

Tunnel Tail: Successful game developer-educator collaboration

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Abstract: This paper describes the development process for Tunnel Tail, a game developed in tandem by a traditional game studio and nonprofit organizations, and released in 2012. Two factors condition the game design: the educational goals and the caveat that the target audience responds negatively to any heavy handed attempts at education through games. By employing their expertise, the companies are able to come up with a solution that satisfies the educational and game design goals. This paper explains the approach taken, why it worked for the parties involved, the risks associated with it and when and how to adopt a similar approach.

Introduction

In Summer 2012 Schell Games, in collaboration with the BEST Foundation and Drug Strategies, released Tunnel Tail, a mobile video game which had the goal of introducing teens to situations in which they might be tempted to try substances such as alcohol, drugs and tobacco and providing them with the right tools to recognize and navigate these situations. This paper describes the process taken throughout the development period to ensure that the game satisfied the educational goals set by the BEST Foundation and Drug Strategies as well as the game design goals set by Schell Games.

Furthermore, this paper explains the design methods utilized by both companies to ensure that both sets of goals were met, explores the takeaways derived from the experience and how they could be applied on similar projects, describes the measurement strategy for educational impact and identifies portions of the process that could have been better executed.

Defining the game

The first step toward the development of Tunnel Tail addressed the definition of the platform and target audience. The game would be developed for the iPhone and Android platforms, and would target players between 11 and 13 years of age. Early focus testing motivated the team to create an edgy setting for the game, in which the main characters were to be sentient mice who live and coexist with humans in the world as we know it today. These mice confront beings known as the Controllers. The player's role in the game is that of a human being who is asked to help lead a tribe of mice against the Controllers. As the game progresses, the player earns the trust of new recruits for their tribe.



Figure 1: The player leads a team of mice

Messaging caveat

In early focus testing, players had a strong negative reaction to the notion of the game referring literally to substances such as drugs and alcohol. This led the team to make the decision of not addressing these substances directly at any point in the game, but rather with metaphors. As a result, the game's ability to meet its messaging goals relies heavily on its game mechanics and their ability to reinforce the different metaphors in the story.

Stating the problem

After the initial concept and focus testing phases, it became clear that the game should satisfy two goals: the educational goals and the game design goals. As such, the first order of business became to draft a list of clear goals that the game should aim for. These goals would become the guiding compass of the game development process, staying always at the core of the decision making.

The project goals were defined as follows:

- First and foremost, create a fun, engaging experience that audiences want to play.
- Introduce players to situations where they may feel pressured, and display methods of dealing with them.
- Introduce the internal / external pressures that can influence decision making.
- Show that players don't need to give in to negative pressures to be cool.
- Engage the player without preaching or speaking down to them.
- Create a mechanism for showing positive peer support.
- Provide a skill recognition and actualization activity.
- Normative education: emphasize that the majority do not use substances, nor do they find it cool.

A common language

A key aspect in developing these goals was stating them in a way that was satisfying and understandable for all parties involved. As such, the goals tackle game design and educational missions at the same time and hint at ways in which these aspects might be connected. For example, a goal like "engage the player without preaching or speaking down to them" suggests that the game must be engaging and that the game writing must be carefully curated.

Methodology

To work around our messaging caveat, Tunnel Tail relies on metaphor, game mechanics that can carry a message, and other subtle indicators of the points that it aims to educate on. As such, the messaging must be explicit and clear enough so that the players get something out of it, but subtle enough that it doesn't feel obviously like a game trying to teach them. Many of the situations and mechanics in the game are intended to provide the player with a metaphorical layer that they can overlay on their lives, providing a toolbox of sorts in their subconscious which they can call upon when they have to deal with temptation and standing up to pressure.

This methodology can be tied to the concept of *incidental learning*, which is to say the type of learning which is unplanned or even unintentional. The player should approach the game of their own volition, drawn by its properties as a game. The learning should then follow naturally, as a result of the player experiencing the game.

Custom fit

The methodology described above plays well with the goals set at the beginning of the project and fits the particular case of our game. However, this is not to say that it is the right solution for every educational game project. The following factors played a key role in developing the above methodology:

1. The BEST Foundation's and Drug Strategies' philosophy: It is in line with their vision to provide kids with the right tools to make informed decisions and navigate social pressure. This plays well with an incidental

learning approach.

2. Due to the nature of our educational content and our target audience, dealing directly with the substance abuse subject would scare the players away.
3. It is in the nature of Schell Games to adopt a fun-first and transformational approach. That is to say, we are partial to designing game mechanics as vehicles for educational content, rather than letting the content carry the educational weight.
4. The time scheduled for production, close to a year, was enough to explore and refine accurate transformational game mechanics.

Initial wrong approach

During early development, several core concepts were proposed to bear the weight of the educational theme. Initially, the concept of “will” was chosen to communicate the notion that teenagers ultimately have a choice when becoming involved in pressure situations. In the game, the mice characters would have a measurable amount of will, which would determine their strength and likelihood to give in to temptation.

The team quickly realized the problem with this approach, as we did not want the game’s message to communicate that being weak-willed leads to trying substances. Rather, the ability to choose comes from retaining control: control of one’s self, actions and environment.

Teenagers deal with struggles of control in their daily life. Their bodies, their time, their friends all seem like they could spin out of their control at any time. Additionally, they experience a plethora of emotions daily that can easily overwhelm them, should they lose control. As a result, the team decided to pursue the central theme of Control, especially when framed in the context of Influence.

Transformational game mechanics

The final game plays like a traditional role-playing game and uses a mix of innovative mechanics and traditional mechanics of the genre to deliver its educational content. Tunnel Tail’s transformational mechanics include:

1. **Story.** The game’s theme of Control is explored throughout a story that focuses on flawed characters, how they come to terms with their shortcomings and support each other. The story makes no mention of substances, but includes the mention of a mysterious substance called “The Stuff”.
2. **Combat.** The game builds on combat encounters as metaphors for real-world situations in which the players might be pressured into doing something they are not comfortable doing.
3. **Pressure.** The core element of the combat system, the pressure mechanic provides a way to expose the player to different types of social pressure and different methods to deal with it.
4. **Recruiting new members.** As the player progresses through the story, they help and support new mice as they join their team.
5. **Conditions.** The main negative effect of losing battles, conditions are based on identified causes and consequences of substance use and prevent a mouse from going to battle. Players can help their mice work through their troubles and get them back in action.
6. **Cooperative multiplayer.** Creates a positive peer group for the player.

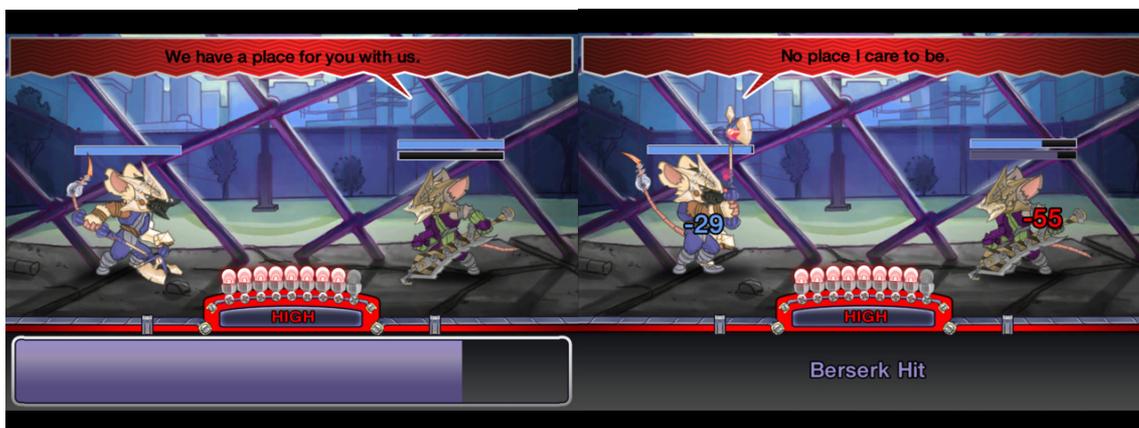


Figure 2: Using combat as a metaphor for pressure situations



Figure 3: Using combat as a metaphor for pressure situations

All in all, the relationship between mechanics and goals is bidirectional. The game was designed to meet the broader initial goals, but opportunities were seized during the development process to address smaller but equally relevant goals via the use of game mechanics.

The design of the combat system is central to both the game experience and the messaging embedded in the game, becoming the heart of the experience. It seems natural that the biggest part of the messaging be carried forth by the main game system. The peripheral systems support the central design and the central theme.

In the periphery, Missions address bit-by-bit learning by equating it to sporadic gameplay. Conditions help drive home the fact that there are real world consequences to our decisions and that making the wrong choice is not the end of the world - rather, there is help for those who seek it. The game story guides the player through different high pressure situations by placing them deep inside different conflicts that address real world problems; and at the same time it puts the player in contact with characters that have had a hard time dealing with everyday pressures. Finally, the Multiplayer system reminds the player that they are not alone in this fight.

Measuring the seemingly immeasurable

The most obvious drawback of this approach is the difficulty to measure the impact the game is having on the players. Are the kids learning? Is it making any difference?

The approach taken by the development team, and a luxury not all teams are able to afford, was that of focusing on making a fun game curated by educational experts. In that regard, getting the kids exposed to the right content was considered to be a big educational win.

Exposure, however, is not enough to justify a project of this magnitude. As such, the team designed a set of game metrics that we felt would provide a valuable glimpse into the type of experience the players were having. These

metrics focused on the transformational mechanics mentioned above, and included:

1. Amount of time players spend with the game.
2. How good players are at the game.
3. The players' performance at the game and how it varies over time.
4. Are the players getting exposed to the right content in the right context.

In addition to this, we recorded traditional mobile game metrics to work on increasing our player retention.

Still, these metrics do not provide a definitive answer. The team is currently moving forward toward a more final verdict by way of organizing a study to measure whether the content is being absorbed by the kids. To that end, Schell Games has made an effort to poll playtesters with the goal of assessing the impact of the content, with satisfying results and The BEST Foundation and Drug Strategies are currently working on a formal study to assess whether players develop skills for handling pressuring situations after playing Tunnel Tail.



Figure 4: The story of the game supports the educational theme

Dangers of collaboration

This approach is not without its dangers. The main risk we identified lies in the amount of people involved in decision-making. In our quest to involve the best of the best in the development process we contracted educational experts and content creators to help craft a great experience. The balance of their involvement is surely positive, but it was a challenge to stop the process from getting muddled by the overhead costs of having too many cooks in the kitchen.

The team became increasingly better at fomenting decentralization of approvals, such that individual workgroups became responsible for collaborating on specific tasks. This requires constant attention from the managers and leaders to ensure that the information is flowing in the right ways and that all groups have what they need to work.

Because of the large amount of content in Tunnel Tail, the approvals process became a bottleneck toward the end of the project, leading to specific cases of less-than-excellent content being released in initial versions of the game. Internal reviews and community involvement led the team to patch the game promptly with content improvements.

Importance of working together

All in all, we identified tremendous value in assembling a team of game development experts and educational experts to tackle this problem. The expertise of both companies shines through in the final gameplay and the released game is testament to the validity of the process.

The most important factor during the development process was the constant communication in the form of weekly calls between the two companies and regular in-person meetings to study the progress of the game and discuss next steps and solutions to arising problems. Both companies kept open ears to ideas and acknowledged the expertise of their counterpart.

Conclusion

The aim of this paper is to show a practical example of how the process of developing transformational game mechanics between game development experts and educational experts provided successful results for the development of the mobile game Tunnel Tail, developed by Schell Games and the BEST Foundation in collaboration with Drug Strategies.

By providing a description of the development process, the key decisions made while making this game and the end result, the aim is to prove that the process is a viable route for teams in a similar situation. In addition, by providing insight into the challenges and successes of the development cycle, the goal is to give an objective look at all aspects of this process.

The hope is that the fact that the development team for the project is comprised of both a traditional game development studio and a nonprofit organization serve as inspiration for other organizations and studios to seek similar partnerships.

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Acknowledgements

An earlier version of this paper was presented at the 2012 Games+Learning+Society conference. The previous paper explored the specific ways in which the game's design met the educational goals, whereas this paper focuses on the development process itself. Since the game had not been released at the time of the writing of the previous paper, this paper also focuses on the release process and lessons learned from releasing the game.