Personal Portfolio - reflection report

(Nikolay Panovski, 492686, ECM2V.Ex)

Introduction / Project goals

This Personal Portfolio project explores an aspect of games and their design commonly described via the terms “game feel” and “juiciness”. This aspect is described as an “elusive quantity” (Game Maker's Toolkit, 2015), and researchers by far have only managed to agree on vague definitions of what a “juicy” game is and what feelings and reactions it causes in players (Hicks et al., 2018). These terms are commonly treated as describing games that have a lot of visual and/or aural positive feedback (Hicks et al., 2018), provide this feedback redundantly (with one player input leading to multiple non-functional effects on the screen) (Hicks et al., 2019), and in that way improve player experience (Kao, 2020). However, research has also revealed various nuances to this concept – inappropriate amounts of juiciness may lead to negative results regarding motivation or performance; what effects (if any) are appropriate may differ per game genre; certain types of juiciness may not affect the perception, but still negatively impact performance (Prook et al., 2015).

I have built interest in exploring this topic that I want to capitalize on. In general, I am interested in creating positive player experiences, and with the current project, I want to gain experience in the implementation of special effects that help with that goal. In turn, I also expect to become able to collaborate in a meaningful way with designers who would also focus on ways to make the player experience better.

In this project, I apply a number of special effects to two existing games from group projects. Some of the effects aim to make the games clearer and to address issues found by people who have previously played the games. Other effects are toggleable and adjustable, and are not strictly necessary to play or understand the games, but may still make them clearer or more enjoyable. The main goal is to implement these effects, but playtesting is also a part of the project, from which I expect valuable insights for future projects where I work on juicy effects.

Masterclasses for this Personal Portfolio

The masterclasses I attended for this term were “Soldering & Arduino Programming” and “Scrum & Sprints”. The former was a refresher on my theoretical knowledge from the Input Output module and allowed me to experience that content hands-on for the first time (since the module at the time was done online, and Arduino experimentations were only simulated). This was an enhancing point for my CV for potential applications to companies that develop solutions with hardware and software combined. The latter refreshed my knowledge of the Scrum methodology and its processes, which is applicable in this project to some extent – defining and prioritizing tasks, having intermediate deadlines for groups of tasks, but also dealing with deviations from the plan at the time of a certain “sprint” (although I never defined strict sprints for this project).

Development process

My process, as outlined in the Learning Outcomes document, included the elements of desk research, implementation of effects, and practical research (i.e. user playtesting and processing results). In addition, the organization of activities led to gaining experience that I will also reflect on.

Desk research

Game feel and juice are a broad topic, with vague definitions and lots remaining to explore in research even after substantial efforts (as outlined above). They fall under the broader area of human-computer interactions and user experiences. What this meant for my research efforts is that there was a lot of material to get started with, presenting multiple perspectives and focusing on various aspects. However, after starting research, it becomes hard to stay on track for the goal of finding appropriate effects to implement. I recognize two reasons for that. First, the aforementioned goal is inaccurate in representing that the research leads to valuable knowledge, which is necessary to implement meaningful special effects. This indicates that the research was possibly important enough for its own learning outcome (on the other hand, I would need to write an additional report to show the results from the research, and possibly leave even less time for development). Second, there is a lot of research on adjacent topics that may seem relevant, but ultimately deals with different application domains or systems altogether – therefore reading through it does not strictly contribute to the project goals and wastes time. It is possible to dive too deep into this research by reading up on it for more context to the parts cited by the more relevant research. For a more focused research process, I should minimize the reading of such sources to only abstracts, or only titles, or not going off track at all. Bookmarking may help if I am interested to read up later, outside of project time.

I found a similar situation in the area of videos to research for game juice effects. Between general overviews of the topic and specific examples on how to juice up a game by adding as many effects as possible, there is no single comprehensive guide, rather a lot of debatably relevant material (helping to build a perspective, but not implementation skills). It was clearer here that I should approach these videos with a grain of salt and not watch for longer than I need to. The main task was to compare the advice given there with the specifics of my chosen games and determine what effects are sensible at all to attempt to implement. The best source I found and used was Masahiro Sakurai's channel on creating games – bite-sized videos, with specific examples but going over general principles, and well-organized for navigation, they were the easiest to take away implementation ideas from.

Implementation of effects

I chose two existing games to build upon with my work – a multiplayer party game (Furfare) and a point-and-click puzzle experience (Beans' Adventure). With this, I aimed for the advantage of not having to create a new game from scratch to then focus on special effects. However, it turned out to also have a disadvantage tied to it – I was limited to the genres, development states, engines and languages of the games chosen. This had notable effects on the development work even before it started – I dropped a third game from the scope of the project, because although it is a rhythm game, some control tests revealed it was too underdeveloped at its core. Implementing special effects without fixing major bugs and then testing whether those effects enhance the game would be too time-consuming and lead to unusable results. This is in line with research suggestions (not all games or genres are found to benefit from juice effects). On the other hand, it offers another vector for research – juice effects on lower-fidelity games, provided that they are developed enough.

As for the chosen two games, I had originally assumed that there would be general enough and simple enough special effects to implement universally, and that they could be based on (tweening) libraries enough that the engine and language did not matter. That turned out to not be the case, and the implementation process of both games was as different as the games themselves. For example, I did not attempt to apply the effect of a camera shake (which I thought would be

“generic”) in the latter game, since it was based on only clicking within static screens, and the narrative also did not justify camera shake even to simulate impact at any point.

Furthermore, the effects are by definition tied to existing game objects that they operate on. This directly relates to code architecture – the relevant objects in both games were clunky and composite, such that it requires almost as much effort to figure out how to hook into them than it does to start from scratch. As a result, most of the effects were kept at a basic level. In the case of Furfare, even an event queue pattern did not help with de-coupling objects, instead it revealed that the game does not allow for easily building a dedicated test scene and adjusting parameters for quick testing.

In conclusion, in the development part of this project the limitations and issues made me learn a lot about the process of implementing juicy effects to games, but also forced me to stop at an unsatisfying amount of progress. The main takeaway here is that I can only make effects flexible, adjustable and complex only to a certain sensible extent, and their specifics are a collaborative design task for the given use case, which is to happen before the game development starts. I may then expose various parameters and leave it to designers to test them, but it is neither possible nor sensible for every piece of an effect to be tweakable.

Practical research (playtesting, observing and surveying)

Testing came to be the weakest part of this project. Over the workdays, I realized that I inherently made testing conditions as hard as possible and did not manage to work around circumstances beyond my control that made testing harder. For example, the chosen games (multiplayer vs singleplayer) required vastly different playtest setups. I was also ineffective in recruiting people in the first place and could have started earlier. Especially concerning Furfare, too few people turned up, several had problems in the only moments where I was able to gather a group at the same day/time under my watch and that skewed the playtest setups further. The online setting (forced by where I was physically during this semester) also caused issues, such as needing external tools to get around Furfare’s “local” multiplayer setup, and poor overall communication with the people who responded to requests for playtesting (except for 1-on-1 communication, which was not enough for the chosen games). As a major takeaway, if I need to gather playtesters and receive any good results in the future, then I need to ensure that either the playtests are in-person (and a protocol is followed strictly), or they can be done completely without my guidance and watch. Of course, the tested products have to allow for that themselves. In this project, I was unable to set forth fewer conditions and restrictions than I did, and so I knew the testing would be tough, and if something does not go according to plan, ineffective. I was able to collect feedback in general, some of it was also applicable, but this process is not solidly justifiable via the conventional means.

What I could improve in the surveying is a natural extension of the testing process. The surveys collected both Likert-scaled opinions and feedback via notes on what was good/missing/could be improved. However, they were not focused narrowly and accurately on concrete, independent variables that concern only the special effects. As one of the testers pointed out in feedback for the surveys themselves, “A number of answers will actually be on game design, because that’s what the survey asks about”. I did not find a good way to separate user perceptions from the games overall from perceptions on specifically the modified elements. (This is in line with one interpretation of game feel and juice – they are such items that, if they exist, they will go unnoticed or undescribed by players; however, if they do not exist, a game may feel lacking in an inexplicable sense.) A good example of multiple considerations that can and should be taken to minimize confounding variables and stay narrowly on topic in such playtests can be found in Kao (2020) (for example, it was made sure that the varying amounts of juiciness in their tests did not influence game framerates).

Organizational tasks

An aspect of this project I only paid attention to once it already started were organizational tasks. In hindsight, these take considerable time and effort, and if they are not done well, all other project activities may suffer in quality. For example, as my first activity, I had to compare my games from the study to choose suitable ones, and I needed to know what assets I would use and how many tests I would need depending on the choices. Other considerations included where to recruit testers from and at which point in the project (they cannot test unfinished games). Later on, setting up the tests would also take time that I did not account for in plans. These events show me that part of the time budget for such a project needs to be dedicated to planning as well as emergency situations. What worries me about this proposition is whether it would be recognized as valid for the sake of hour registrations during the study and on a job. For this, I might benefit from exchanging impressions with fellow students who have done similar projects (with inherently required testing or planning).

Final insights and considerations

In conclusion, my process for this project ended up based on a mixture between various concepts under the umbrellas of "good game feel" and "engaging user experiences". Still, I would like the chance to work on more projects that help me develop in tailoring experiences to users effectively, and more projects involving "juicily" designed games. I know now specific types of games are more likely worth of my focus if I want to do that, such as party, comedy or casual games. This does not necessarily exclude other types of games, but it indicates that my searches for a job at companies can be guided by this factor – whether it is in their style to design juicy games. Furthermore, both the pitfalls in the process and the fruitful research show me that this is rather a team effort than an individual one. I should be prepared for communication with designers both for future Personal Portfolio projects and for future jobs.

Timesheet

Following is the breakdown of time spent on this project in days and activities in reality. If one compares it with the rough estimates in the Learning Outcomes document, two things will become apparent. First, the estimated and the real breakdowns of hours by activities did not end up matching – mainly in the ratio between research work and development work. Too much time spent on research minimized the time for other activities. Second, I did not account for planning and organization activities initially, but they also took a noteworthy amount of time – across organization of project activities, playtests, and tech checks of the chosen games. These are the major takeaways for my next planning of time-bound goals.

Week	Day	Activity	Time (hours)
N/A	N/A	Desk research on "game feel/juice" (from first attempt / in the past year before current redo period)	7
4.8	Wednesday	Planning of activities in detail (sorting through games; necessary assets and playtests, available domains for gathering testers)	1.5
4.9	Monday	Planning of activities in detail (finalizing target games; details/exact numbers for everything)	2.5
4.9	Monday	Check development status of target games (whether there are any issues for testing ASAP)	3
4.9	Tuesday	Tech control test/setups (individual)	1.5
4.9	Tuesday	Finding suitable background audio for rhythm game	1
4.9	Tuesday	Survey planning and questions – for initial feedback before applying any effects	2

4.9	Tuesday	Tech control test/setups (with dedicated person + Parsec) + setting up Discord server and info for the playtests	3.5
4.9	Wednesday	Research/compile enhancements from videos and papers (based on what is applicable for the target games)	7
4.9	Wednesday	Parse feedback and issues from control tests	0.5
4.9	Wednesday	Design tweaks + set up test scene (Furfare)	0.5
4.9	Thursday	Research available libraries and methods for special effects	3
4.9	Thursday	Playtest	1.5
4.9	Thursday	Test and set up input/build settings (Furfare)	1
4.9	Friday	"Particles on projectile impacts" effect (with variable colors/meshes)	4
4.9	Friday	UI text tweening on game events	3.5
4.9	Sunday	UI text tweening finalize (more parameters, prevent tween overlaps, try make score increase stepwise instead of instant)	6
4.10	Monday	Other special effects (camera shake, music tempo, slowdowns, highlights) (Furfare)	6
4.10	Monday	Fix issues and do builds (Furfare)	0.5
		then: 18:15-~19:40 (?!??)	*55.5??*
4.10	Monday	Survey planning and questions – for feedback with effects (Furfare)	1
4.10	Monday	Playtest	1.5
4.10	Tuesday	Organizational (look through documentation for final activities)	1
4.10	Tuesday	Fixes and special effects (Beans' Adventure)	6
4.10	Tuesday	Playtest	1
4.10	Wednesday	Portfolio page creating	0.5
4.10	Wednesday	Summarizing test results	1
4.10	Wednesday	Reflection + final project documentation	6.5
4.10	Wednesday	Preparing files for final upload	0.5
4.10	Wednesday	Footage processing to videos for portfolio page	0.5
		TOTAL	**75**

Results

Compared to my learning goals, I achieved mediocre, barely satisfactory results in almost all aspects (except research/gaining of knowledge, where I believe I achieved more than I targeted or expected). I implemented just enough effects with enough parameters to consider the goals passed, but I can tell that this is not the entirety of the possible results even with these goals, let alone for engaging juicy effects in general. The testing, which was intended to serve as measurement for my success and my improvement of skills, was itself not satisfactory against the original intentions, and did not prove with confidence that the changes I made were responsible for making the chosen games feel or play better (although it provided some anecdotal evidence about individual elements, such as the impact of particles added to Beans' Adventure). I can only assume whether this is a sufficient enough entry in the topic of game feel and juice in order to further my interests and efforts via a suitable job.

Value for my portfolio/future study and work

This project results in an item consisting of the updated games, with contemplations over the research done and knowledge gained in relation to "game juice" (mainly in this document). I hope to be able to use this item in the near future as example of work and motivation on this topic in applications for jobs similar to "juice/UI programmer". I would like to find a suitable company and

match with them based on this, in order to further my research under a graduation assignment in collaboration with them. That way, I would gain at least extra experience that kickstarts my career after the end of the study, or even keep a stable position with such a title at the graduation company.

Next Personal Portfolio

While nothing is set in stone, I might want to work further on one of the major pieces of feedback from the tests of this project – that the indications of controls and mechanics over an infographic do not work for making things clear to players. Based on that, my next project could be taking a game (for example, from a designer), analyzing its mechanics, and making an interactive tutorial based on them, with the goal of making people explore and remember all relevant mechanics before the start of the actual game. Learning outcomes will be based on that analysis, tutorial making and testing.

Other ideas I have for Personal Portfolios involve improving my Web (backend) skills gained mainly during my minor abroad, and making a basic game in Unreal Engine in order to diversify my experience in that regard from just Unity/C#.

References

Game Maker's Toolkit. (2015, February 17). *Secrets of game feel and juice* [Video]. YouTube. https://www.youtube.com/watch?v=216_5nu4aVQ

Hicks, K., Dickinson, P., Holopainen, J., & Gerling, K. (2018). Good game feel: an empirically grounded framework for juicy design. In *Digital Games Research Association Conference*. http://www.digra.org/wp-content/uploads/digital-library/DIGRA_2018_Paper_35.pdf

Hicks, K., Gerling, K., Dickinson, P., & Vanden Abeele, V. (2019). *Juicy Game Design*. https://doi.org/10.1145/3311350.3347171

Kao, D. (2020). The effects of juiciness in an action RPG. *Entertainment Computing, 34*, 100359. https://doi.org/10.1016/j.entcom.2020.100359

Prook, J., Janssen, D., & Gualeni, S. (2015). The negative effects of praise and flattery. In *Foundations of Digital Games.* https://www.um.edu.mt/library/oar/bitstream/123456789/23661/1/2015%20FDG%20-%20The%20Negative%20Effects%20of%20Praise%20and%20Flattery%20in%20Games.pdf