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# Games User Research (GUR) for Indie Studios

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**Abstract**

Playtesting sessions are becoming more integrated in game development cycles. However, playtests are not always feasible or affordable for smaller independent game studios, as they require specialized equipment and expertise. Given the recent growth and prevalence of independent developers, there is a need to adapt playtesting processes for indie studios to assist in creating an optimal player experience. Therefore, our research focuses on challenges and opportunities of integrating games user research in the development cycles of independent studios. We worked with three studios conducting playtests on their upcoming titles. In line with the CHI2016 #chi4good spirit this paper contributes to the important topic of adopting user research methods for indie and small game studios. We believe that the games user research (GUR) field must advance towards demographics that will benefit from GUR but are under-represented in the community and this paper is one of the first that will contribute to this.

**Author Keywords**

Games User Research; Playtest; Indie Development;  
Persona; Rapid Prototyping; Telemetry

**ACM Classification Keywords**

K.8.0 [PERSONAL COMPUTING]: General - Games

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*CHI'16 Extended Abstracts*, May 7–12, 2016, San Jose, CA, USA.  
ACM 978-1-4503-4082-3/16/05.  
<http://dx.doi.org/10.1145/2851581.2892408>



**Figure 1:** User Testing Lab Mobile Setup



**Figure 2:** User Testing Lab Console Setup

## Introduction

The games industry is experiencing both financial and demographic growth. Large game productions like *Grand Theft Auto V* and *Destiny* have development costs in the \$137 and \$140 million ranges respectively [10, 9]. These expensive initial investments make it crucial for developers to ensure that their games perform well in the marketplace. In the interest of improving quality and maximizing revenue, it is feasible that these developers set aside large portions of their budget for marketing, quality assurance, and user testing. Additionally, based on SteamSpy's figures, there are roughly 1.4 billion games purchased to-date on the Steam platform, where roughly 25% of those are indie games<sup>1</sup>. Due to the increasing quantity of games it is important for indie games to deliver a good quality game and positive player experience to survive in the competitive environment. Hence, there is a need to adopt GUR processes and methods specifically for smaller teams and their respective budgets and time frames.

GUR is a burgeoning field building upon evaluation methods from Human Computer Interaction (HCI) and psychology [5, 7]. GUR aims to improve the gameplay experience by conducting usability and user experience (UX) evaluation such as playtesting [6, 13]. Playtesting can be conducted by third parties or by a internal team as part of the same development studio. Major game development studios and publishers (such as Ubisoft, EA, and Activision Blizzard) have teams of in-house GURs. Since these companies produce multiple titles at the same time, it makes sense for them to invest in having internal user research teams [12, 11]. Third-party GUR consultants are also common, which are contracted by a

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<sup>1</sup>see: <http://steamspy.com/genre/Indie>

variety of developers of all sizes. Examples include Player Research<sup>2</sup>, User Behaviouristics<sup>3</sup>, and Bunnyfoot<sup>4</sup>.

However, not all independent developers could afford to hire a full-time internal user research personnel for their project or pay for third party consultancy fees.

The challenge for indie studios is to utilize the benefits of GUR while maintaining a strict timeline, budget, resources and, tools. For this, an effective evaluation methods will need to be investigated. With this goal in mind, an effective user testing approach for indie studios should be delivered in a timely, accessible and economical fashion. To explore this issue we partnered with Execution Labs (XL), an indie developer incubator offering game developers funding, mentorship, playtesting sessions, analytics services, production assistance, and access to industry networks [1]. Indie developers part of XL all have playable games and are working toward finding publishers, preparing for a Kickstarter campaign, or are searching for other forms of funding. We worked with three game development teams on conducting GUR studies while also exploring how the process can be optimized to better answer their needs.

This paper is the first of its kind to showcase the application of inexpensive playtesting methods, and explore the challenges and contributions of them to the development process for indie developers.

## Approach

Our initial challenge was the selection of a testing methodology that was fast, easy-to-apply, and affordable. Since the GUR lab (see Figure 1 and 2) was shared by

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<sup>2</sup>see: <http://www.playerresearch.com/>

<sup>3</sup>see: <http://www.userbehavioristics.com/>

<sup>4</sup>see: <http://www.bunnyfoot.com/>



**Figure 3:** Observation Room



**Figure 4:** Observation Room - Live test

many teams over a short period, timeliness was a key factor in the assessment of feasibility. Moreover, the cost of running the test needed to be minimal, to motivate the team to run several iterations of rapid testing and improvement cycles.

The lab is equipped with a microphone to record participant comments while their gameplay is recorded using a game capture card hardware. An adjustable webcam is also set up to record the participant interacting with the platform (mobile device, controller, and keyboard) (See Figure 1). The collection of gameplay video is useful for the developers and user researchers to watch later. Researchers could view the gameplay interaction behind a room divider (Seen in Figure 3 and 4).

Our approach follows a user-centered design (UCD) process based on methods developed by Pagulayan et al (2003). A key part of UCD is understanding *design intent*, where the general design goal of a game is to create enjoyable experiences for its players [8]. UCD emphasis on rapid prototyping and evaluation to achieve the design intent.

We've adopted a Rapid Iterative Testing and Evaluation Method (RITE) of quick user tests, with low numbers of participants and fast data reporting to allow changes to be enacted between tests [4]. A focus was placed on finding issues related to first time user experience (FTUE) [2], since the teams were developing their pre-production demo to attract publishers and external funding. The overall focus was on *Ease of Use*, to mitigate perceptions of unfairness or inaccessibility [8]. *Starting the Game*, *Basic Mechanics*, and *Tutorials and Instructional Gameplay* are the general game areas or gameplay chunks associated with FTUE. Other areas that were addressed

are *In-game Interfaces* and *Mapping Input Devices* [8]. Areas such as: *Camera*, *Challenge*, *Pace*, and *Story* were not prioritized during our playtests [8]. These areas generally require more specific testing and analysis methods to extract valuable results, as well as more complete games and longer gameplay sessions.

Our average playtest sessions length were about an hour, with the first half of the session dedicated to gameplay and the second half consisting of a semi-structured interview. To identify possible issues experienced by players, we collect observational data from gameplay and a semi-structured interview. In the interview, we asked general questions such as: *What did you have to do?* *What did you find confusing?* and *What was your strategy?* Other questions pertained to player opinion, such as: *If you could change one thing in the game, what would you change?* and *If the entire game changed and you could keep one thing the same, what would you keep?* Additional questions that were specific to each game could be asked depending on particular areas of developer interest.

## Results

In the following, each game is briefly explained, followed by a summary of the playtest process and the main feedback received from developer regarding to the process. The developers from *Game A* were more focused on developing content for their Kickstarter. The *Game B* developers were focused on ensuring that their core gameplay was solid. Lastly, the developers from *Game C* wanted to ensure that their platforming levels were not overly frustrating for the player.

#### *Game A: A 3D Split-Screen RPG*

*Game A* is a 3D split-screen exploration and survival role-playing game (RPG). The game was designed for players to naturally assume roles of *Tank* and *Support* using the items and abilities provided. The developers' goals for the user test were to evaluate controls, and the co-op mechanics. The user test involved both players sharing the screen using Xbox 360 controllers to complete a demo level. Players needed to reach the end of the dungeon within the time frame or play for 30 minutes for the user test to be completed. Both players were interviewed simultaneously after the test.

The developers observed the gameplay and interview sessions noting issues to fix. They found the playtest useful to validate their design intent with the co-op mechanic and to discover some issues regarding the input design. However, they indicated that the majority of their immediate efforts would be focused on content generation, as they were preparing for their upcoming Kickstarter campaign to secure crowdsourced funding. It seems in the interest of acquiring funding or publicity, some developers may not view user testing as high-priority. This highlights two challenges, one in integrating GUR in the indie dev process and the other is to adapt the GUR methods. In this case, the need to adapt GUR method to provide useful results in creating a successful kickstarter campaign.

#### *Game B: A 2D Multiplayer Game*

*Game B* is a 2D multiplayer brawler where the player can switch between three characters with a rock-paper-scissors style circular relationship. The developer's were preparing a build to send to a potential publisher and their goals for the playtests were to explore the overall concept and the controls implementation for different characters in the game.

This team was motivated through the initial playtest results to conduct future tests and made immediate changes to fix their the control implementation before their next playtest.

The developers were inherently interested in player comments regarding controls, balance and the game overall. They had a polished prototype that put them in a good position to test the game frequently to make iterative changes. Additionally, since a prototype version of the game was available on Facebook, it allowed us to test with much larger groups simultaneously, providing more data in a shorter time frame. This highlights an opportunity that indie developers may include online builds of their games that can be tested by larger pool of players. Having easy access to the latest build definitely increased the speed of setting up and conducting tests in multiple locations (such as a remote usability or appreciation test).

#### *Game C: A Mobile Survival Platform Game*

*Game C* is on a hardcore mobile side-scrolling platformer and survival game for the mobiles and tablets. The design intent is for players to fail several times and restart from the beginning of the level to learn from their mistakes. The developers were in a tight deadline to release the game in a few months and wanted to evaluate their input/control implementation on touch-screen devices.

When presented with the report the team has expressed interest in planning more rounds of playtesting to evaluate the resolution of identified issues while testing other levels for balancing purposes and on controls, UI, and feedback. This game is another example of a success where the team successfully integrated playtesting results in their development cycle. The team went on to conduct a future user test to evaluate 4 additional levels.

The developers had designated one member of the team to be the main point of contact for everything related to user testing their game. This made it very easy for the us to communicate the requirements for the test to the developers in terms of build requirements, player profile and key performance indicators (KPI's). Additionally, the one member attended all the tests and was able to see the improvement of the game through the iterative playtests. This helped convince the development team to hold future playtests as the team was motivated on the effectiveness of the tests.

## Discussion

We presented three studies of conducting playtest sessions with indie developers. Our main takeaways are (1) a good approach needs to be cost-effective for indie development, (2) help developers to be receptive and motivated to continue user testing, and (3) the approach should be easily integrated in short development cycles. We are evaluating the approach using the seven categories identified by Fulton et al. (2012) [3]. The categories, representing an evaluation framework to conduct GUR studies with a focus on formative evaluation, are: representative, accurate, specific, timely, cost-effective, actionable, and motivational.

It is important for the participants and methods used in to effectively represent the testing needs and outcomes. If the participants selected do not effectively **represent** the developers target audience, then the findings cannot be confidently applied to the game. We work closely with the developers when recruiting participants to ensure the player profile matches the games target *persona*. However, one area of future improvement could be providing more detailed workshops in developing a target **persona**. If teams could independently develop **persona**'s

for their games they will have an easier time finding representative participants for their user tests.

Data must also be **specific** enough to yield the identification of actionable issues. The precision of recorded observational data allows developers to examine user behaviour as a complete sequence of moments in time. Additionally, when probing during interviews, developers can ask specific questions about the game that would be cumbersome to include in a questionnaire or survey.

To improve upon the **accuracy** and specificity of the data collected, more work can be put into developing playtest tools. A possible application would effectively combine audio/video recordings from the user and gameplay in a single screen layout. This can be extended to display in-game metrics and level progression events. For example, instead of manually going through separate video files, a developer could open the application and browse through critical gameplay events like player deaths, and the application would load the observational data from those game events. A potential application would also decrease the amount of time for overall observational analysis through effective filtering.

One of the most important criteria for independent game studios on a short development cycle is the **timeliness** of the entire research process. The rate of development at independent and AAA teams is so fast, that it is important to test with the latest stable build that changes on a weekly basis. We aimed to meet the criteria for delivering timely results, within a week or between major milestones. Independent studios may have different time requirements when compared with AAA developers, which often manage a multitude of titles simultaneously. Independent studios may define milestones for having

aspects of the game ready for an upcoming Kickstarter launch or a important publisher meeting to secure funding. This was one of the major takeaways from *Game A*, where the developers devoted their resources to preparing more content for their Kickstarter campaign, instead of polishing the user experience.

The penultimate criterion for an effective GUR technique is its **actionability** for the development team. We focus on finding problems related to FTUE for independent teams in the pre-production stage of development. These developers are looking for issues related to major features that require more work or must be eliminated before they reach final production. Interview questions such as: *If you could change or keep one thing in the game what would you change?* help to find memorable moments or main frustrations with the game based on subjective data. In accordance with the objective recordings, developers can effectively identify major issues that require immediate action.

The last criterion is the method's ability to **motivate** and persuade the team to take meaningful actions regarding issues revealed in testing. We tried to involve developers throughout all stages of the preparation and testing processes, so that they can observe the participant experience first hand. This provides a meaningful context for the developers to locate issues and think of solutions in real time with less support from a researcher to guide them. We aimed to empower indie developers in recruiting through the data collection process to intrinsically motivate designers to perform iterative testing. Additionally, when developers are present during playtests and directly witness players' experiences, they become more motivated to fix issues immediately and note what players enjoyed to provide similar experiences in the future.

## Next Steps & Contribution

In this paper we focused on FTUE and not the whole game. Important areas such as Camera, Challenge, Pace, and Story could be the topic of future work. Additionally, we could benefit from software that can easily sort, filter, and organize the playtesting data to increase the overall speed and efficiency of the data analysis. One important result is the need to motivate teams that are more business-oriented to polish their FTUE instead of developing more content. Future workshops training developers on developing *persona's*, interviews, and surveys would also be beneficial.

Different studios expressed diverse motivations and responses to user testing. Our exploration with three indie studies contributes to the initial understanding the following challenges:

- The approach needs to fit within an indie timeline, budget, resources, and tools;
- GUR approach needs to align with the developers immediate goals (such as: securing funding, validating controls, polish for publisher deliverable), long term goals (creating a better game), and be integrated easily in indie development;
- Approach needs to highlight iterative growth between each test to motivate developers to continue testing;

Each of the above challenges highlight future avenues for exploration into integrating GUR into the indie development process.

## Acknowledgements

We would like to thank Execution Labs, UOIT, and NSERC for their assistance and support.

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