ADVENTURESTORMING: CONDUCTING

COLLABORATIVE IDEATION

UTILIZING CREATIVE PLAY

by

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DEDICATION

Writing a dedication for my graduate thesis should not be hard. And yet, this has been the most challenging part of the paper to figure out. How exactly do you thank someone for being supportive during six years of graduate school? For understanding all the late-night classes after work? For listening patiently during the thousands of miles back and forth to the university when what you would really rather do is just go to bed? Well then, to my wife, Katie, I would say thank you for being my sounding board, my encourager, my champion. Your support during this journey has been the stuff of legend. I can't wait to see what our next journey holds.

I must thank my parents, Collette and Billy as well, for helping me get to where I am today. You molded me into the person I have become, instilling in me the value of honesty, compassion, and a life-long love of learning. I would not have made it this far without your boundless love and heartwarming pride.

I guess it wasn't that hard to put down in words after all.

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LIST OF ABBREVIATIONS

Abbreviation	Description
D&D	Dungeons & Dragons
DM	Dungeon Master
FAE	Fate Accelerated Edition
GM	Game Master
NPC	Non-Player Character
RPG	Role Playing Game
UX	User Experience Design

ABSTRACT

Members of the communication design industry are playing larger roles than they have before. Methods used by communication designers are being implemented in businesses to shape research practices and direct projects that impact larger sections of the world's population. Most often, larger projects involve multidisciplinary groups working together for a common goal. As a result, it is imperative that the communication design industry have effective tools for interacting with diverse groups of people during the ideation phase of project planning.

This thesis examines the aspects of successful brainstorming sessions, collaboration, and gamification to determine if creative play can be used as an effective method for conducting group ideation sessions consisting of designers and non-designers. The goal of the proposed brainstorming game is to be easy to implement, foster greater interaction between all members of the group, keep the group focused on the problem, build greater empathy for the users, and generate better outcomes when compared to traditional brainstorming methods.

The prototype tabletop role playing game (RPG), named Adventurestorming, was tested with two groups of five to six people. When compared to the control group, who used classic brainstorming methods, the test groups showed that the game was successful in creating a strong connection with the user, as well as being more successful in exploring problems in the area of user interaction.

I. INTRODUCTION

Since the term was coined in the last century, brainstorming has played a critical role in the creative process—bringing people together to conduct group idea creation. As the reach of the design industry expands, with designers taking part in more business decisions and planning rather than just advertising and aesthetics, it is increasingly important that research includes multidisciplinary teams of people from outside of the design industry. This thesis explores methods by which creative play techniques can be applied to the brainstorming process in order to bring people from varied backgrounds together to participate in group idea generation, increase the degree of engagement with the participants, and improve the problem solving capabilities of the group.

Brainstorming

In 1938, Alex Osborn gave the name brainstorming to his organized ideation sessions. He considered them an integral part of the creative process, but not an entire process in and of itself (Osborn 1963, p. 151). Rather, it is a means through which ideas can be generated in order to be evaluated at a later time. Brainstorming is set apart from other meetings by dedicating itself to being purely creative.

Since the term was coined, there has been debate about whether brainstorming is more effective as a group activity or a solitary one. Author Susan Cain (2012), argued that there is power in working alone (pp. 71-94). Researchers Brian Mullen and Craig Johnson from Syracuse University working with Eduardo Salas from the Naval Training System Center pointed to empirical evidence that brainstorming in groups is less effective than individual ideation (Mullen et al., 1991, pp. 4-9). In comparison, another academic

work suggested that involving technology in the process allowed group brainstorming to perform just as well as individuals (Connolly, 1993).

Communication designers traditionally rely on brainstorming as a primary methodology for generating ideas in groups or as a solitary activity. Tim Brown, CEO of IDEO, stated there is no better way to create new ideas than brainstorming (Brown, 2009, p. 79). If an organization is interested in innovative ideas and it is open to seeking them out, brainstorming is an excellent tool to use when preparing for meetings and client projects alike (Brown, 2009, p. 79; R. Newton, personal communication, September 18, 2015).

<div align="center">Collaboration</div>

Collaboration brings together people of various backgrounds and talents to collectively address a problem (Mattessich 2001, pp. 4-5). In the design community, being able to tap into both collective knowledge as well as collective creativity is essential. Utilizing collaboration early in the design process broadens the scope of knowledge that informs the project. This can result in design solutions that are more relevant to the user base because they are more appropriate on a cultural level or they more directly address the users' actual needs (Sanders 2005, p. 4).

Just as collaboration expands the pool of knowledge for a project, foregoing any kind of collaboration allows for that pool to shrink. Limiting the creative process to a single individual allows for the inclusion, intentional or otherwise, of assumptions and personal biases (Kristiansan 2014, pp. 18-20). Designing with a limited view of the issue can lead to solutions that do not meet the user's actual needs.

Creative Play

Play is a familiar concept with our species. Johan Huizinga (2014) suggested that the idea of play precedes our culture entirely. He pointed out that play is a tool that humans and the animal kingdom have used for learning long before we began to band together to form a society (p. 1). Additionally, the act of playing enables a free pursuit of discovery and learning about objects, people, and society.

Children continue to use games as a way to learn about new parts of their environment; objects, relationships, or abstract concepts. Their lack of prior knowledge does not make them shy during playtime. Instead, the games they play allow them a safe place to explore and learn. Once they have grasped the basic understanding of the subject of their play, they easily move on to exploring all of the possibilities surrounding that subject (Backett 2013, p. 12). While engaged in play, participants are not concerned with the restrictions that real life imposes on them. Rather, the act of play opens up all possibilities, regardless of their practicality (Mainemelis 2006, pp. 86-87).

Most often, play is a group activity, and can lead to discovery about human behavior. Interactions between people during playtime teach participants deeper lessons about empathy and the way society interacts with itself (Hohmann 2007, p. 16). Children first learn how to work with one another during play. Paul Backett (2013) asserted that like children, with adults, play could again be implemented to strengthen the bonds between participants, improving their cooperation (p.12). For the design industry, a stronger group dynamic could prove valuable when designers are working with users to gather information (Backett, 2014, p.12).

Games, and play in general, provide an opportunity for people to work together in order to learn, create new ideas, address problems larger than they could while working by themselves, and also have fun in the process (Peneberg 2013, p. 11).

<center>Assessing Need</center>

The design industry is now involved in more social impact projects than ever before (Simonsen 2012, pp. 6-8). Corporations have realized the value of the design process and are working to incorporate design and creative methodologies into their organizational culture, and incorporating user experience design (UX) into their frontend development (Bowles & Box 2011, ch. 1; Brown, 2016, para. 8). Recently, IBM created an in-house design division dubbed IBM Design. Prior to this, companies including Microsoft, Motorola, and Intel began incorporating design research and design thinking into their corporate cultures (Sanders 2005, p. 1). Projects for designers in these new roles go beyond simple advertising and packaging, directly impacting the lives of the end user (R. Newton, personal communication, September 18, 2015).

As a result of these changes, designers have a responsibility to create solutions tailored to people's or market's actual needs. Additionally, the exposure for design research methodologies has expanded to a degree where it is expected to produce better results (Simonsen 2012, p. 2). Ensuring that end-users are involved in the design process can be key to producing better design solutions. Rather than beginning with an assumption, participating users can actually voice issues that are important to them (Sanders 2001, p. 2). Those issues can prompt designers to ask more important questions as they gather their research. Beginning with questions, rather than answers, allows the

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designer to work towards solutions that directly address the needs of their users (Brown 2016, para. 9).

The *Field Guide to Human-Centered Design* by IDEO (2015) stated that the people most likely to have the answers to a problem are the people who are actually experiencing that problem. IDEO (2015) also suggested that the methodologies they use, and human-centered design in general, are ideally suited to help designers effect social change by engaging end-users in the creative process (IDEO 2015, p.9-10).

It is for these reasons, the expanded scope and reach the communication design industry is experiencing, that it is important to develop methods through which designers can work with individuals from outside the industry using common language and methodologies in order to work more efficiently while also producing superior results when compared to traditional brainstorming methods (Bowles & Box 2011, ch. 6).

<div align="center">Thesis Organization</div>

This thesis is divided into seven sections. The first chapter covers the basic ideas explored in the project: creative play, brainstorming, and the role of collaboration. Following chapters cover the problem this addressed by this thesis and a proposed solution to that problem: a brainstorming tool. The preliminary research chapter covers the areas researched in order to properly design a successful solution to the problem. Chapter four covers the methods by which the tool was designed and the standards by which it was tested. Construction and refinement of the brainstorming tool is covered in chapter five as well as the final user tests. Subsequent chapters cover the results of the user tests and the conclusion of the thesis project, including an evaluation of the tool and areas of future research.

II. STATEMENT OF THE PROBLEM

<u>Brainstorming Difficulties</u>

For useful research to be gained during a group ideation session it is critical that all members of the group participate (Osborn 1963, p153). Ideas should exchange freely in the group, with participants being able to build off of one another's thoughts. If the group includes people from outside the industry, as a multidisciplinary team would, it is even more vital that the tools used during the session help increase engagement and reduce shyness due to perceived inadequacy.

Brainstorming methods must be easy to implement. Cumbersome tools, despite how well they may perform, are difficult to implement. Techniques with a complicated setup, or that require a lengthy explanation risk discouraging participants; resulting in either reduced participation or no participation at all in the session. Being able to easily engage users is critical to the successful implementation of a brainstorming session (R. Newton, personal communication, September 18, 2015).

The administration of an ideation session impacts the successfulness of brainstorming as well. Alex Osborn (1963) stressed that ideation sessions should focus on creating ideas, not evaluating them. When brainstorming groups deviate from this, the output of the group is impacted (pp. 39-55). A brainstorming session that becomes chaotic not only provides poor research outcomes, but also discourages participation, reducing the chance that designers will gain valuable insight from them and reducing the chances that users will continue to work with the design team (Sanders 2001, p. 1).

As the scope of a designer's project increases, and more people are impacted by it, it is crucial that more users from different backgrounds be involved in the project so

that decisions in the process are based on the actual needs of the users, and not based on assumptions made by the designers (Simonsen, pp. 1-2). A team could conduct individual brainstorming sessions with separate users. However, these sessions would be insular from one another, lacking collaboration between the groups of users. Allowing more users to collaborate in the ideation process gives the project a larger pool of knowledge to draw from when making design decisions.

A new system could be designed that implements creative play in order to break down barriers to creativity, increase engagement, and that maintains order during a brainstorming session between designers and participants from multiple disciplines.

<u>Hypothesis</u>

The purpose of this thesis is to develop a tool that allows designers to facilitate a multi-disciplinary collaborative ideation session that is engaging and inclusive through the exploration of brainstorming, creative play, and game mechanics. The tool will use creative play in order to better engage groups of designers and non-designers, and reduce barriers to creativity such as shyness. A system of rules associated with the tool's game along with the game's story will help the brainstorming group stay on task. The tool will feature common gamified elements that will enable it to be easily implemented. Through user testing, this thesis will demonstrate that the tool can create an improved environment for the creation of ideas when compared to classic brainstorming methods.

III. PRELIMINARY RESEARCH

Characteristics of Quality Brainstorming

The practice of creating ideas appears deceptively simple. On the surface one should be able to sit down and compile a list of new ideas. In reality there are many factors than can inhibit the creative process. Critical judgement, old habits, and uncertainty can all hamper brainstorming sessions if they are not planned for properly.

In his text on creative problem solving, *Applied Imagination,* Alex Osborn set some basic guidelines for group brainstorming:

1. *Criticism is ruled out*. Adverse judgment of ideas must be withheld until later.
2. *'Freewheeling' is welcomed*. The wilder the ideas, the better; it is easier to tame down than to think up.
3. *Quantity is wanted*. The greater the number of ideas, the more the likelihood of useful ideas.
4. *Combination and improvement are sought*. In addition to contributing ideas of their own, participants should suggest how ideas of other can be turned into better ideas; or how two or more ideas can be joined into still another idea. (1963, p. 156)

To summarize, Osborn's (1963) theory, groups engaged in brainstorming should list as many solutions as they can possibly think up without consideration for the feasibility of any of those solutions. This remains a solid basis for building ideas, being referred to by design firms like IDEO (Brown, 2009, pp. 79-80), creative departments in corporations like IBM (R. Newton, personal communication, September 18, 2015), and by authors of design textbooks (Pricken, 2008, pp. 12-17). However, a few additions could be made to Osborn's set of guidelines.

Beginning with a blank page can be challenging for some. When the possibilities are endless it can actually have the opposite effect and limit the scope of thought (Kristiansen 2014, p. 34). While Osborn's (1963) guidelines could be seen as a set of

goals, providing users with additional goals related to the situation can improve their performance. A prompt or specific goal for the user focuses their creativity, thus overcoming the challenges of the blank page (Litchfield 2008, p. 656).

Keep going: Once an idea has been generated and recorded it is easy to be satisfied with the result and stop. Aside from going against Osborn's (1963) rule of "go for quantity," it also allows for preconceptions to make their way into the brainstorming session. Humans will tend to be drawn to patterns that are familiar to them. Meaning that, if allowed, users will naturally find solutions that fit what they already know while potentially ignoring information that is contrary (Kristiansen 2014, pp. 19-20).

Using Creative Play Effectively

While the term creative play can cover a wide range of activities, in the context of group ideation there are a few ways to define it in order to ensure that it benefits the creative process. Johan Huizinga (2014) describes playful activity as: fully absorbing, intrinsically motivated, including elements of uncertainty, and involving a sense of illusion (Huizinga, 2014, pp. 2-27). Paul Backett (2013) also suggests that effective creative play has clear rules, engaging stimulus, uncertain outcomes, intelligent leadership, and good fun (Backett 2013, pp. 13-18). From these definitions it can be assumed that for creative play to be an effective part of the creative process it must have a clear set of rules, engage the participants, and contain an element of uncertainty.

Restricting participants with a set of rules makes for good play and for good brainstorming. Rules establish how the players will behave during the game, informing them of boundaries of the game as well as what is and is not permitted. By defining how and where the play occurs, rules provide creative play with a stronger focus (Backett

2013, p. 13). Focus, along with proper leadership, is often the element keeping a group discussion on task, and safely away from the productivity disrupting chaos that can occur in an unfocused group (Kristiansen, 2014, pp. 16-17).

The level of engagement in creative play has a direct impact on how successful it is. Games that fully engage players suspend reality for the duration of play. Giving the players an opportunity to ignore the limitations and issues of their own lives and focus on the possibilities of the game (Backett, 2013, p.14). During this suspension or reality, players can enter a state that psychologist Mihaly Csikszentmihaly (2008) called flow—where they are engrossed in what they are doing, and lose their sense of time (p. 39). Not only does this aid in investing players in the process, but it also boosts confidence. The flow state suppresses the need to question one's competency (Csikszentmihaly, 2008, p. 39).

Maintaining an element of uncertainty benefits creative play by breaking players out of habitual thinking. Humans are very good at recognizing patterns, but it can be hard to look past them once they are recognized (Gray, Brown, & Macanufo 2010, p. 23). When facing a problem, it is natural for a person to rely on previous solutions. As it applies to brainstorming, however, going with easy answer can stifle potential innovation (Osborn 1963, p.43). By incorporating uncertainty into the process players can be forced to ignore the easy answers and consider other options (Kristansen 2014, p. 20).

Creative play, in the context of brainstorming, should provide players with a defined set of rules, engage them in order to suspend reality, and present them with uncertain outcomes so that creative exploration continues.

Successful Collaboration

Successful collaboration depends, for the most part, on maintaining order in the group. Paul Backett (2013) and Per Kristansen (2014) both argue that a collaborative session can easily self-sabotage if the group becomes chaotic (Backett 2013, pp. 13 & 17; Kristansen 2014, pp. 16-17). Without order, collaborative groups can be dominated by one or more extroverted personalities or even a single idea. In this situation, shy participants, who may feel they do not possess enough knowledge on the subject, may not contribute to the group (Sanders 2011, p. 1).

Paul Mattessich, Marta Murry-Close, and Barbara Monsey (2001) of the Wilder Research Center offered many factors for successful collaborative groups; several of which can be applied to brainstorming: a willingness to compromise, having attainable objectives, and effective leadership (Mattessich et al., 2001, pp. 17, 25, & 28).

Compromise in a collaborative group means understanding that the best solution for one member of the group may not be the best solution for the group as a whole (Mattessich et al., 2001, p. 17). During group ideation this concept still applies. What one participant considers an adequate solution may not hold the same value to another. However, maintaining a willingness to compromise enables the group to consider each other's ideas and potentially build off of them as suggested by Alex Osborn's (1963) and Liz Sanders's (2001) research in brainstorming and creativity (Osborn, 1963, p. 156; Sanders, 2001, p. 5).

Giving the collaborative group attainable goals, as described by Mattessich et al. (2001) serves to prevent enthusiasm from diminishing during the process and gives the group a clear definition of what success is (Mattessich et al., 2001, p. 25). In a

collaborative ideation group, assigning a definite goal can be problematic. Researchers

Alan Blackwell, Lee Wilson, and Alice Street from the Universities of Cambridge and

Sussex, together with Charles Boulton and John Knell (2009) acknowledged beginning

group research with a strictly defined goal will not necessarily generate the most diverse

solutions. Rather, they suggested using a "pole-star" vision—a common goal that directs

the work of the group but does not restrict them (Blackwell et al., 2009, pp. 13-14). Gray

et al. (2010) referred to this as a fuzzy goal. Like the pole-star vision, fuzzy goals give the

group a general idea of the problem, but allow the exact nature of the problem, and its

solution, to be discovered during the research (Gray et al., 2010, pp. 5-8).

The research of Backett (2013), Mattessich et al. (2001), and Osborn (1963) all

pointed out that the leadership of a collaborative group is critical in its success. These

leaders keep the group on task, and make sure that discussion is not dominated by any

one voice (Backett, 2013, p. 17; Mattessich et al., 2001, p. 25; Osborn, 1963, pp. 50-52).

Blackwell et al. (2009) took the leadership role further by again applying their pole-star

concept. The pole-star leader, they suggested, balances the group's focus and goals. At

times the group should be given wide latitude in their explorations, and at other times

their focus should be narrowed on specific tasks. The leader also encourages the group to

pursue short-term goals without losing focus on the larger problem (Blackwell et al.,

2009, p. 42). A successful collaboration leader allows the group room to explore while

maintaining their momentum towards the groups fuzzy goals.

For collaborative groups to be successful in ideation they need to be open to the

ideas of other members of the group, have goals to pursue that are not strictly defined,

and have leadership that allows them the opportunity to explore ideas without losing track of their goals.

<div align="center">Gamification</div>

Gamification is defined as the application of elements from game design in situations that are not game related (Roth, Schneckenberg & Tsai, 2015, p. 301). Recent trends have seen gamification applied to business and marketing as a means to increase engagement and reinforce desired behavior (Robson, Plangger, Kietzmann, McCarthy & Pitt, 2015, p. 412). Bringing game elements into these non-game scenarios helps them activate the intrinsic rewards that games provide people: social interaction, positive affirmation, and emotional feedback (McGonigal, 2011, p. 45). In *The Gamification Toolkit,* Kevin Werbach and Dan Hunter (2015) describe three areas that gamification mechanics fall into. Robson et al. (2015) describe three areas as well, and while they disagree on the exact names the taxonomy remains the same: dynamics, mechanics, and components (Werbach & Hunter, 2015, Introduction; Robson et al., 2015, p.415). This section will examine the aspects of these gamification mechanics and how they could be applied to group ideation.

Dynamics

Dynamics, or setup mechanics, include the broad aspects of the game: the basic nature of the game, whether it is physical or digital, how many players will participate, and whether the players will compete against each other or against a common opponent (Robson et al. 2015, p. 415). In the context of ideation, in which research points to an increase in potential creative output in diverse groups, games involving multiple players would be ideal (Schulz, Geithner, Woelfel & Krzywinski, 2015, p. 29).

Bohyun Kim (2015) suggests that the nature of the game needs to match the type of knowledge being sought, and the kind of player participating in the game (Kim, 2015, p. 32). The kinds of players and their motivations can be separated into five groups (See Table 1). If the user base for a game is already known, it can be designed to cater directly to the specific player types in that base. If the base is an unknown factor, then the game must be adaptable, or already applicable to all five player types if it wants to properly engage anyone playing.

Table 1. Player Types and Motivations (Kim, 2015, p. 30).	
Player Type	**Motivation**
Player	Extrinsic Rewards
Socializer	Relatedness
Free Spirit	Autonomy
Achiever	Mastery
Philanthropist	Purpose

Karl Kapp (2007) described several different type of knowledge—declarative, concept, rules, procedure, principles, and problem-solving—and the types of game dynamics that pair best with exploring said knowledge (See Table 2) (Kapp, 2007, p. 5). Problem-solving, the learner relying on previous knowledge to solve a new problem, is the most applicable to the ideation process. As Kapp (2007) and Kim (2015) both suggested that role play and simulation are the game type to apply to problem solving, it would be fair to assume that these game types would fit well with the ideation process (Kapp, 2007, p. 28; Kim, 2015, p. 31).

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Table 2. Knowledge Types (Kapp, 2007, p.5).		
Knowledge Type	**Definition**	**Game Dynamic**
Declarative	An arbitrary association between two or more objects	Narrative, Sorting, Matching, Trivia
Concept	Categories used for grouping similar or related ideas, events, or objects	Matching, Sorting, Simulation
Rules	Relationship between two or more concepts	Simulation, Trivia
Procedural	Ordered sequence of rules or steps a learner must complete to perform a task	Challenges, Practice
Principles	Guidelines for behavior or action that are not sequential	Role Play, Simulation
Problem-Solving	Learner is confronted with a novel situation. They must use previous knowledge to solve the problem.	Role Play, Simulation

Mechanics

Mechanics, or rule mechanics, are the core actions of the game. They are how the game carries out its chosen dynamics (Werbach & Hunter, 2015, Chapter 3). Mechanics can include challenges, chance, rewards, feedback, and turns. These mechanics combine to form a set of rules for the game, informing the player of what they are permitted to do during play, and how their actions impact the game (Robson et al., 2015, p. 415). Ideally, the rules should create a kind of feedback loop; players performing actions, receiving feedback based on those actions, and then using the new information to determine their following actions (Penenberg, 2013, pp. 34-35).

<u>Components</u>

Components, or progression mechanics, are the methods in which the chosen mechanics are applied to the game (Werbach & Hunter, 2015, Chapter 4). This includes how the players are represented in the game; by a plastic token, three-dimensional avatar, or by a character card. Progression can dictate how players earn points, level up, or unlock achievements (Robson et al., 2015, p. 415). It could also dictate how challenges are presented to the players, such as sending them on quests, or having them complete levels in order to battle a final boss (Werbach & Hunter, 2015, Chapter 4).

The dynamics, mechanics, and components will greatly impact how gamification can be applied to the ideation process, and how it performs. Based on the previously described hypothesis, the rules for the game will need to be simple enough to not cause a barrier of entry for players unfamiliar with the creative process, but retain enough complexity to allow for the creation of innovative ideas.

<div align="center"><u>Competitive Analysis</u></div>

<u>Serious Games for Ideation</u>

Marine Agogué of HEC Montreal, along with Levin Lavillain and Sophie Hooge (2015) of MINES ParisTech studied the impact of serious games on idea creation in their paper "Gamification of Creativity: Exploring the Usefulness of Serious Game for Ideation" (Agogué et al., 2015, p. 415). Agogué et al. (2015) argued that current methods for creating ideas in a group setting focus too much on generating a large number of ideas, without consideration for managing the process. The goal of their research was to ascertain whether serious games, games played for reasons other than entertainment,

would be a viable ideation methodology, "by supporting learning processes and an immersive climate for collaboration" (Agogué et al., 2015, p. 416).

The serious game experiment began with participants being assigned profiles which they were to personify during the ideation session (Agogué et al., 2015, p. 419). These profiles would dictate how the participants should think, act and react during the game, similar to how personas are used in the field of user experience design (UX) (Gothelf, 2013, Chapter 3). Participants were then placed in groups to discuss the given topic from the perspective of their assigned profile. After several rounds of group discussion, the generated ideas were voted on by the entire group to select which ideas would be explored further in the final phase of the game (Agogué et al., 2015, p. 419).

Based on the findings from their experiment, Agogué et al. (2015) concluded that serious games were a beneficial methodology when used in the ideation process. Specifically, they noted that using profiles allowed some participants to share prior knowledge with the group that they had not considered relevant. Participants also noted that employing the profiles helped them identify knowledge gaps; giving the team areas to perform future research (Agogué et al., 2015, p. 423). The team noted that using the serious game with the group allowed what they called unusual collaborators, people who would not normally be included in the process, to participate in ideation sessions (Agogué et al., 2015, p. 426). This would indicate that games could be suited to bringing diverse groups of people together for the purpose of creating ideas.

Agogué et al. (2015) acknowledged observed limitations in their serious games experiment. First, they cited the physical limitation of the game. Since the game was conducted in-person with a small group of people, participants were not able to engage in

any sort of real-time collaboration with people external to the group, limited the pool of knowledge available to the group (Agogué et al., 2015, p. 426). It was suggested that a piece of software could be used to allow for real-time collaboration.

Secondly, it was asserted that using profiles with the participants could create a fixation effect—participants knowingly, or unknowingly using their own knowledge and experience to inform their decisions rather than those of their profile. Fixation effects could negate any of the benefits otherwise made possible by utilizing the profiles. Agogué et al. (2015) suggested the fixation effects could be prevented by more thorough facilitation (Agogué et al., 2015, p. 426). This suggests that a game with more structure could be beneficial.

Finally, the team noted that there were some misconceptions about the nature of a serious game. Many participants reported that they had expected more of a game-related activity such as team building exercises, and not a heavily structured and time consuming activity that "require[d] in-depth cognitive involvement" (Agogué et al., 2015, p. 427). The team reported that the serious game was successful in generating ideas, but it is possible that a more entertaining activity would better engage the participants.

Overall, the experiment performed by Agogué et al. (2015) indicated that games can be a successful methodology for ideation. Their technique of having participants role-play using their assigned profiles allowed for greater shared knowledge and the creation of disruptive ideas. It is possible that the application of additional gamification mechanics could solve some of the issues with facilitation and user engagement.

Toolkit-Based Modelling and Serious Play

Klaus-Peter Schulz of ICN Business School, and Silke Geithner, Christian Woelfel, and Jens Krzywinski of Technische Universität Dresden examined serious play and creativity in their paper "Toolkit-Based Modelling and Serious Play as Means to Foster Creativity in Innovation Processes" (Schulz et al., 2015 p. 323). The group saw the importance of diversity in group ideation and sought to explore methods for better interaction between group members with varying backgrounds and experiences (Schulz et al., 2015, p. 324). Their work examined the use of serious play and the creation of small artifacts in two groups, each with their own toolkit of materials to work with. One group received various weights of craft paper and cardboard with which to build prototypes with. The second group utilized a collection of plastic blocks from the LEGO Serious Play® kit which they would use to build abstract creation to represent ideas (Schulz et al., 2015, pp. 327-328).

Groups were given separate prompts to ideate around as well as individual user-archetypes to embody while they were working. These user-archetypes would be used much like personas are, informing the participants about the backgrounds and needs of the user, allowing for a kind of role-play to occur during the ideation process. After a given amount of time the participants would explain their model and its significance to the group (Schulz et al., 2015, pp. 328-331).

Schulz et al. (2015) found that both test groups were able to successfully use serious play to generate creative ideas in a group setting. Users reported that the traditional paper materials were easier to work with initially, but that more creative solutions were able to be realized utilizing the LEGO Serious Play® kits (p. 331).

Participants also noted that the abstract nature of the LEGO Serious Play® creations required more explanation when the group compared models, and that the process of storytelling greatly improved the amount of shared knowledge in the group (Schulz et al., 2015, p. 335).

Based on feedback given by participants the team determined that a perceived difficulty was hindrance in both test groups. Users in the first group, using the paper models, expressed a concern over level of craft skill that each participant had. Since the paper models would have to be hand cut and assembled there was a perceived concern that more talented members of the group would be able to more clearly convey their ideas. Conversely, users reported that the LEGO Serious Play® kits appeared more complicated and expressed an initial preference for the paper models (Schulz et al., 2015, pp. 331-336). This demonstrates that even perceived difficulty can act as a barrier to entry for an ideation methodology.

IV. METHODS

Creating the Tool

The brainstorming tool was constructed in an iterative fashion as described by Hugh Dubberly (2009). Repeating the process of learning, designing, and testing allowed for early corrections to be made to the project before it was brought to a finished stage. This also prevented the project from being based on too many assumptions, as feedback from early testing played a large role in informing the design decisions (Dubberly, 2009).

Using elements of Experience Prototyping, as described in Bella Martin and Bruce Hanington's work *Universal Methods of Design* (2012), portions of the tool were prototyped and tested with small groups of users and then refined. Each revision of the tool components brought new insight into the project. Users involved in the tests not only helped to judge the acceptability and efficacy of the early prototypes, but also contributed to the diversity of the next iteration as they brought their own experiences and backgrounds to the project (Martin & Hanington, 2012, Chapter 36). As Jeff Gothelf (2013) points out, these rapid iterations also prevented time from being wasted on creating a finished tool that needed to be altered after the first major test (Gothelf, 2013, Chapter 1). Testing rough prototypes as the project unfolds allowed the major changes to be discovered and completed before the finished tool was assembled.

Method of Testing

The brainstorming tool was evaluated using several standard methods put forth by the communication design community. A control group, using traditional brainstorming techniques, was used to create a baseline for creative output. The groups testing the brainstorming tool were compared to the control group using a combination of

questionnaires and usability testing to evaluate if the tool helped to generate more useful or more creative ideas during the brainstorming session (Martin & Hanington 2012, Chapters 67 & 94).

The control group utilized Alex Osborn's (1963) classic method listing ideas to conduct their session. In his book, *Applied Imagination*, Osborn suggested that there is no technique in the pursuit of ideas, so long as we consider technique a rigid set of rules. He argued that users should "go for quantity," writing down as many ideas as possible in order to come across innovative ideas (Osborn 1963, pp. 151-156).

Once assigned a topic to brainstorm, the control group was instructed to begin to list any and all ideas that came to mind. In keeping with Osborn's (1963) method, the group was encouraged to write down as many ideas as possible, limit any kind of critical judgement, embrace wild ideas, and combine ideas when they saw opportunities. The point of the brainstorming exercise was to produce as many ideas in the given time, saving the evaluation of those ideas until later.

Since the purpose of the group activities was the generation of ideas, the same group that participates in the control exercise could not participate in testing the brainstorming tool. As each group brainstormed the same topic, groups participating a second time would have the advantage of previous experience on the topic. The group that tested the brainstorming tool explored the same topic, but utilized new participants.

It is possible that the makeup of the test group may have had an effect, either positive or negative, on the results of the playtest. Previous experience in brainstorming sessions, or familiarity with design practices could cause the results to appear more successful than they actually were. With this in mind, three groups of participants with

varied design backgrounds were selected from pools of people most likely to use such a tool. Users were recruited from a practicing design firm, clients of a practicing design firm, and design students.

In order to quantify the outcome of each playtest, each participant was asked to complete a short survey after the conclusion of each test. Participants indicated their level of experience in brainstorming, and how they felt their creative output compared to brainstorming sessions they have participated in the past. They were also asked to how well they felt the group was able to work together and whether or not they were able to stay on task.

V. THE BRAINSTORMING TOOL

Initial tool designs leaned towards taking elements of existing brainstorming methods and adding game elements to them. Several methods from *Game Storming* by Dave Gray, Sunni Brown, and James Macanufo (2010) were evaluated. Many of the activities in *Game Storming* were entertaining twists on the standard brainstorm, but still have room to be further gamified, increasing their effectiveness. This appeared to be an ideal area to improve on methods that already showed some success. However, attempts to further gamify these existing brainstorming games did not accomplish this project's goal of furthering idea generation.

An initial concept centered around building a game out of Post-It Notes®. Many designers and non-designers will likely be familiar with the practice of writing ideas down on Post-It Notes® and putting them up on a wall for everyone else to see. *Game Storming* lists this kind of activity as one of their games they call, Post-Up. In the Post-Up game, participants are given a prompt on a whiteboard and then are tasked with writing as many ideas as they can come up with on separate Post-It Notes®. After a given amount of time, the participants place the notes up on the wall and describe their ideas to the group (Gray, et al. 2010, p. 69). This activity, used by firms including IDEO (Brown, 2009, pp. 81-83) and IBM (R. Newton, personal communication, September 18, 2015) would be easy for participants unfamiliar with brainstorming to pick up. The Post-Up also has room to be further gamified, by either adding a point system to the game, or creating a leaderboard out of players' output, encouraging higher participant engagement. Problems arose, however, in trying to build a game out of the users' output. There did not

appear to be a way to turn the practice of writing down ideas into a game, so the focus

moved to what could be done with the Post-It Notes® once they had been written down.

A game borrowing elements from a sports tournament was devised for users to

participate in once enough initial ideas were recorded on Post-It Notes®. Players would

select several Post-It Notes® ideas from the wall to form a team, similar to the process of

drafting players for a professional sport. Then, following a typical tournament bracket,

participants would pit their team of ideas against each other — arguing which concept

was better. A similar game comparing random ideas is the card game *SuperFight,* where

players draw a character and a collection of super powers into their hand and then argue

with other players as to who would win in a fight (Ross, 2013) (See Figure 1).

Figure 1. Example of Opposing Hands in *Superfight*.

The problem with this tournament-style game was twofold: If the topic of the

brainstorming session was too broad, there is a chance that highly disparate ideas would

be compared during a round. For example: An idea on how to improve an application's

login screen should not be compared to a new concept for the user's home screen. In this case neither idea can win because they do not relate. In addition, this game only served as a means to evaluate concepts that were already generated. It was unable to help with the creation of new ideas. A different style of game would be needed to address the problems of user participation and ideation.

<p style="text-align:center;">A Case for Role Playing Games</p>

Leaving the sports analogy in favor of a new game format allowed for a chance to refer back to the issues this thesis attempts to address: creating a tool that will leverage creative play and game mechanics to further ideation by breaking down barriers between people of varying backgrounds, adding rules and structures to play by, and giving the participants clear goals to accomplish. Rather than attempt to further gamify existing brainstorming techniques, it could be possible to build a brainstorming game out of design research methods, including personas, role-playing, and John Kelly's Wizard of Oz technique – in which someone plays the part of a piece of software or system in order to simulate the behavior of a prototype that is not yet fully functional (Martin 2012, Chapter 99).

Personas

In his book *Lean UX (2013)*, Jeff Gothelf described using personas as a means to represent the users of a particular system (Chapter 3). Designers create these user models by researching or making assumptions about their typical user. A name, background, job, and desires of the user are represented in the persona. This gives the design team something to refer back to so they can make sure they are meeting the needs of their users (Gothelf 2013, Chapter 3). Rather than impose how they would use a product, designers

can use personas to imagine how a particular user, who is a generalization constructed of many users, would interact with the product. Additionally, as discussed in *Universal Methods of Design,* Personas help the design team build empathy for the users by giving them a name and behaviors (Martin 2012, Chapter 63). It enables the designers to consider what motivates the user, what they want, and what they need. Similarly, personas are described in *101 Design Methods* as a means to help facilitate storytelling and inspire ideation (Kumar 2013, pp. 210-211). Imagining how to meet the needs of a particular user represented by a persona gives designers a sharper focus.

Building personas, is similar to creating a character in a role playing game (RPG). Before embarking on an adventure, players typically select a hero archetype and build a character sheet for them; filling in their name, backstory, and assigning them skills and attributes. As they play through the game they imagine not how they would react to situations, but rather, how their character would behave. Personas, and their character analogs, were the first step towards building the brainstorming tool.

Role Playing

Another design research method, and one that had a major role in shaping the tool, is role-playing. The design firm IDEO recommended role-playing as a means to rapidly test prototypes and to build empathy for the users (IDEO 2003). While role-playing, designers identify important areas in a project to examine and then identify the users involved in those areas. If the designers have already developed personas for their project, they can generate ideas by approaching the issues from the mindset of those personas. This can take the form of simply writing down ideas or, in some cases, actually acting out situations and engaging in improvisation. Each designer can take on the role of

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separate personas and act out interactions with the system to explore how they would play out (Kumar 2013, p. 208). In *Game Storming* they include role-playing as a part of their bodystorming exercise—where participants physically perform the tasks they are studying. While role-playing, participants can discover assumptions they might have had about the issue or potential solutions. As Gray et al. (2010) referred to it, role-playing is a method of "figuring things out by trying things out" (p. 59).

The role-playing method fits very well with RPG games. As mentioned above, players in RPGs take on the role of a character and imagine how they would react to the situations that are presented during the game. A typical game will task players with going on an adventure to accomplish a goal, all the while running into smaller problems that they have to overcome by themselves, or more commonly, as a group of heroes. During the game, players are attempting to embody their chosen character and experience the adventure as they would.

RPG

These two design methods and their game counterparts pointed to a very specific variety of role playing game to base the brainstorming tool on: the tabletop RPG. This particular variety of RPG is light on required materials, often needing only sheets of paper for players to keep track of their characters, and dice. The dice are used to decide the outcome of conflict or feats attempted by the players. Aside from these two items players will need a game master (GM), or dungeon master (DM) in some games. The GM sets the story up for players, guiding them on their journey. GMs also play the role of all other non-player characters (NPCs), allowing the players focus on their own heroes while the GM keeps the story on track.

In addition to the role playing and character elements, the dice mechanics in tabletop RPGs add an interesting random element to the game. Even if players make the best choices possible, a bad dice roll will force them to consider a worst-case scenario. When applying this idea to brainstorming it means users might have to look beyond the first solution that comes to mind and dive deeper into the issue. Being denied the easy answers can cause them to change their thinking and those changes can lead to solutions that might surprise them (Kristiansen 2014, p. 20).

<u>Dungeons, Dragons, and Fate</u>

Many people may be familiar with, at the very least in name, with the popular role playing game, *Dungeons and Dragons* (D&D). Created in 1978 by Gary Gygax and Dave Amerson, D&D provided a medieval fantasy setting for players to explore. The DM leads a team of heroes through grand quests where players rely on a variety of dice to decide the outcome of their actions (Wyatt, 2010, pp. 3-7). Being a widely-played game with an assumed learning curve that would be easy for new players, utilizing characters for players to embody, and making use of dice to randomize the outcomes of actions made D&D a logical place to begin the search for a role playing system that was adaptable for brainstorming.

In order for the brainstorming game to be easily adopted by users it would need to be simple to play and easy to setup. Reviewing the D&D character sheet, the document players would fill out to define the character they would be portraying during the game, revealed more than sixty attributes for the player to decide on before they could begin (See Figure 2). Many users would likely be disinclined to try out a new brainstorming system that required such extensive preparation.

Figure 2. *Dungeons & Dragons* **Character Sheet.**

The detailed character sheet of D&D revealed another issue that would have to be overcome when adapting an existing RPG system. When building a character, players would put points in various attributes: strength, dexterity, intelligence, and charisma. Additionally, those attributes impact the skills a character has. A high dexterity attribute gives a character a bonus to acrobatics, or a high intelligence score gives the character a bonus to their history skill. When a player attempts an action, the DM refers to their attributes and skills to see how many dice they should roll. Getting to role more dice increases the odds of a player having a result higher than the difficulty number set by the

DM, and therefore successfully defeating a monster, picking a lock, or persuading another character.
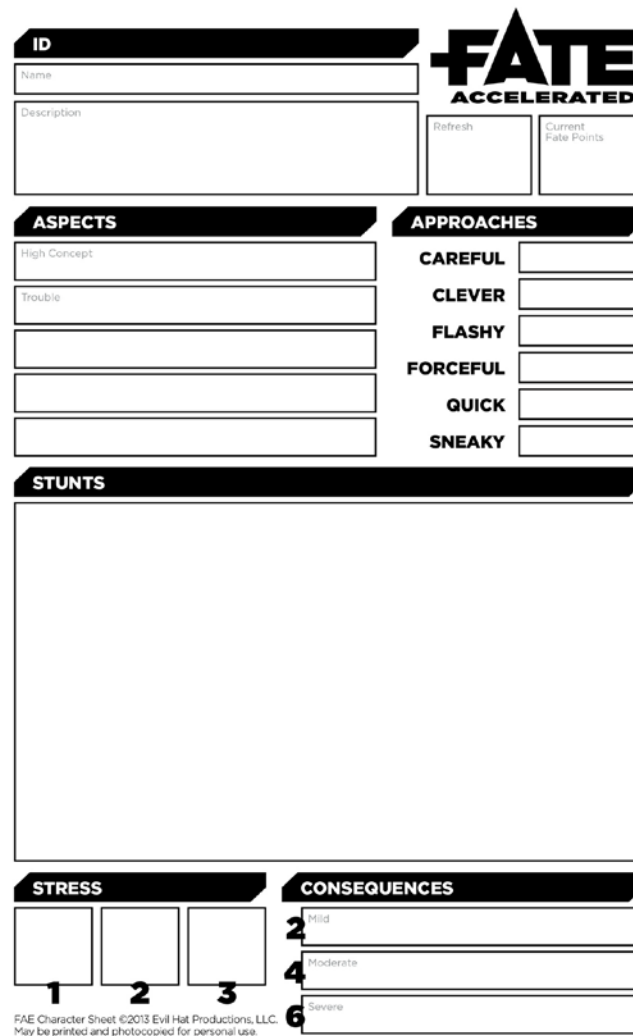
How could this mechanic be adapted to brainstorming? The standard attributes of strength, constitution, and dexterity are not applicable in many real-world situations. Certainly a character's acrobatics skill would not be relevant when brainstorming a new interface for enterprise software, for example. A set of skills and attributes could be designed to fit the exact situation each time before the tool was used. However, doing so adds extra layers of required work to prepare for the brainstorming session, and still leaves many attributes to players to fill in and keep track of while playing. The characters, and their related skills, need to be simplified for the game to be easily implemented.

Fate

An alternative to the complicated mechanics in D&D is found in the *Fate Accelerated Edition* roleplaying system. *Fate Accelerated Edition* (FAE) is a simplified version of the *Fate Core System*, specifically designed as an easy introduction to the world of tabletop role playing games. It is intended to be fast to set up and play (Valentine 2013, pp. 4-9). FAE places more emphasis on the story and how the character interact with it, and less importance on a complicated set of rules. The focus on a simple setup and storytelling would be a great benefit when adapting the game for brainstorming.

FAE's simplified character sheet was one of the first appealing aspects. Compared to the more than sixty items on the D&D character sheet, FAE only asks players to fill in eleven fields to begin a game (See Figure 3). Players are asked to give their character a

name and description, and then to fill in two Aspects and six Approaches—much in the same way a persona would be defined by a few broad characteristics. Giving players less work at the beginning of the gaming session will hopefully lower the barrier of entry for the game and give players fewer things to keep track of while playing.

Figure 3. Fate Accelerated Edition Character Sheet.

Character attributes such as strength and intelligence are not present in FAE like they are in other role playing games. Players instead assign points in what FAE calls Approaches—careful, clever, flashy, forceful, quick, and sneaky. When a player attempts an action they select an approach that matches how they will be performing it. A player

trying to trick someone might do it with a clever approach, or when trying to diffuse a bomb they would use a careful approach. Players add the value of their approach as a bonus on their dice roll. They do function similarly to the character stats from D&D, but could be easier to adapt to situations players would encounter during brainstorming sessions.

Fate and the FAE system are available for licensing under the Opening Gaming License and the Creative Commons Attribution (CC-BY) licenses, allowing for the resulting tool to progress beyond an academic project with fewer legal requirements when compared to licensing competing RPG systems.

Aspects

The most compelling reason for choosing to adapt the FAE system is their substitution for player skills, making FAE characters easily modified to fit any situation an ideation session might call for. Rather than having players assign points in skills like brawling or pick pocketing, FAE has players assign their characters Aspects. Aspects, unlike specific skills, are statements describing an important quality of a character (Valentine 2013, p. 8). Each character begins with two aspects: a high concept and a trouble. The high concept acts as a summary or theme for the character – hard-boiled private detective, or swash-buckling sky pirate. Troubles, on the other hand, are a shortcoming or flaw in the character. When building a persona, one or more general statements are used to define the user's attitude or background (Gothelf, 2013, Ch 13). The similarity between the two systems could make the RPG game easy to implement with design teams already employing personas in their workflow.

During the game, if a player can justify that one of their aspects would give them an advantage in a situation they can invoke that aspect and gain a bonus on their dice roll. Players invoke aspects by spending Fate Points. Each player has three Fate Points at the beginning of the gaming session. Fate Points can be gained if the GM uses one of their aspects against them. If the GM chose to invoke a player's trouble aspect they would grant the player a Fate Point as a reward. Using this method, players do not have to track individual skills for their character. As long as they can argue that their character would be good at a particular task, they can earn a dice bonus.

Fate Dice

The dice in Fate are also different than a standard RPG. These six-sided dice each have two faces showing a plus sign, two with a minus sign, and two blank faces (See Figure 4). Each player rolls four Fate dice to determine the outcome of their action. Plus and minus results cancel each other out allowing for a result ranging from minus four to plus four. Players add their roll to any bonus they receive from aspects or approaches and see if they have beaten either the difficulty number set by the GM, or the GM's dice roll. The Fate dice mechanic is more adaptable than traditional RPG dice that require players to determine a number of six, ten, twelve, or twenty sided dice to roll depending on the skills or equipment they have chosen for their character (Wyatt 2010, pp 3-5). Those mechanics, like in D&D, allow for more in-depth gaming, but would require more work at the beginning of the session and could cause the brainstorming game to be more difficult to implement.

Figure 4. Fate Dice.

Ease of character development, simplified dice-related rules, and a flexible skill system make the FATE Accelerated Edition system the best fit for the brainstorming tool.

<u>Adventurestorming</u>

The name for the brainstorming tool, Adventurestorming, is a portmanteau of adventure and brainstorming—intended to evoke both the purpose of the activity, as well as convey the idea that players will be taking their characters through a heroic adventure based on an everyday task. Adventurestorming, built on the FAE framework, was designed to bring users together for the purpose of group ideation through creative play.

A design firm utilizing the tool would first generate personas based on their project's intended user base. With a brainstorming facilitator acting as the GM, players will choose a persona to base their character off of. The GM will take the players through a scenario as a team of heroes embarking on a quest – though this quest might be quite ordinary. As the adventure unfolds, the GM describes the setting to the players as well as

the actions of NPCs. The players, in turn, describe how they would interact with the product or system and what actions they would take. When the outcome of an action must be determined, players will roll a set of Fate dice. Failing a dice roll give the group an opportunity to discuss why the failure occurred and what could be done differently.

Players will role-play as their chosen persona, thinking and acting as they would. Players begin by giving their characters a name, short description, and filling out their High Concept and Trouble based on their persona's characteristics. Players will also assign points to their character's Approaches in order to define how their character addressing problems – assigning three points to one approach, two points to two approaches, one point to two approaches, and zero points to one approach (See Figure 5). Assigning a range of points to the Approaches allows the characters to be good at some things and bad at others, reflecting how people are not all skilled at the same tasks. The players will have based their characters on the personas already created by the design team – or, in an instance where users from outside the firm are invited to participate in brainstorming, the characters can be based on the users themselves.

APPROACHES	
CAREFUL	2
CLEVER	3
FLASHY	1
FORCEFUL	2
QUICK	0
SNEAKY	1

Figure 5. Points Assigned to Character Approaches.

As the GM walks players through their adventure they describe to them what they are seeing or what the system is doing. Players, in turn, will declare what actions they want to take. When a player takes an action the GM will assign it a difficulty number ranging from zero to eight – zero being a mediocre task, such as opening a door, and eight being legendary, such as attempting to locate a package in a warehouse without looking up its location. To complete their actions, players roll four Fate dice and add the result to their Approach that applies to the situation. A player can spend a Fate point to invoke one of their aspects and receive a bonus on their roll (See Figure 6). If the player's resulting dice role is greater than the difficulty number set by the GM they succeed. Otherwise they have failed their action.

Dice Roll	Approach	Aspect	Total
⊞ ■ ⊟ ⊟	+ 2	+ 2	= 3
⊞ ⊞ ⊟ ⊟	+ 0	+ 2	= 2
⊞ ■ ⊞ ⊟	+ 3	+ 2	= 6

Figure 6. Potential Dice Outcomes.

Failure is an excellent opportunity for the players to discover new ideas about the system. In the event of an obvious reason the GM will tell the players why their action failed, or they may ask the group for a reason why the player was unable to complete their task. This gives the group an opportunity to consider rainy day scenarios – to plan for what happens when something does not work right. As noted in *Reality is Broken,* failing can even make the experience more fun for the players, giving them a chance to learn something and get better at it (McGonigal 2011, pp. 66-67). In this new learning

lies the opportunity for players to reconsider an interaction that they might have thought was already working well enough, and a chance to stumble across innovative ideas.

The goal of Adventurestorming is to engage the players in creative play in order to produce ideation based off of needs of users rather than assumptions. By embodying user personas in the form of their characters, players will build empathy for them and their needs. Engaging in role playing will help the group better understand the interactions involved in the problem they are addressing. The underlying game mechanics tying the game together will serve to engage the players with the problem and with each other, setting up situations where they can collaborate with each other to produce better results.

Core concepts built into the Adventurestorming tool reflect some of Osborn's (1963) original guidelines for brainstorming. Free-wheeling and the combination of concepts are encouraged within the framework of the game (1963, p. 156). However, criticism or the judgment of ideas is used to deal with failed dice rolls and the resulting failed actions. As a result, the principles in Adventurestorming closely match the concepts Dr. Edward de Bono introduced in *Six Thinking Hats* (1999). De Bono introduced six colors hats to represent the different mindsets that participants should take on during ideation—a blue hat for managing the process, green for creating ideas, red for feelings and hunches, black for judgment, yellow for optimism, and white for information and facts (de Bono 1999, pp. 13-14). The GM wears the blue hat when managing the session and white hat when describing the scenario to the players. Players switch between red, green, and yellow hats when expressing the concerns of their character, generating

new ideas, and exploring why actions went in their favor, respectively. The GM and players wear the black hat together when they explore why an action failed.

<center>Refinement</center>

The design of the tool followed an iterative approach of prototyping and user testing. These initial playtests did not go through complete scenarios, but rather, tested individual components of the tool. User testing was implemented in order to identify areas of weakness in the concept of playability of the game. Results of these early tests informed modifications that were made to the game mechanics.

Approaches

Character approaches, even being simplified when compared to other RPG systems, proved to be a stumbling block for early testers. Much of the first playtest was spent determining how particular personas would correlate to the approaches: careful, clever, flashy, forceful, quick, sneaky. To the testers, these felt like traits appropriate for heroes and heroic situations, but they had trouble applying them to the everyday situations they were exploring. This lead to removing the approaches from the game completely to reduce confusion when trying to apply them to real-world situations faced during the game. Now players would simply rely on their four Fate dice to determine their outcome. Positive and negative rolls will indicate success and failure respectfully. Playtests after the removal of the approach system were faster to setup and easier to explain to new players.

Further playtests revealed that players did not feel as connected to their characters after the approaches were removed. They reported that simply rolling dice to determine outcomes did not encourage them to think like their character would. As a result,

approaches that more closely related to personality traits, along with approaches for

technology and culture, were added back to the character sheet (See Figure 7).

Figure 7. New Approaches Based on Personality Traits.

Build a Feature

An additional feature for the game came from one player having an epiphany

during a playtest. In a particular test of the tool the majority of the dice rolls came out in

the players' favor. Given that few players failed their rolls, not much time was spent on

discussing new ideas in the area of the brainstorming topic. One tester, who had been

quiet for most of the game, sat listening to the group discuss their next action. The quiet

group member excitedly announced to the group that he had thought of a new tool feature

that could make their jobs much easier. He inquired how he could use that new idea

within the confines of the game. Up until this point there was no way within the rules of

the game to propose new ideas that were not a solution for a failed dice roll.

In response to this, another tester already familiar with the Fate system, suggested

adding a mechanic similar to the Create an Advantage action in Fate. When creating an

advantage, a player describes an action they could perform to give themselves or another

player an advantage in their situation. The player then rolls four Fate dice to see if they were successful in creating said advantage. If successful, they gain a temporary bonus to their next dice roll. It was suggested that a similar action could be made for building new features during a brainstorming game. If a player thinks of a new feature or function before they fail at a task they can choose to Build a Feature. The player would then roll four Fate dice to see whether they were successful and would receive a bonus. Including the new Build a Feature action gives players an incentive to think of new solutions during the regular gameplay, and not just when the group fails an action.

Mood

A final change to the system revolved around the character's, not the player's, mood during the campaign. In one of the early playtests, one player had several bad dice rolls in a row and failed many actions. She did not mind failing, as it gave the group opportunities to brainstorm ideas, but she questioned how it would impact her character's attitude. Failing repeatedly, she argued, would cause many people to become frustrated with what they were doing and could impact their ability to complete future actions correctly. Conversely, if a character was repeated successful at actions their good mood could help them in future tasks, or at the very least, soften the blow of future failures.

The discussion of the characters' attitudes brought about two additions to the brainstorming game. First, a mood chart was added to the character sheet, ranging from minus three to positive three. Players track the mood of the character by placing a token on the character's zero space and moving it towards the positive or negative end as they take actions. Much like the player's aspects, they may invoke their positive mood for a bonus when they roll their dice, or the GM may invoke their negative mood as a penalty

against them. Using a player's negative mood against them mimics issues UX designers are faced with in the real-world. If a user repeated experiences error messages in an application or website, it can lead to negative perceptions about the brand or cause the user to not use the product at all.

In the final iteration, each player will roll an additional die to determine their mood rather than only relying on successful or failing dice rolls. When a player attempts an action they roll five Fate dice. Four of them determine the outcome of the action, with the fifth die indicating how the character felt about the outcome (See Figure 8). Characters can succeed and not be happy about it, or fail and still retain a positive attitude. This opens up the discussion for how systems give users feedback, and how that feedback can be improved for a better user experience.

Figure 8. Fate Dice with Mood Die.

<u>User Testing</u>

User testing for Adventurestorming was performed in two phases in order to compare the tool with traditional brainstorming methods. A control group, using the

classic method by Alex Osborn (1963) to conduct their ideation, would brainstorm a given topic in order to form a baseline (p.156). The test groups, assigned with the same topic as the control group, would use Adventurestorming to conduct their session. For this test, all groups would be exploring ways that grocery shopping could be made easier.

The control group, Group A, consisted of a mix of employees from a design firm and their clients. Six participants gathered in a room and were instructed to brainstorm the grocery shopping experience and ways that it could be improved upon. They were tasked with following Osborn's (1963) brainstorming methods: reserving judgement until later, accepting all ideas no matter how wild they sounded, building off each other's ideas, and writing down as many ideas as possible (p. 156).

Two test groups were used to test the tool. The first group, Group B, consisted of five undergraduate design students from Texas State University (See Appendix D for partial transcript). The second group, Group C, consisted of six residents, unfamiliar with the creative process, from Killeen and Copperas Cove, Texas. Groups B and C brainstormed the same grocery shopping experience as Group A (control group).

VI. RESULTS

User Testing Feedback

The control group and test groups were both given a feedback survey to fill out
after the conclusion of the brainstorming session. Participants were asked if they had
participated in group brainstorming activities before, and if so, had they ever used
brainstorming games as a part of their process. Surprisingly few of the participants in
either groups had been a part of group brainstorming. The exception being the employees
of the design firm participating in the control group. Of the participants who had previous
experience, none of them had used brainstorming games (See Table 3).

Table 3. Survey Results: Previous Brainstorming Experience.		
1. Have you participated in group brainstorming activities before?	**No**	**Yes**
Control Group	33%	67%
Test Group	73%	27%
2. If so, have you previously used brainstorming games?	**No**	**Yes**
Control Group	100%	
Test Group	100%	

Participants were then asked additional questions after participating in the
brainstorming activities, and were instructed to rank their answers from one to five, with
one being the lowest and five being the highest (See Table 4). Questions included how
effective the method was at encouraging creativity, how well they were able to build off
other participant's ideas, how well the group stayed on task, the ease of learning the
method, and the likelihood of them using the method in the future.

Table 4. Survey Results: Method Feedback.					
3. How effectively did the method encourage creativity?	**1 Not Well**	**2**	**3**	**4**	**5 Very Well**
Control Group		33%	50%	17%	
Test Group			18%	55%	27%
4. How well were you able to build off other user's ideas?	**1 Not Well**	**2**	**3**	**4**	**5 Very Well**
Control Group		17%	50%	33%	
Test Group				73%	27%
5. How well did the group stay on task?	**1 Not Well**	**2**	**3**	**4**	**5 Very Well**
Control Group		33%	50%	17%	
Test Group		9%	36%	45%	9%
6. How likely would you be to use this method again?	**1 Not Likely**	**2**	**3**	**4**	**5 Very Likely**
Control Group		17%	33%	33%	17%
Test Group			27%	45%	27%
7. How easy was the method to learn?	**1 Not Easy**	**2**	**3**	**4**	**5 Very Easy**
Control Group			33%	17%	50%
Test Group		9%	45%	36%	9%
8. How well did the method help you relate to the user?	**1 Not Well**	**2**	**3**	**4**	**5 Very Well**
Control Group	17%	50%	33%		
Test Group				45%	55%

The survey ended with two open-ended questions. Participants were asked what worked well with the method they used during their session, and what did they feel did not work well. The answers to these two questions were varied, but centered around similar themes.

Participants in the control group, who used classic brainstorming techniques, reported that a helpful quality in their session was hearing ideas from other people that they would not have considered on their own. Several of the participants that had not taken part in the creative process before were excited to get to exchange ideas with others. Negative feedback from the control group centered around the group getting stuck. At more than one point during the session the control group ran out of ideas and sat in either silent contemplation or idle conversation. Several participants noted that once the momentum stopped it was difficult to begin again.

Feedback from Adventurestorming test groups stated that one of the greatest features of the game was developing a stronger connection with the users their character represented. Many participants reported an increased understanding of the persona their character was based on, after filling out their character sheet and role-playing them during the session. However, participants reported, almost unanimously, that the game was too easy. During both test sessions the majority of the dice rolls were successful. As a result, the group spent time discussing how different interactions could go well, but very little time addressing rainy day scenarios—situations where a user doesn't take the desired path, exceptions to typical behavior, or errors.

VII. CONCLUSION

<u>Effectiveness of the Tool</u>

User testing demonstrated that the Adventurestorming tool was successful in solving some issues present in group ideation. The game elements of the tool encouraged all members of the group to participate in the activity, helping to break down barriers to creativity. Once the game was underway, users found it to be an easy system to use and reported that they would be likely to use it again in the future. The rules behind the tool were able to guide the test group through the process. However, improvements could be made to the system to better keep the group on task.

Players were able to embody their chosen persona and explore the scenario together from the mindset of their character. After the playtests, both test groups reported having a stronger appreciation for the needs of the users. For the design profession, this stronger empathetic connection with the persona is invaluable. The research by Agogué et al. (2015) already showed that using personas in the brainstorming process can improve user-centered thinking. However, feedback from the test groups suggested having the participants actually role-play as their persona helped build stronger empathy for the users. Non-designers who reported being able to relate to the persona also indicates the tool could be a helpful method for involving outsiders in the creative process. Future research could directly compare the methods used by Agogué et al. (2015) and Adventurestorming to determine if the method used to implement personas directly impacts the quality of the ideation.

Many players reported having some difficulty in learning the game, but this was likely dependent on the initial ability of the facilitator to explain the game. With each

iterative playtest and group playtest the game was received more readily by the participants. It was, however, observed that the majority of the players easily interacted with the group once the game began regardless of how it took to explain the game. This observation suggests that the game itself is not difficult to learn, but that the pre-game explanation could be improved.

The test groups using the Adventurestorming tool did not produce near as many ideas as the control group. Participants using the classic brainstorming method generated three to four times as many ideas as the groups playing the RPG. However, the test groups addressed many areas that the control group did not – discussing more problems related to user interaction, rather than the general issues addressed by the control group. Participants in the test group reported that failing their dice rolls caused them to consider scenarios that they would have otherwise taken for granted.

Playtesting the tool also showed that facilitation has a large impact on the success of the group. In instances where the GM did not have a clear scenario already planned the group took much longer to produce ideas. These attempts at allowing the game's narrative to unfold naturally only resulted in the group struggling to maintain focus. A scenario that was more tightly controlled by the GM could have given the group a better focus on the brainstorming task.

<div align="center">Future Research</div>

The Adventurestorming tool will require numerous iterations in order to reach its full potential in the areas of implementation and idea generation. Future versions of the tool can remedy the problems that were presented in the test groups.

Adding a difficulty roll for the GM could help solve the issue of the game being too easy for players. Rather than only relying on the player's positive or negative dice roll, a die could be used by the GM to determine the difficulty. Before a player rolls for their action the GM would roll an eight-sided die without revealing the result to the rest of the players. The result of this roll would set the difficulty of the player's action. After the player rolls their Fate dice and adds any bonus from their approach, their total would be compared to the die rolled by the GM to determine success (See Figure 9). Since the GM's die was rolled in secret they could potentially change the difficulty higher or lower without the players knowing. In this way, if the group has been succeeding or failing too much the GM could change the outcome to help move the game along.

Figure 9. GM Die Roll Versus Fate Dice.

Future iterations of the tool should also give the players specific goals to accomplish during the game. The scenarios played by the two test groups showed that giving the players a broad problem to explore helped them start without an assumption as to the best solutions, but did impact their direction. Specific goals or tasks would give the group more decisions to make, more dice rolls to attempt, and more opportunities for problems to be discussed. A carefully planned adventure with pre-planned encounters

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would also be a more realistic use of the game. If a firm were to employ the method, they would likely have a specific area they want to explore.

Focus groups will need to be utilized in future versions of the game to measure the impact of the rulebook's visual design. Initial work drew inspiration from materials found in D&D and similar RPGs in order to instill the feeling that participants were exploring a potentially ordinary task as a team of adventurers. Future research will examine how participants react to visuals of this nature and if some become disinterested in the game due to preconceived notions about D&D or RPGs in general.

Playtesting feedback revealed that persona quality could directly impact the quality of ideas generated during sessions. Personas that are constructed improperly could be based off of assumptions or stereotypes, which in turn would introduce those same assumptions into the ideas session. Future versions of the Adventurestorming rulebook could discuss this issue, offer basic guidelines to building personas, and indicate other resources available for building well-defined personas.

Finally, the tool could be expanded into a digital tool. Participants expressed enjoying the experience of sitting in a room together and playing the game. However, being a physical tool imposes limits on the number of people that can participate and where they must be located. If a digital tool similar to the website Roll20.net (n.d.), a website that allows tabletop role playing gamers to play with people over the internet giving them access to virtual dice and group video chat, could be incorporated into the tool then the reach of the game could be expanded (Orr Group, n.d.). Enabling live video and virtual dice rolling would allow participants to collaborate with remote users in real time. There would still be an upper limit to the number of players who could interact at

once, but teams would no longer be limited to only including players that were physically close to them.

As the design industry continues to expand the scope of projects that it participates in, having a method to better engage with users will be increasingly important. Using creative play and game mechanics have shown to be useful tools for ideation and are key components in the Adventurestorming tool. It was observed that using a game to conduct ideation in a group was more fun for the players when compared to classic brainstorming methods. The tool was already well received by the participants who helped playtest it, and with future iterations the tool could become valuable for design firms conducting collaborative ideation sessions with people from multidisciplinary backgrounds.

APPENDIX SECTION

Name

Description

Adventure STORMING

Approaches

Social	
Observant	
Decisive	
Detailed	
Technology	
Culture	

Aspects Player characteristics. Invoke to gain roll bonus.

High Concept

Trouble

Mood Positive Mood can be spent to reroll Fate Dice.

⊕ AdventureStorming Reference

A Brainstorming Game

AdventureStorming is a brainstorming method that combined group ideation with tabletop role playing. Each player takes on the role of a user and attempts to think and act as they would.

The Game Master will guide the group of adventurers through a scenario where they will, as a group, explore how the system works and what happens when things don't go correctly.

Storytelling, Together!

The Game Master will set the stage and help move the action along, but each adventurer will help tell the story. When faced with a challenge or failure, don't be afraid to offer up insight that the rest of the group might not have.

AdventureStorming is about sharing knowledge and solving problems together. As a group of adventuring heroes you can do anything!

Failing Forward

Sometimes members of the group will attempt actions and fail at them. At this point the Game Master will discuss what might have happened that caused the failure.

Failing gives the group a chance to talk about what doesn't work right with the system, and how it could work differently.

Fate Dice

AdventureStorming uses a special set of dice called Fate dice. These six-sided dice have two plus faces, two minus faces, and two blank faces.

When attempting an action players roll 5 Fate dice, four to determine the outcome and one to determine the player's mood. As a player's mood rises and falls it can be used to their benefit or used against them.

Action **Mood**

⊕ AdventureStorming Reference: Actions!

Choose an Approach

Sometime when you attempt an action the Game Master may have you roll to determine the outcome. If so, decide what **Approach** your character will take. You will add the **Approach** to your dice score.

For example: if you were going to try to reach something by putting a ladder on top of a desk, you might choose to do it carefully, using your **Detailed Approach**. After rolling your dice you would add the value of your **Detailed Approach** to your total.

Dice Roll	Detailed	Total
	+ 2 =	1

Invoke An Aspect

If one of your character's **Aspects** could give you an advantage in a situation you may spend a **Fate Point** to receive a +2 bonus on your roll. Any listed **Aspect** can be invoked as long as the argument can be made that it would give you an advantage.

For example: if one of your character's **Aspects** was *"Friendly neighborhood house painter,"* you could argue that your character is used to climbing on ladders for a living. After spending a **Fate Point** to invoke it, you would add 2 points to your attempt to stack a ladder on top of the desk.

Dice Roll	Detailed	Aspect	Total
	+ 2	+ 2 =	3

Make Something!

If you are attempting to do something difficult you may want to prepare for it by performing a **Create an Advantage**, **Craft a Feature**, or **Overcome** action.

The Game Master will have you roll to determine if you are successful.

Create an Advantage - get a +2 bonus on your dice roll by performing some kind of preparation. This is the thinking ahead action.

Craft a Feature - get a +2 bonus on your dice roll by thinking up something new. This is the brainstorming action.

Overcome - remove an obstacle that is impacting the group.
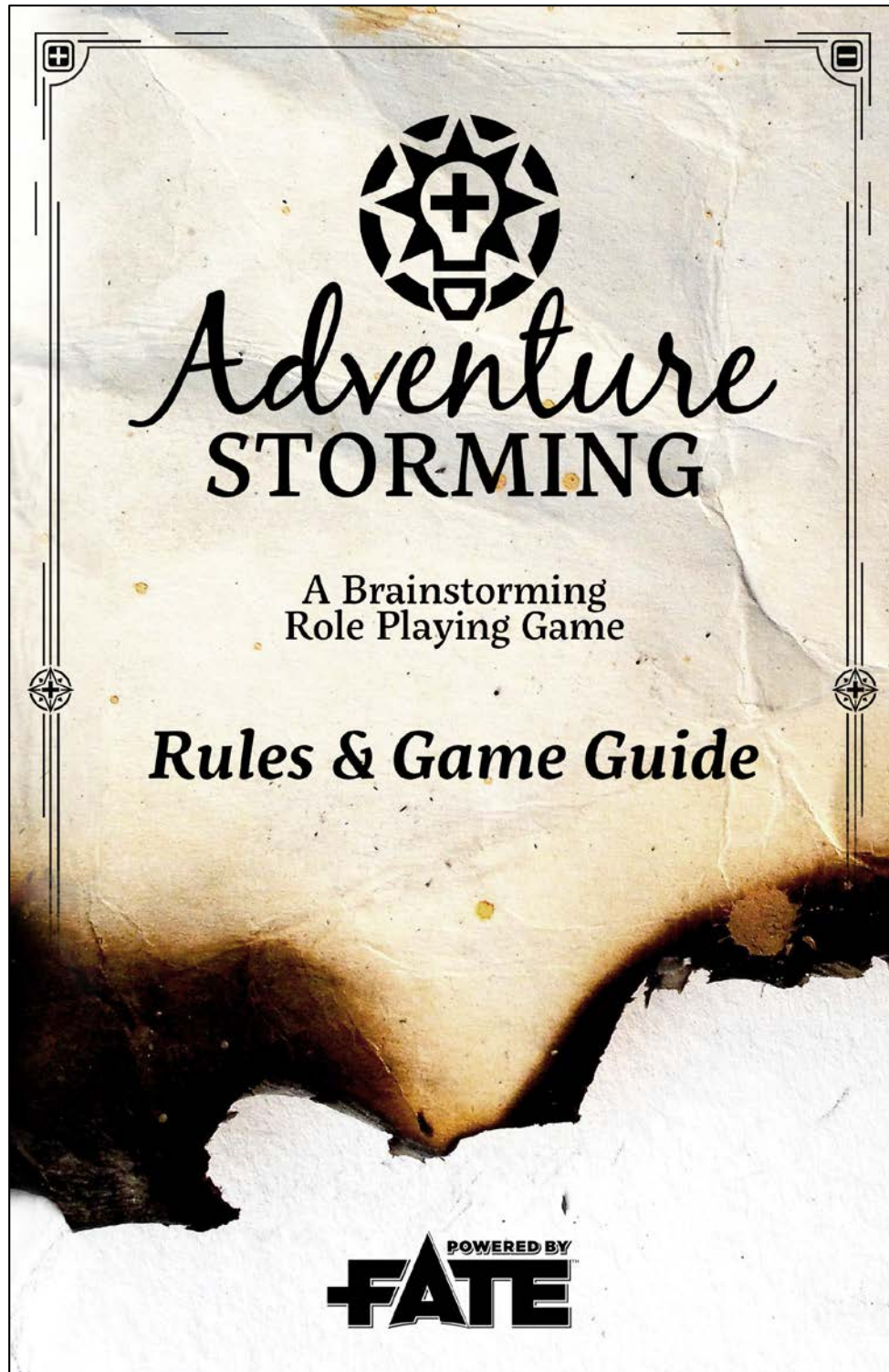
Adventurestorming

Adventurestorming is a brainstorming toolkit intended to help players explore interactions between users and systems. Its strengths lie in building empathy for users and discussion of "rainy day" scenarios. This guide will help you set up and play your very own Adventurestorming game.

Adventurestorming is based on the Fate Accelerated Edition® rule set produced by Evil Hat Productions.
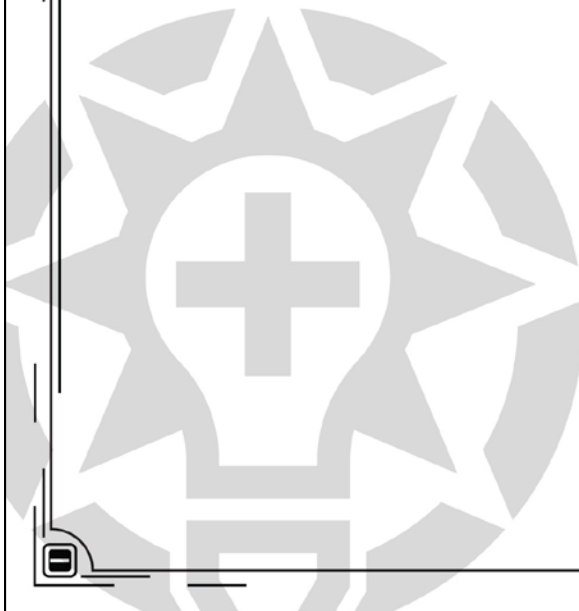
What You Will Need

To get started you will need the following:

+ A Problem to Investigate
+ A Game Master
+ Players (at least one)
+ Character Sheets
+ Fate Dice
+ Fate Tokens (these can be anything!)

The Problem

We will address the items you will need in a moment. But first, let's discuss the *problem*. The Adventurestorming Toolkit is designed to help with ideation, or brainstorming. So to get started you will need a problem to explore. This could be a social issue, or a new mobile app. Whatever the topic is, it is important that the facilitator is somewhat familiar with the issue. Since they will be acting as the Game Master (more on that later) they will need to have enough information to guide the story.

Game Master

The Game Master (GM) runs the game for the rest of the players. His or her job is to describe the scenario for the rest of the group and guide them through their adventure.

The GM will introduce the players to the problem they will be addressing during the brainstorming game as well as play the part of any non-player characters (NPCs). If a player wants to talk to a shop owner or call tech support the GM gets to play the part of those characters.

Remember that Adventurestorming is about exploring what works well and what doesn't work. Don't be afraid to lead players into a situation where they will fail. In failure we can discover innovation!

Players

Game Masters can't brainstorm all by themselves. In order for the game to work you will need at least one other player. In fact, if you have two or more players you might discover that an awesome synergy can form between players, with each one building off the ideas of others.

Before you get started on your campaign, each player will need to fill out a character sheet.

Character Sheets

One of the goals of Adventurestorming is to get into the mindset of the user. Designers will often use personas - general descriptions that represent groups of users. In Adventurestorming we'll take the information in those personas and convert it into characters for us to play as.

Your character will need:

+ Name
+ Description (think about their back story)
+ Aspects (two of them)
+ Approaches (stats for regular folks)

When you fill in your character sheet think about how your character would think and act. When faced with a problem how would she react? Since Adventurestorming is a role-playing game we want to try and embody our character as they go on their adventure!

Aspects

Each character needs two *Aspects* to start with: one *High Concept* and one *Trouble*. Think of *Aspects* as a one-sentence summary of your character.

High Concept

The *High Concept* is the main idea for that character - what they're all about. For example: Tom's *High Concept* might read "tech savvy family man." Tom works in formation technology and loves spending time with his family. We could spend more words describing Tom, but his *High Concept* sums it up pretty well.

Trouble

Troubles, on the other hand, can be thought of as a character flaw or problem your character has. They don't always have to be terrible things, just some kind of drawback they have. For example: Tom's *Trouble* might read "over-involved sports dad." Like we said before, Tom loves spending time with his family. But, his kids are into everything and he go to all the games, and practices, and is *really* enthusiastic. You know how it is. Now, we could have spelled all that out on the character sheet, but his *Trouble* sums it up nice and short.

Invoking & Compelling

"Okay, that's great, but what are **Aspects** for?"
We're glad you asked, read on!

Invoking an Aspect

Let's say you and your team of adventurers are on a quest and you come across an obstacle that you aren't sure you can overcome. If you can make the argument that one of your **Aspects** would give your character an advantage you can spend a **Fate Point** and invoke it. When you invoke an **Aspect** you get a **+2 bonus** on your next roll.

Being Compelled

However, to mix things up the GM can compel one of your **Aspects** against you. Most of the time this will be your **Trouble**, but sometimes your **High Concept** can be used against you. In Tom's case, the GM might suggest that Tom is so busy taking his kids to athletic events that he might not be paying attention to what he is doing. In that case, the GM will give Tom a **Fate Point** and he will suffer a **-2 penalty** on his next roll.

In this way players earn points when they are disadvantaged, and then spend those points later to gain bonuses.

Approaches

Each character sheet has a list of six Approaches. These are personality traits that describe how your character approaches actions. When you attempt an action the GM will discuss which approach matches that action. After you roll your dice you will add your Approach point to your total.

Assigning Points

"Speaking of points, how do they get assigned?" Another great question! When you build a new character you will assign three points to one approach, two points in two approaches, one point in two approaches, and zero points in the last approach. Our characters can't be great at everything, so this is one way we set what they are good at.

Let's look at how Tom's Approaches get set up:

Approaches

Social	2
Observant	0
Decisive	2
Detailed	1
Technology	3
Culture	1

We established earlier that Tom is a "tech savvy family man," so Tom has a score of three for Tech.

Tom has a two in Social and Decisive. Tom likes talking to folks, and he can make his mind up easily.

Tom only has a one for Detailed and Culture. He's pretty busy, so sometimes he isn't careful about the little things, and since he is focused so much on his kids he is a little out of touch with society.

Finally, Tom has a zero in Observant. He is always running around doing things for work and for his kids that he missing things.

Roll Those Dice

So, you are ready to take an action. The GM has told a part of the story and now it's time to do your part. You announce the action you want to take and pick the appropriate *Approach* that goes with it. Now what?

   Now roll those dice! When you take an action you will determine the outcome by rolling five *Fate Dice*. These six-sided dice have two *Plus* faces, two *Minus* faces, and two *Blank* faces. You will add up four of these dice and add them to your *Approach* to see if you were successful.

Dice Roll	Detailed	Aspect	Total
➕⬛➖➖	+ 2	+ 2	= 3

Mood

The fifth die (usually a different color) is the *Mood Die*. When you attempt an action this die will indicate how your action impacted your character's mood. Keep track of this by placing a token on the white dot on the bottom of the Character Sheet. When the *Mood Die* comes up a *Plus*, move the token to the right. When it is a *Minus*, move it to the left.

   You can spend positive *Mood* to re-roll dice when you have bad luck.

Special Actions

If you have an epiphany during the game - this is a brainstorming game after all - you can perform a *Special Action*. There are three kinds of *Special Actions* you can take:

Create an Advantage
Think of this as an action that would create a permanent advantage for the team.

Craft a Feature
Have you thought of a new feature for the system you are exploring? Tell everyone about it!

Overcome an Obstacle
Has the team - and by proxy the users - been stumped by some impediment? Have you thought of a way around it?

Write the idea down on a notecard and place it on the table. The GM will have you roll your *Fate Dice*. If your roll is successful the GM will place a *Fate Point* on the card. Anyone may now invoke that idea once for free as if it were an *Aspect*.

Time for Adventure!

Gather your party and venture forth! Equipped with your trusty Fate Dice and guided by your Game Master you and your fellow adventurers are now prepared to any brainstorming topic imaginable.

Now get out there are create advantages and craft new features. Most importantly, share your knowledge with your team and tackle new problems together.

The following is a portion of the transcript from the Group B play test. This transcript is provided to better convey the interaction between the Game Master and Players during and Adveturestorming session. The Game Master (GM) took the group of players through an exploration of the grocery shopping experience, exploring what parts of that interaction work well and what could be improved.

GM: "Today the five of you, as everyday adventurers will be exploring a topic together. You must, as a group, go out on a quest… to buy groceries."

Player 1:   "Do we all live together?"

GM: "No, you are all in your Hall of Justice."

Player 2:   "So the cupboards in the Hall of Justice are bare?"

GM: "Exactly."

Player 2:   "We have no snacks. How are we supposed to save the world if we have no snacks?"

Player 4:   "To the grocery store!"

Player 3:   "Shouldn't we make a list first? Did we make a list first?"

GM: "I don't know, let's find out if you did or not."

Player 3:   Rolls five Fate dice, scoring two pluses, two blanks, and a minus on her Mood die.

Player 3:   "So I successfully made the list, but I'm a little sad about it because my character is a recovering alcoholic so I knew I couldn't put that on the list."

GM: "Player 3, how did you write down the list?"

Player 3:   "On a piece of paper."

GM: "Okay so the list of items that the team needs for the Justice Hall is written down on a piece of paper. Now, how are you going to get to the store?"

Player 4: "We can take my minivan."

GM: "So Player 4 is going to drive the team to the store. Driving sounds like an *observant* task, so you'll use your *Observant Approach* on this roll."

Player 4: Rolls five Fate dice, getting a plus, a minus, two blanks, and a plus for her Mood die.

GM: "So you have rolled a zero, but with the two points from your *Observant Approach* you successfully navigated up Interstate 35 to the grocery store. And everyone was quite pleased with how well you drove, so move your Mood Token to the right."

Player 2: "We made it!"

GM: "So now that our team of heroes has arrived at the grocery store, what is their next move?"

Player 3: "Let's get some carts."

Player 1: "Are we all going together?"

Player 5: "No we should all split up."

GM: "The team brought a list with you, does everyone know what they need to get once they split up?"

Player 3: "I'll take a picture of the list and text it to everyone in the group."

GM: "That sounds like you would be using your *Technology Approach*."

Player 3: "I have a three for Technology, so this should be easy."

Player 3: Rolls five Fate dice, rolling four minuses and a plus on her Mood die.

Player 3:   "Wow, my phone died right when I got ready to take the picture."

GM: "So the team wasn't able to send the list to everyone, but Player 3 isn't too sad about it. She likes technology so much that she doesn't get upset when they have little problems. Now the team will have to travel around the store together to get everything they need."

Player 2:   "What do we need to get first?"

Player 3:   "To the produce section!"

Player 4:   "I did so well driving us here I'll push the cart."

GM: "The team is going to have to navigate the store to get to the Produce Section. That sounds like an *Observant* action."

Player 4:   Rolls five Fate dice, scoring two minuses, two blanks, and a blank on her mood die.

GM: "You rolled a minus two, and when we combine that with your two Observant points, your score is a zero. When you roll a zero you still succeed, just not very well."

Player 2:   "So we just stood at the front of the store for a while before we figured out where to go?"

GM: "Right. Now, what might have caused you to not find the produce section?"

Player 5:   "Maybe their signs aren't very good. If we came in on the other side of the store, we might not have known where the produce section was."

GM: "Exactly."

GM: "So, what kind of produce does the team need?"

Player 5:   "Veggies."

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Player 6:   "You need to pick up broccoli for broccoli cheese soup."

Player 3:   "We need to get organic broccoli."

Player 6:   "Do they still have it? Are they out?"

GM: "So, Player 5, you need to find the organic broccoli. That sounds like an

             Observant task."

Player 5:   Rolls five Fate dice, scoring three pluses, a blank, and a blank for her Mood

             de.

Player 5:   "I found all the organic broccoli!"

GM: "Now, why do you think you were so good at finding the organic broccoli?"

Player 5:   "Because I'm very observant."

GM: "And what did you observe?"

Player 5:   "They have really big signs in the produce section that say where things are."

Player 3:   "And they have that big sign over the organic section."

GM: "So the team was able to easily find them because of the signs the store put

             out. So, Player 3, what is next on the team's list?"

The game continued in this fashion until the team had completed their list and

checked out, stopping a few times to purchase things online that the store didn't carry or

were out of stock.

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