Research Article

YouTube Gamers and Think-Aloud Protocols: Introducing Usability Testing

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***Abstract*—Background:** *Recordings of gamers interacting with video games have become a mainstay of online video-sharing communities such as YouTube. Sometimes called Let's Play videos, those recordings include content relatable to usability testing sessions and potentially illustrate basic think-aloud protocols.* **Literature review:** *Research regarding think-aloud protocols indicates that the use of video to review concurrent user commentary is a valid usability testing technique, including sessions that include little to no tester instruction or intervention. Evaluation using a heuristic created for the studied interface can support this type of usability testing.* **Research questions:** *1. Based on a heuristic created from video game usability research, do Let's Play videos provide content representative of think-aloud protocols regarding usability of the games played? 2. Are relevant Let's Play videos potentially useful tools for illustrating think-aloud protocols to students unfamiliar with this type of usability testing?* **Methods:** *After reviewing research concerning video game heuristics to create a common set of guidelines, the author selected and reviewed five YouTube videos, gathering and coding information related to the heuristic.* **Results:** *The recordings were found to contain relevant information regarding video game usability based on the criteria developed from the literature, specifically considering verbalizations relative to think-aloud protocols.* **Conclusion:** *Because these gaming videos contain commentary measurable against a research-based heuristic for game usability, they could be used as an additional method to introduce think-aloud protocols to usability students.*

Index Terms*—Heuristic analysis, Let's Play (LP) videos, think-aloud protocols (TAPs), usability testing, video games.*

A few years ago, a simple game called Flappy Bird was the focus of great media attention. Part of the game's success resulted from videos of gameplay posted online by a Swedish social media star, a YouTube personality, whose videos had earned him millions of followers [1]. He and his contemporaries are part of a growing community of online game commentators, who have helped to change the context of gaming by recording themselves playing games while offering a running commentary of thoughts, reactions, achievements, and failures.

These recordings are part of the Let's Play (LP) movement, in which users post videos of themselves on social media to show others their gameplay. Called "professional fans" by some, these gamers are not necessarily experts; they simply love to play video games and provide viewers their thoughts and commentary [2]. Millions of people follow LP gamers online, watching them play a wide variety of games while they give viewers continual narration. Their videos are "quick, dirty and done mostly solo," and despite editing for continuity, their goal is simply to play the game and provide entertaining feedback, rather than to produce professional videos [1]. Viewers are responding, as research from a couple of years ago showed that 70% of men and 30% of women between the ages of 18 and 34 watched gaming videos on YouTube alone [3]. The sheer volume of LP recordings available speaks to their popularity: as of June 2018, a YouTube search for videos of play of the game at the center of this study brings up more than 13 million results.

Observing and recording users interacting with an interface in the manner of these LP videos could be compared to usability testing employing think-aloud protocols (TAPs). Described in detail by Ericsson and Simon, and discussed extensively in the literature, the objective of TAPs are to have "subjects verbalize their thoughts at the time that they [emerge]" [4, p. 60]. Testers observe as users interact with the product being tested and provide verbal feedback about the process with little to no prompting. Strategies for using TAPs differ, but we

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Practitioner Takeaway

- YouTube Let's Play videos showing gamers interacting with video games can provide think-aloud usability testing protocol simulations in the classroom.
- The author provides a heuristic for assessing such simulations based on the literature of think-aloud protocols and usability testing of video games.
- The recordings analyzed contained relevant information regarding video game usability based on the heuristic criteria developed from the literature, specifically considering verbalizations relative to think-aloud protocols.

can use research to create some general guidelines for such a test in an informal setting, particularly when we are introducing the practice to those unfamiliar to usability testing, such as students. Traditionally, TAP tests are set up for specific purposes and follow precise guidelines, and the information received from TAP tests ideally includes the thoughts, struggles, and commentary of a participant from the target user population, much like the content included in LP videos.

This paper evaluates LP videos available on YouTube based on a research-based usability heuristic to determine whether those videos could be used to introduce novices to TAP usability testing. Although these videos are not the same as live demonstrations in a laboratory setting or even formally recorded usability sessions, their availability makes them uniquely suitable for educating students about this type of usability testing when resources for observing formal testing are not available. In the following sections, I begin with a brief discussion of TAPs and an introduction to LP gaming before reviewing research concerning heuristics for evaluating interfaces and games. Then, I describe an analysis of five different users' LP videos of the same game, based on Nielsen's recommendation that approximately five users be observed for adequate testing cycles [5]. I finish with conclusions about the suitability of LP videos for introducing the concept of TAPs.

Literature Review

Observing users' interaction with an interface as those users share their thoughts aloud is a long-standing usability testing technique known as TAPs [4]. The most significant goal of TAPs is to gather feedback in real time while a user is engaged in a task to gain information [6]–[8]. For an informal introduction to TAPs, viewing a recording of product use (such as LP gaming videos) might also be a valuable activity. This section examines the literature regarding TAPs, provides some background about LP gaming, and discusses usability characteristics helpful when creating a heuristic for game testing.

Think-Aloud Protocols Used at various stages in the technical communication and product development process, TAPs benefit usability researchers by helping them rapidly collect data with little tester intervention [6]. Data from TAPs can be collected concurrently or retrospectively [4], [9], using real-time observation or a recording. By employing TAPs, researchers gain valuable information about how participants actually use a product. The guidelines for conducting a TAP test often include giving test subjects contextualizing instructions, offering practice time, and prompting if necessary [4].

However, the literature also discusses the hindrances presented by a tester's intervention. "Thinking aloud" in the presence of an observer can feel awkward for subjects; the presence of an evaluator may hinder the legitimacy of the results. In fact, a survey of TAP use showed that those testers providing demonstrations and practice sessions were in the minority: "the risks of intervening might well outweigh the benefits" [7, p. 4]. Certainly, the best testing situation would mirror a user's natural context, and a natural context would not include instruction about TAPs or the presence of a usability tester/observer.

Because the most frequently used method is concurrent TAPs [7], recordings can prevent some external pressures for participants. Recordings of think-aloud sessions can benefit testers when simultaneous observation is not possible [10]. Likewise, allowing for the recorded use of an interface provides another opportunity: in a more formal TAP session, with an observer present,

participants may exert effort that is not typical of normal use, which could slow them down or cause distraction [8]. Because of this potential concern, some researchers advocate for no interaction with the participant during testing [11]. Videos of a user interacting with a system, such as gaming videos, then, are potentially legitimate sources to introduce usability testing to an audience unfamiliar with TAPs, even if these recordings were not created for that purpose and do not include instruction about the process of usability testing.

Introductory instruction about usability testing often occurs in under-resourced classrooms without access to usability testing equipment and materials. In these settings, the use of recorded TAP sessions can be a viable method to illustrate the technique. When facilities and technology are not available, finding resources to familiarize students with testing methods can be invaluable. Research supports the use of prerecorded videos and the avoidance of interaction while testing, both of which are characteristic of LP gaming videos available free online. These characteristics make LP recordings a potential source for TAP instruction.

Online Gamers and TAPs All users can provide rich information about the usability of a product through testing, and although new users are often the subject of usability testing discussion, a subject who has practice with an interface can offer information missed by novice users [12]. Therefore, experience with an interface does not preclude a participant from contributing to testing. Ubiquitously posted online by experienced gamers, LP videos often include basic elements of recordings that might be produced during a think-aloud usability session. Players typically record their videos in their homes—where most gamers use the products—and edit them to ensure that the video is full of content and without quality issues [13]. The language used by LP gamers is natural, often including expletives and gamer jargon, and the players talk about the games in the way that they might if they were playing with friends. The goal of these videos is typically not to review the game or to win the game with expertise, but simply to play and provide commentary based on their experience with the genre of video games [1]. LP gamers know their viewers—a group that includes gamers and game developers—and appeal to them with a specific purpose: to entertain, but also to inform and comment on game quality and their user experience.

When using self-promotional recordings such as LP videos for instructional purposes, we should be mindful of the potential for manipulation and bias. Even the most practiced of LP gamers edit and splice their gameplay, potentially eliminating valuable information—such as significant usability pain points—that could benefit someone interested in the testing of the game. Further research could examine live-streaming gaming video services, such as Twitch (twitch.tv), to compare live content to videos that have been edited. To maintain a manageable scope with a widely used social media platform, however, this study focused on YouTube videos to ascertain whether they provide relevant content to teach novices about usability testing and TAPs.

LP videos not only appeal to potential game buyers, but game developers also recognize the usefulness of LP videos in their industry, admitting that they consider how suitable their new products will be for LP-type videos [14]. Despite the videos' availability, their significance in the gaming industry, and their possible relevance to usability testing and TAPs, LP videos are not widely discussed in the literature. To aid in instruction about usability and TAPs, LP videos may be an accessible way for learners to conduct an initial consideration of user testing. To begin, however, a discussion of the usability of video games is relevant.

Usability and Video Games Nielsen provides basic guidelines for measuring usability [15], and these elements are consistently referenced in the research: learnability (ease of first use), efficiency (ease of practiced use), memorability (ease of use after absence), errors, and satisfaction. The broad applicability of these usability elements makes them adaptable to many types of testing. However, criteria more specifically adapted for particular products, such as video games, may provide more precise feedback.

Fortunately, because of the popularity of video games, heuristics for evaluating game usability have been the subject of recent research. Videos recorded by LP gamers are varied, a fact that would make a comprehensive list of measurable criteria prohibitively extensive, especially for introductory instruction. Instead, we can refer to commonalities in game heuristic research to create a general set of guidelines [16]–[20]. Certainly, Nielsen's basic framework would be appropriate, but to ensure that we understand the context of gameplay more thoroughly, examining characteristics of video

game usability is useful to ensure a clearer connection for learners.

The elements of usability provided by Nielsen have connections to video game usability measurements. The element of satisfaction, for example, may be significant in game usability because video games are, ultimately, about having fun. However, some elements may need adjustment: Nielsen's element of efficiency, which "generally equates with expending the least amount of resources to complete an end goal" [15, p. 7], may be somewhat problematic for video game testing. In a gaming situation, players may not want a quick and efficient experience; rather, they may prefer more difficulty, a characteristic that can enhance the game's entertainment value. Therefore, to ensure suitability for analyzing video game usability, I opted to adapt the measurement criteria based on game-specific research.

In the gaming usability heuristic guidelines reviewed, common characteristics appeared, and those commonalities were selected to create a rubric to measure the usability of a game while observing the LP videos at the center of this research. These characteristics include the following:

1. Availability of status
2. Adherence to conventions
3. Customizability
4. Accessibility of help
5. Comprehensibility
6. Assistance with user recall

Additional criteria could certainly be added from the scholarship, depending upon the purpose of the analysis, but an introduction to TAPs can rely on these six aspects of interface usability initiated by Nielsen and adapted by scholars focusing specifically on game usability. A more detailed discussion of the six characteristics of video game usability is included in the Methods section of this paper.

Research Questions

As an instructor of technical communication in a four-year university and someone with limited personal experience in gaming, I began the study with the following research questions.

RQ1. Based on a heuristic created from video game usability research, do LP videos provide content representative of TAPs regarding usability of the games played?

RQ2. Are relevant LP videos potentially useful tools for illustrating TAPs to students unfamiliar with this type of usability testing?

To answer these questions, I observed videos of five different online gamers playing the game Five Nights at Freddy's, and, using the six heuristic elements compiled from research, I studied whether these videos illustrated usability via a sort of TAPs, making them suitable for introducing novices to TAPs. If the LP recordings included adequate representations of TAPs, their availability and accessibility could prove invaluable, particularly when resources for instruction are limited.

Methods

In this section, I describe the methods of this study, beginning with the process of creating a heuristic, continuing with an explanation of video selection, and ending with a discussion of the videos' heuristic analysis.

The methods included a few phases, anchored by the previously discussed research about TAPs and usability testing. Having watched many LP videos on YouTube, I knew what type of content was typically included, so my first step was to develop a heuristic based on video game usability, to ensure that the data I collected would be observable (and potentially teachable) to TAPs/usability students based on measurable guidelines. After conducting research about game usability and finding commonalities to develop a gaming-specific heuristic, I considered which game and gamers to study and reviewed their videos on YouTube. Finally, I analyzed the gameplay on the videos using the heuristic, focusing specifically on verbalizations to maintain the connection to TAPs, and collected information to develop conclusions. This section describes each step of my methods in more detail.

Video Game Usability Heuristic For individuals unfamiliar with usability testing, the use of heuristics is encouraged repeatedly in the research. Nielsen and Molich present information indicating that most usability testing is based on heuristics, with the general goal of "trying to come up with an opinion about what is good and bad about the interface" [21, p. 249]. While these scholars admit that using heuristics is not without disadvantages, they posit that using any method to find issues with a system is beneficial, and testing with heuristics can be inexpensive, simple, quick, and adaptable throughout the development process.

TABLE I
VIDEO GAME USABILITY HEURISTIC

Characteristic	Example Questions for Characteristic
Availability of status in the game	Can players see how much energy they have left? How much time is left in the game?
Adherence to expectations of the player	Does the game follow genre conventions, so the player knows intuitively how to function inside it?
Ability to customize gaming experience	Are players able to choose characters, storylines, or actions, to personalize their gameplay?
Accessibility of help	If players encounter obstacles, are tutorials or other modes of assistance provided and efficient?
Clean and understandable interface	Is the game's design easy to navigate and free of unnecessary visual noise?
Assistance moving players toward success	Does the game include features to help player recall, such as tips, task lists, and maps?

These qualities make heuristic evaluation accessible for instructional purposes.

As discussed in the Literature Review section, Nielsen provides the basic guidelines for measuring the general usability of products, but others have tailored those guidelines more precisely to video games [16]–[20]. A list of all elements presented in suggested heuristics for interfaces would be quite extensive, so those elements that appeared in common were selected for consideration. The characteristics are included in Table I, with a more thorough discussion about each element following. These commonalities make up the heuristic used for the analysis in this research.

Evident in this rubric is that the research on developing video game heuristics tends to have more specificity than the general usability guidelines offered by Nielsen. Certainly, the criteria that I have provided correspond closely to Nielsen's elements (e.g., *accessibility of help* easily relates to the *errors* element), and this study could have evaluated video games based upon learnability, efficiency, memorability, errors, and satisfaction. However, using research on video game usability helps ensure that the test criteria are relevant to the context of this usability observation, making analysis for learners more accessible.

Choosing from Available Videos The number of LP videos available online is overwhelming. Both amateurs and professional gamers alike post LP videos on social media sites, and with the perpetual introduction of new games and new users, availability increases exponentially as time passes. Because of the accessibility and widespread familiarity of YouTube, I focused on videos on that particular network; however, LP and LP-related recordings are available on a variety of online platforms, potentially offering opportunities for further research on this topic. Gamers on YouTube alone are prolific: the most popular YouTube gamers post multiple videos per game they play, and their videos go back for years, with the earliest LP videos having been posted in 2006 [22]. To conduct an examination using the concept of TAPs, I had to choose which of these recordings to study. To ensure that each user's experience was similar, and similar to a task-based usability test, I decided to choose different users playing the same game and videos posted during the same time period, with content posted on dates close to the game's release date.

I began with a brief list of games that I knew to be the focus of numerous LP videos. Many games are incredibly complex and require hours of play, with an initial setup that may require multiple videos. To avoid overwhelming complexity, I quickly decided to use a game called *Five Nights at Freddy's* [23]. Because this game has simple, clear goals and does not require significant instruction or practice time, I thought that the content would

be more manageable, particularly if I am considering the use of these videos in introductory instruction. Videos of more complicated games may be an area for future research, providing much more complex data and potentially greater opportunities for pedagogical application. But choosing a simple game allowed me to more easily gauge how well TAPs are illustrated even in shorter recordings suitable for initial exposure to this type of usability testing.

The goal of *Five Nights at Freddy's* is to survive a night in a pizza parlor, where, left to their own devices after the parlor is closed, animatronic animal entertainers become sentient and try to attack the player [24]. Unable to move out of a singular location in front of the security camera screens, the user must constantly monitor the robotic creatures, keeping an eye on power supplies that support doors and lights, and trying to avoid the villains through the night. Much of the game involves simply clicking from one security camera screen to another and occasionally pressing a button to close a door, so the control requirements are not complex. The game has produced multiple sequels and can be played on multiple gaming platforms, and its popularity has made LP videos about the game highly available on YouTube. The simplicity and availability of videos for this game make it very suitable for this analysis.

Nielsen indicates that for a think-aloud usability test to be effective, only "four to five subjects are required" per testing phase [5, p. 393], so my next step was to identify five LP gamers that I could study for this research. I selected three players from a survey of top lists of YouTubers while referring to the available *Five Nights at Freddy's* videos: gamers who call themselves PewDiePie, Markiplier, and jacksepticeye. The lists did not generate other players who had recorded relevant sessions with the game, so I moved to a different method for selecting my final two gamers.

I conducted searches on YouTube for variations of the phrase "Five Nights at Freddy's" and located the videos that had the highest numbers of views, choosing a gamer with the moniker HomelessGoomba/VenturianTale. Unsurprisingly, and famously discussed in the media, the videos, like the gaming industry at large, were heavily male-oriented, so rather than including only those gamers with the highest numbers of subscribers, I located a female gamer with the name ihascupquake. She had a comparably high number of subscribers and had also posted a video of the relevant game. All five videos chosen were posted in late 2014, when the game was released; as a result, the experiences recorded were likelier to be the gamers' early exposures to Five Nights at Freddy's. Finally, all videos included gameplay of the first levels (or nights) of the game. With the videos chosen, my next step was to watch (and rewatch) the videos to analyze their content.

Conducting the Analysis After selecting the videos, I began with an introductory viewing of each video in its entirety. Then, I watched each video at least three more times, taking bulleted notes based on the content, to have a scope of the type of comments included. These notes included short quotes by the gamers, some of which will be included here, as well as notes about the gamers' other statements and basic notes about gameplay. Once my notes were complete, I coded the gamers' comments based on the game usability heuristic that I had developed. For examples of verbalizations and an explanation of their categorization, see Table II.

Finally, I reviewed the videos and my notes to mark illustrative examples of the content and then checked the notes for each video against the game usability heuristic. The results of this analysis are in the following section.

Results

Although they were not specifically created for usability testing purposes, the LP videos reviewed did include a variety of relevant verbalizations to illustrate TAPs, particularly when these videos were measured against criteria for game usability. To determine whether these videos could be used to introduce usability students to TAPs, I have included in this section my findings based on the analysis of the videos, including narrative commentary from the LP gamers, as well as incidents of usability-related commentary that correspond to the heuristic created. If LP videos are to be considered for introducing students to TAPs, then ascertaining the measurability of usability commentary is necessary. Thus, I used the established criteria to find examples of usability-related comments that could be construed as informal TAPs.

The first category in the heuristic is the **constant availability of status** within the game. In this first iteration of *Five Nights at Freddy's*, the player remains in one location for the duration, and the only goal is to survive. The status of victory or defeat is continuously clear—one does not have to

TABLE II
GAME HEURISTIC WITH EXAMPLE VERBALIZATIONS AND EXPLANATION

Characteristic	Example Verbalization	Relationship to Characteristic
Availability of status in the game	"I'm already at nine percent [power]" [25].	The player requires electrical power for protection. The level of power reserves was clearly displayed on the screen, so the player was always aware of that status.
Adherence to expectations of the gamer	"What's going on? […] Can I click on any of this? No" [26].	This player was clearly accustomed to games offering more movement and interaction. Being unable to move is not what this player expected.
Ability to customize gaming experience	"I don't want to go through that phone call again" [25].	The game includes a few lengthy voicemail messages, which most players did not want to hear. The player could not skip this message or receive the information in any other way, which would have been a desired customization.
Accessibility of help	"I don't understand it. Someone tell me in the [YouTube] comments" [26].	This player could not figure out a solution to a problem. The game is simple, but tutorials and tips are not readily available, causing the player to crowdsource for ideas.
Clean and understandable interface	"Oh, we've got cameras, this is so cool!" [27].	The simple interface meant that players could easily learn how to play the game.
Assistance moving players toward success	(to voicemail message) "Oh, alright, we're conserving power […] Good to know" [25].	The voicemail message included tips for playing the game. Despite many negative comments about the message, it did provide information to help players survive.

earn points, for example. For more specific attention to status availability, I looked for verbalizations that indicated that the gamer was checking for status and was able (or unable) to find it. In all five recordings, players repeatedly referenced their status, commenting on the amount of power left and the time remaining in the night, including statements such as "I'm at 83% power. You're not supposed to run out of power" [27]. Because verbalizations such as this were present in all of the videos, viewers can observe that the gamers do, in fact, look for game status, and that within this game, they were able to find their status easily.

Next, to increase usability, games should adhere to **player expectations**. This criterion may be more difficult to discern from some gamer videos, but the videos analyzed include verbal references to gaming conventions. When the gamers realize that they are unable to move from their start positions, they react to this unconventional characteristic by saying, "Can I not move?" [26] and "I can't really do anything here" [28]. The viewer can see that this particular element of *Five Nights at Freddy's* makes the game less initially usable for players. Because of the inability to navigate around the game world, LP players' expectations were not met, and many of them became irritated as a result, evident in the negative connotations of their verbalizations.

The third element of the game usability heuristic is **customizability**. Because of the simplicity of *Five Nights at Freddy's*, customization is limited, and the gamers' reactions to this limitation were similar to those about the adherence to gamers' expectations—voicings of disappointment. One manifestation was in reaction to the lengthy telephone message that plays at the beginning of each level included in the videos. The gamers repeatedly made negative comments about being unable to stop the incoming phone message, voicing frustrations with statements such as, "God, just let me play!" [26]. Only one player (the female player, interestingly) appeared to pay attention and take the message seriously—her silence is informative—but as with the example of being unable to move, the complaints that most of the players "thought aloud" about having to wait can serve as examples of a usability issue that could be improved, based on the heuristic used here.

The **accessibility of help** was a bit more challenging to analyze based on the chosen LP videos, perhaps partially because the game is comparatively simple and partially because the

videos were created by experienced gamers who may not often use help functions. However, the videos selected included repeated questioning about what actions players could take as the game begins, indicating that perhaps they could use some support at those points. In addition to the extended voice message, the documentation should perhaps include a quick tutorial option; this help function would prevent the previously discussed complaints about the customizability of the game and improve the accessibility of the game's help.

The next element of usability in our heuristic is **comprehensibility**, or a clean interface. The overall simplicity of the interface certainly assists with understandability, as indicated when one of the players asked, "I check the cameras, right? That's all I can do" [25]. By observing that all of the gamers quickly figured out the available actions, and through their vocal description of that process, viewers can see that *Five Nights at Freddy's* does meet this element of usability. Even though some of their verbalizations indicated that they were not fully comprehending the game—"I don't know if I'm doing this right" [25]—most of the gamers were able to complete the first level fairly quickly in their videos.

The final characteristic of a usable game is its **assistance with user recall**. That is, a game is more usable if it does not require gamers to remember all necessary information to play; instead, it should provide instructional information during the first session of play, and reference information should be available for all subsequent sessions. In the videos, when the gamers lost a level and had to start over, complaints about having to wait through the instructional telephone message were common; as they moved into the second night—the second level—a new phone message offered additional tips and information, causing more groans. Perhaps, the usability tester viewing this video might (again) consider adjusting the amount and nature of information given; if gamers voice opposition to the extent of assistance, that help could be limited further or presented differently. This information is gained by listening to the LP gamers discuss their play of *Five Nights at Freddy's*, and their verbalizations provide evidence that the videos may serve as an instructional example of TAPs for feedback regarding assistance with user recall.

With the content available in these five gaming videos, novices to usability testing could consider movements, actions, and vocalizations of the gamers. Using only the information verbalized—similar to what one might hear during a think-aloud testing session—however, it is possible to learn whether this game meets the required elements of usability included in the heuristic compiled from gaming research. Particularly because these videos were not produced with TAPs in mind, they can provide a wealth of information about the usability of this game, especially for newcomers to TAPs. For instructors of usability testing, having access to a resource such as free online gaming videos could be valuable in introducing TAPs to students, and measuring videos such as these against a simple heuristic has the potential to provide an entry into usability testing.

Discussion

Based on the results discussed above, LP videos can include content relevant for an introduction to TAPs. Gamer commentary represents the type of content that users ignore, such as when one gamer laughed through part of the initial instructions of the game [29]. Some of the gamers even commented about accessibility and design, with statements such as "There are no subtitles . . . . Blame the creator of the game!" [27] and "These graphics remind me of games from the '90s" [28]. The results and these examples are only some of the notable content in the videos when viewed with the intention of analyzing them for game usability, particularly regarding TAPs.

This study began as a pedagogical project: I planned to consider the use of LP videos to teach undergraduate students in my technical communication service courses about TAPs. The videos' content certainly illustrates examples of the data that testers might gather in a usability testing session with TAPs. These data include typical characteristics for game usability as discussed in the literature. In addition, the content contains other examples of user experience and usability commentary, such as statements about graphic design and the emotional reactions of the players. Some limitations must be noted with regard to using these videos in an instructional setting, however.

Because LP videos are not made for educational purposes, they include some content that people may find objectionable. The use of profanity is common, and sensitive viewers may find the language offensive. However, teachers could screen and carefully select appropriate examples or, with a

stated caveat about this concern, include a selection of videos as an option among other options in course activities. Most important, using the videos as an example of TAPs provides a more concrete example of that type of usability testing for learners. Obviously, integrating video games into a course in any way is going to be appealing to some students, and with the popularity and availability of these LP videos, many students are likely already familiar with them. Connecting coursework to students' extracurricular lives or interests can be beneficial in the classroom. These benefits should be weighed with the consideration of the limitations.

Conclusions, Limitations, and Further Research Directions

Usability testing is an important part of the technical communication process, and TAPs are a popular method of conducting a usability test. Although formal think-aloud testing is invaluable, often technical communication instructors introducing the practice do not have the time or resources to conduct formal testing. In these situations, we can look to media available on the internet such as LP videos made by YouTube gamers. By relating game usability to TAPs in the manner suggested here, newcomers to usability testing can have at least a basic exposure to the type of feedback a user might provide. Although video content needs review to ensure suitability for the audience and context, with careful integration, LP videos such as these provide examples that students of technical communication could relate to in a more concrete and compelling way.

The narrow scope of this research presents limitations that provide opportunities for future research into LP gaming videos. Because of the gender disparity in gamer videos, issues of gender would be an important facet to research in the LP movement. In addition, a more thorough examination of gamers and their videos could yield interesting data through a variety of lenses, particularly those of user experience, to include gamers newer to the LP scene as well as more seasoned players. For those interested in more advanced usability and user experience research, further study of these areas could certainly be fruitful for higher level pedagogical purposes.

To suggest opportunities to introduce usability students to TAPs, this research examined the viability of using YouTube LP videos in an instructional context. The five videos examined illustrate the potential for gathering information about usability as players "think aloud." Certainly, there are other effective methods for introducing TAPs to our students. But for initial exposure to the concept of TAPs, including clips of LP gaming videos from YouTube as an introduction to TAPs may provide a foundation on which instruction about more extensive usability testing using TAPs can be built.

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