

Aalborg University

Digital tools and the Impact on Flow in the Tabletop Role Playing Experience

A study of the impact of digital tools on the flow of the role playing experience.

Special thanks to Mom, Dad and Jacob for the support and Love.

Thank you Henrik for the supervisor.

Praise be to Ausk, Cale, and Treeni, may our luck never run out.

Lars, this would not have been possible without you.

Mads, thank you for reminding me why I did this.

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0.0 Resume

In the 40 years since their inception, tabletop role playing games have gone undergone very little change as an interactive medium. One of the major additions has been the development digital tools as a part of this medium. However, the affect on the flow of tabletop role playing experience have remained unexplored. This thesis intends to amend this through explorative research into the impact of digital tools on the tabletop role playing experience, as well as developing theoretical understanding of the experience. This will be done through an analysis of what is essential to experience as well as the experiences participants have while interacting with the shared fantasy that the experience takes place in.

In order to approach the research question, “What is a tabletop role playing experience, and how does the use of digital tools in that experience affect the flow of said experience?” I employed two phenomenological methods; Giorgi’s Method Rules and the hermeneutic circle. Both of these methods allowed me to work in an iterative fashion, facilitating a process of furthering my understanding of the tabletop role playing experience and the impact of digital tools on that experience through understanding the parts of the experience in the context of the whole and the whole in the context of its parts.

Data was gathered from over 140 participants. The majority of these participants took part in two surveys that investigated the affect of digital tools on the role playing. In addition to these surveys, two play tests were held in which one type of participant, referee or player, were required to use digital tools exclusively. These participants were then interviewed or given a questionnaire. The trends and implications of the surveys were used to determine the perception of tools used in the experience and the play tests were used to see what impact this had on the flow of the experience.

Through analysis of the findings, the tabletop role playing experience was defined and conceptualized. Additionally, it was deduced through analysis of that dated that the implementation of digital tools had an impact on the flow of the experience dependant on the role of the participant. The play test referee experienced a minor improvement in flow due to digital tools, while players experienced a “stutter” in their flow due to the constant need to switch between tools.

1.0 Introduction

The ideas that eventually lead to the development of tabletop role playing were the product of one Dave Wesley (Fine, 1983, s. 13). Wesley and his group of war gamers had grown bored with a particular set of Medieval war gaming rules. Wesley decided to change that by implementing player specific goals, encouraging players to portray their commanders and limiting the amount of troops each player could have.

These experiments inspired both Dave Arneson and Gary Gygax to pioneer this medium in the very first, true tabletop role playing game, *Dungeons and Dragons*. In stark contrast to war games, table top role playing games has each player portray a single character within a shared fantasy world controlled by one of the participants, termed the referee. Together, the players and referee use a system and assumed characters to explore and unravel a narrative; usually created by the referee.



Figure 1.1 – Tabletop Role Playing

Theoretical Frame

This thesis will focus on two main aspects, conceptualizing the cognitive aspect of the table top role playing experience, namely the experience of interacting with a collaborative

imagined world, and how the flow of this experience is altered if all normally analogue tools¹ are made digital on the tablet platform.

In order to build an understanding of the experience of role playing, I will use Giorgi's Method Rules and the Hermeneutic Circle to understand the role playing experience as a whole in terms of its parts and the parts in the context of the whole. As a part of this I have identified three essential factors that are necessary for the establishment of a role playing experience; The Magic Circle, Narrative and System. These factors allowed me to conceptualize what is need before a role playing experience and how certain events can cause these factors to become compromised.

To understand the table top role playing experience itself, I looked to the different means of interacting with the shared fantasy world the participants act upon. Indeed, tabletop role playing has a system, which brings with it a "Game" focused means of interaction; however this is not the only way to interact with the shared fantasy world. Many interactions with this imagined world take the form of the participant portraying a character within this world in a form of improvised play acting. This aspect of table top role playing is more akin to "Play" than "Game". This leads me to make the distinction between these two forms of interaction and the experience of interacting in these forms; which is conceptualized in the terms *practical execution* (Game) and *player interaction* (Play). These two key experiences in table top role playing are accompanied by another key experience of *non-interaction*, in which the player is unable to interact with the shared fantasy world through their character. This key experience will be explored only to the extent of how it relates to the participants interacting within the shared fantasy; as this thesis is focused on the experience of interacting with a shared fantasy, not the overarching *meta-experience* to which the non-interaction experience is heavily related.

Empirical Aspect:

In order to lend theoretically validity to the factors of role playing, I will be looking to Salen and Zimmerman with their work on the concept meaningful play. Additionally, the essential factors of role playing were also based on a focus group. The factor of the Magic Circle was based in the work of Huizinga. The key experiences were derived from the aforementioned focus group, as well as Huizinga and Salen's definitions of Play and Game respectively.

¹ Dice, printed character sheet, reference materials.

The concept of Flow will be taken directly from Csikszentmihalyi's on the matter. This theory will be used to conceptualize how the incorporation of digital tools on the tablet platform to tabletop the role playing experience may affect the experience.

To conceptualize the imagined and shared fantasy of the table top role playing experience, I will be drawing parallels between Marie-Laurie Ryan's work on virtuality and the imagined world of the experience. Much like virtuality, as Ryan describes it, this shared fantasy can be seen as a virtual "object" because it creates its own time and space, while remaining as an object not of reality. These are qualities that are shared with the table top experience; which regularly warps "in-game" time to fit the situation and exists in an imagined space that is apart from reality.

Findings and Implications:

Through play tests in which participants were forced to use only a tablet and available applications and functionalities on said tablet for a session, I was able to observe what affect a tablet had on the flow of the experience. The participants reported that they felt what they can only describe as a "stutter" in their experience when it came to switching between applications. This stutter was a small break in the flow of the game, equivalent in experience to a streamed video stopping to buffer for a second. The stutter in the flow of the experience was further highlighted by the player play testers, commenting that they found the experience of having to change between applications every time they had to interact with the practical execution experience.

What was discovered as a part of surveying 142 people was that the surveyed participants were largely indifferent towards the digital counter parts of tools such as reference books and character sheets. However one tool contrasted this general consensus. Standing out from the other tools options, digital dice rollers were nearly universally detested by the survey participants. Why is this so? I speculate, based on the findings of the survey, the play tests and personal evaluation of the use of the tool, which this may be because the digital dice roller robs the player of a sense of agency. The experience of rolling a die is different from one of pushing a button to generate a random number. The digital dice roller obscures how said outcome is produced in contrast to an analogue die, which players can feel that they have some agency over.

These findings seem to indicate that this stutter in the experience caused by the need to switch between digital tools on the tablet had a slight, but noticeable impact on the flow of said experience. One could say that the Challenge of the experience increases, as the player participant is

robbed of his usual oversight of character sheet and ease of number generation. Oddly enough, using a tablet and digital tools exclusively required the players and referee to have to remember many more details that could easily be referenced in their analogue counter parts.

Glossary

In this section of the report I will be defining a few terms used within the role playing community. These are terms used throughout the report and reading this section will assist the reader, who is not familiar with role playing in better understanding my text

Campaign: Usually described as one story of a role playing game. Characters that make it through a campaign can be used again for others. A campaign should be thought of as one adventure or series of adventures that are tied together through an overarching narrative.

Character sheet: This is a visualization of everything the character is, has on them and everything they can do. Character sheets are essentially the character as viewed through the system. An example of a character sheet will be included in Appendix I.

Die: Is the singular of dice. Rolling dice is the most common way of introducing randomness into a role playing game. The die or dice that are used vary from game to game. *Pathfinder* from Paizo, for example, predominantly uses a twenty sided die, or d20 for short, to determine the outcome of rolls. In addition to this, the system uses dice of varying sides to determine damage done to an opponent during combat; this is usually dependant on how deadly the weapon is.

Factors of Role playing: The essential elements necessary for the role playing experience to be established, they are denoted as *system*, *narrative* and *magic circle*.

Game system: The collection of rules that govern the imaginary world that the role playing game takes place in. The game system determines the success or failure of any action taken by a character within the game world.

Game world: This is the imaginary world where all the actions of the players' characters take place. The game world is governed by the rules of the game system.

Key experiences: The key experiences within the role playing experience usually denoted by the type of interaction that is taking place between the player and the virtual object of the shared fantasy. They are denoted as *non-interaction*, *player interactivity* and *practical execution*.

Non-Player Character: Game design jargon for a character that is not directly controlled by a player. In the case of table top role playing games, these characters are controlled by the referee.

Non-interaction: The experience of being “off-stage” in the tabletop role playing experience. In this experience the player is unable to interact with the virtual object due to lack of mediation from the referee.

Player Interactivity: When the participant is interacting with the virtual object through “play”. This is embodied, mostly through the portrayal of the character that the participant is controlling.

Practical Execution: When the participant is interacting with the virtual object through the “game”. This experience is most apparent in situations of combat, in which the participants interact with the virtual object through systemic processes.

Referee: The Referee controls the progress of the game. This is the general designation of a particular role within the role playing session. It is the Referee's job to describe and create the world around the players and to determine what happens after every action. Referees usually have an alternative title depending on the game in question. *World of Darkness*, a game with a strong narrative focus, calls referees within their games Storytellers.

Session: A role playing session is a loose unit of time used to denote the time spent on role playing. A session usually lasts between three and five hours of engagement within the role playing experience.

Tabletop Role Playing: The collaborative experience created between a referee and players.

Tabletop role playing is the act of assuming the role of a character within a fantasy world using a game system to determine the outcome to that character's actions within the game world.

Troupe: A group of participants that play a role playing game together. A troupe is usually made up of four to six participants, sometimes more sometime less, with one of the participants being the referee and the rest being players within the game that the troupe has chosen to play. Anyone person may be part of several troupes.

2.0 Problem Formulation

What is a tabletop role playing experience, and how does the use of digital tools in that experience affect the flow of said experience?

- What is a tabletop role playing experience?
- What kinds of tools are used in the role playing experience?
 - What is the user perception of digital tools?
- How do digital tools impact flow?

2.1 Description

In this section I will be outlining the problem formulation of this thesis. First, however, I will be academically distinguishing the parameters of this thesis. What will be explored in this thesis is the cognitive phenomenon that occurs when playing a table top role playing games, the experience shared between the players and the referee.

In order to further my understanding of the table top role playing experience, I based my research of both the role playing experience and the investigation of a tablet's impact on the flow within said experience in two phenomenological approaches. One was "*Giorgi's Method Rules*" (Jacobsen, Tanggaard, & Brinkmann, 2010, s. 196). These method rules are outlined in Figure 2.1.

	Giorgi's Method Rules
#1	First, the researcher must form a concrete description of the phenomenon that is experienced by a person. This can be anything from a movie to a text. This concrete description can be formed either based on personal experience with the phenomenon or from qualitative interviews. This serves the function of giving the researcher a means to contextualize the phenomenon.
#2	When this description is formulated by the researcher, he is to re-evaluate said description, while paying special attention to biases held by either him or the interviewed participants. This step is intended to force the researcher to take his own opinions of the phenomenon into account, and try to remove as much bias from the description as possible.
#3	The third step is for the researcher to go over the description of the phenomenon

	once again. This time, however, the researcher will be attempting to transform the experience of the phenomenon into categories and factors that seek to express sociological or anthropological meaning. Only at this step can the researcher transcend the world use of the origin of the description.
#4	Finally, based on the established categories, the researcher can now begin to discern the structure of the phenomenon. The goal in this step is to use the categories and factors the general experience of the phenomenon in the concrete description by means of phenomenological processes.

Figure 2.1 - *Giorgi's Method Rules* (Jacobsen, Tanggaard, & Brinkmann, 2010, s. 196)

This method reflects how I attempted to further my understanding of both the role playing experience and how it is influenced by digital platforms.

The second phenomenological approach that was used as a part of this thesis was the Hermeneutic Circle. The hermeneutic circle is a method for explaining how people render multi-component artifacts meaningful (Krippendorff, 2006, s. 62), as seen in Figure 2.2. Much in the same way as Giorgi's Method Rules allowed me to formulate my definition of the role playing experience through starting in the general, or the composed artifact in context of their world, and then attempting to understand the whole in terms of its component parts; all the while building my understanding. However, where this approach differs from Giorgi's Method Rules is that the hermeneutic circle is a continues process that allowed me to understand the "parts" role playing experience in the contest of "its world," or how the practical execution, player interactivity and non-interaction are affected within the role playing experience due to certain events within the experience. Additionally, this approach also encourages the constant reviewing and furthering of understanding of the "composed artifact" through not only understanding the parts in relation to the world they come from, but also work the other way; furthering understanding of the whole, depending on the new understanding of the parts. Working this way allowed me to add theory to my description, and use that theory to further expand that description based on my elaboration of the parts and the context of the role playing experience.

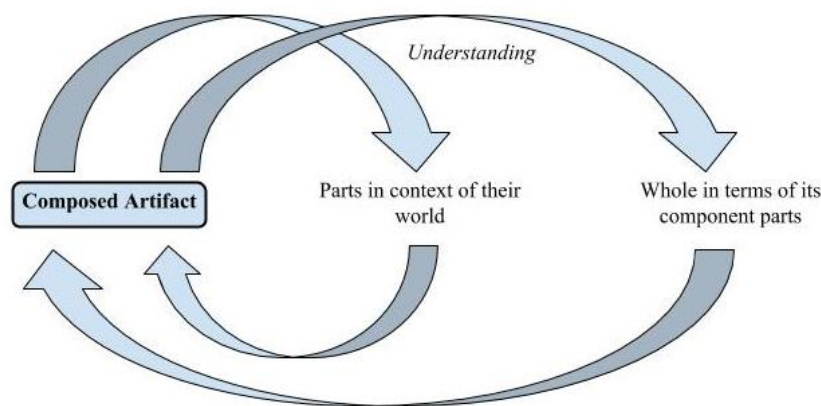


Figure 2.2 - the Hermeneutic Circle (Krippendorff, 2006, s. 62)

Using a combination of Giorgi’s Method Rules and the Hermeneutic Circle in combination with an explorative research focus allowed me the unique opportunity to explore the role playing experience and gather data while continuously evaluating and incorporating new findings. This allows me to refine my research as the research area is explored, which is ideal for an unexplored research area like the role playing experience.

I will now be outlining the research questions that will help me answer the overarching question of “What is a table top role playing experience, and how does the use of digital tools in that experience affect the flow of said experience?”

The **first step** will be to take a closer look at the *process* used to understand the influence of digital tools on the flow of the role playing experience. This section will include an overview of my methodologies, including Autoethnography and Phenomenology.

Second, the means of *data collection* will be explored. Here there will be descriptions of the surveys that I conducted in order to gather the participants’ disposition towards tablets as well as a description of the two play tests that were conducted to see what effect, if any, digital tools would have on the role playing experience. For these tests, I had selected tablets as the ideal platform to test digital tools’ impact on the flow of the experience. A validation for this choice will also be presented. Additionally, there will also be a description of my intention for doing the tests and surveys the way I did.

The **third step** is to answer *what is a role playing experience?* For this purpose, I have identified three key experiences within the role playing experience, the *practical execution* of the game, the *player interactivity* and *non-interaction*, as well as describe the essential factors that must be established for the role playing experience to exist. These factors are *the magic circle*, *system*

and *narrative*. Additionally, I will also be arguing for treating the “collaborative, shared fantasy world” that is featured in role playing as a virtual object. In order to theoretically validate the key experiences I will be using Zimmerman’s work on meaningful play (Salen & Zimmerman, 2004). The combination of both play and game that is presented in Salen’s work was ideal for defining the nuances of the tabletop role playing experience. In order to account for the imaginary nature of the tabletop role playing experience, I will be looking to equate the “imaginary” to the “virtual” using Ryan’s work “Narrative as Virtual Reality” (Ryan, 2001).

The **fourth step** is to look at the categories of tools used in the roll playing experience. As a part of this section, I will also be doing a brief analysis of the tools that were used as a part of the play tests as well as presenting the tabletop role playing community’s perception of digital tools and their use. This section will be important to understanding the language for dealing with digital tools in the tabletop role playing experience.

Fifth, I will be presenting Csikszentmihalyi’s Flow theory. Here is will describe his theory and relate it specifically to the tabletop role playing experience. Also, I will be presenting the relevant data gathered from both the surveys and the play test. Finally I will analyze this data to present a conclusion based on the data.

Finally, I will discuss the conclusions that are reacted by each of these sections with the goal of answered “*What is a table top role playing experience, and how does the use of digital tools in that experience affect the flow of said experience?*”

3.0 Process

This section will describe the process and application of methodologies that were used as a part of this thesis.

3.1 Autoethnography

An autoethnography is “an approach to research and writing that seeks to describe and systematically analyze (graphy) personal experience (auto) in order to understand cultural experience (ethno)” (Ellis, Adams, & Bochner, 2011, s. 273). In practice, autoethnography combines characteristics of both the autobiography and the ethnography in the form of a retroactive analysis of the writer’s experiences with a particular subject matter, usually centered on epiphanies that were experienced by the writer. This is done in order to allow the writer to express personal experiences through an academic perspective. In the case of this thesis, an autoethnography will be used to explore my own perspective and bias in regards to table top role playing, as well as my motivations for undertaking this particular subject matter.

Several motivations are presented as a part of this section. First, tabletop role playing is a hobby that I have greatly enjoyed over the years. I have laughed, cried and been afraid during role playing sessions, proof of my deep emotional connection to the medium. I have also found the study of game theory to be a subject of interest for me, for it has allowed me a deeper understanding of video games, as well as tabletop role playing games. As part of my studies I have also explored alternative forms of gaming, for example pervasive gaming², which has sparked an interest in cross media gaming. However the biggest factor in my choice of this subject would have to be my professional future. My business partner and I are currently developing our own tabletop role playing game and one of our main concerns is how the tabletop role playing medium can be re invigorated for a new generation of players. We believe that incorporating digital tools into the role playing experience is essential to accomplishing this. This project was conceived as a way of not only understanding the role playing experience but also in order to determine the impact on the flow from adding digital tools to that experience.

3.1.1 Personal experience with RPG

I have always had an interest in computer games, particularly role playing games. However, the linearity of the narrative and the lack of influence on the narrative was a source of frustration for

² A pervasive game is a game that extends in some way into reality, either temporally, spatially or socially.

me, since as I learnt more about computer games, and their narratives, I was beginning to see that my actions and decisions within the game carried very little actual weight. Many of the choices in computer based role playing games are commonly binary, which left me feeling that my choices were pretty much irrelevant to the story. I wanted more choices and I wanted to be able to have a character, not just customize a skin and a class for a pre-existing character that could be either a boy scout or a cartoon villain. Additionally, upon reflection, this disappointment with the lack of impact and binary paths stems from a desire for being a part of a story and a love of fantasy worlds. I have always loved loosing myself in fantasy and from a very early age, I made several of my own. They were usually blatant copies of fantasy worlds I had witnessed, such as *the Lord of the Rings* or *Jurassic Park*. This desire for a more “alive” experience, and nuanced choices which actually had an impact on a living narrative, lead me to my first encounter with a tabletop role playing game.

The very first game I played was *Hunter: the Vigil* which is part of White Wolf Publishing’s World of Darkness™ line. In this game three other players and I took the role of everyday people who had been exposed to the supernatural and in turn choose to fight it in a shared fantasy world much like our own. The other players in the first troupe I was a part of were very concerned with “playing their character” rather than simply advancing the campaign, which resonated with my focus on character development within the story rather than as tools to advance a plot. In order for this to happen I have always poured a great deal of myself into the characters I have made. In fact, there can be seen a clear correlation between the characters I enjoyed playing the most and characters that embodied some idealized part of my own persona. However, characters are only half of what I enjoy about role playing. The world that the players interact with is an important part of the role playing experience. From my first game to my current, I have had the great pleasure of having one Lars Kynde as a referee. Kynde takes his game’s narrative and the world we interact with very seriously, and spends much time preparing not only large scale conflicts but also personal conflicts for each of the characters.

Much in the same style as Kynde, the role players that I have played with through Kynde’s games have had a similar desire to play characters and enjoy a story. This shared desire with me has molded the way I play and the way I view role playing. These experience of personal involvement with the characters I create, evolving narratives and like minded players have sculpted what a “good” role playing experience should be, to me. To this date, I have been playing tabletop role playing games since 2008.

3.2 Process

Phenomenological work, or “the study of structures of consciousness as experienced from the first-person point of view” (Stanford Encyclopedia of Philosophy, 2013), has been done. The work done to define and understand the role playing experience is instrumental in understanding what effect digital tools has on it in order to determine their impact on the flow of the experience. For this, I have conducted qualitative research based in the role playing participants’ experiences with role playing, technology and the combination of those two. Phenomenology is qualitative research with the particular interest in social phenomenon based in the participant’s perspective (Jacobsen, Tanggaard, & Brinkmann, 2010, s. 195). This is all under the assumption that the most important reality is what is perceived by participants to be reality (Jacobsen, Tanggaard, & Brinkmann, 2010, s. 195).

The Phenomenological research that was conducted used ethnographic methods, as the explorative nature of the research done for this thesis require me to focus on the participants of the role playing experience actually do. Ethnographic methods are usually employed by “Anthropologists and sociologist... to study people ‘in the wild’” (Nardi, 1997, s. 361) in order “to learn how people actually work and play” (Nardi, 1997, s. 361). In the context of this thesis, I wanted to look at not only the perceptions of the role player participants but also how they actually use digital tools. In order to do this, I employed the ethnographic methods of participant-observation, observation and interview (Nardi, 1997, s. 361). Participant-observation is a method that had been employed before the commencement of this thesis, as this method involves spending expensive time with the “natives”; which I have done as a part of my own fascination with the role playing medium. Observation and interview methods where employed as a part of the play tests that were conducted. Observation was done by giving participants tablets to be used exclusively as a part of a role playing session. An interview was conduct after the referee play test, but due to time constraints, I was forced to employ a questionnaire after the player play test.

3.2.1 Use of Giorgi’s Method Rules

For the **first** step of Giorgi’s Method Rules, as seen in Figure 2.1, I attempted to describe the role playing experienced based upon both my own knowledge and that of my test troupe. This was a risky decision on my part, as my attempt to gain insight into the role playing experience through my test troupe has a significant risk of coloring their opinion of the subject for the play tests. I was willing to risk this, as they also have a combined forty-two years of role playing

experience. Throughout those years they have all played and refereed a multitude of different tabletop role playing games and a multitude of systems. The qualitative data that could be gathered from a focus group with this troupe was invaluable to my efforts in describing the role playing experience. A transcript, as well as a recording of the focus group can be found in Appendix II.

As part of the **second** step, it was required for me to try to both account for my own biases as well as that of the test troupe in order to acquire a more objective description of the role playing experience. In order to do this, I first completed an autoethnography of my own involvement with role playing as well as my motivations for this thesis as seen in Section 2.0. Second, I attempted to look for similarities between the statements provided the focus group in the hope of rooting out individual biases and finding a consistent description of the role playing experience based on that.

The **third** step was to divide the role playing experience into both the key experiences and factors. Although these categories do not directly express the experience in terms of sociology or anthropology, the step is none the less important to my thesis. This step allowed me to find a deeper understanding of the experience I am attempting to describe through breaking it up into small factors and key experiences, and by extension allow me to understand the whole based on its parts. Applying the theories of meaningful play, play, game and the magic circle aided in these divisions.

Fourth, and finally, by using the categories established in the third step, I will be able to accurately describe the tabletop role playing experience. Using this Giorgi's Method Rules allowed me to start in my personal experiences and refine them to a point where subjective opinions could be used to extrapolate objective truths about the experience. This allowed for a deeper understanding of this experience.

3.2.2 Use of Hermeneutic Circle

The **second** approach I used as a part of this thesis is the *Hermeneutic Circle* as seen in figure 2.2. In terms of process, the hermeneutic circle was a continuous loop that I worked with throughout each of the steps within Giorgi's Methods Rules. This allowed me to refine my work on and understanding of the role playing experience, even after I was done describing it and moved on to studying the impact of digital tools on the experience.

This was accomplished through the use of surveys and play tests. As both of these means of data collection were employed, I was able to expand my understanding of tabletop role

playing as well as the use of digital tools and refine said understand in iterations. This method allowed for more flexibility in my process, as I was able to continuously update and reiterate what the role playing experience is and how the flow of it is impacted by the use of digital tools.

3.4 Platform Validation

In choosing to play test digital tools within the tabletop role playing experience, I need to choose a digital platform to use. From my perspective, there were three widely used digital platforms that I could choose to use; smartphones, laptops or tablets. Smartphones severely limits the amount the participant would be able to see, due to the small screen, so this platform was immediately dismissed. The laptop seemed like the obvious choice however, based on my previous experiences with the platform in this experience, there were several problems. These problems are denoted below:

- a) *Physical Barrier*: The laptop creates a physical barrier between the user and the other participants of the role playing experience. While not a problem for the referee in the experience³, but laptop can put a physical barrier between players and the experience by allowing the player to hide any actions on the laptop from the group. This ability to hide behind a barrier may tempt players to be drawn out of the experience with “out of game” interactions; such as social media of games.
- b) *Hindering Interaction or Engagement*: Again, this problem is mostly centered on the players in the experience. At some points within the role playing experience, the referee will center the experience on a portion of the players rather than the whole group. The players that are centered on are “on stage” while the players that are not are “off stage.” When players are off stage that time can be spent interacting with other players that are not on stage, interaction, or paying attention to the experience they are still a part of, engagement. However, with the presence of a digital platform gives the player that is off stage a multitude of “out of game” activities to take part in that bares him from either of these interactions, and actually draws him out of the experience and into reality.

³ A common tool used by referees is a physical barrier called a “Referee Screen” which allows the referee to hide the results of his rolls from the players.

- c) *Vector for Distraction*: This problem is present in all digital platforms that would be introduced into the role playing experience, and is somewhat inescapable. This problem is the fact that even if you manage to stay off social media sites and remain engaged and interacting even while off stage; you can still be distracted by the platform. A smartphone can ring, the Facebook application can show a notification and a laptop can give you easy access to the internet. All digital platforms can become a distraction to the player.

It can be said that problems *b* and *c* are also present in other platforms; however the physical barrier that the laptop provides may encourage such behavior. This left me with the tablet platform, which did indeed have the limitation of having no physical keyboard. Yet, due to the smaller physical presence than the laptop, the tablet was thought to be the ideal digital platform for the play tests.

4.0 Data Collection

With the process behind the process described, how data was gathered from the role playing community will now be outlined. In order to do this, it was necessary to reach a larger audience than my immediate network, in order to get a wide variety of role players. It was decided that an online survey would be the best approach, as it would be able to reach role players from across the globe.

4.1 The Surveys

In the process of gathering data, two surveys were created using the web service *Survey Monkey*, which were posted both on Facebook and several role playing forums. I chose to use an informal tone as part of the survey for two reasons. First, in my experience with gathering user data as a DADIU QA Manger, an overly formal tone can give user “performance anxiety” and they start trying to answer questions based upon what they believe is desired rather than what they actually have to say. Secondly, taking a survey is a time investment for the participants, the least I could do is make the surveys bit interesting to read and not bogged down by over complicated jargon and over formal tone.

Survey Monkey is an online service that allows users to create, distribute and analyze surveys⁴. This website is what allowed me to design my survey questions and distribute the survey through an embedded link that could be posted on a variety of role playing forums and social media sites. The analysis filters of *Survey Monkey* were the driving factor in my choice of this service. These filters were a part of the service not included on the free version of the service and they allowed me to effectively look for trends in the data. This was done by allowing me to filter out participants based on a verity of criteria; such as role and disposition towards a given tool

The data gathered from these surveys was analyzed using a Factor Analysis approach. This method of data analysis was selected due to both its statistical approach, allowing me to numerically represent my participants’ opinions based on number of certain responses, as well as the focus on interrelationships between large numbers of variables. These variables are explained in terms of their common dimensions with the goal of condensing data in these variables into a smaller set of variants, termed factors (Hair, Anderson, Tatham, & Black, 1995, s. 5). For the purpose of the first survey, these factors where dependent on the role of the participants, giving the option of a

⁴ <https://da.surveymonkey.com/>

player, referee or equal amounts of both, and whether or not the participant had used a laptop as a part of the role playing experience. In regards to the second survey these factors were dependent upon role once again and whether or not the participants had used a tablet as a part of their role playing experience (Hair, Anderson, Tatham, & Black, 1995, s. 5).

The first survey was centered on two core goals. The first was to examine and ask users to express their experience laptops within the role playing experience. The purpose of this was to validate which platform was. This would give me important data on what digital platforms in the role playing experience is doing right and wrong using the platform both the participants are familiar with. The second goal with this survey was to gauge whether or not the participants believed that tablets could improve on some of these possible short comings. This was important because it would allow me to see if the participants viewed tablets as a possible replacement to laptops or if they thought that the platform could improve the experience. For a list of the questions asked as part of this survey as well as the answers, see Appendix III. Below each of the questions posed as a part of this survey will be show and their intent expressed in Figure 4.1.

Question	Intent
How many years have you been playing Tabletop Role Playing games?	This question was intended to give me a indication of the amount of experience within tabletop role playing that the participants had.
What is your usual role within the role playing session?	This question was meant to give me a look at the usual roles of the participants in order to build a picture of the background that their experiences are a part of.
In your time as a role player, have you ever used a laptop as part of a session?	This question was meant to divide participants by whether or not they had used a laptop as a part of their role playing experience. Participants that answered no were not asked any further questions.
Select the options that most accurately describe your opinion of the use of laptops within the role playing experience.	Here I was investigating the perceived impact of the laptop platform on role playing experience. This question allowed the participant to give their own personal view of the use of laptops.
Based on your observation of others, have you ever noticed a difference between using a laptop	Here I investigated the perceived impact of the platform again; however this time I externalized the subject of

in a session and not using a laptop?	the question in order to see if participants noticed an impact in others.
Do you think that the issues, if any, that are presented by a laptop within the role playing space would be eased by the use of a smart device, such as a tablet or smart phone?	This question was the last question of the survey and was intended to be a first indication of the participants' disposition towards tablets.

Figure 4.1 – First Survey

The second survey was much longer than the first. The goal of this survey was twofold; to delve deeper into the use of digital tools within the role playing experience, and how their use pertains to both the referee and the players. This was done to gain data on which tools, digital or analogue, were favored by both players and referees. There were several goals in this survey. What I was trying to explore was how digital tools are seen by the role players that took part in comparison to their analogue counterparts. This line of questioning was based in Usability, “a quality attribute that assesses how easy user interfaces are to use” (Nielsen, 2012), by determining the perceived value of the tools as well as how they valued the digital platforms. For a list of the questions asked as part of this survey as well as the answers, see Appendix III. The intent of each question that was posed as a part of this survey is expressing in Figure 4.2.

Question	Intent
Have you ever tried refereeing a tabletop role playing game? (Being the Game Master, Storyteller, etc.)	This question was intended to split the participants between participants with refereeing experience and those that did not. The participants that had no refereeing experience were directed to the player orientated questions.
Please value you tools listed below dependent upon their value to you as a referee.	This question was intended to give me a general idea of what the participants with refereeing experience valued in the digital and analogue tools available for refereeing. This was important as this question would allow me to see the preferences of the participants and how the perceive these tools.
Please value these digital platforms dependent upon their value to you as a referee.	In this question I was attempting to find a trend in the preferred digital platforms of the participants.
Have you ever tried using a tablet as a digital platform for your refereeing?	This question was intended to split participants with refereeing experience depending upon whether or not

	they had any experience with using a tablet as a referee.
Please respond to the following statements that describe your interaction with a tablet as a referee.	Here I presented the participant with several statements that described the Usability of a tablet. They were asked to rate these statements based on how much they agreed with them. This was done to evaluate the use of digital tools on a tablet in these terms.
Please respond to the following statements that describe the impact of using a tablet on your interaction with your players.	This question intends to look at the perceived impact of using digital tools would have on a referee's ability to interact with the players. Much like the previous question, statements were presented and the participants were asked to rate them based on agreement.
Please write any extra comments you have about using a tablet as part of your refereeing experience.	This question was intended to finish off the referee orientated questions and to catch any final comments that the participants may have had.
Would you use a tablet again in the future as a referee?	This question was intended to discern the disposition the participants with refereeing had towards digital tools and platforms to be used for refereeing.
Please value you tools listed below dependent upon their value to you as a player.	This question is where the player participants were started, and the participants with refereeing experience ended up. Much like the similar question in the referee section of the survey, this question presented tools and asked the participant to evaluate the tools based on how they valued them as a player.
Please value these digital platforms dependent upon their value to you as a player.	The intent here was for an evaluation of the presented digital platforms to discern the participant's disposition towards digital platforms.
Have you ever used a tablet as a digital platform as a player?	This question was intended to split the participants between those that had used a tablet as a player and those that had not. This would allow me to pry deeper into what players thought of using tablets.
Please respond to the following statements that describe your interaction with a tablet as a player.	Here, statements were presented and the participant asked to respond based on agreement with the statements presented. The statements were intended allow the participant to respond to the Usability of digital tools on a tablet.

Please respond to the following statements that describe the impact of using a tablet on your interaction with your referee and other players.	This question was intended to explore the impact using a tablet was perceived to have by the participants as players.
Please write any extra comments you have about using a tablet as part of your player experience.	This question intended to allow that participant to give any last thoughts on digital tools and platforms as a player.
Would you use a tablet again in the future as a player?	This question was intended to discern whether or not the participant was willing to try using a tablet as a player again. This was important to ask because it would give an indication of whether or not the tablet is viable as a digital platform for players and whether or not they are willing to try new digital tools on the tablet.
What would a tablet have to offer you in order for you to use it as a digital platform as part of your role playing experience?	This final question was intended to allow the participant an opportunity to voice what a tablet would have to provide them as a digital platform for them to use it.

Figure 4.2 – Second Survey

Usability gave me a theoretical measure to base the questions upon by allowing me to understand how tablets are perceived in terms of Learnability⁵, Efficiency⁶, Memorability⁷, Errors⁸ and Satisfaction⁹. This will be instrumental in allowing me to understand which areas tablets need to improve upon if tablets are to become the main digital platform with in the role playing experience. Both of these surveys were a way for me to gather data on the community's disposition towards using tablets in the role playing experience in order to further understand how tablets may become a part of the role playing experience.

4.2 The Play Tests

In order to document the affect of digital tools on the flow of the role playing experience, I decided to conduct two separate play tests, one for each type of participant. These play

⁵ "How easy is it for users to accomplish basic tasks the first time they encounter the design?" (Nielsen, 2012)

⁶ "How easy is it for users to accomplish basic tasks the first time they encounter the design?" (Nielsen, 2012)

⁷ "When users return to the design after a period of not using it, how easily can they reestablish proficiency?" (Nielsen, 2012)

⁸ "How many errors do users make, how severe are these errors, and how easily can they recover from the errors?" (Nielsen, 2012)

⁹ "How pleasant is it to use the design?" (Nielsen, 2012)

tests were held using my own pathfinder troupe. This was done for the sake of convenience, as I would not have to recruit a new troupe for these tests and my troupe plays at regular intervals. This allowed me to conduct my test at my leisure. These tests were held at The Realm of Adventurers (TRoA), a role playing club in Nørresundby. I choose to run a player test and a referee test in order to isolate the variable of the users' role within the experience. This would allow me tell what affect digital tools have on the flow of the participant's experience in a vacuum. Each test was recorded and full videos of each test can be seen in Appendix IV.

Several challenges were encountered in setting up these tests. The issue of finding enough tablets to conduct the player test. I had hoped that I would able to acquire enough identical tablets so that each player of the troupe could have one during the player test in order to ensure that differences in tablets would not be an issue for in terms of user interface issues. I had hoped I could gather enough tablets to take part in this test myself; however that may have risked introducing personal biases to the results of the play test. In the end I was forced to use a Samsung Galaxy Tab 2, a Windows Surface and an iPad due to my inability to find matching tablets. This challenge, though resulting in inconsistent platforms, also allowed me to gather data on various kinds of digital tools within each category, as not all tools were consistent across all platforms. This may have caused some inconsistency in the data.

4.2.1 The Referee Play Test

For the referee test, Kynde (the referee) was given a Samsung Galaxy Tab 2 to use for the session. The tablet had the Quick Dice Roller, Masterwork Tools: Pathfinder Open Reference, the Spotify application and a collection of spells form the game Pathfinder in the Pathfinder Spellbook application. Kynde was instructed to use the tablet exclusively for the session. This was not how it played out as part of the test however. Kynde reference rules using the analogue books he had brought with him on occasion and predominantly used the internet to look up rules. This was due to my failing to properly inform him of the reference application that had been provided.

He was allowed to use his note book of narrative details, as he did not have them in digital form and I did not think that this would influence the test to a great degree. He was doing this test voluntarily as part of a long running campaign that he has put a great deal of effort into and not allowing him access to his physical notes, or asking him to convert all of them to digital form, was something I thought too much to ask of him.

In order for me to gather data from Kynde after his experience, I conducted a personal interview with him. The questions and a recording of this interview can be found in Appendix IV. As a part of this interview, when I was made aware that he was ignorant of the reference application, I had Kynde try the reference application in a small mock-up test.

A personal interview was my best option for this test, as Kynde was the only participant and I saw it necessary to converse with him regarding his experience. As the referee is constantly active within the role playing experience and interview gave me more opportunity to gather data through follow up questions.

4.2.2 The Players Play Test

As a part of the player test, each player was required to use the tablet for all their role playing purposes. The players were required to have a dice roller, a digital character sheet and access to their spells through the tablet, be it through an application or .pdf. This was done to accommodate the three types of tablets that were present as a part of this test. The participants and their tools were as follows:

- Cale (iPad): Gamedice Pathfinder, Real Sheet Scry free
- Ausk (Samsung Galaxy Tab 2): Quick Dice Roller, Pathfinder Spellbook, Photo viewer
- Treeni (Windows Surface): .pdf viewer, Microsoft Excel, Quickie Dice Roller, Photo viewer

For this test I choose to send out a questionnaire, rather than do personal interviews, due to time constraints. The inability to do personal interviews for this test was less of a problem than it would have been for the previous test as in this test I had three participants¹⁰, rather than one, to gather data from. Having several participants allowed me to gather several view points on the same experience of using tablets in the role playing experience.

¹⁰ My business partner, Mads Reedtz, was missing from the Player test. This worked to my favor as he is rather involved with the further development of this project.

5.0 What is a Tabletop Role Playing Experience?

Role Playing Game is defined in Gary Alan Fine's book *Shared Fantasy: Role-Playing Games as Social Worlds* as "any game which allows a number of players to assume the role of imaginary characters and operate with some degree of freedom in an imaginary environment" (Fine, 1983, s. 6). Though an adapt description of the what tabletop role playing is functionally, it does not make any clear distinction between where this described "freedom" is applicable and where it is not. Tabletop role playing games do indeed restrict the freedom of actions via system and narrative, but the players still have a vast amount of freedom; usually in what their character says, thinks and feels. This is very akin to a form of impromptu theatre coupled with a systematic rule set or, alternatively, related to the concepts of Play and Game.

Play is defined as "a free activity standing quite consciously outside 'ordinary' life as being 'not serious' but at the same time absorbing the player intensely and utterly" (Huizinga, 1955, s. 13). This definition of Play lends itself very well to the portrayal of a character, a free activity that the participant is aware of as outside ordinary life and with no repercussions in the real world with the potential to be intensely absorbing. This free activity also relates well to the "degree of freedom" mentioned by Fine, which indicates that there is indeed a form of Play involved in tabletop role playing.

Game is defined as "a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome" (Salen & Zimmerman, 2004, s. 80). Tabletop role playing clearly falls under this definition as it is a game based on a system that engages players in artificial conflicts presented by the narrative, all of which result in quantifiable outcomes; in the form of success or failure of actions.

Though Fine's definition is accurate, it fails to specifically identify what aspects the participants have freedom. Additionally, Fine's definition encompasses a much wider array of games that can fit under the term "Role playing game" while this thesis deals with the concept of tabletop role playing games exclusively. That is why for the purposes of this thesis I will be expanding Fine's definition using both Huizinga and Zimmerman definitions of Play and Game respectively in order creates a more specific definition of Role playing game:

"A tabletop role playing game is a Game in which participants Play the roles of imaginary characters within a shared fantasy world of which the can act with agency and choice."

This definition sets table top role playing games aside from other, more common table top games, such as *Monopoly*, as these game do not exhibit the same degree of freedom. Granted, *Monopoly* provides players plenty of choices and options, but the players do not have the freedom to come up with options themselves. For example, the player in a monopoly game can choose to buy, build housing or build a hotel. The player cannot choose to build better schools or go talk to the local people to see what would be most profitable in the long run, and thus is limited by the options presented by the game. Table top role playing games allow a greater degree of freedom in options available to players, many of which are not even described as part of the system. Rather than presenting choices to players, table top role playing games usually describe how certain actions are carried out and leaving the how and why up to the participants of the game. This distinguishes table top role playing games from other similar games, yet it does not describe the experience of actually playing one.

In my conceptualization of “an experience” I make similar assumptions as Jantzen et. al. in their work “Oplevelsesdesign.” First, Jantzen et. al. state that experiences come from us while we act upon the world (Jantzen, Vetner, & Bouchet, 2011, s. 37). In the case of tabletop role playing, these interactions upon the world are the part of a self termed “*meta-experience*” in which participants uses a game system and dice to interact with a collaborative fantasy world. This interaction is what is termed the role playing experience. This world is embodied in a single participant, termed the referee. His part in the experience is to be the judge of the world and tell the players what they have to roll dice to interact with the fantasy world. Additionally, he portrays every person in that universe that is not a player. Players portray characters within the fictional world, usually the protagonists of the referee’s narrative. This thesis will focus on the experiences involved in interacting with the collaborative fantasy world, and not explore the meta-experience as this goes far beyond the scope of said thesis.

Seeing as the players are not the characters in the real world, and as Jantzen et. al. assume, experiences are impacted by the mood and motive of the actor and that of the situation (Jantzen, Vetner, & Bouchet, 2011, s. 37). The players are the actors, in the meta-experience, acting upon a system and a referee in order to interact with the cooperative fictional world through their character. So by this thought process the role playing experience is contained within the meta-experience, and each experience can have an effect on the other.

Joe Pine defines an experience as “events that engage individuals in a personal way” (Gilmore & Pine, *The Experience Economy*, 1999, s. 12), though only if a conscious mind is

experiencing it. Players when beginning the role playing experience should suspend their disbelief and truly try to embody their character in this fantasy world may be engaged in a very personal way, much like an actor would in a stage play. Just as an actor's mood and motivations can affect their performance, so too can those of players affect the role playing experience. My assumptions regarding the role playing experience specifically are as follows:

- A. The role playing experience takes place within an overarching meta-experience, which consists of the participants interact with the role playing experience. The role playing experience is made up of three key experiences. These experiences vary in their nature depending upon the role of the participant.
 - a. Interacting with the system is another key experience of role playing. This key experience embodies the use of dice to determine random outcomes of actions the players and NPCs take. This experience is called *practical execution*.
 - b. Interacting with players either as a referee or another player is a key experience which ties into experiences of assuming the role of a character within the fictional world to interact with it. This experience is called *player interactivity*.
 - c. Finally is the experience of being unable to interact with the fictional world due to the character being unable to act. This can be due to the character not being present in the scene which has the referee's attention or due to a stalling of one of the other key experiences. This experience means that the participant having this experience can only interact with other participants in the meta-experience, not the role playing experience. This experience is called *non-interaction*.
- B. The role playing experience is created through collaborative imaginary storytelling taking place in a shared fantasy world between a group of participants, one of which is the referee.
 - a. For this experience to exist, three factors must be present: the participants must suspend their disbelief (*magic circle*), a game system to govern the success or failure of actions taken by players and the referee (*system*) and the referee must have a set of events planned for the players' characters to take part in (*narrative*).

The assumptions regarding the key experiences are based in my own analysis of the processes of interacting within the role playing experience. The factors that must be present for it to be established are based on the findings of a focus group that I held in order to garner a deeper understanding of what made up the role playing experience. The participants of this focus group

were members of a troupe I have been actively role playing with and the participants, excluding myself, have combined over 40 of role playing experience. For a look at the exact transcript and audio recording of the focus group, see Appendix II.

Lastly, I expand both upon Pine's definition of an experience and the assumptions regarding the nature of an experience made by Jantzen et. al. For the purposes of this thesis, the term "an experience" will be defined as:

"A state of engagement created between the mood and motivation of the individual and the situation that the individual finds them in."

5.1 The Factors of the Role playing Experience

The factors of the role playing experience are the base elements that make up said experience that must be present for it to be established. These factors are the magic circle, the system and narrative.

The first and most important factor of the role playing experience is the compact between all participants that what is occurring in the collective fantasy of the group is reality. Role playing as an activity is a collaborative experience between players and the referee that is experienced through the collective imagination of the troupe. To take part in an experience like this, one must leave behind reality and become a part of this collective imagination and suspend one's disbelief. This is commonly referred to as entering the *magic circle*. The term was coined by Johan Huizinga, and he described it as follows:

"All play moves and has its being within a play-ground marked off beforehand either materially or ideally, deliberately or as a matter of course. Just as there is no formal difference between play and ritual, so the 'consecrated spot' cannot be formally distinguished from the play-ground. The arena, the card-table, the magic circle, the temple, the stage, the screen, the tennis court, the court of justice, etc, are all in form and function play-grounds, i.e. forbidden spots, isolated, hedged round, hallowed, within which special rules obtain. All are temporary worlds within the ordinary world, dedicated to the performance of an act apart." (Huizinga, 1955, s. 10)

Salen and Zimmerman expand on this description by stating "In a very basic sense, the magic circle of a game is where the game takes place. To play a game means entering into a magic circle, or perhaps creating one as a game begins." (Salen & Zimmerman, 2004, s. 95)

When entering the magic circle for a tabletop role playing game, all participants must accept two conditions above all else to engage in the experience; acceptance that the world created within our collective imaginations is real and that the character that is being played is the player. The first of these conditions must be in place for what happens inside the magic circle to have any relevance to the game at all. Battling a black dragon at the gates of Absalom to prevent the destruction of the planet Golarion¹¹ has no meaning unless the players accept that these circumstances are both real and have consequence. Dually, by accepting that there are consequences within this world one also starts to feel invested in these consequences and whether or not they are in the favor of the player. The second of these conditions is one that is much harder to maintain in certain cases, however it is equally important. It is extremely important for players to realize that they are playing a character within a fictitious world, but they themselves are not that person. This can be freeing, but also difficult, as there are certain instances in which the player is aware of more than the character. It can therefore be very straining to play the character without breaking the magic circle. Though this is not the most common outcome of such situations as in many cases this strain only serves to heighten the tension of the situation; one common expression within my own troupe for such a situation is “I wish my character could hear the theme music”. A big part of entering and maintaining this magic circle has to do with the social aspect of tabletop role playing games. James Portnow, game industry veteran and writer for the web-show *Extra Credits*, states that “if the people around you agree on the reality you are entering, if they feel the same energy you feel... then it is easy” (Portnow, 2014) to enter the magic circle.

Conversely, this energy can be lost and thus break the magic circle; make it more difficult to enter again. This can happen for many reasons, including the presence of people that have not entered the compact, a player that has broken the magic circle or a biased referee. These events or happenings serve to undermine the role playing experience and, due to the collaborative nature of such a game, cause the whole experience to suffer.

The **second factor** of the *system* that is required for the role playing experience to be established is very dependent upon the designation of the referee. This designation is usually tied up in a number of different circumstances. One such circumstance is, usually, dependent upon what role playing system the troupe has chosen to use for the game in question. Modern role playing games have come a long way from the collection of rules, stats and monster that were once the norm of popular tabletop role playing games like *Dungeons and Dragons* (Fine, 1983, s. 16) or

¹¹ A city and planet, respectively, from the *Pathfinder* role playing setting, published by *Wizards of the Coast*.

Traveller (Fine, 1983, s. 20) which presented very little in the means of a setting within the books, under the assumption that players could make their own worlds to explore. This is no longer the norm, as many modern role playing systems not only introduce the players to the mechanics for playing a fantastical character but also introduce them to a whole fantastical world. For example, White Wolf Publishing's *Vampire: the Requiem* not only gives role players the mechanics for playing a vampire but also sets the stage for a dark and malicious world in which the shadows are inhabited by immortal, stalking creatures of the night. A picture of a world is created for the players to interact with and gives the referee a place to start when designing the role playing experience for the players. This is why the referee is usually selected from amongst the most experienced players within the system that is chosen. This is not always the case, as at times a player will declare that they would like to referee a game that they have been reading up on. The choice of referee and system has a profound impact on the role playing experience. The system that is chosen dictates what the players will be playing, while the choice of referee has more far reaching impact on the game. Referees have many different stances on events such as player death and the like. Some referees choose to have much more linear or grand games which affects the tone of the game. All of this plays into the third factor of the role playing experience.

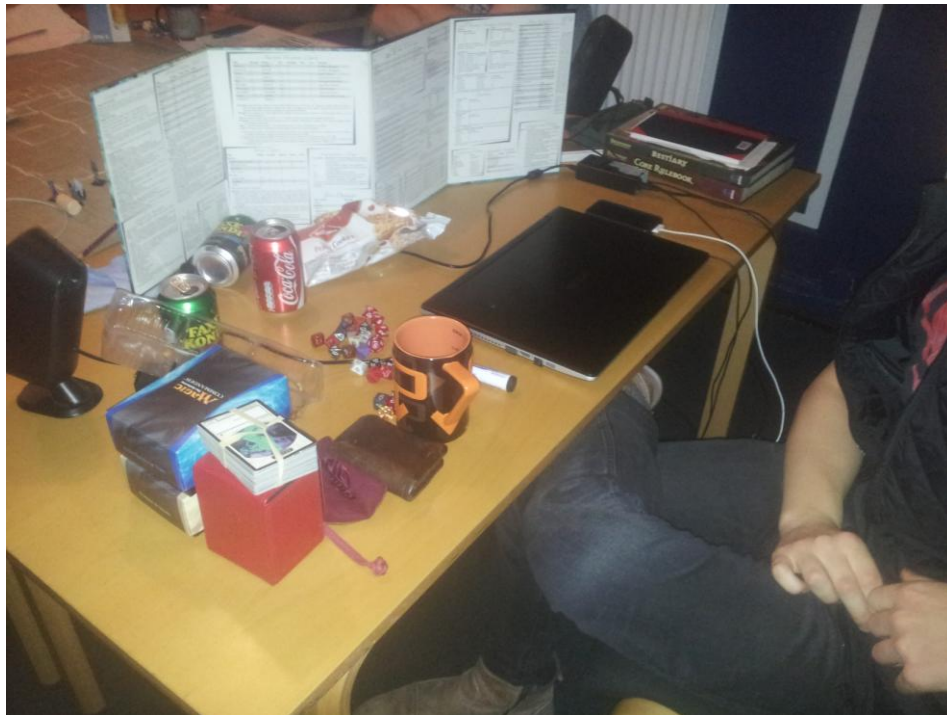


Figure 5.1 – Behind the Referee's Screen

This **third factor** is a *narrative* to tell. All role playing games are based around one unifying factor, and that is that they have a narrative. It is a mutable, collaborative narrative which is as much dependent upon the referee's planning as it is on the creativity and cooperation of the players, however the narrative of a tabletop role playing game still requires a great deal of planning from the referee of the game. It is important to strike a very fine balance when designing such a narrative between direction and freedom for the players. It is ideal for most games that the referee provides the players with enough information so that they know how to advance the narrative, while still allowing for freedom to advance the narrative and approach problems in a way that suits their character. Give the narrative too much direction and the players will feel "railroaded," that is they will feel that they exist only to make rolls within the narrative not to influence it in any meaningful way. Give the narrative too little direction and the players will be unsure of what they need to do to advance the story. It is also important for the narrative that the players feel some element of agency within it, that the narrative changes to suite their choices. This is one of the elements in which tabletop role playing excels, and it is a shame to waste this element by limiting player creativity. Failure to provided adequate freedom within the narrative can result in a breach of the magic circle which causes the fun of the game to break down.

These factors not only establish the tabletop role playing experience, but the also make said experience and example of meaningful play. Meaningful play is a concept that can be defined in two ways, descriptive or evaluative; one to address the mechanisms that create meaning through play and another to help us understand why certain game create meaningful play more effectively than others respectively. The first, descriptive definition of the concept states that meaningful play is the process by which players take actions within the designed system of a game and the system responds to the action and that the meaning of an action in a game resides in the relationship between action and outcome (Salen & Zimmerman, 2004, s. 37). The second, evaluative definition describes meaningful play as what occurs when the relationship between in game actions and outcomes are both discernible and integrated into the larger context of the game (Salen & Zimmerman, 2004, s. 37). These two definitions are closely related and creating successful games means understanding meaningful play in these two aspects.

In the case of tabletop role playing games, this relationship between action and outcome can be particularly observed in relationship between player and referee. The success or failure of all actions taken by players within the imaginary world is indeed determined be the randomizer tool determined by the system factor, however all narrative and descriptive feedback is

determined and conveyed by the referee. To give an example, a player's character is attempting to coax vital information out of a captured NPC. The player's dice roll in regard to this action will determine the outcome, success or failure, but what the NPC says, regardless of the roll, will be determined by the referee. So by extension, one can say that in order for meaningful play to occur, there must be access to both the *system factor*, to lend the rules and to determine outcomes of actions, and a referee, to contextualize those outcomes within the situation and the *narrative factor* while maintaining the *magic circle factor*. The system determines the raw calculation of the action's outcome, but the meaning of said action beyond success or failure is determined by the referee.

Another point can be made when applying meaningful play to the tabletop role playing experience, and that is in regard to the importance of the randomizer tool. The tool is essential to creating meaningful play as it not only gives outcomes to actions, but it very firmly ties the two things together. Players have agency to take actions and the outcomes are entirely determined by an understandable and (depending on the situation) discernible tool; usually a die. Indeed, the meaning of the outcome is determined by the referee, but the outcome itself is found through the use of a tool, which also leans an element of agency over said outcome; even though this agency is usually an illusion as the die produces an entirely unpredictable outcome.

These three factors are what establish the role playing experience for a group of people. When working correctly, the magic circle is entered and the group is transported to a world populated and run by the referee in accordance with the game system and setting while taking part in an adventure that is influenced by their choices, successes and failure. With these three factors explained and the need to maintain them elaborated, one can now ask what kind of experience is a game of role playing.

5.2 The Key Experiences

The key to understanding the key experiences of tabletop role playing lies in the previously established definitions of both *play* and *game*. As role playing is defined, for the purposes of this thesis as “a Game in which participants Play the roles of imaginary characters within a shared fantasy world of which the can act with agency and choice”, the key to distinguishing the key experiences lies in understanding when participants are “playing” or “gaming” based on definitions of these concepts by Huizinga and Salen, respectively.

1) The *practical execution* experience is predominately concerned with the game aspect of tabletop role playing, and pertains to the world management, system based action outcomes and system procedures. Specifically, the practical execution experience is the experience of interacting with the shared fantasy world through system based mechanics. This experience is most profound in situations of combat, a common feature in many tabletop role playing games. In combat, time within the shared fantasy world slows to a crawl so that participants can act in a structured, systematic manner in an otherwise chaotic and hectic situation. Usually, participants take turns to move, speak and take actions, such as attacking, using the mechanics provided by the system. In the practical execution experience, the system takes center stage; and this at the core of the practical execution experience. This experience is tied to the system factor and the flow of this experience becomes entirely dependent on said factor and the tools that are used to maintain and facilitate it.



Figure 5.2 – Example of combat (*The star destroyer was not involved*)

2) The *player interactivity* experience of the role playing experience pertains to the play aspect of the tabletop role playing experience. This play aspect is prevalent in the portrayal of characters within the shared fantasy world, and the participants have freedom to portray the character they are controlling in any manner that they see fit (within the confines of what is possible

within the setting of the game). That makes this experience akin to impromptu acting, or assuming the role of another character, which is a form of play. This experience takes center stage in situations in which participants must interact verbally through their assumed characters. In the case of players, this experience is consistently tied to them each portraying a single character within the shared fantasy world. For the referee, this experience occurs when they portray one of the many NPC within the shared fantasy world. In both these cases, one or more participants is interacting with a player, hence the designation of player interactivity experience.

3) The *non-interaction* experience is when *player interactivity* or *practical execution* is not in effect. This is most commonly experienced by players, as certain circumstances within the narrative can cause a players character to not be active within a given situation, usually due to the character not being present in said situation leading to the common name of the character being “off stage.” This can also be experienced by the referee, however this is usually a choice made by the referee to allow the players to form a course of action internally or discuss certain actions and events without their interference. The non-interaction experience, in a way, forces participants into the so called meta-experience which could lead to distractions from non-game related sources. This aspect of this experience, however, will not be explored as a part of this thesis.

These key experiences represent the means of interaction between the participants and the shared fantasy world.

5.3 Shared Fantasy as a Virtual Object

I will now be looking to define the collaborative, shared fantasy that the participants interact with through the key experiences once the experience is established by factors of role playing. This will be done by relating the shared fantasy of tabletop role playing to the concept of a “virtual object” theorized by Ryan. The lynch pin in this relation comes from one of the virtual aspects of a virtual object, namely the detachment from real world spatial-temporal context (Ryan, 2001, s. 42). To make this relation, one must look at how these two dimensions, time and space, function within the tabletop role playing experience.

There are, broadly speaking, three distinct classifications of time with in a tabletop role playing game; 1) “real” time within the role playing experience (hence forth referred to as “game time”), in which time progresses congruently with real time outside the role playing

experience, 2) narrative time, in which time progress much faster than real time, and 3) combat time, in which time is slowed down to a crawl.

Game time usually comes into play when the player characters of the role playing experience are interacting with non player characters, conversing between themselves in order to make a decision on what to do next or interacting with the environment.

Narrative time, however, is usually reserved for the time in between events, or adventures, in order for time to pass. Examples of narrative time can be when the adventuring party is moving between locations, taking time during an adventure to research a certain subject or even as time spent training or progressing the player character; this last example is specifically referred to as “down time” however it does fit under the broader category of narrative time. Narrative time is usually implemented as a form of progression of the narrative, used to get players to the next key location within the referee’s story, and this time usually requires very little description from both the referee and the players. Players can still interact with the fictional world, make rolls and declare actions as normal, but this is usually in the sense that the players’ characters are engaging in activities that take a large amount of game time and are better described in narrative time due to this.

Combat time slows time to a near standstill that gives players and the referee the oversight to handle the chaos that is combat. Combat time only takes effect when the characters are involved in, as the name implies, combat. This measure of time is usually the best documented in the game system, and is generally divided up into rounds. Each round, all participants of the combat get a turn to act within the combat; be it making a skill roll, attacking or casting a spell. Each round is meant to give order to a very chaotic action scene and usually only depicts a few seconds within the experience, but can take hours in real time.

The role playing experience takes place in the collective imagination of the participants. Each participant helps build this collective experience through the actions and descriptions as well as their interaction with the narrative, setting and other players. The fact that all these events take place in the mind’s eye of the participants indicates that the shared fantasy exists outside of real space. One could argue that the tabletop role playing experience requires a presence and space within the real world, implying that the role playing experience, however if this was the case then all virtual experience would require the same space in the physical world. Most experiences, in one form or another, do take up physical space, but this is not the same as having the being spatially connected to the reality context. The dimension of space denotes whether or not the

experience itself takes up space in the atom based world or not, and with this in mind, the tabletop role playing experience can be concluded to exist outside the real spatial context; as all the action that takes place during a role playing experience takes place in the mind of the participants, not in any physical space. There are no castles, no vampires and no rainy night, all of these elements exist only in the imagination of the referee and players.

As is presented here, the shared fantasy world that is interacted with by the players exists within its own, self contained time and space that are not subject to the workings of reality. As Ryan states, “a virtual object... creates its own space and time” (Ryan, 2001, s. 42). This is also true for the shared fantasy, leading me to relate this concept with that of a virtual object.

5.4 What is a Tabletop Role Playing Experience

Based on the reasoning and theories presented as a part of this section, I can now present an accurate description of what the tabletop role playing experience is. The tabletop role playing experience is the experience of interacting with a virtual object that is a shared fantasy world. Participants interact with the virtual object through narrative play or systemic game based action, both of these interactions are mediated by a single participant, termed the referee, who applies narrative and situational context to the systemic success or failure outcomes. This experience is established through a shared compact between the participants that the events of the virtual object have significance, a narrative that is present by the referee and a system to dictate the rules within the virtual object. This is what makes up a tabletop role playing experience.

6.0 Tools in the Tabletop Role Playing Experience

For the purpose of this thesis, I will be analyzing the intended and actual impact on flow of the digital tools of all of these categories. This will be done so that I can attempt to compare the perceived intended use of the tools used in the fully digital play tests with the perceived usage of these tools. After determining both intended use as well as perceived usage of the tools, I will be able to determine if the use of digital tools on the tablet platform has an effect on the flow of the tabletop role playing experience.

6.1 Tool Categories

There are three broad categories of tools that are used in table top role playing games. When I speak of tools in the context of table top role playing, I am referring to aids or necessary objects, such as dice, that facilitate the table top role playing experience. These tools are traditionally of the analogue variety; however with the advent of digital platforms many of these tools have gotten digital counter parts. The categories that I will be dividing these tools into are as follows: *reference tools*, *randomizers* and *props*.

Reference tools are a category of just that, tools that allow the participants to reference game related information while in a table top role playing session. These include the characters sheets that all players must use, as well as the system book or books available to the referee. With the advent of digital platforms in the role playing experience, the possibility for reference tools have expanded. The one of the most common forms of digital reference tools are .pdfs of role playing books, usually viewed on a laptop. In order to accommodate this, many publishers now release .pdf or e-book versions of role playing books at a reduced cost. Digital platforms can also be used to access databases of role playing related information. These databases can be in the form of a dedicated wiki or, more recently, in the form of an application bound to a browser or smart device. The difference between these two digital reference tools is that e-book variants still maintain the structure of the book they are a digital version of, while databases collect information by subject; usually gathering all information of the same subject from all available books. Some examples of analogue referencing tools include the standard character sheet used in most tabletop role playing games, referee screens and of course any hard copy book that includes rules of the system in use. Examples of digital reference tools are databases like the *Pathfinder Source Reference Database* and the application *Masterwork Tools: Pathfinder Open Reference* by Masterwork Tools.

Randomizers are at the core of any role playing experience. Randomizers are the tool that allows the participants, with the help of the system, to determine the success or failure of actions taken in the shared fantasy world. By far the most prevalent of this type of tool is the standard, analogue die. Most role playing games employ dice as their randomizers but some do exist that employ other means; such as a deck of cards. Some systems even use many types of dice for different purposes within the role playing system. Digital counterparts to analogue dice, usually in the form of a smart-phone bound application, have not been as widely used by the roll playing community. It is very rare to find a person that would prefer the digital counterpart over the analogue in regards to this tool. Examples of analogue randomizers are six sided dice, twenty sided dice and a plethora of other dice of varying sides. Some examples of digital randomizers include applications like *Quick Dice Roller* by Ohmnibus and *Dice Roller* by WobiWare. Both are available on the Google Play Store.

Props are to be understood as any tool that is directed towards enhancing atmosphere, mood and tone of the experience. These include tools such as music players and sound boards to add mood to the scenario taking place in the shared fantasy world, as well as any physical props that referees may use to blur the line between the imagined and reality. These tools are not essential to the experience, nor are they directly related to table top role playing. This differs from the other two categories, which function as essential aids in determining outcomes I the shared fantasy world. Examples of analogue props can be letters written in game, white boards to conceptualize the local area in game and any other physical object that is presented to the players and characters at the same time. Digital props include digital music players like *Spotify*, digital sound boards and art work shown on a digital platform.

Both reference tools and randomizers are integral to both practical execution and player interactivity; while props serve to add thematic weight to the context of interactions. These tools are used throughout the session by participants and thus are present in all the key experiences. This is not the case for the prop category; as these tools are predominately used to add an element to the experience.

Additionally, it is possible for a tool to be a part of several tool categories. An example of this would be the tool known as a battle board. Some tabletop role playing games employ the use of miniatures and a gridded battle field to conceptualize the positions of players and their adversaries, which implies that the tool is a prop as it brings something from the imagined

world into reality. However, systems that use this tool usually do so because distance, area and positioning in combat are essential to the system. If that is true, then battle boards share qualities with reference tools, as they visually allow for quick reference of position of combatants, ranges and so on. For the purpose of this thesis, battle boards and other tools that share qualities with more than one category will be treated as a part of both categories.

6.2 Tools and the Factors of Role Playing

In relation to the factors of role playing, the tools tend to support several factors at the same time. To begin, I will describe how these tools relate to the factor of the magic circle. Reference tools do not serve to support this factor, as the magic circle as a factor of role playing concerns itself with compact held by the participants that the events and actions of the shared fantasy have value; which is something that the use of reference tools has little, if any, impact on. This can also be said about Randomizers, as their use does not influence the agreement made to take this shared fantasy seriously. Props, however, can have an influence on this factor. Music, sound boards and physical props are able to bring the imaginary and the real closer together. This can be through music that sets the scene in a tavern or battle, spooky noises while the characters are exploring a haunted house or being handed a letter in game and out of game. All these props serve to make the imaginary more sensual or tangible, making it easier to maintain the suspension of disbelief required for the magic circle factor to persist.



Figure 6.1 – The Players declare actions

The narrative factor is, in part, related to all the categories of tools. Reference tools come into play in the narrative factor when the player participants take the narrative in a non-standard direction. Most tabletop role playing games state that “story trumps rules” or supporting the narrative of the experiences is more important than supporting the system of the experience. By non-standard actions I am referring to action that are not described in the system; actions that are not usually possible in the system but are made possible through the narrative. In cases such as this, reference tools that allow for easy referencing can allow the referee participant to look up related rules for inspiration on what to allow the players to roll to determine the success or failure of these non-standard actions. Randomizers in relation to the narrative factor infuse actions with tension. Narrative gives context to actions randomizers, depending on the context, add tension. This is because randomizers inject an element of uncertainty to every action taken. No matter how great the plan is in theory, there is always the chance that the participant will roll poorly¹². Props relate to this factor in much the same way that they relate to the magic circle factor. Props serve as bridges between the imaginary and the real, and this can also serve to make the imagined narrative more real to the participants. A physical letter addressed to a character engages the player in a very real way with the narrative, a certain sound effect can support a certain narrative event and playing the theme song of a key villain can engage the players in their arrival as well as key them into the severity of the situation.

In regards to the factor of system, reference tools are very closely related to it. Reference tools allow for quick and efficient referencing of relevant information on taking actions in the shared fantasy. Character sheets serve this function most abundantly within the experience, displaying all relevant information to the player regarding which actions their character is good and bad at taking along with their special abilities and the like. In this factor, reference tools are crucial to maintaining the flow of the experience, ensuring that even actions that the referee is not prepared for are easily reference and brought into praxis. Randomizers are also curial tools to this factor as well. This is due to the fact that all actions taken through system involve the use of a randomizer, and they are an essential part of executing system related functions. Props do not have any relation to this factor, as the system factor does not deal with the imaginary shared fantasy as a concept but is more about the mechanics that govern said fantasy.

¹² In fact, you would be hard pressed to find a role player that doesn't have a story about being failed by the dice.

6.3 Community tool evaluation

As a part of the second survey, I asked participants to evaluate the tools they use as a part of tabletop role playing. The participants were asked to evaluate these tools both as how they view them as a player and as a referee, if applicable. These evaluations will be presented bellow.

6.3.1 Referee evaluation

Out of the 55 participants that took part in this survey, 39 had refereeing experience. As a part of this survey, the participants were asked to declare how they value of certain tools common within the role playing experience, rating them as either strongly preferred, preferred, neutral, disfavored or strongly disfavored. This was to be done in regards to the tools value for their refereeing experience. Two options were given for the participants to evaluate in regards to random number generation, either digital dice rollers or analogue dice. Digital dice rollers the response was negative, the majority of 13 participants disfavoring the tool with 10 strongly disfavoring. 13 participants were neutral to the tool while only 3 preferred them. This was in stark contrast to Analogue dice which were strongly preferred by 26 participants and 7 preferred them; while 2 remained neutral, 3 disfavored and 1 strongly disfavored analogue dice. The clear favorite here is the analogue dice as the strongly preferred means of generating random for referees. This trend seems to suggest that the game randomizer, when moved to a digital platform, is not well received by the participants, possibly due to some negative effect on the experience.

The participants were asked to evaluate three different methods of referencing rules in the same way as the random number generators. The methods were using .pdf books, digital data bases and analogue books. The option of .pdf books were predominantly rated neutral with 16 participants, followed closely by preferred with 14 participants. 7 participants strongly preferred .pdf books while 2 participants disfavored them and 1 strongly disfavored them. Digital databases fared better, as 20 participants preferred them and with 9 participants strongly preferring them. 9 participants were neutral in regards to them and only a single participant disfavored digital databases. Analogue books were strongly preferred by 16 participants and preferred by 13 while 10 participants remained neutral and a single participant strongly disfavored them. Though analogue books seem to be the strongly preferred method for referencing rules, the digital means are by no means disfavored by the participants of this survey.

The final tools that the participants were asked to evaluate were a collection of miscellaneous tools that were music players, sound effects and props. Props in this case was a

reference to physical items, such as a puzzle box or dagger, as well as digital items, such as pictures of monsters or maps, that can be given or shown to players in an attempt to make the fictional world real to them. Music players were strongly preferred by the majority of referees with 15 participants rating it as such. 11 participants rated them as preferred and another 11 at neutral, while only 2 disfavored music players. Sound effects were regarded by the majority of participants, 21 participants, with neutrality. 6 participants preferred the inclusion of sound effects, 4 strongly preferred them while 7 disfavored them and 2 strongly disfavored them. In regards to props one can see that the majority regarded them with neutrality however the overall response to them was positive, with 13 participants preferring them and 6 strongly preferring them. Only 4 participants disfavored props and a single participant strongly disfavored them. These miscellaneous tools are not essential to the role playing experience, however music players seem to be the most strongly preferred by these referees.

Out of the 39 referee participants that took part in this part of the survey, 12 participants had used tablets in connection with their refereeing experience. This is a very small sample size however; some trends may still be indicated from this small sample. In the next part of the survey, these 12 participants were asked to respond to a set of statements with strongly agree, agree, neutral, disagree, strongly disagree and “I did not try this”. These statements were created as allusions to the five quality components of usability. The statements were as follows:

1. It was easy to learn how to use a tablet for my refereeing purposes. (Learnability)
2. It was quicker to look up relevant information on my character sheet. (Efficiency)
3. It was easier for me to use a tablet for rolling dice than regular dice. (Efficiency)
4. It was easier for me to use a tablet for rolling dice than regular dice. (Efficiency)
5. Were I to use a tablet again, I would remember how to accomplish all tasks as a player with it. (Memory)
6. I made only a few mistakes in my interaction with a tablet while I was a player. (Error)
7. I found the use of a tablet as a player pleasant. (Satisfaction)

These questions only scratch the surface of usability within the role playing experience in regards to tablets, due in part to the small sample size and the simplicity of which these concepts are investigated, however the question is an important first step into understanding what is necessary for facilitating a “good” user interface for a tablet in the role playing experience.

The majority of participants responded positively to the first statement (1.) regarding Learnability, with 8 participants agreeing and 2 strongly agreeing and 2 neutral responses. There was no disagreement to this statement. The response to the Efficiency of rules referencing on a tablet statement (2.) was a little less unanimous, but the majority of the participants still responded positively to the statement, with 4 participants strongly agreeing and 2 participants agreeing. 4 participants regarded the statement with neutrality, while 2 participants either disagreed or strongly disagreed. In regards to the tablet's Efficiency of music management statement (3.), 5 out of the 12 participants disagreed, 2 participants were neutral, 2 participants agreed and a single participant strongly agreed with the statement. 2 of the participants had not tried managing music on a tablet within the role playing experience. The statement regarding Efficiency of using a digital dice roller (4.) on a tablet was strongly disagreed with by 5 participants and disagreed with by 2 participants. A single participant was neutral to the statement and 1 participant agreed with the statement. 3 participants had not tried using a digital dice roller with a tablet while refereeing. The Memory inspired statement (5.) was strongly agreed or agreed with by 8 participants, 4 each, while 3 participants regarded the statement with neutrality; only a single participant stated that they didn't try this aspect of using a tablet. The response to the Error inspired statement (6.) the majority of participants agreed, with a total of 7 participants declaring they agreed with the statement and a single participant strongly agreed. A single participant disagreed and another strongly disagreed with the statement, while 2 participants remained neutral. The final statement inspired by the Satisfaction component of usability (7.) was regarded with neutrality by 5 of the participants, making up the majority of participants response, however the response was positive; as 3 participants strongly agreed with the statement and 4 participants agreed. These findings, though by no means conclusive, show that there is defiant room for improvement in certain areas of the tablet's usability while being used in the role playing experience by referees; though key areas, such as rules referencing Efficiency and Learnability, appear to be functioning well.

6.3.2 Player Evaluation

Once again, the participants were asked declare how they value certain tools common within the role playing experience, rating them as either strongly preferred, preferred, neutral, disfavored or strongly disfavored, however this time they were to rate their value to them as players. There were 44 participants that responded to this evaluation. Two options were given for the participants to evaluate in regards to random number generation, either digital dice rollers or analogue dice. Digital dice rollers the response was, once again, negative. A majority of 17

participants strongly disfavoring the tool, while 16 disfavored it. 9 participants were neutral to the tool while only 2 responses were positive preferred them. The notion that Analogue dice are favored by role players is further supported by this evaluation, in which 32 participants strongly preferred and 5 preferred them; while 5 remained neutral and 2 strongly disfavored analogue dice. Once again analogue dice come out as the clear favorite here and is the strongly preferred means of generating random for players.

The evaluation of reference methods for players differed from the results gathered from the preferred methods of referees. The option of .pdf books, for example, was predominantly rated positively, with 13 participants strongly preferring them. This was followed closely by preferred with 12 participants. 8 participants disfavored using .pdf books while a single participant strongly disfavored them. 10 participants were neutral towards the tool. Digital databases were evaluated in a similar, positive way, with 13 participants preferring them and 11 participants strongly preferring them. 11 participants were neutral in regards to the use of digital databases. 8 participants disfavored digital databases and a single participant strongly disfavored the tool. The majority of participants rated analogue books positively, with 15 participants strongly preferring them and 15 preferring them. 8 participants remained neutral while a single participant strongly disfavored and 4 participants disfavored analogue books. Analogue books once again topped this evaluation as the preferred means for players to reference rules, and once again the digital referencing tools were not far behind.

Players were also asked to evaluate the use of digital character sheets and analogue character sheets. The majority of participants regarded digital character sheets with neutrality; however the overall perception of them was positive, being preferred by 9 participants and strongly preferred by 7. 11 participants disfavored digital character sheets while only 3 participants strongly disfavored them. The evaluation of analogue character sheets was overwhelmingly positive, with 23 participants strongly preferring them and 14 preferring. 6 participants were neutral and a single participant disfavored them. An analogue character sheet was the clear favorite here.

Players were also asked to evaluate the use of props as a part of their player experience. Once again, the evaluation of props was regarded with neutrality by the majority of 21 participants. 10 participants preferred their use them and 8 strongly preferring it. Only 4 participants disfavored props and a single participant strongly disfavored them.

and 5 strongly disfavored the platform.

Out of the total 55 participants that took part in this survey, only 13 had used tablets as a part of the player experience. These participants were asked to respond to a series of statements, inspired by the components of usability, with strongly agree, agree, neutral, disagree, strongly disagree and “I did not try this”. The statements were as follows:

1. It was easy to learn how to use a tablet for my refereeing purposes. (Learnability)
2. It was quicker to look up relevant information on my character sheet. (Efficiency)
3. It was easier for me to use a tablet for rolling dice than regular dice. (Efficiency)
4. Were I to use a tablet again, I would remember how to accomplish all tasks as a player with it. (Memory)
5. I made only a few mistakes in my interaction with a tablet while I was a player. (Error)
6. I found the use of a tablet as a player pleasant. (Satisfaction)

Once again, due to the small sample size, indication of trends regarding the components of usability is what can be garnered for these responses.

The first statement (1.) regarding the Learnability of tablets for players was met with positivity, with a majority of 6 participants strongly agreed and a further 5 participants agreeing with the statement. The second statement (2.) was meant to explore the Efficiency of digital, tablet bound characters sheets and the affect they could have on the role playing experience. However, the fact that I was asking them to respond to digital character sheets introduced an element of doubt to the data gathered. This made the data gathered unusable and it will not be presented here; see Appendix III for the data that was gathered here. The third statement (3.) was concerned with the Efficiency of using digital dice rollers as players. This statement received negative response from a majority of 5 participants, who disagreed with the statement, and 3 participants strongly disagreed. There was not a single positive response to this statement and only a single participant was neutral. 4 participants responded “I did not try this”. The Memory statement (4.) had 5 participants that strongly agreed with it, forming the majority, and a further 4 that agreed. 5 participants remained neutral and no negative responses were gathered. This lack of negative responses was mirrored in the Error statement (5.). This statement, much like that last, was met mostly with positivity, the majority of responses being agree, with 5 participants, and 4 who responded strongly agree. 3 participants responded with the neutral option and a single participant responded “I did not try this”.

No negative response was given. Finally, the Satisfaction (6.) statement was also met with positive responses from the participants, 6 of which agreed with the statement and 3 strongly agreed. A single participant disagreed with the statement and 3 participants remained neutral.

6.4 Tool Analysis

The evaluations of the tools presented to both players and referees revealed some, somewhat expected, results. Both players and referees preferred the use of analogue dice over the use of digital dice rollers. This indicates that digital dice rollers in the current form are not optimized for the roll playing experience, as both types of participants seemed to shy away from their use, while favoring the analogue counterpart.

Digital referencing methods, however, fair much better than their dice rolling counterpart, receiving mostly positive responses from the participants, be they player or referee, though still slightly behind the analogue books.

The majority of referees preferred the use of music players within their role playing experience, possibly in an attempt to use music to engage players in the experience further. Though there is a clear majority of referees that prefer using music players in the role playing experience, the same cannot be said for sound effects, which were regarded mostly with neutrality. This could be due to need to activate sound effects at appropriate times during the experience as well as the added preparation time necessary to use them effectively, as opposed to the hands off approach of playing music and only having to change it for thematic reasons; for example going for a conversation and into combat would require a change in music.

Digital character sheets were met with general neutrality by the player participants, while analogue character sheets were strongly preferred. This is not unsurprising as analogue character sheets allow for quick reference of the character's statistic and characteristics used in rolls, while many digital character sheets are actually hampered by their digital nature as it, robs the player of this oversight. By extension, many digital character sheets, especially those found on tablets, restrict the player in their character creation and advancement. For example, if a referee has come up with some custom ability that one of his characters gains, it would be impossible on most tablet bound character sheets to add it.

Referees preferred the use of props more so than players, but the use of props and their effectiveness is very much dependent upon the specific prop that is used and its impact on the role playing experience.

These results seem to indicate that the tools available on digital platforms, though not always the favorite among the users, have a practical aspect that warrants their use. The data implies that digital reference tools are not as strongly preferred by either participant as their analogue counter parts, but they are by no means lagging behind. Likewise both referees and players generally seem to be in favor of the inclusion of digital media into the role playing experience; usually in the form of a laptop but tablets are not entirely disregarded. The majority of participants that have tried tablets are willing to use them again, though many would like to see some improvements before doing so. The participants of the second survey implied that the improvement that is needed for tablets in the role playing experience in order for them to be accepted by the community at large is one of efficiency. However, if this were true then digital dice rollers would be the most efficient random number generator available. One comment made by Treeni on his questionnaire as a part of the player test caught my attention to explain this inconsistency. He stated that the digital dice roller was not as exciting as analogue dice. This leads me to believe that there is some innate value in the very action of rolling a die that is not present in a digital dice roller. I believe that this value is that a die gives the player the illusion of control over the situation, while the digital dice roller walls off this illusion. In a digital dice roller the calculation of the success or failure of the player's character is done "under the hood" and at the push of a button, meaning that the operation of the digital randomizer is indiscernible to the player. While with analogue dice, on the other hand, the character's fate is, literally, in the player's hands. Analogue dice give the player agency within the experience, something that a digital dice roller, by this logic, robs them of.

The statements regarding the Usability of tablets had a small sample size; however some light is shed on the general Usability of tablets within this context. The statements regarding Learnability, Memory, Error and Satisfaction were generally met with either positivity or neutrality, implying that these components function in the context of the role playing experience. Where tablets suffer the most, according to this small sample group, is in Efficiency. This data implies that accomplishing tasks on the tablet is generally less efficient than other platforms that players or referees can use, be the digital or analogue. Whether this Efficiency issue is due to poor set up of the tablet, some innate quality within the tablet or some unthought-of aspect remains unexplored in the survey, but that data seems to imply that it is indeed present.

6.5 Tools Summary

It became apparent through the second survey that, though digital tabletop role playing tools were not as positively regarded by the survey participants, they were by no means disfavored greatly. Usually, digital props and reference tools were regarded with neutrality by the majority of participants; however this was not the case for digital randomizers. These tools in particular were almost universally disfavored by the participants of this survey. I theorize that this is due to the indiscernible action of the digital dice rollers that rob the participant of the perceived agency they have with analogue randomizers.

7.0 Flow

Flow is defined as “the state in which people are so involved in an activity that nothing else seems to matter” (Csikszentmihalyi, 1990, s. 4). This state is achieved through the combination of two dimensions of experience, challenge and skill. These two dimensions refer to the challenge of the activity that the participant is involved in, while skill refers to the skill of the participant at the activity. For example, when a person first begins to go to the gym their skill is low, and so is the challenge; as their focus is on completing exercises not on the challenge of exertion ($x1$). Low skill and low challenge can still bring about the state of flow, as the equivalence of skill and challenge is achieved. However, if they heighten the challenge beyond this skill, by adding too much weight to an exercise, the participant will not be in flow but be in a state of anxiety ($x3$). If the inversion of this situation occurs, the participant enters a state of boredom ($x2$), as the activity is not of an appropriate challenge for his skill level. Finally, flow can be achieved when both challenge and skill are at their highest ($x4$). This can be seen in Figure 6.1 (Csikszentmihalyi, 1990, s. 74).

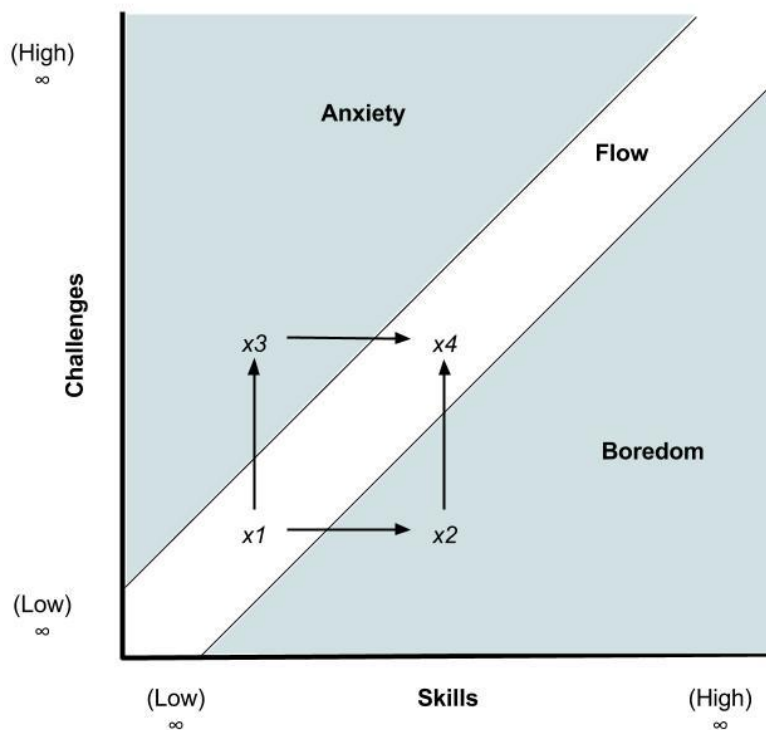


Figure 6.1 – Flow Theory (Csikszentmihalyi, 1990, s. 74)

7.1 Flow in the Tabletop Role Playing Experience

In the case of tabletop role playing, flow occurs for a player when their character is able to interact both through the practical execution experience and the player interactivity experience, giving the player agency, as well as being faced with both appropriate narrative and system based challenges. For referees, flow is the natural state in which this participant is in. The referee has, in many aspects, ultimate agency within the shared fantasy world, however the challenges that also facilitate this flow are challenges provided by the players. These challenges are not so much there for the referee to overcome, that is the role of the players, but the challenge is to integrate the challenges presented by the players in the form of their actions into the narrative and system. This state is only interrupted by pauses in the game for rules references or contemplation of narrative implications of actions.

In regards to the dimensions presented by Csikszentmihalyi, challenge and skill, these dimensions are present in role playing as well. Challenge is predominantly presented by the referee; however players are just as able to present challenges to other players through their portrayals. Rarely do these challenges end in imaginary physical confrontation, but these challenges can infuse both the narrative and the characters with depth. The skill dimension also present in the role playing experience. For referees, skill is tied to managing the actions of players and responding in the context of the narrative. For players, however, skill is determined in a very different manner. First there is the skill of the character that is acting within the imagined world, which is usually embodied through the system and the character's stats in relation to this system. However there is another skill involved, and that resides with the player alone. This is the literacy of role playing norms, both system wise and narrative wise. An experienced role player is one that can quickly pick up new mechanics, understand their character to present interesting challenges and take actions that both serve their character and the narrative at the same time. For the purpose of this thesis, I will be focusing on the skill of player's tool use when discussing flow, as these other aforementioned skills are beyond the scope of this thesis.

7.2 Flow Findings

The response to the player test yield some interesting finding in regard to how participants experience flow when exclusively using digital tools while playing a role playing game. The individual answers for each questionnaire can be found in Appendix IV.

7.2.1 Cale

Cale will be the first player whose answers will be described. He has been playing role playing games for about nine years now and has extensive experience both as a player and as a referee. The play test was the first time Cale has exclusively used digital tools for all his player needs in a role playing session; however this was not his first time using digital tools as a part of the experience. When asked to describe his use of laptops, and by extension digital tools, and compare them to his use of analogue tools and the use of a tablet as a part of the test, Cale stated that he had never used a laptop as a player, though he professed that he uses laptops almost exclusively as a referee, stating that they “just [make] managing the universe easier” while also citing tools such as digital dice rollers and .pdfs as tools that make the platform invaluable to him. Yet, when comparing the experience of using digital tools as a referee and using digital tools as a player he described the experience as “stilted” and “clunky”, due to the trouble he had moving from application to application on the iPad that he used as well as the lack of a physical keyboard.

When asked to describe his initial impressions of using the tablet as a part of the play test, Cale stated that “Like all introductions to new technology, I found it alien and difficult, because I had to readjust my approach.” A tablet was very different from his usual tools, which are entirely analogue. Cale found note taking to be “bothersome” on a tablet, something he usually does with great vigor. He went on the state that he felt that most of his actions were slowed because he was using digital tools on a tablet. This was due to the necessity of switching between digital tools while remembering his relevant modifiers to rolls. He does admit that though he found this annoying, it did not have a great impact upon the flow of experience as a whole. He does enjoy the use of digital reference tools on the platform, and states that he could see digital tools as having a place in the role playing experience for players. The major problem, as he sees it, is that he had to jury rig several digital tools together in order to have an entirely digital tool set.

7.2.2 Ausk

Ausk has been playing role playing games for ten years and the player test was not only the first time he used a tablet, Samsung Galaxy Tab 2, for role playing but also the first time he was playing using only digital tools. He has, however, used laptops before as a part of his player experience; citing that the use of a laptop, and by extension digital tools, “opens up for easier management of rules”. Tablets, he said, lack the versatility a laptop has but are at much less risk of

acting like a distraction, due to the physical barrier they can create between the player and the referee; though he prefers a laptop as he feels that a tablet is limited by its operating system.

Ausk expressed that he was pleasantly surprised by the experience of using digital tools exclusively, however he found that switching between tools was cumbersome; especially in “high speed situations such as combat, where numbers are needed quickly”. This impacted the flow of the game in a negative way, according to him. A positive aspect that Ausk enjoyed about using digital tools was that he had all his tools in one place, rather than cluttering a section of the table with a variety of papers, dice and writing utensils. In regards to the digital dice roller, Ausk was positive, however he did express that this positivity was in the realm of “minor rolls” and that he preferred analogue dice for dramatic rolls. Additionally, having to find his modifiers to a roll in a picture of his character sheet, and then switching to the dice roller, selecting the dice he wished to use and then finally rolling his result was a process that took far too long and hindered the flow of the game in Ausk’s opinion and placing unnecessary strain on the player. Finally, Ausk stated that though this experience was less than perfect for him, he sees great potential in a “dedicated” digital tool for all the participant’s role playing needs, going so far as to say that it could facilitated greater immersion and flow in the role playing experience.

7.2.3 Treeni

Treeni has been playing role playing games for ten years as well and the player test was the first time that he has used his digital tools exclusively for all his role playing purposes, and he notes that he “was delightful[ly] surprised”. He has used a laptop in connection with role playing before, but this was mostly for the reference tools in the form of .pdf books, though this was an infrequent occurrence. He likes the charm of using analogue tools the most but he admits that a laptop digital tools work “ok” for his needs. In terms of platforms, he prefers using a tablet because it is quicker due to the swipe controls, which he finds to be faster than mouse and key board controls.

His initial impressions of using digital tools exclusively was that he “like[d] it, and the dice roller spared some time” though he does state that he thought that it was less exciting and that he prefers to use analogue dice. He states that digital randomizers were faster when using a tablet as well as looking up rules and calculating his modifiers. Treeni says that there were not really any tasks that he found to be less efficient when using digital tools rather than his usual set up for roll playing but he does make one very interesting comment. This comment was “I had less... feeling

with the game”, alluding to Treeni feeling less connected with the action of the game when using entirely digital tools in the roll playing experience. He express this again when asked if he would use digital tools exclusively again by stating that he would but “it took some of the charm of” role playing away. Treeni also comments that a dedicated digital tool would be preferable to the “jury rigged” set up that he was forced to use as a part of this test.

7.2.4 Referee Play Test with Kynde

During the referee interview with Kynde regarding the experience of using exclusively digital tools as a referee, several important statements were made. Kynde has been a role playing for 12 years now and has been my referee on several occasions. He has used tablets before as a referee; however the play test was the first time that he attempted to use a tablet, and digital tools, exclusively. His impressions of using the digital tools that was made available to him was positive, though influenced by the way the Samsung Galaxy Tab 2 was set up. He states that “this proves that with a bit of prep time [digital tools] can be used incredibly well in the game mastering context” as well as “this particular time I had a very great experience with it. The other times I found it perfectly adequate, but this it was exceptionally streamlined.” When asked to elaborate upon what he found to be psitive, Kynde stated that the digital randomizer, a tool that was not popular with the players, was a boon for his experience. The digital randomizer, he elaborated, allowed him to produce several results quickly and efficiently. This allowed him to maintain the flow of the game much better than if he was rolling analogue dice. For example, in roll playing combat, the referee is in control of several characters at once, usually on the form of the enemies of the players. This requires him to have to generate several values to determine the success of these enemies’ actions, something that is made quicker by a digital randomizer.

Additionally, he enjoyed the ease at which the Samsung tablet allowed him to jump between applications, and the fact that those applications would remain running in the background. As an example of this he states “Like if you had a certain .pdf open on a certain page, but then you had to change the music, it stays on that page while you do so”. In a surprising turn of events, Kynde found the use of a tablet for his refereeing purposes more efficient than using a lap top, calling the mouse and key board interface “redundant” to the vast majority of his interactions with digital tools. In fact, he would only desire to use a keyboard to look up rules that he didn’t know where were in his .pdfs. This searching on the internet is not an occurrence that happens very often,

and Kynde states that as a referee “you will have prepared for the session, and part of that is knowing where to look up the rules for what you have planned in that particular session”.

Kynde asserts that digital tools had a positive effect on his ability to manage and convey the narrative of the game, stating that it allowed him to maintain the flow and pacing the sessions which is “alpha and omega when it comes to role playing because “it is all about making them forget that they are sitting around a table in a room rolling dice and make thing think that they are in that moment and keeping a believable, constant flow of the story”. However, despite his high praises of the digital tools that he used for the refereeing play test, Kynde would not switch over to them exclusive on a tablet alone. Instead, he would prefer a tablet/laptop hybrid set up in which the laptop is used for searching the internet for emergency rules checks as well as music management while the tablet is used for rolls and rule referencing on the fly. It is worth noting that these flow enhancements that Kynde experience were admitted to be minor, but noticeable; at least to him. Much like the players that took part in the questionnaire, Kynde also saw the potential in the use of a dedicated, multipurpose digital tool for role playing; or as he put it “a program that is like a life hack for story tellers, all the different things they need, and then you just have to press buttons”.

7.3 Analysis of Play Tests

All the play testers indicated that there was a distinct challenge with using digital tools exclusively for their role playing purposes. This came in the form of having to switch between tools in order to complete rolls, which two of the participants indicated was less efficient than using analogue tools. In essence, the tablet and the need to switch between multiple applications were influencing the flow of practical execution of the player participants negatively. In addition to this, two of the player participants, Cale and Ausk, disliked the use of digital randomizers which matches the player’s evaluation of the tool well. The efficiency of the digital randomizer is also called in to question when taking into perspective the flow hampering need to switch between multiple applications. Treeni stated that he liked the use of a digital randomizer, stating it produced results quickly, though he did admit that the digital tool was less exciting than the use of analogue dice. This indicates that even if dice rollers could become efficient within the role playing experience, they may still not be the best choice in terms of randomizer.

The play testers’ experience was plagued by them having to swap between two to three applications in order to complete any task within the fictional world. This resulted in minor,

but noticeable, “stutter” of the flow of the players’ practical execution experience. This is further supported by the implied trend for the Efficiency questions regarding digital randomizers, and by extension making rolls within the fictional world, to be responded to negatively by the majority of the survey participants.

Kyndes experiences with the use of digital tools, both during the test and in the past, were positive. However, his experience in the play test was greatly influenced by the fact that I had set up the tablet for him. This adds a degree of bias to the test, as I was personally involved in sculpting his experience. While this may have influenced the tester to have a more positive experience than they would have if he had set the tablet up himself, it does show that having a positive experience with a digital tools is possible with the current technologies, affecting the flow in a positive way through the use of a tablet. However, he admits that this experience wasn’t perfect, his rules referencing was hampered by using the internet instead of the intended digital reference tool provided. Whether the application would have improved the flow this is a question that remains unanswered, but the brief trial of the application done during the interview leads me to believe that it would.

The experience and benefits of the digital randomizer that Kynde describes as a part of the interview does not correlate with the experience of the majority of referees surveyed. Kynde expressed that he enjoyed using the digital randomizers that was provided, as it allowed him to generate several results quickly and efficiently; improving the flow of combat and thus supporting both the system factor and the practical execution experience of all participants.

7.4 Summary

The findings of this play test indicate that the exclusive use of digital tools affects the flow of the tabletop role playing experience differently depending on the participant that is using them. In the case of the referee, it was documented that the participant claimed an improvement in the flow, though it was a minor improvement. This is in contrast to the declarations of two of the player participants who documented a “stutter” in the flow of their experience, due to the necessity of switching between digital tools on a tablet. In this case, the need to switch between tools is less of an increase in skill or challenge causing a break in flow, and more of an external obstacle that stops the flow of the experience for the players for but a moment.

This difference may rest in the different perspective on flow that each participant has within the experience. As stated previously, the referee's natural state is to be in flow with the experience, as they are the mediator of the virtual object and all interactions with it. If this is true then the external obstacle of switching between tools is not an issue for the referee, as the flow of the experience is at the pace of the referee. This is not the case for the players, as they are subject to the flow of the experience which originates from the referee. This means that the, granted, minor obstacle to their flow of switching between tools is all the more apparent.

In the play tests, this obstacle was exasperated by the use of the tablet platform; however I would argue that the obstacle is still present in other platforms. This is based on the fact that digital tools for tabletop role playing are very much separate tools that still require participants to switch between them. The obstacle may be less pronounced, and almost unnoticeable, when using another platform, but that does not mean that it is not present.



Figure 7.2 – A tense moment, as combat escalates.

8.0 Discussion

In this section I will be discussing the implications and findings presented in the previous sections as well as discussing the relevance of the findings and conclusions reached in each section.

8.1 What is a Tabletop Role Playing Experience?

The description present of the tabletop role playing experience allows for several interesting theoretical implications, due to the theoretical terminology applied to it. Classifying the shared fantasy world that the experience takes place in as a virtual object allowed for some interesting developments in regards to the key experiences and factors of role playing. By treating the shared fantasy world as a virtual object I not only accounted for the lack of a spatial-temporal context within reality, but also allowed me to treat the object of interaction within the experience as a separate entity within the experience. By taking this approach of considering the tabletop role playing experience in terms of its parts, and its part in relation to the experience, I was able to clearly define the role that both the factors of role playing and the key experiences as well as how they relate to the experience and the virtual object.

The factors are the necessary elements that must be present in order for the experience to be established, yet the factors can also be said to support the virtual object that is the shared fantasy. The *system* factor governs the rules of the virtual object, the *narrative* factor gives the events in the virtual object context and the *magic circle* ensures that the participants take the events of the virtual object seriously. However, the virtual object does not account for all the interactions outside of the virtual object; for example “out of game” interactions. This is why the distinction between the virtual object and the experience as a whole is still made, even though what each describes is similar. To put it in another way, the virtual object is a huge part of the experience but the entire experience is not a virtual object. The reason this may be less clear in this thesis is that I have chosen to limit the scope of this thesis to the interactions with the virtual object and how digital tools impact the flow of these interactions.

8.2 Tool Categories and Perception

The results gathered from the surveys seem to indicate that the digital tools available, though not always the favorite among the users, have a practical aspect that warrants their use. The

data implies that digital reference tools are not as strongly preferred by either participant as their analogue counter parts, but they are by no means lagging behind. This can also be said for digital props, however the same is not true for digital randomizers. The majority of participants disfavored their use, regardless of the role said participants had within the role playing experience. Why this is so remains up to speculation, however Treeni, one of the play testers, made a statement that may shed some light on this phenomenon. Treeni stated that the digital randomizers were not as exciting as analogue dice.

This leads me to believe that there is some innate value in the very action of rolling a die that is not present in a digital dice roller. I believe that this value is that a die gives the player the illusion of control over the situation, while the digital randomizer walls off this illusion, making for indiscernible outcomes that rob the player of meaningful play in the practical execution experience. In a digital randomizer the calculation of the success or failure is done at the push of a button, while with analogue dice the character's fate is, literally, in the player's hands. Analogue dice give the player agency within the experience, something that a digital randomizers (in their current form) robs them of.

As a part of the referee play test data gathering interview, Kynde went against the survey data from the survey once again in regards to the digital randomizers, stating that he enjoyed it greatly due to its ability to generate and list several results quickly for him. However, this may be due to the particular application he was using, which was indeed picked by me for the express purpose of the refereeing test. The type of digital randomizer was not controlled as a part of the survey, so the digital randomizer used by the majority of referees that took part in the survey may have been single result generating, which would indeed slow the flow of the practical execution experience and by extension negatively impact the flow of the experience as a whole.

8.3 Flow and the Tabletop Role Playing Experience

The findings of the play tests showed an interesting impact upon the flow of the experience. In both play tests, the advent of digital tools was shown to have a minor impact on the flow of the experience as a whole; positive for the referee and negative for the players. What became apparent as a part of the play test was the digital tools as such did not impact the challenge or skill necessary of flow, but could serve as an obstacle for it. This was mostly apparent with the players, as they were forced to switch between digital tools on a tablet.

This concept of obstacles for the flow of the tabletop role playing experience proved to be a minor nuisance for the players, but due to the difficulty of switching between tools on a tablet it became noticeable to the players. It was most often described as a stutter in their flow that did not risk breaking the flow of the experience, merely halting it for a short moment. As the current digital tools that are available for digital platforms are separate programs, this stutter is theoretically still present on other platforms. The difference is that on a laptop one can switch to a different digital tool much quicker than one could on a tablet, resulting in the obstacle being nearly unperceivable to the participant. However, this is not the same as saying that the obstacle does not appear on other digital platforms.

9.0 Conclusion

What is a tabletop role playing experience, and how does the use of digital tools in that experience affect the flow of said experience?

With relevant theories and findings presented analyzed and discussed, I can now begin to answer my overarching research question, “What is a tabletop role playing experience, and how does the use of digital tools in that experience affect the flow of said experience?”

The tabletop role playing experience is the experience of interacting with a virtual object which takes the form of a shared, collaborative fantasy, supported by essential factors of system, narrative and magic circle. The means by which participants interact with this virtual object are termed key experiences, and all these interaction controlled by players are mediated by the referee. The referee does this through their response to actions and outcomes determined by systemic process. This is to both add context to the outcomes, as well as giving them narrative relevance. The key experience denote the two means interacting with the virtual object, either through systemic process embodied by actions that require rolls (practical execution) or through the portrayal of the character the participant is embodying within the virtual object.

In regards to how digital tools impact the flow of this experience, it was shown that the impact was not only determined by the role of the participant but also had a minor impact on the flow. The referee of the play test reported that the use of digital tools improved the flow of his experience, mostly through allowing him to quickly generate dice results with the help of a digital randomizer. The opposite was true for the players. The impact on the flow in regards to the players was actually not due to any particular tool, though it is theorized that the use of digital randomizers rob the players of the sense of agency they had with the analogue counterpart, but due to the necessity of switch between digital tools on the digital platform that was used. This switching cause a stutter in their experience which was an obstacle for the flow, as the constant need to switch between reference tool and randomizer caused pauses in their flow which would not be present if they were using analogue tools. Though minor positive and negative impacts on flow were document, the use of digital tools in the tabletop role playing experience do show promise in moving the medium into the next generation.

10.0 Further Development

The first step in further developing this thesis would be to explore the presence of this stutter further with the goal of understanding how to minimize or eliminate it. This could be done through further explorative research, focusing on the variables of platform and specific digital tools used within the tabletop role playing experience. Through the play tests, I have indication of the presence of this stutter, to further understand the phenomenon I must see what impact laptops have on the stutter as well as the tools that are used.

The point of these further studies would be to gather data on the stutter so that one may extrapolate how these variables affect the experience. Once those variables are understood and conceptualized, one can begin to use that understanding to design optimal digital tools for tabletop role playing for the platform that is found most optimized. Based on the indications found as a part of this thesis, I can make a few postulations as to how digital tools could be improved.

In regard to the stutter that was apparent while using a tablet, I would say that the play test participants' suggestion could prove fruitful. The concept of designing a unified tool that runs as a single program on the digital platform could theoretically eliminate the stutter, for no longer would the participant be forced to jury rig a collection of tools and be forced to switch between them. However, things are rarely as simple as that; and these tools must be brought together with care and testing for them to not pose an obstacle for flow. Reference tools for referees and players alike must be tailored to their role's needs as well as allow for overview and easy searching of specific rules.

In the case of agency and the digital randomizer, a change is needed in how they are designed. Currently, the majority of digital randomizers produce results at the push of a button and this has been theorized to rob players of agency. If this is true, then one can say that the means of interacting with the tool must be change. For this, I suggest using the touch interface of the tablet to allow the user to swipe their dice, hopefully giving back the illusion of agency over the outcome.

The purpose of further understanding and conceptualizing this stutter could be instrumental in further digitizing this medium, which may lead to further innovation of tabletop role playing.

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All Appendices can be found on the CD accompanying this report.

No Role players were harmed in the making of this thesis.