Child's Play: Researching Meaning-Making in Transmediated Worlds

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Abstract

Understanding the inherent pedagogies of transmedia products that push past single product use (such as game, card, virtual world, comic, etc.) and embrace a suite of products as entry points to narrative worlds requires knowledge of learning, design, and media cultural theoretical frames. While this conversation of theory has been applied to older school-aged children extensively, the amount to which these schools of thought come together to address mediated play in early childhood education has been somewhat limited. This discussion aims to bring the discourses of multiple fields of study together to consider the ways in which narrative worlds can be created and researched to foster productive play for young children. Specifically, the author investigates what makes "good" transmedia environments for learning, and how this learning situates itself in broader forms of play and activity? By analyzing transmedia worlds with an emphasis on the ways play and design can facilitate learning experiences, the research-driven educational media development communities can leverage new ideas for their own research and development. And by asking how the world invites and even requires 'activity' on the part of the user, designers and producers can generate new worlds and environments that enable rich play and learning experiences.

Keywords: transmedia, games, learning, media, design, research

Child's Play: Researching Meaning-Making in Transmediated Worlds

Meet Judah, a six-year-old boy. Judah loves Mario. Not just the games, but all things Mario. Over the last six months, Judah has spent many an afternoon playing Mario Kart and Mario Galaxy on the family Nintendo Wii. What began as a passion for one game soon included multiple games, and resulted in his creating scenes across the living room floor with his Mario figurines (and screaming at his younger brother when they are moved), watching Mario episodes on TV, or playing with the neighbors and reenacting epic battles between Bowser and Mario to save Princess Peach. The world of Mario is something Judah does, not just something he plays with, watches or consumes. In fact, Judah often takes his own creative liberties with the Mario franchise, when through imaginative free play he creates new worlds in which Mario narratives bump up against that of Smurfs or Legos or other barnyard playthings. This description of a child's immersion in a branded world is not far from current social realities. A trip down the toy aisles at your local Target or Toys-R-Us will confirm this.

Educational media has a history of piggybacking entertainment trends and reappropriating technologies and methods for learning (Squire, 2011; Games & Squire, 2011; Ito, 2009). No mainstream media is exempt: radio, television, interactive computer applications, and games have all made their way into educational institutions and circles of learning promotion. As consumer entertainment culture has evolved, researchers have taken notice and work to understand how market product design and participation strategies can be leveraged to better facilitate learning. In considering the current cultural contexts of games and play, researchers must investigate more than the pedagogical strength of individual platforms and expand exploration into the affordances of multi-platform narrative worlds as learning environments. A broad swath of research exists that addresses the ways learners interact with mediated learning environments, however, it is rare to find a convergence of theoretical frames relevant to learning, media culture and design that

specifically addresses the role of play in early childhood, specifically, children between the ages of 3 and 10.

Judah's involvement with the swath of media that make up the Mario narrative world is more than fandom or a study in audiences. To understand his practices requires more than research on the interface design of the individual products and platforms. And traditional educational research approaches alone don't begin to scratch the impacts of popular culture and design theory. To really understand what kinds of learning take place as Judah's interactions in the Mario world are mediated by tools, a new kind of inquiry must emerge that employs a transmedia approach to early childhood education and kid media studies.

More Than the Game

The investigation of expansive participatory narrative worlds links directly to studies of transmedia environments. Cognitive development requires children to be actively at work building on their existing knowledge structures and creating new knowledge and meanings by interacting with their environments. The construction of knowledge structures is mediated by tools, which for a transmedia world may include myriad products and platforms, such as video games, analog games, virtual worlds, playing/trading cards, comics and stories, toys, and user-generated content.

Non-commercial educational media development has remained predominantly single-media focused. The projects that have included a cross media approach to their content delivery systems have still conducted research on their primary platform, and not necessarily the relationships between the main product and peripheral tools. For example, Quest Atlantis has been cited as a research-based educational game that included cards and other out of game rewards (Barab, Thomas, Dodge, Newell, Certeaux, & Tuzun, n.d.). However, the artifacts around the game are predominantly digital goods or fringe elements, not a separate narrative entry point through which participants can deepen immersion in a broad narrative. Most educational (non-entertainment) products have a primary platform that is supplemented by additional products.

What sets the study of transmedia worlds apart from the study of specific products and platforms is that the focus is not on a single medium, rather a convergence of media that includes designed experiences and user participation across platforms.

Early school-age children (preK - mid-elementary, from this point forward referred to simply as "kids" or "children") are of particular interest to entertainment transmedia markets as they are heavily targeted in the consumer cultures of media and play. So what is the draw? What practices have entertainment markets found that specifically entice and involve younger audiences? Do narrative worlds offer the potential for learning in different ways than the individual franchise elements may? If so, understanding the power of transmedia worlds for learning has the potential to inform educational media innovations. Yet the educational research around meaning-making in the convergence of well-designed media, particularly as it relates to play and early childhood, remains scarce. To scratch the surface of the above questions, it is necessary to lay a research foundation of two subquestions: *What makes "good" transmedia environments for learning?* And *how does this learning situate itself in broader forms of play and activity?*

While market transmedia has espoused very gender specific practices, and strong arguments can be made about gendered forms of play (Buckingham, 2003; Banet-Weiser, 2007; Squire, 2011; Tobin, 2000), the current market economy indicates that boys and girls both participate in narrative worlds, while different kinds of content and participation styles may cater more to specific genders. For the purposes of this inquiry, the research presented in this discussion does not focus specifically on gendered forms of play, but acknowledges that there is a large body of research addressing multiple perspectives on gender and play. There is also a growing body of research on the uses of games, comic books, video, manipulatables and toys, and user-generated content as teaching and learning tools (Martin & Steinkuehler, 2010; Moeller, 2011; Roseberry, Hirsh-Pasek, Parish-Morris, & Golinkoff, 2009; Lindh & Holgersson, 2007). Therefore, this discussion is about the learning that emerges via participant activities in narrative worlds which

link individual platforms and products as opposed to a study of the educational merits and implicit

pedagogies of individual products and platforms that may make up narrative worlds.

By understanding the pedagogies and contexts of transmedia participation through the

lenses of education, media and cultural studies, and design theory, it may be possible to further

design interactive transmedia worlds for early learners that leverage the pedagogical power of

participant activity for learning. The frames through which these contexts illustrate meaning-

making also impact the means and methods by researchers investigate how kids and their

relationships with media can inform quality design.

Defining Transmedia

The review of literature on play and participation in new media spaces brings forth a

resounding theme of *process*. Meaning emerges through textual experiences with toys, games, and

other products in a transmediated world from the play process, not simply via the texts of the

products themselves. Games scholars Katie Salen and Eric Zimmerman consider the process

through the medium of games as "the play of meaning" (2004, p. 366), seeing meaning emerge

through the process of play. Games are expressions of culture. "As a result they embody ideas,

narratives, and ideologies that, as part of a larger cultural landscape, shape our understanding of

games and give us a language with which to speak about them" (2006, p. 45). The meanings that

emerge therefore do so through the unique mechanisms of play. This aligns with the views of early

media theorist Marshall McLuhan (1967), who describes media environments not as passive

wrapping, but as invisible active *processes*.

The process of meaning-making is a dialogic relationship between the participant and the

products and platforms with which they engage. Feedback occurs on each end of the system, and

the process becomes a part of social and cultural dynamics on a greater scale. Henry Jenkins, a

media scholar often credited as being the father of transmedia studies, distinguishes convergence

culture as a process as opposed to an end point (2006). In a transmediated environment, this

supports the premise that engagement across multiple platforms is not a journey to arrive at a targeted end point—to engage in transmedia worlds is to explore, discover, participate, and master. This lines up against the active practices of learning. As Buckingham (2003) describes, "a theory of pedagogy is ultimately a theory of activity - or at least of process" (p. 398).

Jenkins (2006) defines transmedia storytelling as "a new aesthetic that has emerged in response to media convergence—one that places new demands on consumers and depends on the active participation of knowledge communities" (pp. 20-21). Frank Rose (2011) refers to these nonlinear, participatory, immersive, and often game-like narratives as deep media: stories that take you deeper than singular episodes or films will permit. And through these new modes of content interaction, stories are changing, from the way stories are offered to audiences for enjoyment to the stories individuals tell about themselves. In participatory activity, this plays out as more than a text or a collection of texts, but a cultural practice (Buckingham, 2003). As Henry Jenkins (2006) explains:

> In the ideal form of transmedia storytelling, each medium does what it does best - so that a story might be introduced in a film, expanded through television, novels, and comics; it's world might be explored through game play or experienced as an amusement park attraction. Each franchise entry needs to be self-contained so you don't need to have seen the film to enjoy the game, and vice versa. Any given product is a point of entry into the franchise as a whole. Reading across the media sustains a depth of experience that motivates more consumption (p. 98).

Through participation, or activity, audiences (for lack of a better term) project meaning into the world, and extract it from the world. Figure 1 illustrates the relationships between products and platforms, participation, and meanings and pleasures through the narrative space. Therefore, the pedagogical strength of transmedia is found in world immersion, and a deep understanding of the elements, structures, and systems that make up that world can only be discovered by active

exploration. Because the worlds span multiple platforms, exploration is about acquiring and

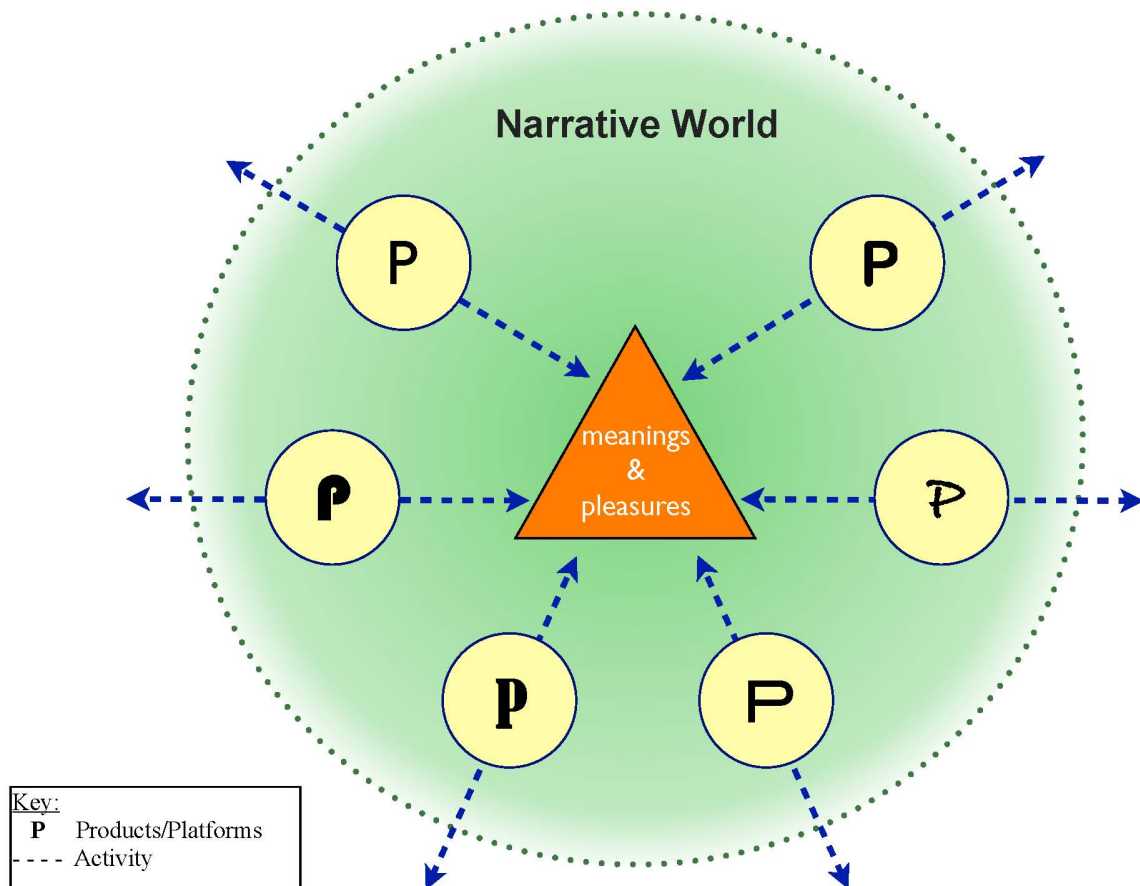applying knowledge in a variety of contexts.

Figure 1. The relationships between participant activity, products and platforms, and the creation

of meanings and pleasures in transmedia narrative worlds.

        The idea of defining variables that make for good media is not new. Games scholar James

Paul Gee (2003, 2007) generated a list of thirty-six principles, later streamlined down to thirteen,

that identify attributes of good games for learning. Many of the principles Gee cites can be applied

to transmedia experiences as well as games, particularly those in the area of learner empowerment,

co-design, and engaged participation. Kurt Squire (2011), games researcher, breaks down two key

qualities for making meaning in the ideological worlds of games:

> ...(1) the learning cycle of a player developing goals, reading the game space for information,
>
> taking action in the game world, and then reading games for feedback; and (2) the social
>
> experience of participating in particular game communities, which is where much of the
>
> reflection, interpretation, and media production occurs as interpretations are debated and
>
> legitimized. (p. 30)

Designers of the texts are not required to fill in every detail of every story that composes the

world, in fact, well-designed transmedia spaces leave room for participants to imagine much of the

world and project their own texts into the space. Through this, borders can be pushed through

user-generated content. Reflecting back to Judah, the six-year-old that introduced this discussion,

illustrates this boundary pushing. Judah employs the elements and structures of Mario, but pushes

the narrative boundaries of the transmedia world by blending texts. Play and user-generated

content also serve to push the boundaries of narratives as participants create mashups, fan-fiction,

or even engage in open-ended play activities in which the meanings from the texts flow from

participant to narrative and back out to participant. Kid's media scholar Mimi Ito (2009) notes, "For

young children, games such as *Pokemon™* and *Yu-Gi-Oh™* popularized a more player-centered

orientation, where kids remix, trade, and customize their game play within a social context"

(p.153).

In transmedia worlds, the platforms are no longer the center of the narrative universe. The

participants and social communities that develop around them are. Based on the definition of

transmedia in this discussion, narrative worlds share similar qualities for facilitating participant

meaning-making. "Good" transmedia worlds for learning as defined in this analysis are narrative

spaces comprised of a non-linear series of texts, platforms, products that make up a broader system

of experiences that become realized through exploration, participation, and activity, allowing

participants to project meanings and pleasures into the space, as well as apply the meanings to new contexts both within and outside the narrative world.

Play as Learning

The ideas presented have been considered for many audiences, however, markets around properties like *Dora the Explorer, Wonder Pets, The Backyardigans*, and other early childhood franchises have yet to capture what makes the meaning-making processes in play and narrative world participation important for discussing learning in a post cognitive revolutionary perspective (Bruner, 1990).   Earlier in this discussion, the emphasis on the *process* of media interaction set the stage for the definition of transmedia participation. Process is also a useful consideration when analyzing the pedagogy of play. Children construct meaning through play spaces not only by employing the cultural representations of toys, games, video programming, and other forms of transmedia storytelling, but by becoming active participants in the process of play. Play is a powerful agent for learning in the development of children (Erikson, 1950; Piaget, 1962; Vygotsky, 1978). Erik Erikson (1950) refers to the span between three-and-a-half and five years old as "the play age," in which time children develop imagination, broaden skills, and learn to function in social groups in a cooperative manner. He theorizes that child's play is the infantile form of the human ability to deal with experience by creating model situations and to master reality by experiment and planning. Between six and eight years old, children enter a phase of "industry", in which projects, building, and making become growth activities.

It should be noted that the "ages and stages" approach to child development should never be thought of as static and time dependent rules of development that make a child normal, rather, every child is unique and develops with a complex set of variables that contribute to growth and learning, variables such as culture and social influences. What the stages do provide researchers and child specialists with is a general trajectory of experiences which can help identify physical and cognitive processes taking place in child development.

As discussed, well-designed transmedia worlds not only invite, but require deep exploration in order to participate fully in the narrative experience. The ways in which participating members of these worlds are able to playfully and productively push against the boundaries of the world align well with the general development of four through eight year olds, who are learning to manage their own interests and exuberance, and often find pleasure in adapting and bending their environments to their will (Ackerman, 2004). In fact, educational approaches like the Montessori Method center on the principles that children learn best when guided through interest driven activities through their own effort while encouraging order and logical thought (Montessori, 1912; Squire, 2011). Montessori methods and transmedia worlds have theoretical parallels through the progression of interest, agency, mediated exploration, and play.

Rich with symbols, transmedia worlds also can provide fodder for the development of what Vygotsky (1978) refers to as practical intelligence:

> Although practical intelligence and sign use can operate independently of each other in young children, the dialectical unity of these systems in the human adult is the very essence of complex human behavior. Our analysis accords symbolic activity a specific organizing function that penetrates the process of tool use and produces fundamentally new forms of behavior (p.24).

The products and platforms that compose narrative worlds can be considered not just tools for play, but tools for operationalizing more complex forms of practical and abstract intelligence, which according to Vygotsky, takes place when speech and practical activity converge. Through this convergence, and the sociality of narrative play, cultural models emerge. "Cultural models, which cannot be stated in one definitive way, are stories or images of experience that people can tell themselves or simulate in their minds" (Gee, 2006, p. 617). Play that is transmediated therefore contributes to children's development of mental models.

Well-designed transmedia worlds are aptly suited for children in their early years, when they are peaking in their role and fantasy play. The platforms across media can become tools for developing such necessary skills as perspective-taking (Galinsky, 2010), as children concurrently come to understand the inner and outer self, building self control and self awareness with an awareness of others around themselves. And worlds that allow the pushing of narrative boundaries can be useful tools in fostering imagination, a skill that leads to the generation of new ideas and innovation, and takes place when children learn to mentally move past what is represented to see what is possible.

The Design of Play

Based on this analysis of transmedia worlds as play spaces that facilitate learning, the platforms and products in a well-designed transmedia world are then *tools* for such learning. Therefore, whether considering formal design (product design) or informal design (participatory co-design), design theory becomes a factor in understanding the role of design in narrative worlds for learning.

Design is the organization of information, stimuli, and resources. With the outcomes of design process ranging from tangible artifacts to human systems to information architecture, designed products may envelop myriad elements. However, all design weaves together visceral, behavioral, and reflective dimensions. Described by Donald Norman (2004), noted designer and design scholar, these three very different dimensions are interwoven through any design. It is not possible to have design without all three. But more important to note is how these three components interweave both emotions and cognition.

Designed artifacts are inherently social. Particularly as a consumer cultural artifact, there is someone on the receiving end of the formal design. The artifact is sandwiched between the social, with a designer on the creating end, and a receiver to view, use, or in some way construct some sort of meaning from it. These social constructs may take place at the designed, personal use, and

greater cultural/sociological level. A well-designed transmedia experience affords play and participation, not only allowing kids to extract meaning from various environments within the larger narrative, but also projecting new meaning into the spaces through play and co-creation.

Well-designed narrative worlds require that knowledge of constraints and affordances be applied to each medium. Jenkins describes good transmedia environments as those in which each medium does what it does best (2006). From a design theory perspective, this can be understood through a lens of affordances and constraints (Norman; 2002, 2004). Both physical and cognitive artifacts can be designed for ease of use. Affordances refer to the "perceived and actual properties of the thing, primarily those fundamental properties that determine just how the thing could possibly be used" (Norman, 2002, p. 9). Constraints, on the other hand, sit on the other end of the spectrum, cuing a user in to perceived and actual limitations of a thing.

The interplay between design and social participation can sustain a narrative tension between design and learning. Once in the hands of participants, however, members of a world become co-designers, with users reflecting either consciously or subconsciously on previous outcomes of tool use, and modifying use cases, physical, or programmed design in order to improve outcomes. This also includes cases where the original intent of the tool can become discarded in order to more effectively achieve new means. Regardless, these are all examples of a social interplay in which the relationships allow feedback to flow between the design and inhabitants of media worlds.

When referring to transmedia worlds, it could be easy for designers and producers to simply say that they want to add cards, game spaces, and figurines to a specific intellectual property (IP). A well-designed world that provides a strong structure for meaning-construction by early learners should include tools that are mapped to the types of content that will be conveyed, and the proposed interactions between participant and text. Comic books tend to be fairly linear; games can range from linear (or "on rails") to sandbox freeform play. The thoughtful design of certain media

may afford different kinds of social interactions, including facilitating communities of practice (Lave & Wenger, 1991) around the textual experiences. The trap of thoughtlessly applying of different media texts to a narrative would result in a simplistic infusion of context across platforms without consideration of the participatory experience of the end users. Pedagogical strength doesn't come from designing and including all possible forms of media in a narrative world. On the contrary, when companies focus on the things a particular IP and set of creators do well, and as design and learning theory are taken into consideration, developers can avoid the pitfalls of creating shallow surface experiences, limiting the potential for a child's immersive participation.

Researching Children's Narrative Worlds: A Bricoleur Model

To this point in the discussion, the arguments have focused predominantly on the designs, uses, and potential pedagogical strengths of narrative worlds. But what about the study of these spaces? What would a transmedia approach to educational research methodologies look like? The approach would need to consider both the development and user participation components of a product or platform. Critical questions may include: What do we already know about the ways young children already participate in emerging media cultures? What are the impacts of specific kinds of tools on the ways young children create knowledge? And how can the knowledge of kid culture speak into the design of relevant tools and narratives for learning?

Research about children that speaks into a design process may take many shapes. Children may be involved with production teams as users, testers, informants, or design participants (Druin, 2002). The goals of design research may span from understanding use or impact to improving a user interface or design functionality. Because of the interdisciplinarity of design, the broad array of possible media interactions to be evaluated, and the necessity for the media designer/researcher to ground thinking in various theoretical frameworks (media theory, design theory, learning theory) and apply it to emerging and new media contexts, the evaluation methods for transmedia participation must also embrace diversity in approach and interpretation. In addition, emerging

forms of technology participation require researchers to reconsider traditional theoretical

frameworks, cultural practices and methodological approaches (Leander & McKim, 2003). The

study of young children's experiences in transmedia narrative worlds is no different.

Design for children has a history of neglecting the input of target users in the design

process, often relying on market media strategies that are shallow at best. In the last decade, the

field of Human-Computer Interaction (HCI) has evolved to embrace a more ethnographically

grounded, contextually focused, user-centered approach, in which end users influence how the

design of objects, tools, and processes take shape (Druin, 1999, 2002). The theories behind user-

centered approaches to design originated with Donald Norman's book The Psychology of Everyday

Things (retitled The Design of Everyday Things, 2002) and later Things That Make Us Smart (2004).

From a research design perspective, Norman's work aligns with potential methodological practices

of transmedia research. Different methods have constraints and affordances, and both enable and

impede a researcher's ability to gather specific kinds of information. Because transmedia world

participation spans multiple products and platforms, and because a variety of activities and

experiences emerge via said participation, a transmedia approach to studying these narrative

spaces as play and learning environments would need to not only consider the constraints and

affordances of each platform, but of each research method. Multiple methods (which may include

mixed methods approaches), serves as a broader classification than mixed methods, and includes a

greater flexibility in targeting design decisions for product and platform development, as well as

including children in research in a variety of roles.

Therefore, a more appropriate methodological framework for the researcher of children's

transmediated narrative worlds is Denzin and Lincoln's description of the *researcher-as-breicoleur*

(1994, p.2). Denzin and Lincoln interpret the term originally used by Levi-Strauss to describe the

Jack-of-all-trades researcher to not be bound by a limited set of methods (as originally described by

Levi-Strauss), rather a self-reflexive researcher who is aware of cultural dynamics of a group and

may be inventive with methods required to best gather information towards a specific purpose or

set of questions (Crotty, 1998). Educational research that focuses on transmedia narrative worlds is

concerned with myriad user practices and outcomes. Methods must be reflexive to the specific

culture of the population being observed and interacted with, as well as to the objectives and

potential implications/applications of findings.

How the Culture of Childhood Impacts Media Research

Brenda Laurel, a design researcher who has contributed to the field of children's media

design, particularly through pushing the boundaries of interactive media for girls, refers to the

work of understanding popular culture in ways described in this discussion as "culture work"

(2001, 2003). Culture work is working and researching in the language of popular culture, and

relies on an understanding of perception, cognition, and how people construct meaning. Culture

work becomes a dialogic process as those of the field are informed about "our time and our nature

through the responses of people to the artifacts of popular culture" (2001, p.11). The culture of a

people is an ensemble of texts that they themselves ensemble, which the anthropologist strains to

read over the shoulders of those to whom they properly belong (Geertz, 1973). This particular

inquiry has already traced the roots of user-centered design to ethnographic approaches to

research and a goal of designing based on contextually relevant practices of a group of culture. The

practices of ethnography then become an important factor in learning from kid culture and

facilitating the voices of the cultures of young children into the practices of design.

As described by Creswell (2007), ethnography focuses on a specific cultural group, and the

researchers describe and interpret patterns of values, behaviors, beliefs, and language of this

"culture sharing group" (Creswell, p. 68; Harris, 1968). Childhood can be bound by cultural

definitions; evolving over time and dependent on larger themes of politics and popular culture as

social context contribute to the development of identities and cultural allegiances. In researching

the ways young children interact with narrative spaces that span multiple media, adults are

working to understand and co-create with a culture of which they are and will always be an outsider. Cultural inclusion relies on age, and once outside that group, it is impossible to regain cultural membership. Having been a member of childhood culture at one point in one's life doesn't qualify a person for a lifetime status as an insider.

For this reason, children can be seen as an indigenous people, and adult researchers are outsiders. Ethnography is a methodology with a colonist past, with early accepted descriptions of "descriptive accounts of non-literate peoples" (Wolcott, 1999, p.11). However, the practices of ethnography have continually expanded and reinvented its definition to be critical of views of The Other and the practices of research that enable understanding of groups and cultures to emerge. While an adult researcher who projects their own memories of childhood on the design of products and platforms without working to understand and learn from current kid culture can risk being accused of being a cultural colonizer, by using thoughtful ethnographic models with design problems, the design profession itself stands to be democratized via the infusion of insights flowing from the culture of the target users themselves (Plowman, 2003).

When adults project their own perspectives into the culture of children and limit the voices of children that speak into a design process, the power potential of the tool is put at risk. A body of research exists to help researchers identify ways in which children can become involved in the process of design as the media industry's own cultural experts. Kevin Leander and Kelly McKim (2003) set a research precedent for pushing back against traditional methodologies to adapt to the requirements of emerging media practices. Leander's work adapts ethnography practices to online settings, identifying the changes between way the adolescent youth function in media spaces and the ways traditional ethnographic (translation) reflects life practices. Practices in participatory communities that span a variety of media illustrate a need to modify the means by which we study transmedia. In Leander's work, the online spaces were the game changer - in studying transmedia experiences, the game changers are the media and the products which are being used by children to

generate meaning. Educational media research is in a position to push back against traditional methods to maintain that the measurement of kid-research practices are still valid. Kids' researcher and theorist Joseph Tobin (2000, p.6) posits, "What's needed to overcome these problems is a hybrid approach—a viewer response study that includes an ethnographic attention to social and cultural context and the use of rigorous and imaginative interpretive strategies for making sense of the viewers' responses."

Current trends in industrial and research-based product development of new technologies for kids may embrace including kids in all four roles, however, decisions for kid input strategy are contingent on time, cost, design goals, and the cultural values of the design team. Including kids as co-designers and team members through cooperative inquiry are the most resource intensive, requiring the commitment of both time and money (Druin, 2002; Markopoulos, Read, MacFarlane, and Hoysniemi, 2008). The majority of children's media industry producers focus their attentions on kids as testers and informants. But producers and researchers still need to be intentional with when kids are used in the process, what the objectives for involvement are, and how age-appropriate methods, activities, and interpretive strategies are used to capture the experiences, behaviors, and feedback narratives of participants. As Creswell (2007) states, "Active collaboration with the participant is necessary, and researchers need to discuss the participant's stories as well as be reflective about their own personal and political background, which shapes how they 'restory' the account" (p. 57). Children's experiences in transmedia narrative worlds are participatory and active, and made rich through story. Evaluation of participant data would do well to embrace the affordances of the products/platforms and cultural activity around them for data collection and interpretation as well.

Considerations For Working With Children

If product evaluation with adults can be complex, evaluation with young children becomes exceptionally complex. The evaluator or tester must consider physical, socio-emotional, and

cognitive development processes not only in formulating evaluation methods, but in interpreting outcomes. Each process presents its own developmentally-based constraints and affordances of the mind and body. In addition, it would serve researches well to be especially conscientious about bracketing their own projections and assumptions about childhood into the testing experience. Tobin (2000) warns of the dangers of such researcher projection. "When we as educators or researchers succeed in getting children to say what we fear or expect them to say, we have failed, for the performative responses we elicit render the children's real feelings invisible to us. Children are adept at answering teachers' and researchers' questions in ways that make them simultaneously transparent and opaque" (p.68).

To list the ways in which research methods and user test strategies need to take the unique characteristics of children into consideration would be an exercise in futility. To simplify and categorize the considerations, the three factors that should be kept in mind as a framework for making method decisions are *content*, *context*, and *communication*. What are the research goals for the evaluation, and what products or platforms make up the content that the child or children will be interacting with? What is the context of the questioning or interactive environment? And how will children communicate their feedback to evaluators, whether through behavior or discourse (written or verbal)? While these are important considerations for working with all ages of research participants, they can be particularly critical for gathering and interpreting the outcomes of kid research.

In participant research, particularly when a child is asked to be critical of something, the ethos and cultural context plays a large role in the way the response is given (Markopoulos et al, 2008). The system acts on the child and the child may respond back to the system based on the conditioning for that culture. For example, conducting focus groups in a school, library, or research lab may all present different environmental cultures that impact the kinds of feedback and behaviors elicited from a child or group of children. In addition, the rapport built between

participant(s) and evaluator(s) can impact findings, as can the possibility of researchers leading

children's feedback, especially since the ways in which children communicate can differ from the

styles of adults (Irwin & Johnson, 2005). When considering methods like interviews Tobin (2000)

suggests aligning the evaluation methods with the forms common to cultural practice. For example:

> ...If your research is on a topic that people commonly discuss with others, do group
>
> interviews. Popular media are social texts. A good portion of the pleasure and meaning we
>
> get from movies comes from talking about them. Children talk a lot about television and
>
> movies at school. Asking them to do so in a focus group interview therefore was asking
>
> them to conduct a conversation that I assume is like conversations they have when I'm not
>
> present (p. 141).

By considering the content, context, and communication methods for investigating young

children's interactions with the myriad texts, products, and platforms that make up transmedia

narrative worlds, researchers can creatively find ways to allow the voice of the child to speak, and

understand experiences in ways that can support quality design for kids.

Conclusion

Children's television programming research shows that television is not simply a medium

fixed in time or space, rather, becomes a part of other cultural practices and ideologies (Banet-

Weiser, 2007). As new generations emerge that are not limited to singular media sources for brand

and narrative engagement, cultural practices and ideologies will link various media platforms and

kid participation across platform, and will generate new methods of projecting meaning and

pleasure into and out from mediated story spaces.

The ability to infuse the outcomes of product testing into design requires the ability to learn

both about and from young children. The purpose of practicing research with children from early

prototyping to final design production processes is to explain and make predictions about the ways

in which individual and groups of children interact with various forms of media. Ethnographic

research emphasizes observation and study in the context of a culture-sharing group. For children, this context includes the setting in which activity takes place, and may include physical, cultural, and social variables that impact the behavior and language of children.

The research presented in this inquiry stands to become a part of a broader discussion that goes beyond traditional industry-based user testing, and digs deeper in the knowledge construction that takes place in participant experience. The narratives that young children craft around participatory experiences reflect the impacts of world design. By studying participant experiences, including analyzing how participants talk about their play experiences and how designed media elements present in child narratives, insight into design issues and objectives for products can be gained. In understanding the ways in which young children interact with and experience the different products that may make up a narrative world, steps can be taken in both academia and the digital media industries to improve the quality of interactive multimedia products that support digital literacies, content exploration, and discovery.

A tension should exist between the research-driven development of educational products and the mainstream methods children employ to interact with narratives. Research & development has goals and intentions, as do the practices of the participants of the narrative worlds, and these goals and intentions are not always in sync. Researchers and developers who are able to hone in on the discord are able to push the boundaries of new creations, and cultivate the development of new products and narratives that carry pedagogical strength. This should be applied not just to specific products and platforms (digital and analog games, interactive spaces, movies and storylines, etc.), but to the entire suite of products and platforms that make up a narrative world, and designed in such a way that deep exploration, user participation and activity, and creative boundary pushing of narrative world borders are not only allowed, but encouraged. Through these practices, deeper learning can take place.

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