Not just users: Mapping the range of user roles in open development games projects

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ABSTRACT

Open video game development systems provide a useful model for designing an engaging user experience (UX) research project. While UX research has typically framed people simultaneously as research subjects and users of a technology, some work has also problematized each of these categorizations. For instance, UX practitioners have questioned the framing of people as generic users, and participatory design has repositioned participants as co-owners of the results of research. This article offers a complimentary perspective by applying the concept of user roles to the activity of participation in open development. Open development, which is the prolonged process where incomplete games are publicly released and iterated on based on player feedback, is fundamentally a UX research process. In open development projects, user-participants adopt a variety of roles, including acting as consumers, players, bug reporters, player support services, community moderators, reviewers, developer advocates, playtesters, quality assurance testers, content creators, and ideators. This paper builds definitions for the user-participant roles and offers examples from the online forums for an open development game. Finally, it argues that we can design communications systems to support these roles.

CCS CONCEPTS

• **Human-centered computing** → **User models**; • **Applied computing** → *Arts and humanities*.

KEYWORDS

video games, user experience, game development, research participation, user roles

1 INTRODUCTION

I don't want to call them hardcore [players] because they're not necessarily hardcore. Sometimes they just

love what you're doing, and they're not playing a lot, but they might be writing fanfiction, they might be drawing, they might be doing other things, and they're not actually just a hardcore player. [19]

At the 2015 Game Developers Conference, a panel of experienced developers discussed their experiences with open development projects. In the quote above, Jamie Cheng described how participants in these projects were doing a lot more than just *playing* the game. This paper expands on this observation to review the broad range of roles that user-participants adopt in open development systems.

Broadly speaking, open development is publicly distributing an incomplete game, sharing information about the game development process, and iterating on the game over time based on player feedback. Game developers have primarily described open development as a new communications system which requires strategies for effectively discussing project goals with players and facilitating useful feedback from players [4, 43]. Elsewhere, I have shown how open development integrates technical communication interests in content strategy and user experience (UX) to create a model for engaging user-participants throughout prolonged user-experience (UX) research projects [47]. Ultimately, open development reframes UX research as an intentionally-designed system that is used by participants. In other words, open developers design UX research for the experience of participants.

This paper uses the concept of user roles to examine user participation in open development systems. A user role is defined as "a specific task or group of closely interrelated tasks (constituting a job), carried out by people in the development or operation of a system." [33]. User roles also help depict how individuals may have multiple goals over time [12]. Recent work has shown that UX professionals often find user roles to be more useful for designing than user personas [30].

This paper contributes to technical communication scholarship on video games. While technical communication has studied a range of topics around games (including documentation, critical gameplay, and pedagogical uses), two areas are particularly relevant here. First, the field has explored developer-player communication systems. For example, Zimmerman argued that developers use cycles of secrecy and disclosure to build player anticipation while marketing a game [54]. Sherlock described a range of strategies for rhetorically presenting patch documentation to players [40]. And Reimer explored how developers co-construct excellent user experience through negotiating changes to games with players [36]. Second, technical communication work has also studied connections between UX and games. For example, Tilley, Blandino, and deWinter discussed the limits of traditional usability standards for

testing dynamically-generated game content [49], and Karabinus and Atherton examined how an amateur game design community built ongoing documentation to support user needs [20].

This paper argues that, by examining the specific, voluntary work done in open development games systems, we can begin to reimagine the design of UX research systems to support user-participants' varied roles. In the sections that follow, I situate open development user roles within other problematizations of user research. Then I describe the content analysis methods used in this study. Finally, I present definitions of open development user-participant roles and discuss how we might design communications systems to support these roles.

2 LITERATURE REVIEW

Traditional user research often limits the agency of users: "The concept of the user, as it is constructed in [User-Centered Design], is the object of study and research, not necessarily an empowered agent that helps drive design decisions or direction" [37]. This intentional limitation can be seen in popular methods such as A/B testing [6] and big data analytics [34, 39] where users may not even be aware that they are providing feedback. In these methods, users effectively become data.[1] Recently, there have also been attempts to problematize this depiction of user research.

First, some researchers have sought to redefine users in human-centered terms. For instance, Don Norman argued:

> One of the horrible words we use is "users." I am on a crusade to get rid of the word users. I would prefer to call them "people." You know, we test people. ... We design for people. We don't design for users. [32]

Others have reclassified users in more specific categories, such as readers, viewers, publishers, or players. Even the defenders of the word user (due to its ability to highlight the designed nature of systems and thereby to support user agency in demanding changes) have sought to complicate simplistic, generalized depictions of users [24]. This shift toward more fully acknowledging the activities of users can also be seen in the movement from narrow usability and user-centered design to broader user experience and experience architecture [35]. These redefinitions of users, however, have often stopped short of redefining the role of UX research participants, who are still often seen as only engaging in the process in order to give feedback to designers.

Other work has more directly examined the potential roles of users in the creation of technologies. For example, Johnson said that collaboration with users was an ethical imperative [18]. He reframed the traditional model of development to decenter the designer and to situate users as active agents in determining the direction of technology. A similar approach model can be found in participatory design, which provides a methodology for committed, extended user involvement that results in the co-ownership of the

products of the work [42]. And participatory methods have already been discussed as a means for improving justice in UX research [37].

But these models that decenter designers do not necessarily fit well with the values of game production. Many developers and players view games primarily as art [10], which comes with the associated values of artistic intent and authorial ownership. These values can come into conflict with deep user agency during game development, as can be seen in a relatively early argument over the proper use of open development. In 2014, Walker criticized open development, saying it "pandered" to player preferences and stifled artistic originality [52]. In his response, Roth said that Walker had mischaracterized open development [38]. Instead, he argued that developers were still in control of their own games and were not being blindly directed by player feedback. Finally, Lindskog tried to split the difference by arguing that open development was danger-ous when it prioritized marketing, so he encouraged developers to be critical of player recommendations and to stay true to their own vision [26]. While these commentators had significantly different views of open development, all three rejected the value of a truly participatory design methodology for games. And numerous open developers have agreed, arguing that the developers must remain central to the game design:

> Open development is not design by committee, the wisdom of crowds, or abandoning your design to met-rics. It needs engaged game designers to make it work. It's not about giving people what they want. It's about getting them to react the way you want them to. [27]

Thus the prioritization of artistic integrity here necessitates a different approach for repositioning user-participants as something more than data points.

A potential starting point can be found in discussions of pro-sumers or "customers [who] participate in the creation of products in an active and ongoing way" [44]. An extended business literature has shifted the prominent view of consumers from passive recipi-ents of value to active contributors to value [51]. This literature has become particularly prominent in relation to online platforms [7]. As a part of this broad discussion, Agrawal and Rahman provided a useful breakdown of the ways that customers contribute to modern firms [1], including:

- co-producers, who engage in self-services,
- co-distributors, who use e-commerce to direct goods distri-bution,
- co-promoters, who create reviews and word of mouth rec-ommendations,
- co-manufacturers, who directly create content or customize products for personal use,
- co-consumers, who engage in experience sharing,
- co-ideators, who submit ideas to firms,
- co-evaluators, who help judge the value of various potential ideas,
- co-designers, who help make decisions on the customization of products or services,
- and co-testers, who offer feedback on specific products or services.

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[1]Open development practitioners have also sometimes valued user-participants pri-marily as data:

> The community is there as another tool, another data point, another voice for you to listen to you. But they are not game developers. They are not people who have spent you know years and years of their life learning how to do this job. So I think there's a danger there when you open it up too much and kind of let the community feel like they're running the show. [50]

While these roles are a good starting point, they do not capture the specifics of work in game development, such as the differentiation between playtesting and quality assurance (QA) testing. Nor do they necessarily reflect the priorities of user research. Thus we need to conduct more specific analyses of user-participant activities in these areas.

3 METHODS

The research questions for this study were:

(1) What are the roles of user-participants in open development game projects?
(2) Which roles are most and least prevalent?

To answer these questions, this study used a content analysis methodology to study the forums on Steam for the game *Aground*.

Content analysis is a major research methodology in technical communication [3, 45]. Huckin defined content analysis as a research method that identifies "specific words, phrases, concepts, or other observable semantic data in a text or body of texts with the aim of uncovering some underlying thematic or rhetorical pattern" [15]. Among other things, content analysis has been used in technical communications studies of academic journal articles [13, 21], figure captions [41], press releases [2], and job postings [5, 23].

3.1 Sample

This study analyzed the Steam forums for the game *Aground*, which was being actively developed by Fancy Fish Games when the sample was collected in March 2019. The data collection and analysis methods for this study were approved by my university's institutional review board (#19-0046).

Aground is a 2D exploration and crafting game that is similar to *Minecraft, Terraria,* or *Starbound,* but with gameplay more focused on narrative progression. The game was selected because it had an involved developer and active player community. At the time of data collection, *Aground* had been in development for less than two years. The game was initially announced by the developer in a June 2017 tweet about a new prototype [28], and it was scheduled for a full release in March 2020 [29]. From June 2017 until March 2019, *Aground* progressed from an initial closed prototype, to a free, public browser-based alpha, through a crowdfunding campaign, and finally to a paid Early Access version on Steam. Communication about *Aground* and its development occurred on numerous sites, including the developer's website (fancyfishgames.com), a subreddit, social media accounts for the development company and the individual developers, several official Discord servers, and digital distributions sites (including spaces for announcements, reviews, game mods, and forums).

The sample for this study was the complete Steam forums for *Aground* from June 2018 to March 2019. A total of 267 forum threads were included in the sample. While other sites could have been selected for the study, developers have noted that forums are their primary point of contact with players during open development [9, 50].[2] Steam forums, in particular, often represent the largest player community for open developers [50].

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[2]This may be changing with the growth of Discord chats, but forums remain key sites open to a range of discursive activities.

3.2 Coding System and Analysis

This study used a conventional content analysis method, where codes are developed through inductive readings of the texts [14]. The primary unit of analysis for this study was a conversation. Conversations were identified by the introduction of a new topic, and they included any uptake or resolution of the topic by subsequent posts. Some forum threads contained only a single conversation, while others contained several. Content was then coded by user roles in each conversation. Content from a single user-participant was coded only once for each role they adopted in a conversation. However, the same role was coded multiple times in a conversation if several user-participants adopted it.

The coding system was developed through several readings of the study sample. After initial roles were identified, these roles were combined under broader user-participant activities. The final coding system included 4 activities and 11 user roles. Using the final coding system, the entire sample was recoded using NVivo qualitative data analysis software to increase consistency in code application. Finally, the frequency distribution of the activities and roles was calculated.

While many content analysis studies have included coding definition tables in the methods section, the primary results of this study are the user roles and activities. Thus the coding categories will be described below. A similar approach has been used in previous content analysis studies focused on the discovery of relevant descriptive categories [48].

4 RESULTS

A total of 2520 forum posts from 267 forum threads were analyzed for this study. Both the developer and the player community were strongly represented in these posts: user-participants created 1880 posts, and the developer created 640 posts. At least 75 different user-participants posted on the forums, but many the posts were from a smaller core group. The majority of threads were started by user-participants (99%), though the developer also responded to most threads (77%). The median thread included the initial post, followed by three replies (one by the developer and two by user-participants). The median thread also included at least one reply from a user-participant other than the original author. With that being said, there was significant variation between threads: 59 threads (22%) had zero or one replies. And four threads had more than 50 replies each.

The content analysis identified four user-participant activities in open development projects: Playing-Consuming, Community Development, Game Testing, and Game Development. Each of these activities and the user roles associated with them is discussed in more detail below. Then the frequency distribution of the roles is described at the end of this section.

4.1 Playing-Consuming

Conversations related to playing-consuming activity focused on the game as an object and on individual or localized experiences of gameplay. This activity primarily ignored the context of the game as something being-in-development. The three major user-participant roles in this category were 1) consumer, 2) player, and 3) bug reporter.

4.1.1   Consumer. User-participants adopting the consumer role sought to acquire the game or to make decisions related to its acquisition. They used the forums to seek information related to the game as an object/experience to be obtained. Most consumer posts were not from current players of the game. Consumer posts typically opened new conversations rather than contributing to existing conversations. Overall, consumer posts belonged to three categories. First, some posts asked about specific features of the game:

> **Consumer:** Does this game have depth? Looks good but would like to know if there's much depth and is it story driven or survival style?

Second, other consumer posts sought information about various versions of *Aground* that were available online:

> **Consumer:** Is the demo the same on Steam as it is on [Kongregate]? I can't wait for it's release.

Finally, some active players also adopted a consumer role when asking about future updates:

> **Consumer:** Ineedmorecontent INEEDNEXTUPDATE-ICANTWAIT.

These latter posts positioned the user-participants as consumers rather than players because they were overtly concerned with the game as an object rather than as a gameplay experience.

4.1.2   Player. User-participants adopting the player role used the forums to ask questions about gameplay or to chronicle personal gameplay experiences. As with consumer posts, many player posts opened new conversations rather than contributing to existing conversations. The most common type of player post was a question related to a specific experience in the game:

> **Player:** So... I accidentally attacked the dragon before getting the quest to summon the alchemist to his lair. Did I screw up the quest? Is there a way to reset the dragon or do I have to try to kill him?

Some player posts also asked broader questions about strategy in the game. For example, a player responded to the conversation started in the previous quote to ask, "Which way is better? kill a dragon or give her 5 babies?" These player posts were sometimes used as an informal theorycrafting[3] mechanism on the forums. Finally, player posts also sometimes narrated personal experiences in the game without any direct reference to strategy:

> **Player:** When you take off your helmet and think "I look really weird with no helmet" because its been so long with a helmet on.

These posts were most common when players encountered something they thought was particularly enjoyable or entertaining.

4.1.3   Bug Reporter. User-participants adopting the bug reporter role sought to fix issues they encountered during normal gameplay experiences. The bug reporter role framed these issues as unintentional design flaws whereas the player role attributed issues to personal gameplay decisions.

Bug reporter posts typically described an issue and then asked for help:

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[3]Theorycrafting is the analysis of gameplay mechanics to create optimized play strategies.

> **Bug Reporter:** Everytime I present the Mechanic the Dragon Armor the game crashes. Please Help!

Both the developer and other user-participants commonly responded to these threads by asking for more information or by describing potential solutions to the problem. Occasionally, other user-participants responded to these threads to describe related bugs or to confirm the existence of a bug. Notably, bug reporters sometimes also reported intentional design decisions as errors:

> **Bug Reporter:** Just want to point out a minor thing. Coral sword is in my inventory but when I use weapon filter it's not there in the list. For a while I thought the sword was missing. The same happens when the sword is in the storage.
> **Developer:** The coral sword is under the spellcasting/books tab - this is a little un-intuitive, but it is my hint to you that it uses the spellcasting stat for stamina usage.

These posts suggest that bug reporting is related to user perceptions of gameplay experiences rather than any inherent qualities of the technology.

4.2   Community Building

The community building activity was characterized by efforts to support other participants in open development game projects and to build a stronger collective identity. In open development games, the community includes the developer as well as players. The developer directly answers player questions and supports player activities, and the players reciprocate by providing feedback and by supporting the developers' decisions. So while the roles here were coded only for user-participants, the community building activity included instances of users offering support to the developer.

Most forum posts related to community building were responses to threads started with other activities. On the *Aground* forums, there were four major roles related to community building: 1) player support, 2) community moderator, 3) reviewer-promoter, and 4) developer advocate.

4.2.1   Player Support. User-participants adopting the player support role sought to assist with issues encountered by other user-participants during gameplay. Player support posts were usually responses to conversations begun by player or bug reporter posts. Some instances of player support occurred in short conversations where problems were easily resolved:

> **Player:** How do I talk to the dragon? The dragon sits there but all I get an option for is Z to attack. ... Am I missing something obvious? Cheers.
> **Player Support:** You have to have an alchemist quest, and you have to be stand in a certain spot.

Other instances of player support were contained in extended conversations with multiple participants, including the developer. For example:

> **Bug Reporter:** When I place a Forged Icy Chest, it turns into a Wooden Chest. This means that I just wasted some Icy Fur. I tried placing it using the hotkey and menu, but either way, they turned into wood.
> **Developer:** I forgot to set one parameter, easy fix.

Bug Reporter: great, thank you! thought i was doing something incorrect.
Player Support : For anyone else that cares, this is now fixed, but unfortunately, it doesn't fix the chests you already forged, so you'll have to forge them again.
Bug Reporter: great, thanks for letting us know

As in the example above, the player support role was sometimes used to clarify or extend answers provided in other player support posts. In other cases, multiple player support posts offered different potential solutions to the same issue.

4.2.2 Community Moderator. Community moderators sought to create structures for discourse around the open development project. Community moderation was not an official position in the *Aground* community, so most of these posts did not seek to enforce discourse rules. Instead, they usually offered tips for using the features of the Steam forums:

Community Moderator: I like to break [spoilers] into parts though. To do spoilers, just put them in between [spoiler][/spoiler]. Oh, and check this [link] out for more formatting help.

Some community moderation posts also spoke directly to the developer as the audience. For example, several user-participants asked the developer to post more detailed information about updates:

Community Moderator: It's one thing to not spoil stuff, but EA testing works better if you tell us what's been rebalanced, changed, or added. You don't have to link to the full changelog in the main news post, but it should be somewhere.

Other community moderators offered the developer advice for constructing effective update posts and organizing the forums.

4.2.3 Reviewer-Promoter. Reviewers analyze specific elements of games and then offer a summative evaluation or purchase recommendation [46]. The majority (86%) of reviews on Steam are positive [25] and therefore can be understood as primarily intended to promote the game and to support community growth. This promotional aspect of game reviewing was also present on the *Aground* forums, where every reviewer post conveyed a positive evaluation of the game. Thus, the reviewer-promoter role was seeking to increase the size of the community by making positive purchase or play recommendations to potential consumers.

Most reviewer-promoter posts were responses to conversations started by consumers. For example:

Consumer: Does this game have depth? Looks good but would like to know if there's much depth and is it story driven or survival style?
Reviewer-Promoter: The game has a rich storyline, and developing gameplay, and the different story paths unlock different upgrades. I've replayed through what was released at any given time quite a few times, and did things in different orders. I would say the game has more depth the average AAA title already, and is still growing :)

In some cases, reviewer-promoters qualified their purchase or play recommendations based on play preferences or on the unfinished state of the game. The remaining reviewer posts were used to start new threads and conversations, often with the developer as the apparent audience:

Reviewer-Promoter: i love dis game. just for saying, having lot of fun so far. ... keep going devs !
Developer: I'm glad you're enjoying the game!

4.2.4 Developer Advocate. Developer advocates supported the developer or their design decisions. As opposed to community moderators, developer advocates were less concerned with the quality of the discourse than with the discussion of specific topics where the developer has already explained their vision for the game. Developer advocates contributed to the forums by explaining and supporting the developer's decisions. For example:

Developer Advocate: [The developer] seems to be both dedicated to and determined about finishing the game so I personally would be very surprised if he does not deliver on his promise to do so. Actually I think that many will be pleasantly surprised that he will add so much to the game before "letting it go." (Also in all fairness we have to remember that for a developer to keep supporting the game then it will have to be popular enough to pay at least some bills.)

In this excerpt, the user-participant defended the developer from a common critique of open development games: that consumers buy into projects based on promises that go unfulfilled. The developer advocate here primarily argued from the ethos of the developer as a dedicated/trustworthy actor. While this instance was similar to a game review, it was more focused on the actions of the developer than on the game itself. Other design advocate posts defended the use of low-resolution graphics in the game and the implementation of a stamina system to slow down gameplay progress. Finally, some developer advocate posts also directly amplified the voice of the developer by repeating their previous statements or by linking to their statements in other threads.

4.3 Games Testing

Traditionally, games testing is divided into the disciplines of playtesting and quality assurance [16]. While open development testing sometimes occurs passively (e.g., through analytics), some user-participants intentionally and actively engage in testing activity. There were two roles associated with the games testing activity: 1) QA testers and 2) playtester-designers

4.3.1 QA Tester. QA testers sought to provide detailed descriptions of bugs in order to improve the general stability and performance of the game. While this was similar to the bug reporter role, QA testers made a concerted effort to contribute to the development of the game rather than to fix their own, individual experiences of the game. Both bug reporters and QA testers spoke from personal narrative (referencing something that they directly experienced), but QA testers typically expanded beyond that experience to show a systematic approach to verifying or replicating the bug:

QA Tester: I decided I'd finally have at the Kraken ... and discovered that if I make direct contact with the center of it while I'm in my submarine, the game

crashes. I replicated the error once before coming here.

QA testers also sometimes referenced intentional attempts to break the game or attempts to test the same issue on multiple computers or operating systems.

4.3.2 Playtester-Designer. The hyphenated name here combines two common perspectives of the role. From an industry perspective, this role is typically framed as playtesting, which is a process of putting an unfinished game in front of potential players and gathering feedback on their experiences. Conversely, Agrawal and Rahman described the role of co-designer as one of creating small customizations or alterations to a product [1]. By combining these together the playtester-designer can be seen as recommending small changes based on play experiences:

> **Playtester-Designer:** I think you should change the recipe for the blood gem. The way it is (1 Alter Gem + 4 Dragonblood), it's hard to make them early game, late game they aren't that useful either. The worst part is once you get the Time Manipulator, you can uproot it and plant it next the Fish Village to make infinite profit by buying blood gems, uncrafting them and selling them for a huge profit (10 Blood Gems (3k gold) are worth around 8k gold uncrafted! And it takes a minute only!).

As in this example, playtester-designers often identified a problem and then recommended a solution. These solutions included changes to game object mechanics, settings options, or the graphical or auditory representations in the game.

4.4 Co-Developing

Co-developing was the closest to a truly participatory open development activity. Many user-participants never engage in this activity, but a small minority contribute in ways that can change the direction of the game. There were two main roles related to co-development activity: 1) content creators and 2) ideators.

4.4.1 Content Creators. Content creators seek to develop content for a game. For *Aground*, all user-generated-content was classified as mods (or unofficial, player made content that can be integrated directly into a game), but this is not the case for all open development games. For example, players constructed official in-game items for *Might and Magic X* [53] and directly contributed to the user interface for *Wasteland 2* [8]. Modders for *Aground* created a range of content, including in-game items (e.g., a hovercraft), functions (e.g, the ability to disassemble a vehicle into its crafting components), and language translations. One early group of modders was even planning a complete expansion with a medieval setting [31]. While *Aground* content creators had a Discord server to support their work, they also used the forums for three main purposes. First, they recruited other modders. For example: "Calling All Modders! In preparation for the upcoming space update, the [modding] community has begun to put together a new system concept mod!" Second, novice content creators asked questions about modding: "I wanted to create my own items but i can't find the correct pixel art creator that aground will actually recognize." Finally, experienced content creators publicized new mods or changes to

existing mods: "If anyone else is missing this, there is now a mod for that (Spanner)." While most of the work of content creators was completed off the forums, these instances of the role demonstrated how it contributed to a broader range of user-participant activities.

4.4.2 Ideator. Finally, the ideator role sought to develop significantly new ideas or directions for the game. Ideators were similar to playtester-designers, but they suggested much broader changes to the game. Ideators in the *Aground* forums made a range of suggestions, including new game modes and new kinds of interactions. The developer often responded to these ideas by shutting down the conversation or by recommending that a modder take on the work. For example:

> **Ideator:** Say, what about Boss Rush? Or some kind of arena mode? Would you be willing to implement that?
> **Developer:** Maybe, but I bet a modder will get around to that before I do.

As in this example, ideators sometimes based their suggestions on experiences in other games.

Some ideation posts were also repetitions of previous conversations. For *Aground*, these suggestions clustered around a cooperative game mode and updated graphics. While the initial forum posts for each conversation framed these ideas as new contributions to the game, the responses reflected the prior conversation of the topic:

> **Ideator:** do you know how great it would be if it had at least terraria level graphics?
> **Developer Advocate:** Well, this is the 8bit nostalgic graphic, so it's a specific style. I'm sorry if you won't enjoy this gem of game because of it, but it is a style which loved by many people (and I'm one of them).
> **Developer:** Changing the graphics at this point would be a huge amount of work (and I doubt we would've been able to come this far so quickly with one artist if we hadn't started with this art style). But, if Aground does well, we might consider making an HD version!

4.5 Prevalence of User-Participant Roles

This section briefly reviews the frequency distribution for the user-participant activities and roles. Frequency counts here are based on the instances of user-participants adopting a particular user role. As described in the methods section, each role was only counted once per user-participant per conversation. A total of 1,251 instances of user roles were identified in the conversations in the sample. The frequency distributions of user-participant activities and roles are shown in Table 1.

The results suggest that user-participants were self-selecting to four primary roles (player, bug reporter, player support, and playtester-designer). Together, these four roles accounted for 83% of the coded activity in the sample. The remaining seven roles were all far less common, with each representing less than 5% of the code applications.

Table 1: Frequency Distribution of User-Participant Activities and Roles

Activity or Role Name	Frequency (%)
Playing-Consuming	624 (50%)
Consumer	50 (4%)
Player	385 (31%)
Bug Reporter	189 (15%)
Community Building	339 (27%)
Player Support	263 (21%)
Community Moderator	18 (1%)
Reviewer-Promoter	33 (3%)
Developer Advocate	25 (2%)
Games Testing	237 (19%)
Playtester-Designer	200 (16%)
QA Tester	37 (3%)
Co-Developing	51 (4%)
Content Creator	17 (1%)
Ideator	34 (3%)

5 DISCUSSION

Overall, the roles represented a wide range of user interactions with the open development process, including activities typical to commercially-released games and to user feedback processes. But there were also roles outside of these areas that could be valuable to developers and players.

The consumer, player, bug reporter, player support, and reviewer roles were most clearly aligned with activity around commercially-released games. Overall, these roles represented the majority (71%) of the user roles coded here, so it could be argued that the most user-participant communications were not directly related to open development. However, this argument would ignore the ways that these traditional roles, as they were adopted on the forums, directly and indirectly contributed to the development of *Aground*. Even the player role created discussions and increased the visibility of the game. Additionally, player posts sometimes prompted conversations that identified common points of confusion or highlighted other playtesting feedback. Likewise, the player support role can be seen as a key part of building and sustaining a strong open development community. Wolfire Games, an early advocate of open development, described community building as one of their three pillars: "Start [building a community] early. Starting from zero is tough, so get it out of the way now. The earlier you start the more seeds you can plant by launch" [11]. In other words, while open development necessarily expands on the activities of typical gameplay communities, it also includes these activities in support of its own goals.

A second argument on the prevalence of traditional gameplay roles could be that user-participants were generally acting as if *Aground* was already a commercially-released game. This argument might have merit, especially since Steam Early Access has been described as a late phase in open development that opens "a fire hose of users" [27]. Developers typically have localized releases on smaller platforms before going to Steam, and once they are on Steam, many developers are less open to making significant

changes to the game. While the use of Steam Early Access forums might be a limitation of the sample, approximately a third of the user activity in the study was still focused on giving feedback to the developer. Over the ten months covered in the sample, playtester-designers and ideators suggested more than 200 changes to the game, and bug reporters and QA testers identified more than 200 issues with the current build. In other words, even as a minority of the communication activity, these roles represented a substantial amount of feedback for a small, independent developer.

Finally, several less common user-participant roles also made significant contributions to open development work. For instance, the developer advocate role seems well-aligned with the exigencies of open development because it reflects both the incomplete state of the game and users' knowledge of development goals and processes. Several developers have even directly cited the importance of advocates:

> The first thing we did was we commuted a very tight circle of VIP community members. ... People listen to them, and they become ambassadors. Because once they have banged on your game design documents, and your dev team and the VIPs worked things out, and you all agree this is what the game should look like, once those get opened to more of the community, you have a whole set of ambassadors there helping you explain, "this is why we did it." [43]

While *Aground* did not use the same structure for their "VIP circle," higher tier backers on the Kickstarter were given access to "developer feature polls," and several of the most active participants were mentioned as "Beta Testers" in the game credits.

Additionally, while the ideator role was not particularly common on the forums, the developer directly emphasized the contributions of this role to *Aground* in the game description on Steam: "The diverging science and magic paths, pets/familiar system, fishing, and more were all thanks to player suggestions." Clearly, ideators can make valuable contributions to open development projects.

Finally, the redirection of some community moderator work toward offering communications advice to the developer was an interesting shift in open development. In these posts, the user-participants were drawing on their experience in other open development projects to support effective communication in the current project. This suggested a more equal power distribution between users and developers than is typical for traditional game releases. Even if artistic vision reflects a common value for game design, it is not valued similarly within the design of game development communications systems. This positioning is not unique to *Aground:* Other open development projects also have instances where developers adopt new communication strategies based on player recommendations. For example, after a year of open development, the team behind *Factorio* began releasing a weekly newsletter after players argued that they needed more regular updates on development [22]. Six years later, the newsletter was still being published on a weekly basis.

Thus in creating open development communications systems, developers might want to conceptualize the kinds of roles they envision for user-participants. The communications systems can then be designed to promote and support specific roles. We can see

a reflection of this in the *Aground* forums, which were organized into three major categories: General, Suggestions, and Bug Reports. These categories were created in August 2018 in response to a player's recommendation:

> **Community Moderator:** PS. Could we get a couple of additional forums, one for bug reports and one for suggestions? I hate Steam's primitive forum software. Click a thread, then click to the last page, then scroll down to the last post... ugh.
> **Developer:** You know... this might sound stupid, but I didn't even realize you could do that on steam. Done, and I moved some threads around!

While these categories were an early reflection of the major user-participant roles on the forums, they also likely acted as signals to subsequent participants of the kinds of discussion topics to post. As such, it is unsurprising that the prominent roles of playtester-designer and bug reporter continued to align with the named categories in the forums. If other roles are valued by developers, similar signals might be built into forums or other open development communications technologies. For example, many of the instances of the QA testing role occurred in a thread that specifically looked for ways to break the game. This could be expanded to a forum category with clear instructions if robust QA testing was a priority. Or, if the player support role was particularly valued, forums can implement community recognition badges or other structures to recognize active members. Other open development projects have implemented other communications tools to support specific roles. For instance, ideators sometimes receive recognition in the game credits or through in-game items that highlight this role. And in-game feedback widgets, like the one made for *Subnautica* [17], can be used to vastly increase player feedback by creating an in-game communications interface.

Moving beyond open development games, similar approaches can be designed into UX research more broadly. By expanding the recognition of user-participant roles beyond those of the representative technology user and the research subject, we can create more responsive and engaging experiences for participation in UX research. Creating systems that are open to many kinds of interaction and then seeking to understand participants' goals within these systems is a logical first step, but designers might also begin to identify and cultivate specific roles that are valuable but less prevalent. This then allows us to recenter user-participants during UX development, even in industries where the final products still center developers.

6 CONCLUSION

This paper identified and described user-participant roles found in an open development game project. It used conventional content analysis to examine Steam forums for *Aground*. Ultimately, it identified four user-participant activities and eleven roles on these forums. By examining the frequency of these various activities and roles, the study found that many user-participants were acting in similar ways to users of completed games. Still, the multiplicity of roles helped to demonstrate how specific tools and approaches might be built into open development systems in order to support a wide range of potential user-participants and their goals.

Overall, this study has sought to demonstrate how reflexively applying UX concepts on the design of extended user research projects can help us facilitate participants' goals alongside the broader project goals. By reframing participation around users' own goals, we can build more sustainable and engaging UX research systems.

6.1 Limitations

The major limitation of this study is the focus on user-participant roles solely in the forums for the game. As noted above, the genre and channel for the communications had an effect on the types of work we see there. Still, with the highly diffuse network of communications that represent open development games, some limiting of the sample was necessary for the qualitative research method to be successful.

6.2 Future Work

This paper primarily serves as a foundation for further analysis of user-participant work in open video game development projects. The next step in the study will examine the effectiveness of user-participants' voices in these projects by correlating the user roles described here with their discursive uptake in developer and player responses.

Other future work could compare user-participant roles across open development communication channels or across various open development games. Further work could also expand these roles beyond the purview of games development to broader UX practice.

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