ABSTRACT

Childbirth is a complex and multidimensional experience for the mother, riddled with unforgettable emotions and sensations. In today’s cultural climate in California, a mother’s primary attendant for social support throughout labor is usually her partner. Preparing the partner is an integral step to making sure that the mother is well-supported in her birth. Because the mother’s experience is influenced by the support she receives, and because birth partners need more support than is recognized, the author targets birth partners with a learning intervention. The author investigates video games as a vehicle for knowledge transfer to the birth partner, both as currently available and as a positive learning tool. To address the problem of limited access to childbirth preparation methods, especially for under-served Californians, the author investigated, designed, created, and evaluated two tools: The Prepared Partner and Digital Birth. The Prepared Partner is an online Flash game, and Digital Birth is a free iPhone application that is still undergoing revision and testing. Both games allow the user to practice various supportive actions in the realm of childbirth support for a mother in labor. The author found that players met the learning goals due to The Prepared Partner, and answered positively on the survey questions about their enjoyment of the game.

Keywords: Birth Partners, Childbirth, Digital Birth, Support, The Prepared Partner, Video Games

INTRODUCTION

Childbirth support – supporting a mother throughout labor and the birth of a child or children – is a complex task, as evidenced by the number of books, websites, and articles available for expectant parents. Most women and their partners receiving prenatal care consider attending childbirth preparation classes, which may include a unit on labor support or comfort measures during labor. Unfortunately, access to printed and online media and in-person childbirth preparation can be limited due to working hours, distance to the classes, economic hardships, and many other reasons.

We present the iterative human-centered, interdisciplinary design and evaluation of two games about childbirth support, The Prepared Partner and Digital Birth, and the surrounding domain research that informed the designs. We applied mixed ethnographic methods of gathering requirements to inform the tools. Our over-arching goal was to reach a large number of women and their birth partners, and
to increase satisfaction with the birth experience and the feelings of preparedness among first-time parents.

We began by investigating the practice of childbirth preparation by administering an online survey. Participants generally prepared by taking childbirth preparation classes, though not in such large numbers as we expected.

Given our results from the survey, we gathered information about childbirth support from various sources. We developed The Prepared Partner as a pilot or proof-of-concept application, and evaluated it for learning and enjoyment.

This early success led us to continue considering how games might be a good medium for deploying information about childbirth support. Prior to proceeding, we performed a thorough search for childbirth scenes in commercially-available games in order to investigate the landscape surrounding birth in video games.

We conducted further targeted investigation about childbirth support using ethnographic interviews, and observation of childbirth classes. In the interviews, we focused on birth partners’ preparation methods, goals and experiences of import when providing childbirth support, and partners’ perceived utility as support-providers. For the childbirth education classes, we collected information about the curriculum as it pertained to childbirth support.

Using this information, we developed a second game, Digital Birth, using the feedback from The Prepared Partner together with the interview data. Digital Birth uses the same artificial intelligence engine as The Prepared Partner, but is founded on techniques and user goals from the ethnographic investigations.

**CHILDBIRTH PREPARATION**

The first stage of our research into a tool to help women have a positive birth experience was to investigate how women and their birth partners prepare for birth. We examine the relationship between the childbirth preparation, feelings of preparedness, learning in childbirth, and overall satisfaction with the birth experience.

Our literature review revealed that childbirth preparation is related to satisfaction regarding childbirth or the choice of childbirth method. However, many of these studies have a limited user base and focus on a few types of childbirth preparation methods.

The Listening to Mothers II survey (LTM) (Declercq, Sakala, Corry, & Applebaum, 2007) summarizes the habits of American women in preparing to conceive, preparing for labor and birth, the birth outcomes and statistics, and post-partum demographics, including breastfeeding incidence and duration. The survey found that the most important source of information about pregnancy and childbirth for first-time mothers (33%, N=146) was books, followed by friends and/or relatives (19%), and the Internet (16%). Childbirth education classes were cited as important only 10% of the time, although most (56%) first-time mothers enrolled and attended such classes.

There has been a significant amount of research about the benefits of childbirth preparation. Lumley and Brown showed that attenders of childbirth education classes did not show increased satisfaction with their birth experience compared to the non-attenders (Lumley & Brown, 1993). Nichols came to the same conclusion: attending childbirth class did not have an effect on childbirth satisfaction (Nichols, 1995). Fabian, et al. found that although there were no statistical differences between attenders and non-attenders of childbirth class in terms of birth experience, those that attended classes were more likely to opt for an epidural during labor (Fabian, Rådestad, & Waldenström, 2005).

Goodman, et al. showed childbirth satisfaction was influenced by whether the expectations for labor and delivery were met (Goodman, Mackey, & Tavakoli, 2004). Morgan, et al. described that effective pharmacological pain relief was insufficient for determining maternal satisfaction with labor (Morgan, Bulpitt, Clifton, & Lewis, 1982).
Related Content

Research Note: The Results of Formatively Evaluating an Augmented Reality Curriculum Based on Modified Design Principles
www.igi-global.com/article/research-note-results-formatively-evaluating/54351?camid=4v1a

Criteria of Development of Adaptive Didactic Games for People with Intellectual Disability
Eduardo César Contreras Delgado and Isis Ivette Contreras González (2012). Handbook of Research on Serious Games as Educational, Business and Research Tools (pp. 873-891).
www.igi-global.com/chapter/criteria-development-adaptive-didactic-games/64290?camid=4v1a
Gamer Talk: Becoming Impenetrably Efficient
www.igi-global.com/chapter/gamer-talk-becoming-impenetrably-efficient/53933?camid=4v1a

Bioshock in the Cave: Ethical Education in Plato and in Video Games
Roger Travis (2010). Ethics and Game Design: Teaching Values through Play (pp. 86-101).
www.igi-global.com/chapter/bioshock-cave-ethical-education-plato/41313?camid=4v1a