

## Chapter 9

# Teaching Childbirth Support Techniques Using the Prepared Partner and Digital Birth: The Design and Development of Games for Dads-To-Be

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### **ABSTRACT**

*In today's California, a mother's primary social support person in childbirth is her partner, guiding her through a multidimensional experience, helping her make sense of unforgettable emotions and sensations. 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, we target birth partners with a learning intervention. We investigate 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, we investigated, designed, and evaluated two games: *The Prepared Partner*, an online Flash game, and *Digital Birth*, an iPhone application. Both games allow the user to practice various supportive actions in the realm of childbirth support for a mother in labor. We found that players of *The Prepared Partner* met learning goals while enjoying the game.*

### **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,

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## ***Teaching Childbirth Support Techniques Using the Prepared Partner and Digital Birth***

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 postpartum 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.

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