To Bracket or Not Bracket: Experiments in Gamification in the Wilds of Technical Communication

Brett Oppegaard
University of Hawai'i at Manoa
2550 Campus Road
Honolulu, HI 96822
+1 808-956-3340
brett.oppegaard@hawaii.edu

Thomas Conway
University of Hawai'i at Manoa
1776 University Avenue
Honolulu, HI 96822
+1 808-375-7092
tconway@hawaii.edu

Megan Conway
University of Hawai'i at Manoa
1776 University Avenue
Honolulu, HI 96822
+1 808-956-6166
mconway@hawaii.edu

ABSTRACT
"Gamification" research has evolved and grown dramatically in recent years, gaining popularity across disciplines. While such efforts have generated headway in many respects, and in various directions, from conceptual understandings to user studies, the field could benefit from more work focused upon use in research methodologies at the nexus of practice and theory. This paper, in turn, reflects upon such an experiment aimed at the design and application of gamification techniques within a typical technical-communication context. In this case, subject matter experts within the National Park Service were being asked to improve accessibility of their site brochures by audio describing them. During this training, they were given an overview of audio description, as a process, as well as introduced to a prototype web tool and then asked to use that tool to create the description for their site brochure. Unlike previous training exercises with other parks in this project, though, this group also was organized by sites into a tournament bracket, in which pairs of parks competed against each other in exercises designed to create comparable audio description. The winner of each round, as determined by an independent panel of judges, advanced to the next round, spurred by the promise of fun Hawaiian-themed prizes at the end. This gamification strategy appeared to generate more data, and more research-focused data, than the previous training exercises we have offered, per user. It also apparently engaged many, in various evident ways. But it also seemed to disenfranchise some as well, who dropped out of this voluntary training, creating a mix of results, which will be outlined in this paper.

Categories and Subject Descriptors
L.3.6 [Science and Technology of Learning]: Methodology/Tools/Technology – Technology Enhanced Learning.

General Terms
Design, Experimentation.

Keywords
Gamification, audio description, accessibility, information design, cross-modal translation, National Park Service, disability studies.

1. AUDIO DESCRIPTION AS A CONTEST
For more than 30 years, the U.S. National Park Service (NPS) has been struggling to address federal mandates that require the availability of equivalent learning media on site for those with disabilities, such as blindness or low vision. While NPS sites offer much visual media, in many forms – including videos, visitor-center exhibits, and wayside signs – this research project has been focused strictly on the unique paper brochures offered at each place. One objective of this research project has been to find a practical path for the NPS to translate its roughly 400 purely visual and silent (paper-based) brochures into equivalent acoustic versions using a captioning-like process called audio description. For this work, our research team has custom-built a web-based tool, www.unidescription.org, which includes an online training center and forum. To user test this approach, we had organized and conducted two earlier and similar training sessions for parks, as a way for them to learn and use the UniD system, starting with three sites in Round 1 and eight parks in Round 2. For Round 3, though, we had many more parks wanting to participate (28) and an ambition to use gamification techniques to increase the engagement and quality of our training and production processes, leading to more and better data per park. With NCAA basketball's upcoming March Madness as an inspiration, we decided to create our own sort of tournament bracket and incorporate it into the process, which we dubbed a "Descriptathon." During this three-day training session, we gave our usual spiels about audio description. We gave the parks guidance and objectives for finishing their brochures, like we did before. Yet in this round, we also added a generally light-hearted competition to see how that affected the Descriptathon dynamic. In that process, we discovered many positive aspects associated with such a structure, including what we perceived as increased camaraderie and aesthetic motivations. We also had a few dropouts, which might or might not be attributable to the perception of an "electronic whip."

1.1 Gamification as a methodology
Interest in gameplay to improve human processes is not new, by any means, but it did surge as an idea again in the mid-2000s, when a convergence of new mobile and web technologies intersected with evolving digital business models (Bogost, 2016; McGonigal, 2011; Nacke & Deterding, 2016; Walz & Deterding, 2015). Gamification, as the term du jour, has been thought to drive behavior in situations outside of games, including in serious contexts, by, among other outcomes, spurring innovation, increasing engagement, and raising efficiency (Rauch, 2013). Technical communication is a natural home for gamification studies, because of crossover interests in interface design, information management, and systems development; game design also revolves around concepts common in the academic field's practices, such as iterative design, rapid prototyping, and user testing (deWinter & Vie, 2016). In this scholarly arena, researchers now are moving past the fundamental questions of

SIGDOC '17, August 11-13, 2017, Halifax, NS, Canada

ACM 978-1-4503-5160-7/17/08$15.00
https://doi.org/10.1145/3121113.3121228

definitions and motivations into inquiries about how such research should be done, when, and when not, including within that scope the challenges, heuristics, tools and methods of designing and implementing gamification techniques (Deterding, Björk, Nacke, Dixon, & Lawley, 2013; Nacke & Deterding, 2016). This effort is part of that inquiry.

2. A "GAMIFIED" METHOD

Similar to a sports tournament, National Park Service sites were paired in this process and told they would be competing to see who could write the better audio description of a provided media artifact. Each round offered a new artifact to describe, with an increasing level of difficulty, starting with a photographic portrait of Thomas Edison and followed by a landscape photo in Denali National Park and Preserve, an Everglades National Park collage, and a Yellowstone National Park map, all retrieved as some of the most challenging examples from our Round 2 training. After getting the necessary permissions, we used the forum on the web tool (www.unidescription.org/forum) as a way to catalog the various responses and to open up the process and data to the general public.

Figure 1. Thomas Edison portrait.
Courtesy of The National Park Service.

In other words, the Edison portrait was one of our most debated and difficult artifacts to audio describe in Round 2 of our training (when we were working with Thomas Edison National Historical Park), so we brought it back to Round 3, gave it to this new group of park staff (none affiliated with that park) and had them give it a try, to see the responses and how they might differ. The 33 responses varied widely (some participants responded multiple times) and ranged from a relatively straightforward description, such as:

A black and white round photo shows a young Thomas Edison at age 14. He gazes directly and confidently straight at the camera, while wearing a newsboy cap, scarf, and jacket, and almost smiling.

To more interpretive impressions, such as:

Aged fourteen, Thomas Edison, dressed in a knitted scarf, workman's cap, and jacket, sits with a confident half-smile on his face. His eyes reveal his precocious intelligence, maturity, and, at the same time, the burden of responsibilities he bears. He is working already. He studies at home when he can, but does not attend school. He suffers from hearing problems, but his force of personality does not let that deter him. The young man will be an inventor and businessman, and will need the toughness and resourcefulness he honed in these formative years.

At the end of each round, a panel of three judges (the Media Accessibility Coordinator for Harpers Ferry Center, Michele Hartley, and two independent consultants, specializing in audio description, Sina Bahram and Annie Leist) picked a winner from each pairing. As half of the field was eliminated from the main competition in each round, those who were not part of the main tourney anymore were placed into a consolation bracket, which we called "People's Choice." Those parks competed against everyone else eliminated each round, with the opportunity to rise back into a form of contention. In the final round, this tournament therefore had two victors crowned, one from the main tourney and one from the People's Choice tourney. The completed bracket shows the progression, in which Valley Forge won the main tourney and the author of the NPS System Map emerged as the People's Choice.

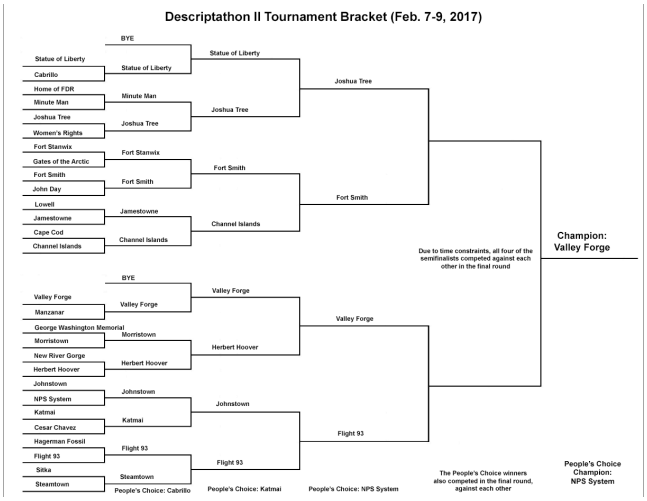

Figure 2. Completed Descriptathon bracket.

3. FINDINGS

The "gamification" approach described here did produce an enormous amount of data, with the descriptions from the contest providing the bulk of the 31 related forum threads and 293 responses. In addition, 24 out of the 28 participating parks completed (or mostly completed) their first drafts of the description of their park brochure using the UniD system during this training period. Because of the complex variables involved and the iterative design of the Descriptathon, which has evolved considerably in concept from Round 1 to Round 3, we have not compared data between rounds. As a case study of Round 3, though, the Descriptathon 3 findings offer a significant amount of fodder for future exploration.

Each round of competition generated comparable audio description text from independent National Park Service interpreters, about the same image, illustrating and demonstrating the vast scope of subjectivity in this field and creating opportunities for targeted studies using content analysis of this work. The chosen artifacts were drawn from some of the most contentious and compelling discussions we had about audio description as a group in Round 2, focused upon the most challenging types of static media to describe, including complex photographs, collages, and maps.

Overall, the separate drafts of the brochure translations of each park produced during this session ranged in length,

depending on the size and visual density of the brochure, but, as a rough ballpark, they were about 5,000 words each. These drafts included in-situ descriptions of all sorts of media artifacts, including maps, charts, illustrations, timelines, and photographs, often showing people engaged in recreational activities or in a scenic landscape, or a combination of those, consistently reinforcing and challenging the concept of a photograph conveying a thousand words, when those words now can be counted.

4. DISCUSSION

We were looking for a way to add a layer of engagement to an otherwise difficult and draining multi-day series of tasks related to translation. This "gamification" layer did, at least anecdotally, add energy to our discussions, and the panel of judges providing commentary on this work also seemed to significantly affect the overall translation quality throughout the Descriptathon. Therefore, it would not be prudent (or even possible) at this point to deconstruct and parse each element of the research situation into an easily definable strata, especially in an effort to validly determine what stimulus directly caused what effect. Competing variables included the competitive state of the activity versus the value of the judge's comments on the proceedings versus improved training materials that were provided online this round versus substantially more peer acknowledgement and discussion via the forum versus the preexisting individual skills and talents of the participants, and so on, were too intermingled and fuzzy to untangle. So in that respect, we don't really know how much the tournament layer added to this mix. We did get a distinct sense, though, that it brought a powerful energy that turned most people on but some people off. A scholarly concern about gameplay is the voluntary nature of it (Huizinga, 1955). The participants in this project were volunteers, interested in improving accessibility in the National Park Service, but they also were employees of that government bureau, being paid and working on the clock, so they were not entirely participating of their own free will, raising the specter of an "electronic whip" compelling their actions at least to some degree (Deterding, 2014). Some participants might have valued collaboration more than competition, and some of those, might have been discouraged by "losing" their tournament round. We did not track those feelings, but we did have four of the park representatives (out of 28) drop out at some point in the proceedings, for reasons unclear. Not wanting to be judged, or to compete, could have been a part of that.

That said, many of the participants remarked in our conference calls about how much fun they were having, how exciting this training was, and how they were eager to hear what the judges thought (and if they advanced, or not, in the competition). Because creating accessible media is not usually a competitive activity, by nature, and other activities (like driving sales of a product) might be much better aligned with productivity and quantity, using gamification in this context was both surprising and provocative to participants. If everything else was equal, would that lead to better (and more) audio description? That will have to be left for another experiment with a different design. What this case demonstrated to us was that gamification can be incorporated in such a process, and it can generate action and motivate participants. But how much? And how valuable is that motivation? And is it worth the potential costs that might demotivate a participant?

This case study did not intend to peel that problem apart but to just taste a bit of the potential. For our next Descriptathon, we plan to keep many of the same design features. But we also want to start pinning down some of the ideas here in more detail and with more precision. We thought gamification was an important layer to add to our project, to experiment with its potential first-hand. Now that we've seen what it can do, we are eager to refine our experiments and spend more time trying to understand how it works.

5. ACKNOWLEDGMENTS

Our thanks to the National Park Service, in particular Michele Hartley, who served as our liaison with these sites across the country, as well as to accessibility consultants Sina Bahram and Annie Leist, and to UH research assistants Philipp Jordan and Tuyet Hayes, who performed the experiment's groundwork.

6. REFERENCES

[1] Bogost, I. (2016). *Play Anything: The Pleasure of Limits, the Uses of Boredom, and the Secret of Games*. New York, NY: Basic Books.

[2] Deterding, S. (2014). Eudaimonic design, or: Six invitations to rethink gamification. In M. Fuchs, S. Fizek, P. Ruffino, & N. Schrape (Eds.), *Rethinking Gamification* (pp. 305-331). Luneburg, Germany: Meson Press.

[3] Deterding, S., Björk, S. L., Nacke, L. E., Dixon, D., & Lawley, E. (2013). *Designing gamification: creating gameful and playful experiences.* Paper presented at the CHI'13 Extended Abstracts on Human Factors in Computing Systems, New York, NY.

[4] deWinter, J., & Vie, S. (2016). Games in Technical Communication. *Technical Communication Quarterly, 25*(3), 151-154.

[5] Huizinga, J. (1955). *Homo Ludens: A Study of the Play Element in Culture*. Boston: Beacon Press.

[6] McGonigal, J. (2011). *Reality is broken: Why games make us better and how they can change the world.* London: Penguin Books.

[7] Nacke, L. E., & Deterding, S. (2017). The maturing of gamification research. *Computers in Human Behavior, 71*, 450-454.

[8] Rauch, M. (2013). *Best practices for using enterprise gamification to engage employees and customers.* Paper presented at the International Conference on Human-Computer Interaction, Las Vegas, NV.

[9] Walz, S. P., & Deterding, S. (2015). *The gameful world: Approaches, issues, applications*. Cambridge, MA: MIT Press.