, 56, 70]) for scientific communication [31, 83], alongside methodological discourse on how to produce such informative comics [2, 38, 71, 72].

#### 2.2 Qualitative research on game development

Game developers are part of multi-billion dollar corporate businesses, serving global audiences through a complex transnational production pipeline [22, 23]. In this paper, we refer to game developers as individuals who are involved in game creation, development, production, and services in any form of affiliation (e.g., full-time, part-time, AAA, indies) (see also [59, 60, 75]). In recent years, inquiries into these individuals' work and life experiences in game development have gained academic attention [40, 80]. Scholars have identified that the cycle of game production is often idealised or even educated as something systematic and formatted in the linear process (from concept, production, testing, and post-production), which does not fully represent the microscopic reality of game development that is highly cultural and local (or cross-local) and often tied to regional factors [36, 68, 98]. Ethnographic case studies conducted at game development workplaces (i.e., game studios) also revealed that the game development process is multitudinous,

complex, contextual, and interpersonal [40, 69], which Whitson described as "messy" [97].

The researcher's awareness of the reality of the messy game development process is an integral part of keeping the informants engaged in relationships or other means to motivate the busy game developers. Maintaining a high retention rate in longitudinal research requires persistent communication, frequent follow-up contacts, and tangible non-monetary incentives to make it feel rewarding to the participants [32, 48, 76, 88] (see also [24, 47, 85]). One of those attempts in the game research discipline can be found in Kultima's ethnographic study of the game *Noita* by Nolla Games (2019). The study accompanied year-long persistent meet-ups and interviews with the developers, participatory observations and gameplay, documentation, and an art exhibition to trace the game's lengthy development. The success of the process was tied to the built trust between the researcher and the informants [42].

#### **3 SETTING: GAME EXPATS STORY**

#### 3.1 Research context: Game expats

"Game expats" in this paper refer to either assigned or self-initiated migrants [1, 26, 86], who migrated to another country primarily due to their game development profession, with or without concrete long-term future plans for a settlement [63] due to precarious work contracts and toxic malpractices normalised in the industry [14, 16, 59, 75]. Although the number of game expats has increased significantly in recent years [28, 84, 96], for instance, making up 30% of game developers in Finland [58], critical inquiry has been lacking about these migrated individuals' work and life transition and how it affects their game design and business choices. Furthermore, despite the growing significance of multiculturalism in the game workplace [28, 58], questions remain about the game industry's insufficient actions for diversity and inclusivity [49, 64], geographical hierarchies of game workers [11, 60], and global-centric industry norms that do not necessarily accommodate local contexts (e.g., maturity of the local market, regulations) [12, 36, 46, 98].

#### 3.2 Research setting: Data and art creation

3.2.1 Consent for both research and comics. The project GES began in 2020 alongside a three-year journey of game expats in Finland. Participants joined the project voluntarily through personal contact or from an online pre-survey form posted on game developers' groups in Finland. The pre-survey asked about their years of game work, years of living in Finland, role at the company, current residential status in Finland (e.g., work permit), and whether they have previous experience of game work in other countries. Consent was collected both through the pre-survey and then again verbally at the beginning of the interview, inquiring the participants about the potential usage of their interview data (transcript) upon anonymisation for *both* research and comic.

3.2.2 Interview data. Initially, 5 longitudinal participants volunteered for the project. But it later grew to 9 as more joined. Longitudinal participants were carefully selected from Korean game expats working in the Finnish game industry, who agreed to disclose their nationality (South Korean) for research and comic purposes. The choice was made based on the similarity of game development (e.g., platforms, business models) between the home country (South Korea) and the host country (Finland) (e.g., Free-to-play, PC, mobile) to focus more on the human-to-human interactions and cultural aspects of game work. There were two interview sessions each year with the longitudinal participants.

There were also additional one-time interviews with 23 participants from various regions (e.g., North America, Latin America, Asia-Pacific, Middle East, Western and Eastern Europe) collected between 2020-2023. Their detailed nationalities were purposely grouped in approximate regions for further anonymisation in the GES reports to protect the identity of some nationalities that are exceptionally rare (and thus easy to distinguish) in Finland or even in the Nordic game industry as a whole. Our semi-structured interview guidelines included (a) motivation for and experience of relocation, (b) opinions about working in Finnish game companies, (c) cultural encounters at work and integration, and (d) future plans and motivation for long-term stay. As the research was initiated during the COVID-19 pandemic, we also asked for (e) the impact of remote work. The longitudinal respondents were also inquired about (f) the recent changes in the condition and practices of their game work. The lead author conducted the interviews and let the participants freely express their views, using familiar metaphors and industryspecific abbreviations to describe their experiences. Each interview took about 60 minutes. The lead author's own migrant background allowed talking with the participants while acknowledging their immigration process, while previous experience in the Korean game industry also offered knowledge to understand the context behind Korean participants' work and life transitions. In total, longitudinal and one-time combined, roughly 65 hours of interviews were recorded and transcribed (n=64) between 2020-2023.

3.2.3 The format of the webcomic. To reach a broad audience, we adopted the form of webcomics (also known as 'webtoon'), created and published online by the lead author via social media (e.g., Facebook<sup>1</sup>, Instagram<sup>2</sup>, Tapas.io<sup>3</sup>) with 15-16 weekly episodes each year. Webcomic layouts and storytelling techniques are distinct from the conventional printed comic, optimised for, e.g., smartphones and tablet devices [20, 61, 73]. The choice of a webcomic for the participants of game developers was also rationalised as an artwork format, specifically a smartphone-friendly comic strip (webcomic). We speculated that showcasing a custom-made artwork accessible via mobile devices could provide our participants with an engaging and unique experience, helping them stay curious and follow up with the research. The lead author acted as both researcher and artist throughout the project. At the same time, we emphasised a clear division of artist (in this case, the lead author) and participant roles: The participants could comment and express their thoughts on the contents of the comic but were not involved in the comic creation process. This ensured artistic freedom to illustrate even self-exploitative and controversial labour discourse in the game industry (e.g., crunch mode, unequal treatment between game workers).

<sup>&</sup>lt;sup>1</sup>https://www.facebook.com/solip.comic/

<sup>&</sup>lt;sup>2</sup>https://www.instagram.com/solip.comic/

<sup>&</sup>lt;sup>3</sup>https://tapas.io/series/Game-Expats-Story

#### 4 METHODS: MAKING COMICS FOR RESEARCH

#### 4.1 Initial phase

The first step of the artistic process was to facilitate a research setting for both qualitative longitudinal interviews and comics. Here it was important to assure the participant that both the research reports and the comic would be anonymised. After several internal variations, a comic style with non-binary figures and without identifiable skin colours was chosen. Sample images were presented to the research participants before the interview (see Figure 2).

A predictable schedule for artwork publication was also deemed essential for gaining the participants' and online audiences' attention to the project. Thus, a schedule to publish the webcomic on social media was conceived: Annual seasons between 2020-2023, each with 14-15 main weekly episodes. In total, three seasons consisting of 44 comics were created according to the plan.



Figure 2: Sample images presented to the participants in 2020, portraying industry facts about the Finnish and Korean game industry. The purpose of these sample images was to demonstrate the artistic style of the comic GES to potential participants, assuring them the comical human figures would not resemble any of their visual appearances.

#### 4.2 Phase 1: Comics from the analysis

The first phase explored RQ1, comic creation as part of the qualitative analysis process to help inductive abstraction. The lead author started with the interview transcripts and paid close attention to game expats' relocation motivation and experiences and the impact of remote work during the COVID-19 pandemic. Here, we adopted the thematic analysis [7, 9] method of (a) familiarisation with the data, (b) slicing the full data into initial codes, (c) searching for themes, (d) iteration of themes emerging, (e) definition of relevant themes with the purpose of the study, (f) producing of the report [6]. Then these discovered codes were visualised into comics (sketches storyboard) as shown in Figure 3.

The lead author created notes and sketches while reading through each transcript (see Figure 4, (i)). The participant's facial and bodily expressions during the interview, which were not fully captured in the transcribed data, were also referenced in the later stages of comic making. The initial codes from the transcribed data were then grouped into (comic) scripts (see Figure 4, (ii)). Excerpts from different transcripts were put together and rephrased in the script

to create a cohesive tone and manner as if one protagonist is narrating in each episode (see Figure 4, (iii)). This was to ensure the readability of the comic, helping readers follow the story. Then, the storyboards were created from the scripts from identified codes, while we searched themes by abstracting the codes using thematic analysis (see Figure 3). From there, 63 abstracted codes from the transcripts were then cross-checked and refined repeatedly while developing the storyboards, which helped to articulate and interpret the themes from another angle. Quotes in the storyboards were also checked again to ensure the participants' intentions and the researcher's analysis were well reflected in the final storyboard. Once iterative refinement was completed, the comic was then polished and published (see Figure 4, (iv)-(v)). Due to Instagram's image upload limit per post, it was important to condense multiple codes and their associated quotes into a short comic of 10 images per episode. Such technical design constraints helped the artist/researcher to revisit and condense the themes further and articulate the analytical direction [77] that is most relevant to reports.

## 4.3 Phase 2: Comics in the longitudinal research setting

The second methodological phase of GES explored RQ2, creating and using comics as a communication and recall tool when periodically engaging with the participants over the multi-year project span. From the first longitudinal data sets, we monitored game expats' stories of cultural encounters at game work spaces in Finland and how they adjusted themselves to (or rejected) the new practices upon long-term migration. We later traced how such views and work practices change over time. From there, with the qualitative research analysis framework of grounded theory [10, 78], the comic scriptwriting and storyboarding were conducted simultaneously and iteratively as we further collected longitudinal data. The comic artworks were used during the follow-up interview, reminding the longitudinal participants of their previous statements (see Figure 5).

The process started similar to Phase 1. Once the interview transcripts were in (see Figure 6, (i)), a deep read-through with sketches and notes was first drafted with initially discovered codes being drawn into a script and storyboard (see Figure 6, (ii) until (v). Then, there was an open-endedness between the codes and comic work, which concentrates on sampling and visualising the data as *the way it is* at the time of the artwork, before conceptualising a theory. The lead author then reflected on the initial findings and showed the participants the comic artwork from the previous round (see Figure 6, (vi)). These participants were freely allowed to express their thoughts, reflecting on their changes in life status and work views since the last interview. The cycle then repeats.

Once comic artwork was published online, new participants volunteered to join, asserting that they also wanted to be part of the research and comic — evidencing the potential of research comics in recruiting participants. This resulted in a significant growth in one-time interview participants, from an initial 10 sign-ups to 23 by the end of the project (230% in increase). Furthermore, out of 9 longitudinal participants, 8 remained and 1 dropped out only due to re-expatriation to another country, resulting in a high retention rate of 89% and a total of 44 interview sessions in 2020-2023.



Figure 3: Diagram of the Phase 1 process corresponding to the comic creation process with the thematic analysis model.



Figure 4: The process of comic creation as part of the research, in Phase 1: (i) transcript data, (ii) codes identified through thematic analysis, (iii) script writing as if one protagonist is narrating the story, (iv) storyboarding and polishing upon cross-checking it with transcripts, codes and themes, (v) publishing of final comic work and report.



Figure 5: Diagram of the Phase 2 process, using comic-making in the longitudinal setting with grounded theory.



Figure 6: The process of coming creation while longitudinal research, in Phase 2: (i) transcript data, (ii) codes identified from data samples, (iii) script writing as if one protagonist is narrating the story, (iv) storyboarding and polishing upon cross-checking it with transcripts, codes and themes, (v) polishing and publishing of final comic work, and then (vi) show the comics to the participants in the follow-up interview as a visual recall tool. Participants were able to freely describe their thoughts about the comic in the follow-up interviews and what has changed or remained still since.

#### 5 FINDINGS & DISCUSSION

#### 5.1 Analytical findings

We reported GES research findings in separate academic papers but summarise them briefly here along with the references. The reports described that game expats had generally relaxed attitudes towards transitioning to remote work due to COVID-19, as distributed work (e.g., outsourcing, freelancers) was normal in the game industry even before the pandemic [66]. However, despite the game industry's norm of remote work, game expats tend to disregard the creative values of its workers with flexible workspace (e.g., contracted freelancers, outsourcing contractors) [66] (see also [8, 11, 60, 99]). The significance of game developer's occupational community on migration was also discovered, with the community being a primary channel of recruitment and moral support of game expats [64] (supporting [89, 90, 95]). Furthermore, as described by [63, 64], it was evident that game expats are often expected to reach immediate productivity (i.e., being able to put into work immediately) upon migration. This was often phrased as (to become) a 'cultural fit' amongst the participants, similar to the reports from other industry sectors such as IT and service firms [30, 74]. This was due to the competitiveness of the market and standardisation of game development technicalities (e.g., game engines, platforms), which depicts niche practices and human interpretations (e.g., localities) as a risk for the studio's global game business and individuals' game careers (e.g., failure to extend work contract) [65]. This leads to assimilation (for detailed terminology, see [5]), in which game expats withdraw their existing work know-how from the previous country such as communication and leadership style, task prioritisation, teaming, and choice of game design and aesthetics. Some game expats reported their game work practices being ousted as something 'wrong' that does not culturally fit with the logic of new employer [63, 65] (see also [15]), which may hinder a balanced integration and new innovations to emerge. Implications were suggested to encourage migration stress inoculation [5, 21] in a safer environment (e.g., education, on-board training, cross-cultural jam) to further diverse and inclusive game work culture and develop new talent pools ([67], supporting [33, 57]).

## 5.2 Methodological findings: What does comic-making offer to game research?

Here, we discuss how integrating QLR-ABR with comics (QLR-CBR) provides an environment for analytical inductive abstractions, enabling rich analytical findings. The visual representation of the participant's story functioned as a form of assisted recall [13, 18] in the follow-up interview sessions, which enhanced the richness of the long-term data as the participants were able to reflect upon their work and life changes easily. The comics also helped engage with the participants, resulting in a remarkable longitudinal retention rate of 89% and effortless participant recruitment.

5.2.1 Visual abstraction for cross-check. Our first research question ("In what ways can ABR supplement QLR of game expats' work experiences?") has been explored. Throughout GES, visualising the data into comics complemented a "post-it" approach [6] (which some refer to as "analytic memoing" [53]) in qualitative analysis, functioning as visual guidance when combining codes together to

find themes. The visualisation of codes into scripts and storyboards enabled us, the researcher and artist, to further verify and abstract the patterns from another point of view. This enabled a deeper exploration of patterns, contributing to determining the analytical directions [77] and aiding in articulating which themes held greater relevance and significance for further substantiation and report.

Furthermore, the use of comics in the longitudinal research design also facilitated an iterative research approach. When recurring or pertinent patterns surfaced in subsequent data (follow-up transcripts from the longitudinal study or new data from additional participants), the codes initially created and visualised in comics were often revisited or re-interpreted. New findings were illustrated and published into a new comic, supporting or debunking the previous episodes. This helped us to immerse deeper into the longitudinal dimension, not only the dimension of an individual case, but also the cross-sectional dimension that articulates the social context and societal discourses over the course of time on 'how' something happens over time [51, 87, 88]. An example is provided by the participants' descriptions of the relatively lower game job salaries in Finland (e.g., Helsinki) versus other game industry hotspots (e.g., California, Tokyo). The story was coded and visualised twice, once in 2020 and later in 2022. The earlier comic episode visualised participants' behaviours, in which they perceived salary as a quantifiable indicator of their work and immigration success [63] (supporting [14, 17]). Then, later data revealed that these behaviours also correspond to insufficient communication with their newer Finnish game employers and the significance of the occupational community [64, 95] (see also [86, 89]), upon being visualised in a comic with excerpts from the newer data (see Figure 7).



Figure 7: Game expat's 'shock' towards the offered salary, illustrated in 2020 (top) and in 2022 (bottom).



### Figure 8: Screenshots of responses from the readers of the comic and the lead author's interactions (commenters' names anonymised in grey boxes). Some readers point out their flaws (left), while others appreciate the comics (right).

5.2.2 Research popularisation and participant engagement. The responses to the comics from the participants were unanimously positive, probably contributing to the high participant retention of GES. This is unsurprising given that mobile devices are widely used amongst game developers and comic strips are a common ideation sources of game design and development [39, 41]. While some were concerned about whether publishing the comic about the research in progress would affect the participants (e.g., drop out once they were unsatisfied with the comic), this didn't occur. Instead, our comic artwork increased the feeling of reward among the participants despite no financial compensation (e.g., vouchers, coupons) for participating in the research. It seemed the participants generally perceived comics as tangible and relatively swift visual evidence that the research was indeed in progress. Longitudinal participants were excited to discuss the comic in the follow-up interviews, expressing their follow-up stories of what happened since the comic. They found comics a useful recall tool, as they often did not remember what they had said in the previous interview due to frequent shifts in job contracts and projects, as shown in the excerpts below. This shows visual recall tools [18, 51] are effective communication methods in longitudinal interviews while substantiating our inquiry in the second research question ("How does ABR affect the retention of the QLR participants?").

"What did I say back then? I don't remember (laugh). (After browsing through GES comic) Ah! Right. Come to think of it, I don't think this is just Finland's problem — but perhaps everywhere else." (Longitudinal participant B, in the follow-up interview in autumn 2021).

"Oh yes. I've seen some of the comics already. (After browsing through GES comic) This one. This one was on point. (Pointing at one of the comic images) And recently I also heard similar stories from my work." (Longitudinal participant F, in the follow-up interview in spring 2022).

All viewers' comments and engagement (e.g., likes, shares) were screen-captured to ensure that the records would remain documented regardless of the platforms' (Facebook, Instagram, Tapas) service status. Despite some fluctuations, the number of public audiences' online responses to the comic (e.g., comments, likes) gradually increased later in the project as the comic gained more visibility online.

This helped popularise the research to a broader audience and recruit more participants. Some active readers would comment about similar experiences to illustrated comics, and some eventually signed up for an interview. While some parts of the audience argued that certain parts of the comic omitted the gloomy realities of game work, others claimed that it reflected well and each individual's work experiences cannot be generalised (see Figure 8). One member of the audience directly contacted us to counter-argue with one of the GES's comic episodes. The lead author later illustrated this counterargument, as additional data collected later also backed the claim. The participant later contacted us again, appreciating the researcher's quick and transparent response.

#### **6** IMPLICATIONS & LIMITATIONS

We argue that choosing the ABR approach is also tied to the researched practitioners' tastes, reaching out to the participants in a suitable and welcomed art format for disseminating and discussing the research topics - in this case, smartphone-friendly comics. Therefore, we believe incorporating artistic methods, such as comics, into the research process offers unique advantages in ethnographic game research as it enhances participant engagement. Similarly, we contend that various other art forms, such as photography and storybooks, with multidisciplinary research teams, hold promise for studying the practices of game developers. This is particularly crucial for building a larger body of knowledge in understanding the culturally diverse practices of creative work, in games and other creative industries worldwide [36, 80]. Establishing access to informants of game developers [59] and gaining trust [42] with informants takes time, but to achieve a rigorous academic understanding of game development practices, we need tools and methods that prevent game scholars from relying solely on industry's idealised reports, especially when direct observation is unfeasible.

While our work serves as the first attempt to document and reflect the method of QLR-ABR (QLR-CBR) in game research, it also has limitations. First, some may perceive the comics-based visual representation of the data as distinct from reality. One of the longitudinal participants said that the comic-form portrayals of their previous interview were "too comical" and "look funny" compared to what had happened in their workspace. This suggests some of the comically exaggerated expressions, although essential to our chosen aesthetic, may not perfectly align with the informant's own expectations. Therefore, as a researcher and artist, it is important to communicate transparently with the participants about the rationale behind the aesthetic choices, making sure they do not feel alienated by the artwork created from the research.

One may also critically reflect on web-based comic publications' dependency on social media platforms (e.g., Facebook, Instagram). All GES comics were published through social media to reach broader audiences, which made them significantly dependent on these social media corporations' policies, regulations, and algorithms. For instance, there were fluctuating view counts between GES comic episodes on Instagram, and we could not fully articulate what was causing such differences other than mere speculation.

Another obvious limitation of our approach is the scalability that not every researcher has the skills to turn their data and analyses into art. However, this in turn, could potentially offer new venues and work opportunities for art practitioners (e.g., artists and scriptwriters) and encourage multidisciplinary academic methodological collaborations. Perhaps emerging AI-assisted illustration tools<sup>4</sup> may make the process more accessible in the future.

#### 7 CONCLUSION

In this paper, we described and reflected on the methods used for Game Expats Story ("GES"), which used qualitative longitudinal research ("QLR") with art-based research ("ABR"). To achieve greater participant engagement in the longitudinal research setting, we simultaneously created a mobile-friendly webcomic artwork — one of the common media among game developers — while conducting data collection and analysis. We also used comic artwork as a communication and recall tool when engaging with the participants over multiple years.

We explored ABR in the framework of QLR in the context of game research, answering our first research question: "In what ways can ABR supplement QLR of game expats' work experiences?" In GES, the qualitative data analysis was complemented with comic scriptwriting and storyboarding, which enabled the researcher to do additional in-depth checking of the data patterns while solidifying the relevant analytical direction for a cohesive report narrative. This resulted in several rich academic reports and comic artwork outcomes. The comics were also used as a form of assisted recall in the follow-up interviews, helping the longitudinal participants reflect on their previous interviews and follow up with their recent changes in work and life. This approach also aided the researcher/artist in documenting and tracing the participant's changes over the course of time.

We also affirm the impact of ABR on participant retention, thereby confirming the second research question: "How does ABR influence the retention of QLR participants?". The comics served as a non-monetary incentive for participants, which enhanced the engagement throughout the longitudinal research. Consequently, GES resulted in an exceptional participant retention rate of 89%, with only one longitudinal participant leaving due to re-expatriation. The comic was also useful in recruiting participants relatively effortlessly and provided a visual representation of research in progress to non-academics. As such, we conclude that the QLR-ABR method offers a novel approach for ethnographic game research, investigating the long-term development work experiences of individual game developers. Future studies might explore other artistic forms and advancing tools, with guidelines for future researchers to conduct engaging game research on development practices.

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#### A APPENDIX

The comic artwork of the "Game Expats Story" 2020-2023 was originally published online via Meta (i.e., Facebook, Instagram) and Tapas.io. It is now achieved in the Open Science Framework: https://osf.io/pfexu/?view\_only=11a4ce2cc8e6485dad00b6121495efcf.