

Labor of Love and Delivery of a Pain Management Strategy

Formative Evaluation

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I certify that I have contributed 33.33% of the effort to the conceptualization, information collection and analysis, and writing of this paper. If asked, I will be able to succinctly describe any portion of the paper. I understand that I am responsible for all of the contents and will be evaluated for the total project.

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## **Formative Evaluation**

### **Abstract**

It is called labor for a reason. The energy and effort that goes in to delivering a baby can be overwhelming and chaotic. Unexpected twists and turns are common, making it important that the expectant couple (EC) come in with a well thought out and detailed birthing plan, especially when it comes to managing the discomfort of labor. This formative evaluation focuses on the assessment of a module designed to help the couple select a pain management strategy for labor and delivery, in a hospital setting.

The module was designed and tested using peer evaluation, and one-on-one and small group sessions. Instructor feedback was given at several points along the way. Using the feedback from the evaluations, the module was redesigned and modified.

The latest version of the module was shown to be effective in improving the learners understanding of pain management strategies during the labor and delivery process, but additional modifications are clearly needed. The design team will discuss the evaluation process, their findings and their proposed revisions.

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## Methodology

### Introduction

The purpose of the formative evaluation report was to analyze the effectiveness of the instruction through the conduction of Labor of Love and Delivery of a Pain Management Strategy teaching module. Upon completion of the content analysis and formatting the module into an instruction design product, each component was well thought-out and delivered to the expectant couple (EC) of a new born baby. From our perspective, the goals and objectives are well-suited for the module and are achievable within the specified time.

#### Subjects and descriptions

*Design team.* The instructional design team consisted of three educated and motivated individuals, Jenny Tanaka, Tod Aeby, and Anuhea Nakahara. Each team member expresses a passion for the content and delivery of this instructional module. The team collaborated productively while contributing an equal amount of effort toward the design process in order to fulfill the goals and objectives of the module. While working together each team member incorporated their expertise in certain areas.

Fortunately, the subject matter expert is a team member with a great deal of knowledge and experience in the birthing process and he enjoys sharing what he knows as a contribution to the instructional presentation. Dr. Tod Aeby is a practicing physician and the chief of the generalist division at the Department of Obstetrics, Gynecology and Women's Health at the University of Hawaii John A. Burns School of Medical. He was an active group member who facilitated the incorporation of his knowledge and expertise

throughout the module. Had Tod not been on the team, the team would have had to find another subject matter expert.

Jenny is a mother and special education teacher in Kailua. While Tod was the content expert, Jenny contributed the perspective of a woman who has gone through the labor and delivery process herself. As a teacher, she has great organizational and time management skills. She used those attributes to make sure the instructional module was done well and in a timely manner. She also works well with others so she makes a large contribution by organizing and conducting the different modules for the expectant couples.

The overall look and feel of the instructional module was the innovative work of the team designer, Anuhea. She has a background in art and design; adding yet another talent to the group. She really enjoyed being creative and putting her art expertise to work. Although she has a niece and lots of friends with children, she had almost no practical labor and delivery experience. As a consequence, she provided important input since her knowledge base was most similar to our target audience. Most of the information and questions were tested on her first, making sure she felt the items were important and understandable.

*Instructor and peer reviews.* Prior to designing the instructional module, there were many critical steps that played into the actual implementation. Reflecting the Dick and Carey instructional design model, revising is a valuable and reoccurring process. We relied on the feedback from multiple parties to revise and improve our learning objects and delivery of instruction within our module. There were three opportunities to receive feedback that came from the designer's Educational Technology (ETEC) peers, ETEC instructors, and one-on-one review.

The foundation of our instructional module was built around the Instructional Hierarchy and Content Analysis. They were both important processes that needed to be completed prior to moving to the next step of creating the instructional module. The Instructional Hierarchy was the outline of how we organized our learning objectives and in which order we taught them based on the skills and knowledge needed. It was the road map to how we would get from one objective to another and the learning path taken to reach the terminal objective. The Content Analysis was the blueprint to the instruction, which included objectives, pretests, content-related information, embedded tests, feedback, and posttests. Along the journey of outlining and building the module, critical feedback was acquired for the overall design of the instructional module.

The peer review process was very interesting. It was the first feedback we received solely reflecting the Content Analysis. Each team member had different people reviewing the content and providing their thoughts on it as future instructional designers and even as potential participants. It was exciting to share our work with our peers and acquiring their perspectives. Many were really helpful in improving our content, such as formatting, grammar, and additional comments to improve the test questions and overall delivery of instruction.

Next, we received feedback from the instructor. Feedback received included comments related to the Instructional Hierarchy, Content Analysis, and Instructional Module. General comments were provided on the checklists for each design process. A common revision that was recommended was the alignment of test items and assuring they were parallel. It was also noted that the instructional information needed to be more



detailed in the Content Analysis, which the designers significantly improved when creating the module.

*One-on-one review.* Each member conducted a one-on-one but at different times throughout the design process since it was taking longer than expected to compile all the information in the best possible sequence. Then, it took longer than anticipated to finish the final design of the module, requiring the team to work with what they had. Tod did his when the module was still in rough draft form, Jenny did hers while the module was almost done, and Anuhea did it after it was completed. Although each person did their one-on-one at different times, each time the feedback led to additional improvements, contributing to the overall design and delivery of our instructional module for the small group.

By way of illustration, Tod received feedback on making the module user friendly and visually pleasing while Anuhea's feedback of the nearly finished project, coming right before the small group sessions, was mostly on minor spacing and grammatical errors.

*Small group review.* Since our target population is very specific we had a very hard time trying to get a group of at least five expectant couples together. We put up fliers in baby stores, posted status updates on Facebook, contacted birthing teachers and sent out a mass email to Bradley birthing class participants. None of these efforts led us to any recruits. Additionally, we approached the hospital for permission to invite the expectant couples in birthing classes and those taking the labor and delivery tour to consider participating in our module. The hospital informed us that they would have to get the module reviewed by their marketing and legal staff and that it would take several weeks to get approval. We ultimately settled on giving the module to expectant women confined to the hospital as a result of complications of their pregnancy. Since our content expert is a

doctor he was able to identify the patients, contact their physicians for permission to approach the patients and then invite them to participate. Since most of these women were on bed rest and were not allowed to leave their room, we were not able to conduct an actual group session. Many of these women also had their partners or someone there keeping them company so we were able to get 13 participants.

*Procedures.* Before administering the instructional module, it was first outlined through the development of the Formative Evaluation Plan (Appendix A). It was then given in the following standardized manner.

- Self-guided folders were assembled for each participant
- The patient's physician was contacted and permission was obtained to invite the woman to participate
- The pretest was distributed and each patient received a scripted explanation of the instructional module's purpose and procedure
- After 10 - 15 minutes, the pretest was collected and the instructional module, posttest and post-survey were distributed. The participants were asked to keep track of how long each step took
- After a few hours, the packets were collected and each participant was given goody-bags with newborn diapers, flowers, and candy.

The module was tested on Thursday, April 21, 2011 starting at approximately 3:45 pm. All participants were either patients or partners of patients on the Ante-partum Unit of the Kapiolani Medical Center for Women and Children. This unit is on both the third and fourth floors and each expectant patient had their own room. The average age of the participants was 29 years. Of the thirteen participants, nine were pregnant, three were male

partners and one was the mother of one of the patients. The sessions went as planned, for the most part, and the packets were picked up at approximately 7:00 pm. In two cases, the patients had diagnostic tests or therapeutic sessions, which delayed the completion of the module and pushed packet pick up to the next day. We gave each participant approximately three hours to complete the module and tests, but most said they were done within an hour. Some of the women were on medications for their pregnancy complications but most felt that the drugs did not impact their ability to participate in the instruction. One patient was drowsy and actually unable to complete the test. This participant was removed from the analysis.

It is important to note that for many of the women, this was not their first child and thus, their motivation to learn was not necessarily equivalent to that of our target audience. Additionally, since they were not in a group and we were not there to give guidance or answer questions several of the participants failed to complete all the embedded tests questions.

### *Analysis & Results*

The feedback and comments received from the instructors, peer reviewers, and one-on-one were mostly positive and helpful with improving the overall completion and implementation of the instructional module. It was encouraging and helpful with making appropriate changes that will continue to improve the delivery of instruction, with hopes to improve the results of the module through each review process.

#### Peer Data

Anuhea was lucky to receive feedback from two women, both of whom have delivered children. Their input was from an experienced point of view but also an editor

like point of view as well. Both women are very good writers so they gave suggestions on how to improve our questions and answers. One woman is a PhD student, she gave us suggestions on how to change the question to make them easier to grade and more qualitative. Since our content analysis was done as more of in an outline form, with limited detail, both women were able to make excellent suggestions for making additional informational content available to our learners.

Jenny's peer review process was helpful and encouraging. She had the perspective of a male and female with prior birthing experience. The male peer reviewer had recently gone through the birthing process with his wife, witnessing the birth of his first baby boy less than a year ago. The female peer reviewer had two children and was very passionate about knowing what to expect during the birthing process. She believed in giving birth naturally and felt blessed to give birth to her second child at home. The comments and feedback were primarily helpful with formatting, grammar, terminology, and making tests questions parallel. All the feedback was taken into consideration for the final submission and implementation of the instructional module.

Tod had two peer reviewers, as well. The first was with an ETEC PhD candidate who had a scheduled cesarean section. Her perspective challenged the team to question and justify the instructional module if a certain segment of the target audience has limited interest in entertaining the possibility of going through labor. The second peer reviewer was a high school math teacher that viewed the module from a very analytical perspective. Mathematicians look at problems in a different way than physicians, and the changes he suggested made the instruction and test questions more universally appealing.

## Instructor Data

There were three formal opportunities to receive feedback from the instructor to make revisions to the module. The first series of comments were based on the Instructional Hierarchy. This design process was probably the most time consuming and difficult task to accomplish and feel satisfied with. It was challenging to come up with the objectives and wording for the verbs. Collaboration and frequent feedback and calls to the instructor were often done. Based on the feedback regarding the hierarchy, the instructor's recommended changing some of the verbs to be parallel with the level of skill and behavior. The team agreed to change the verbs when writing the content analysis. For example, instead of using the verb "distinguish" in the rules section of the hierarchy it was proposed to use "determine" being that it is a higher-level skill. Upon completion of the hierarchy the design team was able to start the Content Analysis.

Once the objectives, goals, information, and instructional strategies were outlined within the Content Analysis, it was then time to receive more feedback to continue the process of revising and editing for the overall creation of the module. Based on the feedback, much of the need for improvement had to do with the test items. One notable revision that needed to be made was the use of different pretest and posttest questions. Due to time constraints and the quantity of information that needed to be included, it was difficult to come up with different test questions prior to submitting the final Content Analysis. Positively, the feedback was accepted and applied when creating test items for the pretests, embedded, and posttests. Feedback was also given regarding the lack of details in the instructional information. Unfortunately, the instructional designers were not aware of the specific information that needed to be included within the Content Analysis.

Instead, the instructional information included a brief synopsis of what would be covered to teach each particular objective. Knowing that instructional information was part of the module, it was reinforced and accepted as positive feedback and included at a later time of the instructional design process.

Aside from grammatical, APA, and formatting issues, there were many positive attributes included among the feedback received. The designers were praised on the instructional strategy, especially Gagne's Nine Events of Instruction. Additionally, the use of engagement strategies were positively praised, which solidifies that the learners were given an opportunity to practice different behaviors within the context of learning. Lastly, the instructor's gave positive notes regarding the feedback we provided for the test items. Most of the feedback was detailed for the learner and reinforcing to what was taught.

The last opportunity to receive feedback from the ETEC instructor was on the final Instructional Module. The hard work paid off and the module itself was very rewarding. Although the feedback was not received until after the small group, there is always the chance of revising it for future use. Instructional designer Tod may have use for the module within his field of work as an OB/GYN doctor. However, Anu and Jenny may have future use by administering the module with friends, non-profit organizations like birthing classes, or added to their instructional design portfolio.

After receiving feedback for the final submission, there were still some reoccurring problems, but for the most part, the instructor was very pleased and satisfied with the instructional module. Again, there were grammatical and formatting problems, but more importantly, some of the test items were not parallel and lacked a sufficient amount of information for higher order objectives. Although majority of our test items worked for the

skill being taught, there were some that seemed more difficult on the pre or post test, making it a challenge for the learner to get the correct answer. Regarding the information provided on the higher-order objectives, it was advised that more examples and non-examples be used, especially since much of the content has already been taught and requires learner's to access prior information and apply it to the last couple objectives and the terminal objective. Therefore, examples and non-examples provide an idea of what is expected in order for the learner to be successful and learn. For example, objective number twenty required the learner to choose a pain management strategy and write about the risks and benefits. Had the instructional designers provided examples and non-examples based on theoretical scenarios, it may have guided the learners to more accuracy and motivation to complete the test questions. It definitely left the learner helpless, but now that it was addressed and feedback and recommendations were provided, the revision can be made.

On a positive and final note regarding future revisions from the ETEC instructor, the module was motivating and awesome. It was evident in the checklist that there was an appreciation for the hard work the designers put in to the module. The feedback was also motivating and encouraged the designers to do the revisions and make the module as usable and learner-friendly as possible.

### One-on-one data

A pretest was given to each of the three one-to-one participants prior to the implementation of the instructional module. Team members administered the instructional module on their own schedule. The one-to-one sessions were also helpful in making changes to the working and structure of the pretest, post-test, and surveys. Please note that it was made clear to the participants that their names would be kept anonymous and their information would only be used for a Masters project in the Educational Technology program at the University of Hawaii.

To illustrate the process, Jenny's one-to-one review was administered on March 28, 2011 at approximately 3:45 pm with a 24-year old female, Sierra. Sierra is currently self-employed and is taking a break from college to focus on her business and to prepare for the arrival of her baby. Happily in a steady relationship and with great support, there is no doubt that Sierra will raise a healthy baby. She is expecting a girl on July 30, 2011 and expresses excitement and joy about the new change and addition in her life. Her willingness and eagerness to learn about the pain management options during labor made it self-motivating for the reviewer. Her preference of pain management strategies reflected the behavioral approach, rather than medical, but she is open to learning all possible options. After taking the pretest and prior to taking the instructional module it was casually discussed and mentioned that she was surprised at how unsure she was about the risks that medical options may pose to the baby. However, she stated that she did not know the exact risks and would like to learn more.

Sierra took 30 minutes to complete the pretest. The session took place at the home of the instructional designer, Jenny. The participant sat at the dinner table where it was



breezy, quiet, and relaxing with some soft music playing in the background. Sierra did not mind the music and was comfortable with where she was seated. The first part of the review consisted of the pre-test. On the pretest, Sierra scored 70%. It was not a bad score being that she is an expectant mother and has not had any experience with a live birth. Her impressive score most likely was the result of hearsay, reading birthing books, and talking to other experienced women. It should also be noted that she answered all the entry-level questions correctly and stated that she was familiar with about 55% of the content.

Periodically throughout the pre-test, the reviewer was asked how she was doing. Other than having two clarifications about test questions she did not have any concerns or problems with answering the questions. One of the questions that confused her had to do with terminology. She was not expected to know what the word meant, so the instructional designer told her not to guess and reassured her that it will be covered in the instructional module. The second question that confused her had to do with how to use the pain management triangle. The instructional designer told her to try her best. After grading the pretest she got the first question of concern incorrect whereas she got the second one correct. It was impressive to know that she could figure out how to use the pain management triangulation chart without any prior instruction. Other than that, there was not much feedback in regards to the content or design of the module.

#### Small Group Demographics

We collected demographics for each participant using a survey questionnaire (see appendix B). The questions ranged from basic general information to what their plans for the birthing process are. An overview and analysis of the survey results (see appendix C) showcased some interesting facts about our learner population. For example, all

participants were either in a relationship or married and three of the thirteen participants were males. Surprising only one out of the thirteen participants said they are taking a birthing class or plan on taking a birthing class. Consequently, the question, “Are you currently taking or planning to take a birthing class? If yes, which one?” did not come as a surprise when most of the participants chose medical options to deal with the pain of labor. Reason being, is that birthing classes usually promote alternate pain management strategies, which the patients are not aware of because majority of them are not taking birthing classes. Additionally, we have to take into account that all the women were already in the hospital for medical intervention due to a pregnancy complication. Most were experiencing pre-eclampsia, which is a pregnancy disorder characterized by high blood pressure, excessive swelling and protein in the urine, that if left untreated can lead to seizures, strokes and fetal compromise or pre-term labor.

### **Small group test data analysis**

There were three evaluation instruments used to provide feedback on the effectiveness of our instructional module. First, a pretest (see appendix D) was designed to determine the baseline knowledge of each of our learners. The results of the pretest would indicate the learners’ entry-level understanding of labor pain management. The test consisted of items designed to assess the participants’ knowledge of four entry-level behaviors and twenty instructional objectives. All test questions were constructed in multiple-choice and matching format, with the exception of questions nineteen and twenty, which tested the pre-terminal and terminal objectives. These questions required fill-in-the-blank and written responses, respectively.

There were four entry-level behavior test questions that only appeared on the pretest. The twenty test questions addressed each of the learning objectives, one through twenty of the instructional objectives. Question twenty, addressing our terminal objective, asked the expectant couple to identify their personal pain management strategy and justify their selection in an open ended fashion.

Our embedded test (see appendix E) was designed to measure the knowledge gained by reading the instructional module. The intent was to use the embedded test to provide immediate feedback to the learner and allow them to measure their understanding of the concepts in the instructional module. Answers were provided on the page immediately following the cluster of questions generated by the each chapter. The learners were free to go back and review the material to help them understand any questions they answered incorrectly. This embedded test also contained twenty questions, with one question to address each objective. The questions were intended to be parallel to those in the pretest, but with the wording or the scenario changed and the answers in different order.

The third assessment instrument, a posttest (see appendix F) was developed to give the designers feedback on the retention of knowledge gained through the use of the instructional module. The post-test contained twenty questions that were also intended to parallel the pretest and the embedded test. The wording and scenarios were also changed slightly, so that the test questions were not familiar enough that they could get it right, merely through memorizing the answers.

Scoring of the evaluation instruments was difficult. Several of our questions, rather than being in a single answer multiple-choice format (with only one correct answer), had five to seven choices offered with two or more of them being correct. In the original

grading scheme, the entire question was marked wrong unless they got every single response correct. This led to some very low scores on the modules. To give our participants, and the learning module, proper credit for what they learned, it seemed more appropriate to treat each choice as a true/false question and give partial credit when it was earned. This reanalysis of the module's scores seems to give us better information regarding its effectiveness. See Figure 2.

The first four questions on the pretest were meant to confirm our expectations of our learners' entry-level knowledge on the subject of pain management and medical interventions. Figure 1 illustrates the pretest and post-test performance of our participants, as it relates to the Instructional Analysis. We selected 80% as confirmatory and unfortunately, only two of the questions met this criteria. EL2 (75% correct) had to do with the learners understanding of the definition of risks associated with medical interventions. Upon reviewing the question, we believe it was well written and while the majority of the participants got it right, we can't assume that this group had a sufficient understanding of risk to use the concept later in the module. There was mixed results on the other two questions, 15 and 16, that required an understanding of the definition of risk and this would be addressed later. It is likely that we would need to include a brief section on risk in our updated version of the module. EL3 (42% correct) was more problematic in that the majority of participants got this wrong. The questions were meant to confirm that this population had a baseline understanding of the definition of a medical complication. While it is possible that the question was poorly written, the fact that the learners also performed poorly on the pretest, embedded test and posttest version of objective seven, also dealing with complications seems to indicate that we cannot presume that our target audience

understands this concept. In the updated version of this module, medical complications will be removed from entry level and will be incorporated into the instruction.

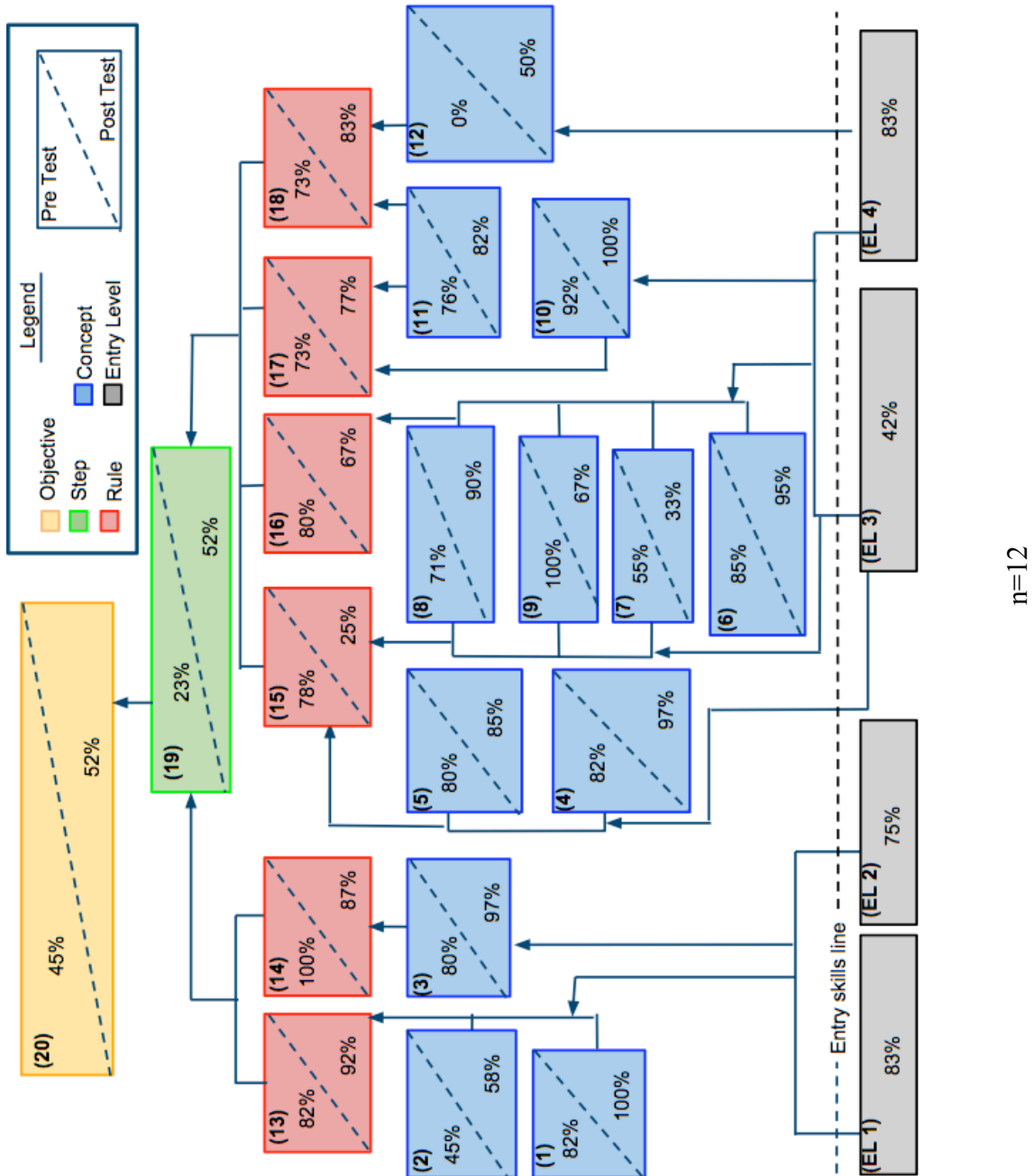


Figure 1. Instructional analysis comparing pretest and post test scores by percentage mastery.

Chapter	1. Pain Management Options											
	1				2				3			
Objective	Pre (%)	Embedded (%)	Post (%)	Pre (%)	Embedded (%)	Post (%)	Pre (%)	Embedded (%)	Post (%)	Pre (%)	Embedded (%)	Post (%)
Learner #												
1	0	/	100	100	/	0	80	/	100	80	/	100
2	100	/	100	100	/	100	100	/	100	100	/	100
3	100	100	100	0	100	0	60	100	0	100	100	80
4	100	/	100	0	/	0	100	/	0	100	/	100
6	100	100	100	0	100	100	80	100	100	80	100	100
7	100	100	100	100	100	100	60	100	100	60	100	100
8	100	100	100	0	100	100	80	100	100	80	100	100
9	100	/	100	0	/	0	80	/	0	80	/	100
10	0	100	100	0	0	0	60	0	0	60	100	80
11	/	100	100	/	100	100	/	100	100	/	80	100
12	100	100	100	100	100	100	100	100	100	100	100	100
13	100	100	100	100	100	100	80	100	100	80	100	100
% Mastering	82	100	100	45	88	58	80	98	97	80	98	97

n=12

Figure 2. Individual scores by learning objective and chapter.

Chapter Objective		2. Risks of Pain Management Strategies																	
		4			5			6			7			8			9		
Test	Learner#	Pre (%)	Embedded (%)	Post (%)	Pre (%)	Embedded (%)	Post (%)	Pre (%)	Embedded (%)	Post (%)	Pre (%)	Embedded (%)	Post (%)	Pre (%)	Embedded (%)	Post (%)	Pre (%)	Embedded (%)	Post (%)
	1	100	/	83	100	/	100	86	/	100	100	/	100	80	/	80	100	/	100
	2	100	/	100	100	/	100	86	/	100	100	/	100	60	/	80	100	/	100
	3	50	100	83	80	80	57	86	100	86	0	0	0	80	80	100	100	100	100
	4	67	/	100	60	/	100	71	/	86	100	/	0	80	/	100	100	/	100
	6	83	100	100	80	100	100	86	100	100	100	100	100	40	100	100	100	100	0
	7	100	83	100	80	100	57	86	100	86	100	0	0	80	100	100	100	100	100
	8	83	100	100	60	100	100	100	100	100	0	0	0	80	100	100	100	100	0
	9	67	/	100	60	/	14	86	/	86	0	/	0	80	/	80	100	/	0
	10	50	100	100	80	80	100	71	80	100	0	100	0	40	100	100	100	100	0
	11	/	100	100	/	100	100	/	100	100	/	100	100	/	80	60	/	100	100
	12	100	100	100	100	100	86	86	100	100	0	100	100	100	100	100	100	100	100
	13	100	100	100	80	80	100	86	50	100	100	0	0	60	100	80	100	100	100
% Mastering		82	98	97	80	93	85	85	91	95	55	50	33	71	95	90	100	100	67

n=12

Figure 2 (continued). Individual scores by learning objective and chapter.

Chapter Objective	3. Benefits of Pain Management Strategies								
	10			11			12		
Test Learner #	Pre	Embedded	Post	Pre	Embedded	Post	Pre	Embedded	Post
1	100	/	100	80	/	80	0	/	0
2	100	/	100	60	/	100	0	/	0
3	100	100	100	60	100	100	0	100	100
4	100	/	100	80	/	100	0	/	0
6	100	100	100	80	100	100	0	100	100
7	100	100	100	80	100	60	0	0	0
8	100	100	100	80	60	80	0	100	100
9	100	/	100	80	/	20	0	/	100
10	100	100	100	60	100	60	0	100	0
11	0	100	100	/	100	80	/	100	100
12	100	100	100	80	80	100	0	100	0
13	100	100	100	100	100	100	0	0	100
% Mastering	92	100	100	76	93	82	0	75	50

n=12

Figure 2 (continued). Individual scores by learning objective and chapter.



Chapter	4. Options During the Labor and Delivery Process									
	13					14				
Objective	Pre	Embedded	Post	Pre	Embedded	Post	Pre	Embedded	Post	Post
Learner #										
1	100	/	100	100	/	100	100	/	100	100
2	100	/	100	100	/	100	100	/	100	100
3	0	100	100	100	100	100	100	100	20	100
4	100	/	100	100	/	100	100	/	100	100
6	100	100	100	100	100	100	100	100	100	100
7	100	100	100	100	100	100	100	100	100	100
8	100	100	100	100	100	100	100	100	100	100
9	100	/	80	100	/	80	100	/	60	60
10	0	100	20	100	100	20	100	100	60	60
11	/	100	100	/	100	100	/	100	100	100
12	100	100	100	100	100	100	100	100	100	100
13	100	0	100	100	0	100	100	0	100	100
<b>% Mastering</b>	<b>82</b>	<b>100</b>	<b>92</b>	<b>100</b>	<b>100</b>	<b>88</b>	<b>100</b>	<b>88</b>	<b>87</b>	<b>87</b>

n=12

Figure 2 (continued). Individual scores by learning objective and chapter.

Chapter	5. Fetal and Maternal, Risks and Benefits											
	15			16			17			18		
Objective	Pre	Embedded	Post	Pre	Embedded	Post	Pre	Embedded	Post	Pre	Embedded	Post
Learner #												
1	100	/	0	60	/	0	80	/	100	80	/	100
2	100	/	0	100	/	100	80	/	80	80	/	100
3	80	100	0	80	100	100	80	100	100	80	100	100
4	60	/	100	80	/	100	80	/	100	60	/	100
6	80	100	0	100	100	100	80	100	60	40	100	100
7	80	100	0	80	100	0	60	100	25	100	100	100
8	60	100	0	100	100	100	60	100	60	80	100	100
9	80	/	0	80	/	0	60	/	80	20	/	0
10	60	100	100	60	100	0	60	100	80	80	80	100
11	/	100	0	/	100	100	/	100	60	/	80	100
12	80	60	100	80	100	100	80	80	100	80	100	0
13	80	80	0	60	100	100	80	100	80	100	100	100
% Mastering	78	93	25	80	100	67	73	98	77	73	95	83

n=12

Figure 2 (continued). Individual scores by learning objective and chapter.

Chapter	6. Weighing Options				7. Selecting a Strategy			
	19		20		20		20	
Objective	Pre	Embedded	Post	Pre	Embedded	Post	Pre	Post
Learner #								
1	50	/	100	67	/	100		
2	50	/	75	100	/	67		
3	0	75	0	33	33	0		
4	25	/	100	33	/	67		
6	25	100	100	100	0	100		
7	0	0	50	0	0	0		
8	0	0	0	67	0	0		
9	0	/	0	0	/	0		
10	0	0	50	0	0	67		
11	/	75	0	/	100	33		
12	0	100	50	0	100	100		
13	100	100	100	100	100	100		
% Mastering	23	56	52	45	42	53		

Figure 2 (continued). Individual scores by learning objective and chapter. n=12

When the participant's individual scores are evaluated (figure 2), it is clear that several of the participants did not record their answers to the embedded questions. This problem was discussed earlier, but it stems from our inability to get the participants together in one group or be with them as they completed the module. As previously mentioned, most of our learners were hospitalized because of complications of their pregnancy and most required bed rest and continuous fetal monitoring. In a group setting, we could have monitored their progress through the module and we would have noticed that they weren't answering the embedded questions. The two participants that tested the module in a group with one of the designers present, did in fact complete all of the embedded questions. It is likely that the learners read and answered the questions in their heads and they just didn't record the answers. In that case, the embedded questions still would have met Gagne's instructional goal of providing learner feedback. Since the module is meant to be a stand alone instructional tool, knowing that the learners need more guidance and encouragement with the embedded questions will help us in the redesign process. Figure 3 depicts the three scores of the participants that completed all three tests, for comparison purposes.

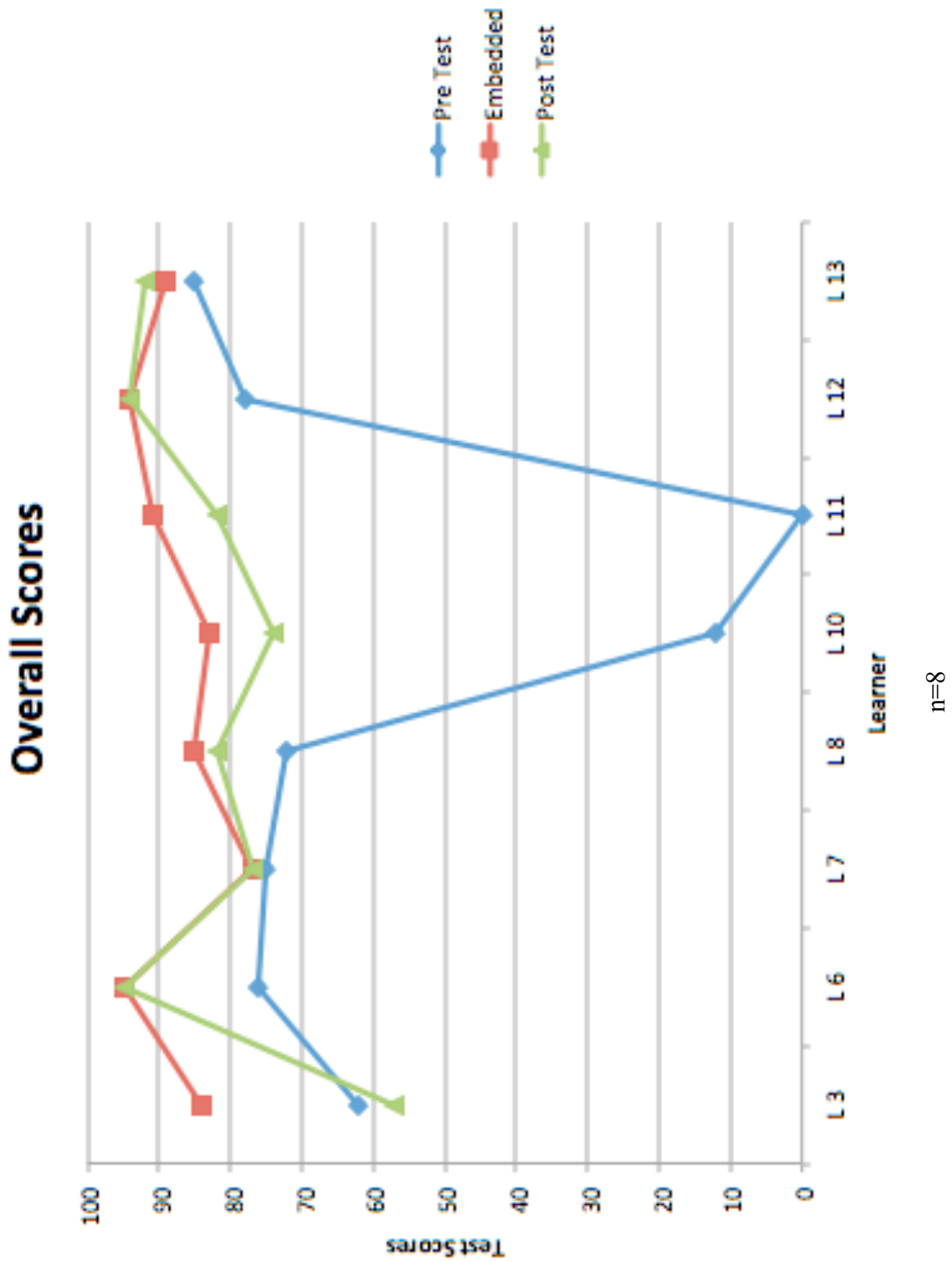


Figure 3. Line graph depicting the scores of learner's who completed all three tests.

Further evaluation of the individual scores demonstrated that a large number of the participants just failed to complete the questions that required writing, such as learning objectives 7, 19 and 20. Whether it was a fill-in-the-blank question or one that required a short answer, the participants seemed unwilling to supply an answer. Nonetheless, we had to mark the question wrong and assume the learning objective was not met. Naturally, this had a large impact on our ability to assess the effectiveness of the module.

Results of the pretest, embedded test and post-test, by learning objective are illustrated in figure 4. Our test group's better than expected performance on the pretest, likely reflects their demographics. While some of them were having their first baby, most were experienced moms. Additionally, since they were in the hospital, one could assume that they are absorbing information about labor, fetal monitoring and other topics that were tested. Our target audience would likely score lower on the pretest. That being said, the results of the pretest still indicate that the participants did not possess sufficient knowledge to make an informed choice regarding pain management in labor.

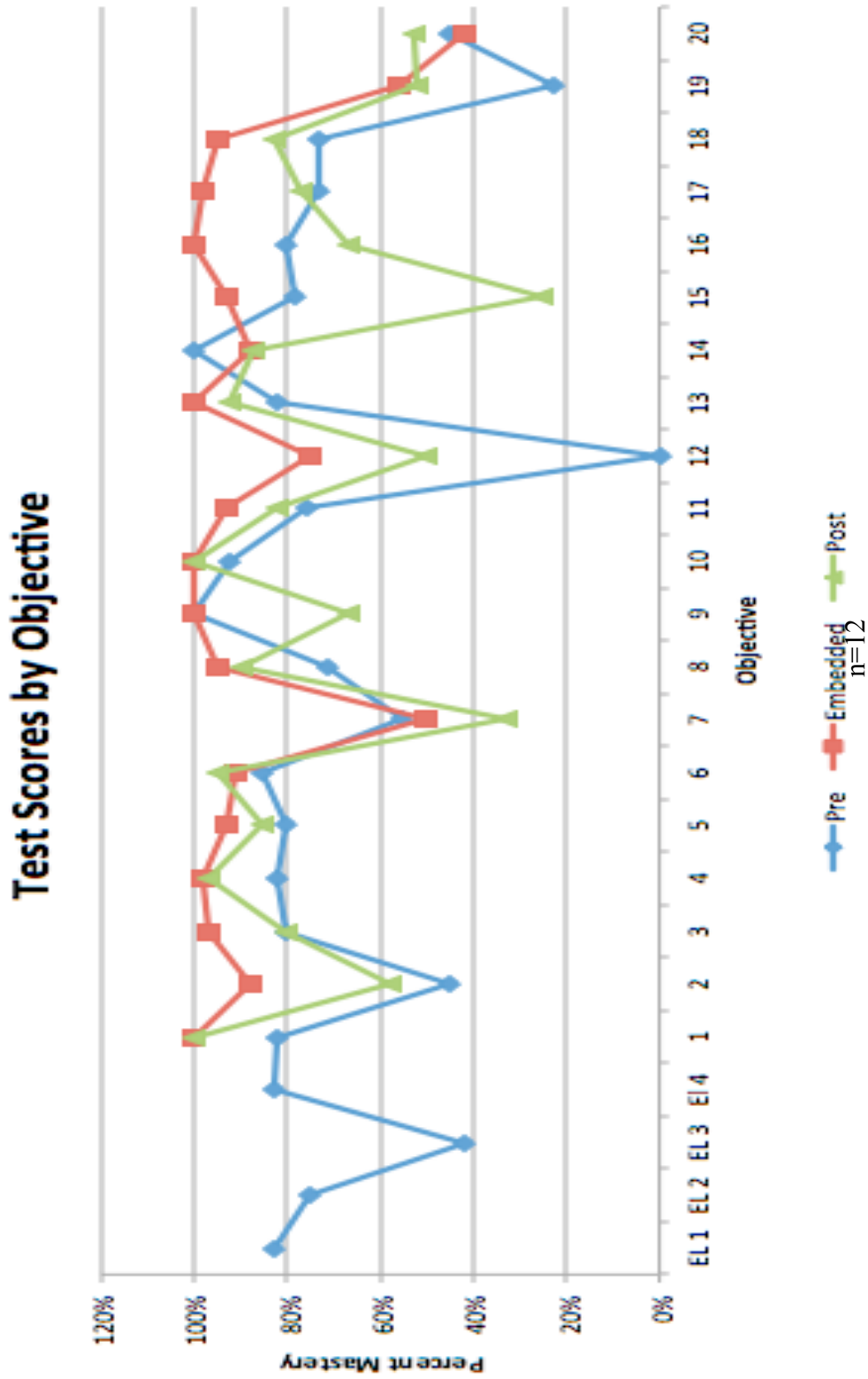


Figure 4. Line graph representation of test scores by objective.

Our evaluation of objective 12, dealing with values surrounding pain management in labor, showed improvement as a result of the module, but mastery of the objective was not achieved. The design team struggled with how to test this objective and ultimately developed an innovative tool. It is clear that the objective needs instruction since every single participant missed the question on the pretest. After instruction, the majority got the embedded question correct but there was drop-off on the post-test. See Figure 4. In the embedded question, the participants were given the values of a theoretical couple and asked to use the instrument to determine that couple's best pain management option, based on their values and personal beliefs. The group performed fairly well, though not at the level of mastery. Unfortunately, when we asked them to apply this tool to determine their own pain management preference, the scores dropped. One could argue that these questions were not parallel because it requires a higher order of thinking to determine your own response to the value questions. Also, in reviewing the question, it became clear that we didn't give them sufficient instruction in how to record their response. It's possible that they did it correctly but failed to record the answer. Future iterations will likely need more instruction and better guidance.

We identified three anomalies in our data. Objectives 7, 9 and 15 all had post-test scores that were considerably lower than the pre-test scores. For objective 7, define rare complications; the designers have two explanations for the learners' poor performance with all three tests. First, the pretest, embedded test and post-test all required a short answer and we are concerned that the participants just rebelled against having to write out their response, similar to the problem observed with questions 19 and 20. Second, the participant's response to entry level question 3, define complications, indicate that this



concept is not clear to this group of learners and the more advanced concept of rare complications might be beyond their grasp without basic-level instruction.

Reviewing the individual participants' scores on learning objective 9, one sees that they performed very well on the embedded test, but did poorly on the post-test.

Unfortunately, we used a negative in the stem of the posttest. Even though the negative was in capital letters and printed with a bold font, the participants' responses make it clear that they were tricked by the question. In the next iteration, the negative should be removed.

By the same token, reviewing the individual participants' scores on learning objective 15, classify fetal risks, one sees that they also performed very well on the embedded test, but did poorly on the post-test. In this case it seems that the instruction was at fault. While fetal distress was mentioned as a risk of epidural anesthesia, fetal sedation, which doesn't occur with this form of pain management, was not specifically discussed. In the next version of this module, fetal sedation should be presented as a non-example under risks of epidural anesthesia.

Compared to the scores on the embedded test, we saw a large drop in the posttest scores for objective 12. This objective used an innovative assessment tool and it requires some refinement. In the end, it was clear that the post-test instructions did not give the participants sufficient guidance on recording their response. In fact, when taken literally, the instructions merely said, "see what they would choose" and did not ask them to indicate that choice on the answer sheet. This can be easily corrected for the future.

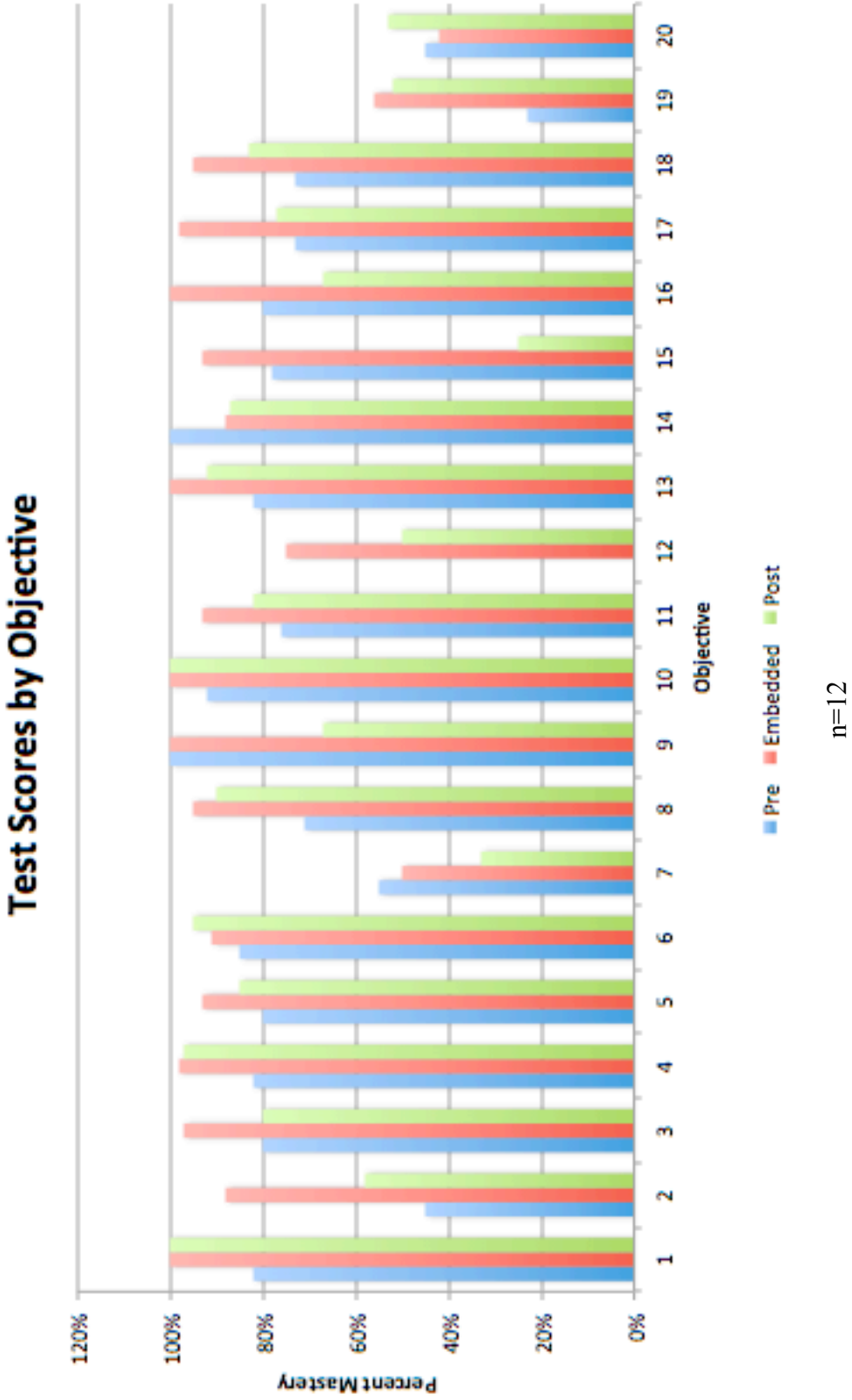


Figure 5. Bar graph of scores for each objective.

Finally, analysis of the results of our terminal objective, selecting a pain management option, was disappointing, which is indicated in Figure 5. While the designers expected the group to perform poorly on the pretest, the results showed little or no improvement on the embedded and post-test questions. Similarly, learning objective 19, weighing the risks and benefits, was not apparently achieved. Unfortunately, both of these questions required the participant to write their answer, rather than merely checking a box or circling a selection. The design team discussed this at length and decided that there was no way to know whether the objective was not actually met or if, in fact we were just asking too much of the learners at the end of a long module. It seems apparent that this section will need to be re-engineered and re-tested. Based on feedback we received from the instructors, we could try supplying the learners with some theoretical couples in typical labor and delivery situations and give them multiple-choice questions to explore their understanding of the objectives. Ultimately, our intent was to have the learners develop the intellectual skills required to make a personal pain management choice for their labor. We may need to develop creative ways to allow the participants to indicate their response, including their justifications, using a matching or fill-in-the-blank format.

#### Anecdotal Data

The results of the tests may have been a reflection of the administration and environment or condition that the learners were in. The patients were unable to get out of their bed and may have been exposed to medications. As stated in the small group discussion, the targeted population was very specific and difficult to gather. Therefore, the small group identified consisted primarily of patients on bed-rest in the hospital, due to complications with their pregnancy. However, two of the learners were not hospitalized

and did not have prior birthing experiences, though they did witness a delivery before. Consequently, much of the discussion or observations gathered does not reflect direct patient interaction. Since the learners were on bed rest and confined to their rooms, the instructional designers were not able to observe or record anecdotal data, instead they had to rely on the margin notes or comments or questions from the patients. Overall, the patients did not use the margin notes or have any questions, but felt comfortable taking the module.

The non-hospitalized learners were able to take the module together on a different day. The administration of the module was conducted at the same time, starting with the pretest and pretest survey. Following the completion of the pretest activities, the instructional designer gave each learner the instructional module with a quick overview of the objectives, activities, and purpose. Lastly, the learners were given the post-test, followed by the post-test survey and demographics. This procedure allowed for specific and observable behavior to be collected.

One observable commonality between the learner comments and questions was on objective number twelve's pretest question. It had to do with the triangulation grid and how to use it. Both learners commented on the unfamiliarity of the grid, but were told to try their best and were discouraged from guessing. Since the dyad group was monitored by an instructional designer, it was encouraged and stated at least twice to use the margin notes if they had any questions, comments, or for note-taking. Due to the nature of having the instructional designer available for the learner, there was more of a connection between the learners and designer and every component of the module was thoroughly completed.

Some comments in the chart (see Figure 6) are included and were direct quotes from a few of the learners.

Learner quotes and comments	Designer response
“Is the module supposed to be bias?”	“Absolutely not. We clearly provide multiple perspectives of birthing options and do not favor one pain management option from the other. It is informative to all options considered.”
“Am I supposed to know all the entry level questions?”	“It is assumed that our learners have this prior knowledge, but please do not feel incompetent.”
“I don’t know how to use the triangulation chart?”	“Please try your best. If you have any comments about the instruction of learning to use it feel free to write it in the margin notes.”
“The pictures are great.”	“Thanks, they were all taken by the instructional designers or given permission to use by friends.”

*Figure 6.* Anecdotal data of learner quotes.

Since the instructional designers were presently available in the same room for the second administration of the small group there seemed to be quality learner achievement reflected in the test results. The learners at the hospital were in there own room without access to the instructional designers, whereas the learners that took the module at the home

of one of the designers were closely monitored. Based on the results, some of the hospitalized learners did not do the embedded questions, disregarded the pretest, and did not complete or even attempt test questions that required writing. Consequently, the closely monitored learners did a thorough and accurate completion of the module. There was a significant and comparable improvement and there were observable opportunities that will assist for future improvements.

#### Attitude survey data

The questions asked in the attitude survey (see Figure 7) were to assess their overall feeling towards the module. The majority of the participants either somewhat agreed or strongly agreed for most questions. The two questions with the lowest response at neutral had to do with the amount of information taught and if they gained new insights. Since all participants were already in the hospital, perhaps they were not in the right mind frame to absorb all the information. Also according to our demographic data, majority of the participants were not first time parents or had previous birthing experience, therefore this information was not new to them and they did not gain new insights. The most encouraging response of the attitudinal data was that 82% of the participants strongly agreed that they would recommend this module to other expectant couples.

Attitude Survey Questions (Likert Scale)	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
Was the instructional module clear and easy to understand?	0%	9%	0%	45%	45%
The amount of information taught was manageable.	0%	0%	18%	36%	45%
The questions were challenging and well written.	0%	0%	9%	45%	45%
The visuals were helpful in my learning.	0%	0%	9%	36%	55%
I gained new insights on painmanagement for labor and delivery.	0%	0%	18%	27%	55%
I found the module useful for preparing for the birthing process.	0%	0%	9%	36%	55%
I would recommend this module to other expectant couples.	0%	0%	0%	18%	82%
<b>Attitude Survey Questions (Open-ended)</b> Additional comments and/or suggestions.	It was fun. Thankyou folks for having us participate in this exercise! Mahalo's				

Figure 7. Attitude survey results.

## Conclusion

### Recommended Revisions

The overall scores of the pretest, embedded test and the post-test indicate that the module, in its current form, was able to advance the understanding of our learners in the selection of a pain management strategy for labor and delivery. That being said, the module has considerable room for improvement.

The revisions chart (see Figure 8) outlines the recommended revisions for the next iteration. The final module was a success in many aspects, but as future instructional designers we acquired new skills and information that will serve as a valuable resource to improve the instructional component. It will surely help more learners fulfill the objectives expected and reach the terminal objective to their fullest potential.

Component	Problem	Revisions Made	Recommended Revisions
Content	Goals: Initially too big	Initially it was a birthing plan but then narrowed it down to just pain management	No change
	Objectives: Too many	Narrowed it down to 20 objectives and 4 EL	Still a lot of objectives but doable.
	Instructional Analysis: The flow of the chart and behavioral verbs	Changed some of the verbs so they are of higher order.	Changing the flow of instruction to not be so repetitive.
	Test items: Making sure they are parallel	Looked through all items to make sure they all tested the same thing	All though they tested the same objective, make sure to use the same type of question for easier understanding and grading. Do not use negative questions.
	Strategy	No change	No change
	Instruction: More information that is relevant to answering questions- description of drug names and types	Added better descriptions and more information.	Provide more instruction and especially objective 12 for better understanding.
	Examples	No change	Have a separate place for examples to provide more learner guidance, especially for objectives 19 & 20
	Non-examples: To provide more	No examples were place within the instruction	Have a separate place for non-examples to provide more learner guidance.
	Practice Feedback: There should be instruction, practice, then feedback	Made sure there was sufficient instruction before practice and feedback	Give examples of good feedback and bad feedback.

Figure 8. Recommended revisions chart.



Process	Pace	No change	No change
	Length	No change	No change
	Schedule		Stick to a schedule for more accurate times for each participant.
	Chunk size	No change	Chapter 2 seems a little long, it could be broken into 2 parts
	Motivation	No change	
	Prerequisite skills	No change	No change
	Amount of practice	No change	No change
	Environment	No change	A more comfortable environment with all participants together.
	Written directions in test	More directions for objective 12	Still more directions and examples needed for objective 12, 19, 20
	Instruction or practice	More directions for objective 12	Still more directions and examples needed for objective 12, 19, 20
	Data collection procedures	No changes	Be more clear with directions about doing all 3 parts: pre test, embedded, posttest. Monitor the testing so they can ask questions and we can hear verbal feedback.

Figure 8 (continued). Recommended revisions chart.

Format	Spelling	No change	No change
	Grammar: Wording of questions	Changed questions for better understanding	No change
	Vocabulary	No change	No change
	Table of Contents	No change	No change
	Page numbers	No change	No change
	Placement of practice or feedback	Instruction and activity was placed before practice and feedback	No change
	Color	No change	Add more color to emphasize different things, such as highlight negative words in questions
	Symbols: Names used in examples	No change	Use more diverse and cultural names.
	Media	No change	Get the actual module bound like a magazine
	Emphasis	No change	Emphasis is much needed in questions, bold or underlining important words so that the learner has better guidance.

Figure 8 (continued). Recommended revisions chart.

**Discussion**

In the design phase, it became clear that it would be difficult to help the expectant couples understand their personal values, biases and beliefs related to pain management in labor. The designers developed an innovative method for assessing these parameters but the tool required fine-tuning. It will continue to get better with future iterations.

When it came to testing the module, the biggest challenges for the design team was trying to find people within the specified target audience. There are only so many pregnant women in the world. Next time the designers would need to do more advanced planning

and try to partner up with a birthing class or hospital. Since it's clear that the hospital will require a review of the module, the designers will need to start the process several weeks ahead.

Another challenge we faced was data analysis and scoring of our test questions. The best results will come from consistent types of questions, with a definitive number of points for each, across the three tests. Within the test we noticed that many of the participants did not respond to the open ended questions that required writing. They didn't answer the questions and this severely limited our ability to assess achievement of the terminal-learning objective. In the next version, we will try to avoid open-ended questions or give better examples.

Our tests and module lacked emphasis. Important words could be highlighted or underlined to make the learner more aware of the points the designers were trying to emphasize. Another thing we overlooked was the lack of cultural consciousness. All of our examples used primarily Caucasian names but looking at our demographics many of the participants were of mixed ethnicities.

Through the conduct of this instructional design study, the team learned that the most important part of the design process is to know your audience. Specifically, the designers need to know what the learners know, how they learn and what motivates them. Testing the module on a group that approximates the characteristics of the target audience will make the analysis and revision much cleaner.

*If only we had the time and the resources.* Once the module has been adequately tested, revised and validated, it would be nice to use it in conjunction with a set of birthing classes or distributed as a handout for doctors to give patients that want to know more.

Further refinement could come from following the couples through the labor process and doing postpartum interviews to see how the information we gave them was actually utilized. Additionally, it would be nice to expand the module to include sections on all of the controversial aspects of the labor and delivery process. Topics such as fetal monitoring, episiotomy, elective cesarean section, breastfeeding and circumcision would also lend themselves well to this same instructional design process. While we see considerable utility in a paper-based module that could be left in the obstetrician's waiting room or sent home with the expectant couple, a web-based module might also be useful.

# Appendices

## **Appendix A. Formative Evaluation Plan**

### ***Test Population***

#### *One-on-one/Dyad*

- Three people- One expectant couple and one expectant mother will be part of the one-on-one testing. The results and feedback of this test will help to improve the instructional module before testing the small group.

#### *Small group*

- A prenatal/Lamaze birthing class made up of at least 5 expectant couples or 10 people. This group will consist of mostly mothers and fathers but could include friends, doulas, birthing coaches and other relatives that are participating in the class with the expectant mother.

### ***Strategies for Meeting Times***

The pre-test, instructional module and posttest will be done during or after a birthing class with teacher permission or if time permits. If people volunteer to stay after class we will be providing beverages and refreshments.

### ***Timeline***

The instruction will be administered along with the module within the one-hour session time set out for it.

### ***Types of data collected***

There will be various types of data collected- learner responses to pre/post test, observations, interviews, and learner margin notes. Observations will be done in structured manner so all group members know what to collect. Learner's margin notes will be evaluated for themes and patterns. Interviews will be also be recorded and analyzed.

### ***Types of Evaluation***

The quantitative data collected from the pre/post test results will be analyzed and made into different types of graphs. Each graph will give a different visual interpretation of the data. Surveys will also add to quantitative data. Qualitative data will be from learner's notes, interviews, and instructors notes and observations.

### ***Methods for Gathering Information***

Information will be gathered from our pre-test and post-test scores. Additionally, the learners will be given a copy of the module with instructions to take margin notes as they progress through the instruction. As instructors, we will gather field notes and observations that will be included in the analysis.

### ***Scripts for Describing the Project***

Hello,

Congratulations and thank you for your attention. The three of us are Masters students in Educational Technology at the University of Hawaii. There we are learning how to develop instructional materials for people who wish to learn a topic. This particular workbook has been designed to help couples like yourselves make informed choices about the management of the discomfort of labor and delivery, as they prepare for the birth of their child, With your help, we hope to make this workbook an excellent source of information for expectant couples.

We have tried to guess what you already know about pain management and we will be starting with a test that will help us know if we guessed correctly. It's called a "pre-test" and we expect that you will get some of the questions right, but know little or nothing about many of the other topics. The purpose of the workbook is to help you understand the rest of

the subject. As you work through the material, we would appreciate any comments you are willing to give us. Feel free to jot notes to us in the space provided in the margins of the pages. After you complete the workbook, we will give you a second test to see how well the instruction worked. We will also ask you to complete a short survey to help us understand how you felt about this experience.

We certainly hope that you will find this instruction pleasant and informative. We, and the expectant couples that will be using the finished product in the future, thank you for sharing your time with us. Are there any questions?



**Appendix B. Pretest and Posttest Demographics and Attitude Survey**

***Pretest demographics survey.***

This demographics survey will help the Labor of Love Instructional Design team with analyzing the participants involved. It is solely used for the information pertaining to their Instructional Design Masters project at the University of Hawaii at Manoa. Results are presented anonymously.

***Please answer the following questions to the best of your knowledge.***

1. Have you ever watched another woman give birth? If yes, describe your experience.

2. Are you currently taking or planning to take a birthing class? If yes, which one?

Yes                      No                      Class: \_\_\_\_\_

3. How do you plan on dealing with the pain during labor?

A. by using medical options

B. by using or learning about behavior options and implementing them into the labor process

C. no preference

***Please answer the following questions on a scale of 0-4, put N/A if it is not applicable:***

0=Not prepared at all, 1= Minimally prepared, 2= Somewhat prepared,

4= Definitely prepared

4. How prepared are you to handle the discomfort during labor?

0                      1                      2                      3                      4                      N/A

5. How prepared do you think your partner is for the labor process?

0          1          2          3          4          N/A

6. Do you have any known pregnancy complications or concerns? If yes, please explain.

7. Do you have any questions or concerns about giving birth? If yes, please explain.

***Posttest demographics survey.***

Please complete these survey after completing the instructional module and post-test. By participating in this survey, you will help us to determine if the instruction was effective. It is solely used for the information pertaining to their Instructional Design Masters project at the University of Hawaii at Manoa. Results are presented anonymously.

***Please answer the following questions and be as honest and specific as possible.***

1. How old are you? \_\_\_\_\_

2. What is your gender?      Female          Male

3. What are your ethnicities?

4. What is your religious background?

5. What is your marital or partnership status?

Single          In a relationship          Married          Separated          Divorced

6. Where were you raised? State: \_\_\_\_\_ Country: \_\_\_\_\_

7. What is your highest level of education that is completed or currently working on?

High school    College          Bachelors      Masters          PhD

8. Is English your primary spoken language? If not what is?

Yes                  No                  Language: \_\_\_\_\_

9. What are your interests/hobbies?

10. Are you currently employed? If yes, what do you do?

Yes                  No                  Occupation: \_\_\_\_\_

## Attitudinal Survey

*Please read and respond to each statement carefully. Then, circle the appropriate number that corresponds to your belief.*

Strongly disagree-----Neutral-----Strongly agree  
1                                  2                                  3                                  4                                  5

1. Was the instructional module clear and easy to understand?

1                  2                  3                  4                  5

2. The amount of information taught was manageable.

1                  2                  3                  4                  5

3. The questions were challenging and well written.

1                  2                  3                  4                  5

4. The visuals were helpful in my learning.

1                  2                  3                  4                  5

5. I gained new insights on pain management for labor and delivery.

1                  2                  3                  4                  5

6 I found the module useful for preparing for the birthing process.

1                  2                  3                  4                  5

7. I would recommend this module to other expectant couples.

1            2            3            4            5

8. Additional comments and/or suggestions.

Appendix C. Demographics Survey Results

Demographics	Pre-Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10				
Learner 1	No	A, B, C *asking and for help	N/A	N/A	Pre-eclampsia/Ashtma	N/A	23 Female	Hispanic, Caucasian, Asian	Christian Seventh Day Adventist	In a Relationship HI, USA	High School	Yes	Like to read, go to the movies, shop, go to the mall, hangout, with friends and family	No
Learner 2	No	A, C Whatever works at the time ?	?	?	Pre-eclampsia, pregnancy induced hypertension, asthma	?	25 Male	Hawaiian/German	Christian	In a Relationship HI	High School	yes	Sports such as football, baseball, basketball, Playing music.	Yes, CAN
Learner 3	I have given birth to 2 girls. Had 2 c-sections	A, unfortunately I haven't experienced labor. Ask for epidural	0	0	None	None	27 Female	Pert Hawaiian	Christian	Married HI, USA	High School	Yes	Cooking	No
Learner 4	Yes	C	3	3	Yes, Preterm labor	No	39 Female	Pt. Hawaiian		In a relationship HI, USA	High School	Yes		Yes, Clerk
Learner 6	Yes. The experience was quite overwhelming. My wife labored for many hours only to find out after she needed to get an emergency c-section. It was an emotional roller coaster. I had lots of anxiety and some tense moments.		N/A	4	Pre-eclampsia	No	38 Male	Caucasian	Catholic	Married HI, USA	College	Yes		Yes, Rigger @ PHHSY & IMF
Learner 7	Yes	A	3	3	Pre-eclampsia	No	36 Female	Pacific Islander/Asian	Catholic	Married HI	College	Yes		Yes
Learner 8	Yes. I have 2 children. 1st child had a great experience but 2nd child was horribly painful.	A	1	0										
Learner 9		A	0	0										
Learner 10	No	A	3	4			21 Female	Micronesian	Christian/Protestant	In a relationship HI, USA	College	No, Korean	Net surfing and reading	No
Learner 12	Yes! I've experienced 2 births. Each birth was very different from each other.	B, breathing methods	2	2	None	None	24 Female	Burmese, portugese, Irish, Iabonese, Chinese	Buddist	In a Relationship HI, USA	Masters	Yes	Yoga, taking my dog to the beach, cooking, reading	Yes, DOE EA

Appendix B. Demographics overview.

**Appendix D. Pretest Questions and Key**

**Pretest Questions**

**EL 1. Which statement defines pain relief associated with labor?**

- A. asking your partner not to play loud music
- B. the use of behavior or medical methods to decrease the discomfort
- C. taking pills to lower blood pressure
- D. taking Tylenol for a headache

**EL 2. Which statement best defines risks associated with pain management during labor?**

- A. an unanticipated or unexpected negative consequence of a choice
- B. getting a cesarean section because the baby was too big
- C. a predictable positive result of a choice
- D. the result when you do not follow the rules

**EL 3. Which statement defines medical complications during labor?**

- A. a difficult procedure
- B. lots of people giving their opinions at once
- C. praise for a job well done
- D. an unplanned negative outcome

**EL 4. Which statement defines benefits associated with pain management during labor?**

- A. an unanticipated or unexpected negative consequence of a choice
- B. getting a cesarean section because the baby was too big
- C. a predictable positive result of a choice
- D. the result when you do not follow the rules

**1. Which of the following is an example of using narcotics for pain relief?**

- A. taking two ibuprofen pills
- B. taking a Tylenol caplet
- C. IV morphine
- D. taking two aspirin tablets

**2. Which describes the procedure of epidural anesthesia?**

- A. a needle in the back to place numbing medicine in the fluid surrounding the cord
- B. a catheter in the back to deliver numbing medicine to the nerves coming out of the spinal column
- C. breathing gas to go to sleep
- D. getting pain medicine through your veins

**3. Place a check next to one or more boxes that describe non-medical methods used by women in labor to gain relaxation, control and pain relief:**

	use of breathing techniques
	use of a focal point
	use of breathing gas to go to sleep
	effleurage
	use of loud music

**4. Place a check next to one or more boxes that might indicate sedation from narcotic exposure:**

<input type="checkbox"/>	constant crying
<input type="checkbox"/>	slow and shallow breathing
<input type="checkbox"/>	difficult to arouse
<input type="checkbox"/>	previously alert but falls asleep after breast feeding
<input type="checkbox"/>	keeps eyes closed in bright light
<input type="checkbox"/>	weak or no effort to breast feed

**5. Newborn infection is important because the newborn\_\_\_\_\_ . Please select one or more boxes.**

<input type="checkbox"/>	can get an infection that may spread and cause permanent damage
<input type="checkbox"/>	will require prolonged hospitalization and antibiotics
<input type="checkbox"/>	will have to go to the nursery to get weighed and measured
<input type="checkbox"/>	can stay in the room with the mom for an extended period of time
<input type="checkbox"/>	will require invasive diagnostic tests like a spinal tap

**6. Place a check next to one or more boxes that describe a laboring patient that has lost control:**

<input type="checkbox"/>	loud, patterned breathing
<input type="checkbox"/>	crying, “just cut the baby out already!”
<input type="checkbox"/>	screaming and striking her birthing partner
<input type="checkbox"/>	rapidly stroking her abdomen
<input type="checkbox"/>	asking to have her back rubbed with a tennis ball
<input type="checkbox"/>	eyes closed in a trance-like state
<input type="checkbox"/>	holding on to the bed railing with clenched fists



**7. Your doctor is discussing an epidural, she mentions several common side effects of the procedure. She also mentions that there are rare complications. What does she mean by “rare complications”?**

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**8. Place a check next to one or more boxes that are possible consequences of a maternal fever in labor.**

<input type="checkbox"/>	Mom will have to get a cesarean section
<input type="checkbox"/>	Mom will have to be placed in isolation to prevent spread of the infection
<input type="checkbox"/>	The hospital staff will assume that the baby has an infection
<input type="checkbox"/>	Mom and baby will be given antibiotics
<input type="checkbox"/>	Mom will not be able to get an epidural if she wants one

**9. Angelina is in active labor with Brad at her side. Suddenly, the baby’s heartbeat drops to 60 beats per minute. Which of the four responses is typically done in this situation?**

- A. nothing is done because it is common for the heartbeat to go that low
- B. Angelina is offered lunch since the baby might have a low blood sugar level
- C. Angelina is given medicine to make her contractions stronger and more frequent
- D. Angelina is taken for an emergency cesarean section.

**10. An alert baby can best be described as:**

- A. sleepy and only reacts to painful stimulation
- B. wakes when gently stimulated, but quickly falls back to sleep
- C. needing help to breathe
- D. eyes open, occasionally cries, suckles when offered the breast

11. Place a check next to one or more boxes that indicate the mother is comfortable.

Mom is comfortable when she:

	is sleeping during her labor
	requires several injections of pain medicine before her tear can be fixed
	has excess bleeding after the delivery and she keeps pushing the doctor's hand away while they try to massage the uterus to help it contract
	is tense and anxious during her contractions
	had a tear that needed to be stitched and she is pain free during the suturing

12. Given a couple with the following responses to the questions below, which pain management strategy will give them the greatest sense of personal gratification? Use the triangulation grid below then circle your response.

1. It is very important for women to control their reaction to pain without medicine.

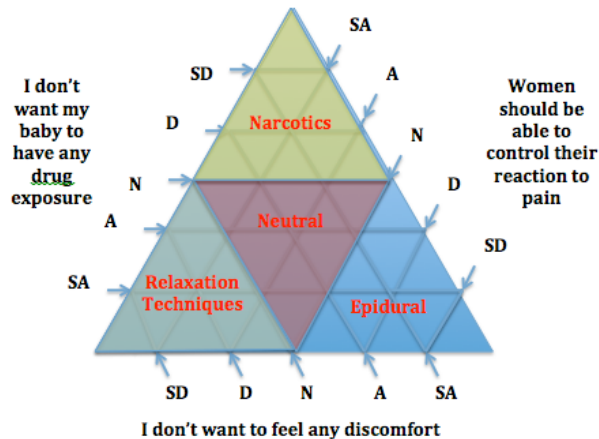
**Strongly Agree**      Agree      Neutral      Disagree      Strongly Disagree

2. It is very important to me that my baby not have any exposure to drugs during labor

**Strongly Agree**      Agree      Neutral      Disagree      Strongly Disagree

3. It is very important to me that I not feel any discomfort during labor.

Strongly Agree      Agree      Neutral      Disagree      **Strongly Disagree**



**13. Which of these is a medical option for pain relief?**

- A. intravenous morphine
- B. patterned breathing
- C. whirl pool
- D. rolling the lower back with a tennis ball

**14. Which of these is a behavior option for pain relief?**

- A. intravenous morphine
- B. patterned breathing
- C. epidural anesthesia
- D. cesarean section

**15. Jane is in active labor and is considering IV narcotics to help her tolerate her contractions. Place a check next to one or more boxes that represent possible risks to the baby.**

	Newborn sedation
	Newborn fever
	Difficulty staying awake to breast feed
	Infection in baby requiring antibiotics
	Difficult feeding two days after birth

**16. Mary is in active labor and is considering IV narcotics to help her tolerate her contractions. Place a check next to one or more boxes that represent possible risks to the mother.**

	Mom feels sleepy and a little disoriented
	Mom has heavier bleeding after the baby is born
	Mom feels nauseated
	Mom has to go for a cesarean section
	Mom has back pain

**17. Mary is in early labor and is considering IV narcotics to help her tolerate her contractions. Place a check next to one or more boxes that represent possible benefits to the baby.**

	Mom has less bleeding
	The baby is born sedated
	Mom relaxes and gets some rest in the early part of labor so that she is better able to help the baby breast feed
	Mom develops a fever
	Mom's labor is longer

**18. Joan is in early labor. She and her husband Pete have selected relaxation techniques and they have practiced them religiously. Select the items below that represent possible benefits to the mother.**

	Joan feels good about having mastered labor discomfort without the use of drugs
	Joan slept through most of her labor
	Joan feels good about not exposing her baby to drugs
	Joan's muscles suddenly relax allowing labor to progress
	Pete worked hard to coach Joan through and they feel their relationship is stronger

**19. Jack and Jill are in active labor and have decided to get an epidural. What are the maternal and fetal risks and benefits of that choice? Use the chart below to fill in your response.**

	Risks	Benefits
Maternal		
Fetal		

**20. Assuming that labor is progressing normally, select your preferred method of pain relief. Justify your choice based on risks, benefits, and personal beliefs.**

Narcotic medications

Epidural anesthesia

Behavioral approach

Explanation of choice:

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## Pretest Question's

### Key

EL 1. **Which statement defines pain relief associated with labor?**

- A. asking your partner not to play loud music
- \*B. the use of behavior or medical methods to decrease the discomfort
- C. taking pills to lower blood pressure
- D. taking Tylenol for a headache

EL 2. **Which statement best defines risks associated with pain management during labor?**

- \*A. an unanticipated or unexpected negative consequence of a choice
- B. getting a cesarean section because the baby was too big
- C. a predictable positive result of a choice
- D. the result when you do not follow the rules

EL 3. **Which statement defines medical complications during labor?**

- A. a difficult procedure
- B. lots of people giving their opinions at once
- C. praise for a job well done
- \*D. an unplanned negative outcome

EL 4. **Which statement defines benefits associated with pain management during labor?**

- A. an unanticipated or unexpected negative consequence of a choice
- B. getting a cesarean section because the baby was too big
- \*C. a predictable positive result of a choice
- D. the result when you do not follow the rules

1. **Which of the following is an example of using narcotics for pain relief?**

- A. taking two ibuprofen pills
- B. taking a Tylenol caplet
- \*C. IV morphine
- D. taking two aspirin tablets

**2. Which describes the procedure of epidural anesthesia?**

- A. a needle in the back to place numbing medicine in the fluid surrounding the cord
- \*B. a catheter in the back to deliver numbing medicine to the nerves coming out of the spinal column
- C. breathing gas to go to sleep
- D. getting pain medicine through your veins

**3. Place a check next to one or more boxes that describe non-medical methods used by women in labor to gain relaxation, control and pain relief:**

*	Use of breathing techniques
*	Use of a focal point
	Use of breathing gas to go to sleep
*	Effleurage
	Use of loud music

4. Place a check next to one or more boxes that might indicate sedation from narcotic exposure:

	Constant crying
*	Slow and shallow breathing
*	Difficult to arouse
	Previously alert but falls asleep after breast feeding
	Keeps eyes closed in bright light
*	Weak or no effort to breast feed

5. Newborn infection is important because the newborn \_\_\_\_\_. Please select one or more boxes.

*	can get an infection that may spread and cause permanent damage.
*	will require prolonged hospitalization and antibiotics.
	will have to go to the nursery to get weighed and measured.
	can stay in the room with the mom for an extended period of time.
*	will require invasive diagnostic tests like a spinal tap.

6. Place a check next to one or more boxes that describe a laboring patient that has lost control:

	loud, patterned breathing
*	crying, "just cut the baby out already!"
*	screaming and striking her birthing partner
	rapidly stroking her abdomen
	asking to have her back rubbed with a tennis ball
	eyes closed in a trance-like state
*	holding on to the bed railing with clenched fists



**7. Your doctor is discussing an epidural, she mentions several common side effects of the procedure. She also mentions that there are rare complications. What does she mean by “rare complications”?**

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**Possible responses:**

EC clearly explains their understanding of rare complications rather than side effects by stating in their response that rare complications are unexpected consequences of therapy, that are unlikely to happen.

**8. Place a check next to one or more boxes that are possible consequences of a maternal fever in labor.**

	Mom will have to get a cesarean section
	Mom will have to be placed in isolation to prevent spread of the infection
*	The hospital staff will assume that the baby has an infection
*	Mom and baby will be given antibiotics
	Mom will not be able to get an epidural if she wants one

**9. Angelina is in active labor with Brad at her side. Suddenly, the baby’s heartbeat drops to 60 beats per minute. Which of the four responses is typically done in this situation?**

- A. Nothing is done because it is common for the heartbeat to go that low
- B. Angelina is offered lunch since the baby might have a low blood sugar level
- C. Angelina is given medicine to make her contractions stronger and more frequent
- \*D. Angelina is taken for an emergency cesarean section.

10. **An alert baby can best be described as:**

- A. sleepy and only reacts to painful stimulation
- B. wakes when gently stimulated, but quickly falls back to sleep
- C. needing help to breathe
- \*D. eyes open, occasionally cries, suckles when offered the breast

11. **Place a check next to one or more boxes that indicate the mother is comfortable.**

**Mom is comfortable when she:**

*	is sleeping during her labor
	requires several injections of pain medicine before her tear can be fixed
	has excess bleeding after the delivery and she keeps pushing the doctor's hand away while they try to massage the uterus to help it contract
	is tense and anxious during her contractions
*	had a tear that needed to be stitched and she is pain free during the suturing

12. **Given a couple with the following responses to the questions below, which pain management strategy will give them the greatest sense of personal gratification? Use the triangulation grid below then circle your response.**

1. It is very important for women to control their reaction to pain without medicine.

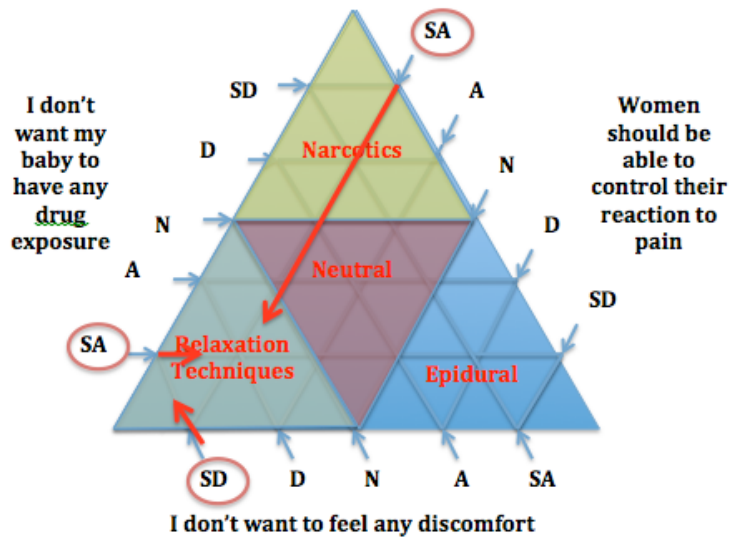
**Strongly Agree**      Agree      Neutral      Disagree      Strongly Disagree

2. It is very important to me that my baby not have any exposure to drugs during labor

**Strongly Agree**      Agree      Neutral      Disagree      Strongly Disagree

3. It is very important to me that I not feel any discomfort during labor.

Strongly Agree      Agree      Neutral      Disagree      **Strongly Disagree**



13. Which of these is a medical option for pain relief?

- \*A. intravenous morphine
- B. patterned breathing
- C. whirl pool
- D. rolling the lower back with a tennis ball

14. Which of these is a behavior option for pain relief?

- A. intravenous morphine
- \*B. patterned breathing
- C. epidural anesthesia
- D. cesarean section

**15. Jane is in active labor and is considering IV narcotics to help her tolerate her contractions. Place a check next to one or more boxes that represent possible risks to the baby.**

*	Newborn sedation
	Newborn fever
*	Difficulty staying awake to breast feed
	Infection in baby requiring antibiotics
	Difficult feeding two days after birth

**16. Mary is in active labor and is considering IV narcotics to help her tolerate her contractions. Place a check next to one or more boxes that represent possible risks to the mother.**

*	Mom feels sleepy and a little disoriented
	Mom has heavier bleeding after the baby is born
*	Mom feels nauseated
	Mom has to go for a cesarean section
	Mom has back pain

**17. Mary is in early labor and is considering IV narcotics to help her tolerate her contractions. Place a check next to the box that represents possible benefits to the baby.**

	Mom has less bleeding
*	The baby is born sedated
*	Mom relaxes and gets some rest in the early part of labor so that she is better able to help the baby breast feed
	Mom develops a fever
	Mom's labor is longer

**18. Joan is in early labor. She and her husband Pete have selected relaxation techniques and they have practiced them religiously. Select the items below that represent possible benefits to the mother.**

*	Joan feels good about having mastered labor discomfort without the use of drugs
	Joan slept through most of her labor
*	Joan feels good about not exposing her baby to drugs
	Joan's muscles suddenly relax allowing labor to progress
*	Pete worked hard to coach Joan through and they feel their relationship is stronger

**19. Jack and Jill are in active labor and have decided to get an epidural. What are the maternal and fetal risks and benefits of that choice? Use the chart below to fill in your response.**

	Risks	Benefits
Maternal	Fever, unable to ambulate, unable to feel the urge to push	Comfortable, muscles in the birth canal relax, able to get sleep, able to interact with baby sooner
Fetal	Fetal distress, maternal fever and presumed infection in newborn	Mom better rested, mom able to interact, bond and breastfeed sooner, shorter labor

**20. Rubric for possible responses:**

(3) You Got It!	(2) Almost Got It!	(1) Uh, Oh!
<p>A) The learner chose at least one of the pain relief strategies and:</p> <ol style="list-style-type: none"> <li>1. Justified their option with at least two risks to mom and baby.</li> <li>2. Justified their option with at least two benefits to mom and baby.</li> </ol> <p>B) The learner chose at least one pain relief strategy and explained their reasoning based on at least one personal belief.</p>	<p>A) The learner chose at least one of the pain relief strategies and:</p> <ol style="list-style-type: none"> <li>1. Justified their option with only one risk to mom and baby.</li> <li>2. Justified their option with only one benefit to mom and baby.</li> </ol> <p>B) The learner chose at least one pain relief strategy, but did not explain their reasoning based on a personal belief.</p>	<p>A) The learner chose at least one of the pain relief strategies and left out one or more of the justifications for their pain management option based on risks and benefits to mom and baby.</p> <p>B) Learner did not mention anything about personal beliefs.</p>

### Appendix E. Embedded Test

## Embedded Questions

1. **Which of the following is an example of using narcotics for pain relief?**

- A. taking two ibuprofen pills
- B. taking a Tylenol caplet
- C. IV morphine
- D. taking two aspirin tablets

2. **Which describes the procedure of epidural anesthesia?**

- A. a needle in the back to place numbing medicine in the fluid surrounding the cord
- B. a catheter in the back to deliver numbing medicine to the nerves coming out of the spinal column
- C. breathing gas to go to sleep
- D. getting pain medicine through your veins

3. **Place a check next to one or more boxes that describe non-medical methods used by women in labor to gain relaxation, control and pain relief:**

	use of breathing techniques
	use of a focal point
	use of breathing gas to go to sleep
	effleurage
	use of loud music

**4. Place a check next to one or more boxes that might indicate sedation from narcotic exposure:**

<input type="checkbox"/>	constant crying
<input type="checkbox"/>	slow and shallow breathing
<input type="checkbox"/>	difficult to arouse
<input type="checkbox"/>	previously alert but falls asleep after breast feeding
<input type="checkbox"/>	keeps eyes closed in bright light
<input type="checkbox"/>	weak or no effort to breast feed

**5. Newborn infection is important because the newborn\_\_\_\_\_ . Please select one or more boxes.**

<input type="checkbox"/>	can get an infection that may spread and cause permanent damage
<input type="checkbox"/>	will require prolonged hospitalization and antibiotics
<input type="checkbox"/>	will have to go to the nursery to get weighed and measured
<input type="checkbox"/>	can stay in the room with the mom for an extended period of time
<input type="checkbox"/>	will require invasive diagnostic tests like a spinal tap

**6. Place a check next to one or more boxes that describe a laboring patient that has lost control:**

<input type="checkbox"/>	loud, patterned breathing
<input type="checkbox"/>	crying, “just cut the baby out already!”
<input type="checkbox"/>	screaming and striking her birthing partner
<input type="checkbox"/>	rapidly stroking her abdomen
<input type="checkbox"/>	asking to have her back rubbed with a tennis ball
<input type="checkbox"/>	eyes closed in a trance-like state
<input type="checkbox"/>	holding on to the bed railing with clenched fists



**7. Your doctor is discussing an epidural, she mentions several common side effects of the procedure. She also mentions that there are rare complications. What does she mean by “rare complications”?**

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**8. Place a check next to one or more boxes that are possible consequences of a maternal fever in labor.**

<input type="checkbox"/>	Mom will have to get a cesarean section
<input type="checkbox"/>	Mom will have to be placed in isolation to prevent spread of the infection
<input type="checkbox"/>	The hospital staff will assume that the baby has an infection
<input type="checkbox"/>	Mom and baby will be given antibiotics
<input type="checkbox"/>	Mom will not be able to get an epidural if she wants one

**9. Angelina is in active labor with Brad at her side. Suddenly, the baby’s heartbeat drops to 60 beats per minute. Which of the four responses is typically done in this situation?**

- A. nothing is done because it is common for the heartbeat to go that low
- B. Angelina is offered lunch since the baby might have a low blood sugar level
- C. Angelina is given medicine to make her contractions stronger and more frequent
- D. Angelina is taken for an emergency cesarean section.

**10. An alert baby can best be described as:**

- A. sleepy and only reacts to painful stimulation
- B. wakes when gently stimulated, but quickly falls back to sleep
- C. needing help to breathe
- D. eyes open, occasionally cries, suckles when offered the breast

11. Place a check next to one or more boxes that indicate the mother is comfortable.

Mom is comfortable when she:

	is sleeping during her labor
	requires several injections of pain medicine before her tear can be fixed
	has excess bleeding after the delivery and she keeps pushing the doctor's hand away while they try to massage the uterus to help it contract
	is tense and anxious during her contractions
	had a tear that needed to be stitched and she is pain free during the suturing

12. Given a couple with the following responses to the questions below, which pain management strategy will give them the greatest sense of personal gratification? Use the triangulation grid below then circle your response.

1. It is very important for women to control their reaction to pain without medicine.

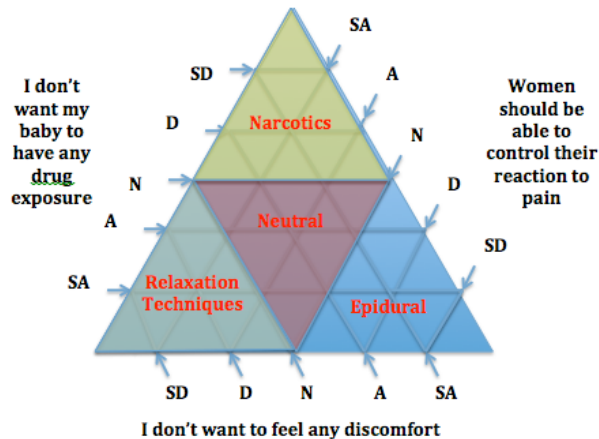
**Strongly Agree**      Agree      Neutral      Disagree      Strongly Disagree

2. It is very important to me that my baby not have any exposure to drugs during labor

**Strongly Agree**      Agree      Neutral      Disagree      Strongly Disagree

3. It is very important to me that I not feel any discomfort during labor.

Strongly Agree      Agree      Neutral      Disagree      **Strongly Disagree**



**13. Which of these is a medical option for pain relief?**

- A. intravenous morphine
- B. patterned breathing
- C. whirl pool
- D. rolling the lower back with a tennis ball

**14. Which of these is a behavior option for pain relief?**

- A. intravenous morphine
- B. patterned breathing
- C. epidural anesthesia
- D. cesarean section

**15. Jane is in active labor and is considering IV narcotics to help her tolerate her contractions. Place a check next to one or more boxes that represent possible risks to the baby.**

	Newborn sedation
	Newborn fever
	Difficulty staying awake to breast feed
	Infection in baby requiring antibiotics
	Difficult feeding two days after birth

**16. Mary is in active labor and is considering IV narcotics to help her tolerate her contractions. Place a check next to one or more boxes that represent possible risks to the mother.**

	Mom feels sleepy and a little disoriented
	Mom has heavier bleeding after the baby is born
	Mom feels nauseated
	Mom has to go for a cesarean section
	Mom has back pain

**17. Mary is in early labor and is considering IV narcotics to help her tolerate her contractions. Place a check next to one or more boxes that represent possible benefits to the baby.**

	Mom has less bleeding
	The baby is born sedated
	Mom relaxes and gets some rest in the early part of labor so that she is better able to help the baby breast feed
	Mom develops a fever
	Mom's labor is longer

**18. Joan is in early labor. She and her husband Pete have selected relaxation techniques and they have practiced them religiously. Select the items below that represent possible benefits to the mother.**

	Joan feels good about having mastered labor discomfort without the use of drugs
	Joan slept through most of her labor
	Joan feels good about not exposing her baby to drugs
	Joan's muscles suddenly relax allowing labor to progress
	Pete worked hard to coach Joan through and they feel their relationship is stronger

**19. Jack and Jill are in active labor and have decided to get an epidural. What are the maternal and fetal risks and benefits of that choice? Use the chart below to fill in your response.**

	Risks	Benefits
Maternal		
Fetal		

**20. Assuming that labor is progressing normally, select your preferred method of pain relief. Justify your choice based on risks, benefits, and personal beliefs.**

Narcotic medications

Epidural anesthesia

Behavioral approach

Explanation of choice:

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**Appendix F. Posttest and Key**

**LABOR OF LOVE**

**POSTTEST**

**1. Alexandra is in labor and is requesting a narcotic for pain relief, which of the following options would be appropriate for her to receive?**

- A. Fentanyl in her IV
- B. two aspirins
- C. an extra strength Tylenol
- D. an ibuprofen tablet

**2. Which describes the procedure of epidural anesthesia?**

- A. a needle in the back to place numbing medicine into the fluid surrounding the spinal cord
- B. getting pain medicine through your veins
- C. breathing gas to go to sleep
- D. a catheter in the back to deliver numbing medicine to the nerves coming out of the spinal column

**3. Place a check next to one or more boxes that describe non-medical methods used by women in labor to gain relaxation, control and pain relief.**

	Use of breathing techniques
	Use of a focal point
	Use of breathing gas to go to sleep
	Effleurage

	Use of loud music
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**4. Place a check next to one or more boxes that describe behaviors that might indicate newborn sedation from narcotic exposure:**

	constant crying
	slow and shallow breathing
	difficult to arouse
	previously alert but falls asleep after breast feeding
	keeps eyes closed in bright light
	weak or no effort to breast feed

**5. Place a check next to one or more boxes that denote problems that are associated with newborn infections.**

	problems with feeding
	able to stay in mom's room for extended bonding
	will need antibiotics and have to stay in the hospital for several days
	baby can go home with mom when baby is 2 days old
	baby has to get a spinal tap
	baby can come to the mom's room for breast feeding and long visits

	baby may need several chest x-rays
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**6. Place a check next to one or more boxes that describe a laboring patient that has lost control:**

	repeatedly saying “hee-hee-ho” during contractions
	curled in a ball, thrashing side to side and crying with each contraction
	dropping to the floor and sobbing
	softly stroking her abdomen
	holding on to the bed railing with clenched fists
	focusing on a picture, breathing softly and not responding to questions during contractions
	asking to have her back massaged

**7. Your doctor tells you that there is always the possibility of rare complications of a therapy, what does this mean?**

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8. Below is a list of things that could happen if a mom develops a fever during labor.

Place a check next to one or more boxes that are appropriate.

	the baby might need to be delivered using forceps or a vacuum
	the baby will have to be isolated in the nursery to prevent spread of the infection to other babies
	the hospital staff will assume that mom has infection of the amniotic fluid around the baby
	mom and baby will be given antibiotics
	mom will not be able to get an epidural if she wants one

9. Angelina is pushing when the baby’s heartbeat repeatedly drops to 40 beats per minute and only recovers to 70 beats per minute between contractions. Which of the four responses below **WOULD NOT** be a typical response to this situation?

- A. nothing is done, it is common for the heartbeat to go that low
- B. forceps are applied and an attempt is made to deliver Angelina’s baby very fast
- C. a vacuum is applied and an attempt is made to deliver Angelina’s baby very fast
- D. Angelina is taken for an emergency cesarean section

10. Which of these accurately describes an alert baby?

- A. sleeps when swaddled but wakes easily and cries when hungry
- B. needs help to breath
- C. keeps eyes closed and does not respond, even in a dimly lit room
- D. feeble cry, does not move arms and legs much

11. Place a check next to one or more boxes that indicate a mother who is comfortable:

	mom is laughing and talking on her cell phone during her contractions
	mom requires several injections of pain medicine before her tear can be fixed
	mom has excess bleeding after the delivery and she is interacting with her baby and her husband while the doctors try to massage the uterus to help it contract
	the laboring mother is crying and begging for a cesarean section with each contraction
	the mom had a tear that needed to be stitched and she is pain free during the suturing

12. Elaine and Tom made the following selections. Use the triangulation grid below to determine the method of pain management that would give Elaine and Tom the greatest sense of personal gratification.

1) It is very important to me that I control my reaction to pain without medicine.

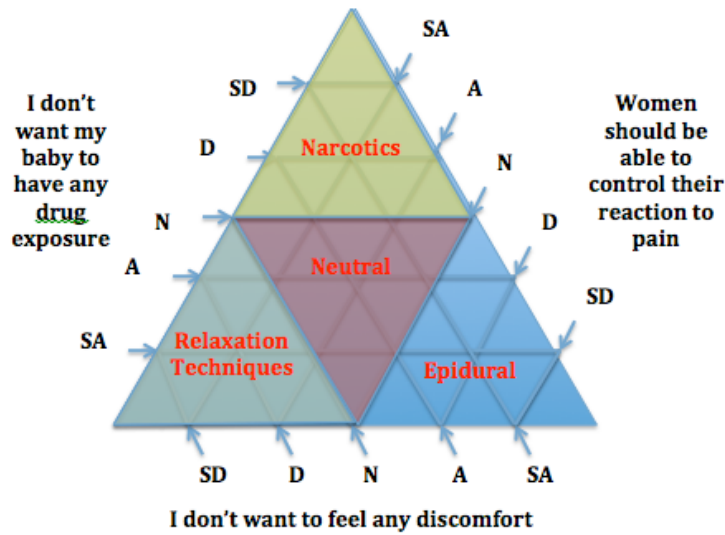
Strongly Agree (SA) Agree (A) Neutral (N) **Disagree (D)** Strongly Disagree (SD)

2) It is very important to me that my babies not have any exposure to drugs during labor.

Strongly Agree **Agree** Neutral Disagree Strongly Disagree

3) It is very important to me that I have as little pain as possible during labor

**Strongly Agree** Agree Neutral Disagree Strongly Disagree



- A. Relaxation techniques
- B. Epidural anesthesia
- C. Narcotics
- D. Neutral about pain management techniques

13. Place a check next to one or more boxes that depict medical options for managing the discomfort of labor:

<input type="checkbox"/>	effleurage
<input type="checkbox"/>	epidural anesthesia
<input type="checkbox"/>	patterned breathing
<input type="checkbox"/>	massage
<input type="checkbox"/>	Narcotics

14. Place a check next to one or more boxes that depict behavior options:

<input type="checkbox"/>	effleurage
<input type="checkbox"/>	epidural anesthesia
<input type="checkbox"/>	patterned breathing
<input type="checkbox"/>	massage
<input type="checkbox"/>	Narcotics

15. Margaret is having trouble dealing with the pain of labor and she and her husband are considering epidural anesthesia. Select a fetal risk from the list below:

- A. newborn sedation
- B. newborn infection
- C. diarrhea in the mom
- D. fetal distress

16. Sue is having trouble dealing with the pain of labor and she and her husband are considering epidural anesthesia. Select a maternal risk from the list below:

- A. fetal distress
- B. baby is born and acting sedated
- C. baby has heart problems
- D. lowered blood pressure and feeling dizzy

**17. Sue is having trouble dealing with the pain of labor and she and her husband are considering epidural anesthesia. Place a check next to one or more boxes that indicate fetal benefits:**

	mom is comfortable and able to immediately breastfeed the baby after it is born
	the baby is born sedated
	mom relaxes and the labor progresses faster
	mom is comfortable and chatting on her cellphone during labor
	mom is able to walk around the ward during her labor

**18. Sue is having trouble dealing with the pain of labor and she and her husband are considering epidural anesthesia. Which response below is a maternal benefit?**

- A. shortly after getting the epidural, Sue develops a fever
- B. thirty minutes after getting the epidural, Sue’s blood pressure falls and she becomes dizzy
- C. after the epidural, Sue has to stay in bed and go to the bathroom using a bedpan
- D. Sue is comfortably discussing names for the baby while she is having contractio

**19. Martha and George are in the early stages of labor and are asking for some narcotic pain medicine so they can get some rest. What are the maternal and fetal risks and benefits of that choice?**

	Risks	Benefits
Maternal		
Fetal		

**20. You have now completed the pain management module. Assuming that labor is progressing normally, select your preferred method of pain relief. Justify your choice based on risks, benefits and personal beliefs.**

Narcotic medications

Epidural anesthesia

Behavioral approach

Use the space below to explain your choice:

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**LABOR OF LOVE POSTTEST**

**Key**

**1. Alexandra is in labor and is requesting a narcotic for pain relief, which of the following options would be appropriate for her to receive?**

- \*A. Fentanyl in her IV
- B. two aspirins
- C. an extra strength Tylenol
- D. an ibuprofen tablet

**2. Which describes the procedure of epidural anesthesia?**

- A. a needle in the back to place numbing medicine into the fluid surrounding the spinal cord
- \*B. getting pain medicine through your veins
- C. breathing gas to go to sleep
- D. a catheter in the back to deliver numbing medicine to the nerves coming out of the spinal column

**3. Place a check next to one or more boxes that describe non-medical methods used by women in labor to gain relaxation, control and pain relief.**

*	Use of breathing techniques
*	Use of a focal point
	Use of breathing gas to go to sleep
*	Effleurage
	Use of loud music

**4. Place a check next to one or more boxes that describe behaviors that might indicate newborn sedation from narcotic exposure:**

	constant crying
*	slow and shallow breathing
*	difficult to arouse
	previously alert but falls asleep after breast feeding
	keeps eyes closed in bright light
*	weak or no effort to breast feed

**5. Place a check next to one or more boxes that denote problems that are associated with newborn infections.**

*	Problems with feeding
	able to stay in mom's room for extended bonding
*	Will need antibiotics and have to stay in the hospital for several days
	baby can go home with mom when baby is 2 days old
*	Baby has to get a spinal tap
	Baby can come to the mom's room for breast feeding and long visits
*	Baby may need several chest x-rays



**6. Place a check next to one or more boxes that describe a laboring patient that has lost control:**

	repeatedly saying “hee-hee-ho” during contractions
*	curled in a ball, thrashing side to side and crying with each contraction
*	dropping to the floor and sobbing
	softly stroking her abdomen
*	holding on to the bed railing with clenched fists
	focusing on a picture, breathing softly and not responding to questions during contractions
	asking to have her back massaged

**7. Your doctor tells you that there is always the possibility of rare complications of a therapy, what does this mean?**

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**Possible Responses:**

EC clearly explains their understanding of rare complications rather than side effects by stating in their response that rare complications are unexpected consequences of therapy, that are unlikely to happen.

**8. Below is a list of things that could happen if a mom develops a fever during labor. Place a check next to one or more boxes that are appropriate.**

	the baby might need to be delivered using forceps or a vacuum
	the baby will have to be isolated in the nursery to prevent spread of the infection to other babies
*	the hospital staff will assume that mom has infection of the amniotic fluid around the baby
*	mom and baby will be given antibiotics
	mom will not be able to get an epidural if she wants one

**9. Angelina is pushing when the baby’s heartbeat repeatedly drops to 40 beats per minute and only recovers to 70 beats per minute between contractions. Which of the four responses below WOULD NOT be a typical response to this situation?**

- \*A. nothing is done, it is common for the heartbeat to go that low
- B. forceps are applied and an attempt is made to deliver Angelina’s baby very fast
- C. a vacuum is applied and an attempt is made to deliver Angelina’s baby very fast
- D. Angelina is taken for an emergency cesarean section

**10. Which of these accurately describes an alert baby?**

- \*A. sleeps when swaddled but wakes easily and cries when hungry
- B. needs help to breath
- C. keeps eyes closed and does not respond, even in a dimly lit room
- D. feeble cry, does not move arms and legs much

11. Place a check next to one or more boxes that indicates a mother who is comfortable:

*	mom is laughing and talking on her cell phone during her contractions
	mom requires several injections of pain medicine before her tear can be fixed
*	mom has excess bleeding after the delivery and she is interacting with her baby and her husband while the doctors try to massage the uterus to help it contract
	the laboring mother is crying and begging for a cesarean section with each contraction
*	the mom had a tear that needed to be stitched and she is pain free during the suturing

12. Elaine and Tom made the following selections. Use the triangulation grid below to determine the method of pain management that would give Elaine and Tom the greatest sense of personal gratification.

- A. Relaxation techniques
- \*B. Epidural anesthesia
- C. Narcotics
- D. Neutral about pain management techniques

**13. Place a check next to one or more boxes that depict medical options for managing the discomfort of labor:**

	effleurage
*	epidural anesthesia
	patterned breathing
	massage
*	Narcotics

**14. Place a check next to one or more boxes that depict behavior options:**

*	effleurage
	epidural anesthesia
*	patterned breathing
*	massage
	Narcotics

**15. Margaret is having trouble dealing with the pain of labor and she and her husband are considering epidural anesthesia. Select a fetal risk from the list below:**

- A. newborn sedation
- B. newborn infection
- C. diarrhea in the mom
- \*D. fetal distress

**16. Sue is having trouble dealing with the pain of labor and she and her husband are considering epidural anesthesia. Select a maternal risk from the list below:**

- A. Fetal distress
- B. Baby is born and acting sedated
- C. Baby has heart problems
- \*D. Lowered blood pressure and feeling dizzy

**17. Sue is having trouble dealing with the pain of labor and she and her husband are considering epidural anesthesia. Place a check next to one or more boxes that indicate fetal benefits:**

*	mom is comfortable and able to immediately breastfeed the baby after it is born
	the baby is born sedated
*	mom relaxes and the labor progresses faster
	mom is comfortable and chatting on her cellphone during labor
	mom is able to walk around the ward during her labor

**18. Sue is having trouble dealing with the pain of labor and she and her husband are considering epidural anesthesia. Which response below is a maternal benefit?**

- A. shortly after getting the epidural, Sue develops a fever
- B. thirty minutes after getting the epidural, Sue’s blood pressure falls and she becomes dizzy
- C. after the epidural, Sue has to stay in bed and go to the bathroom using a bedpan
- \*D. Sue is comfortably discussing names for the baby while she is having contraction

**19. Martha and George are in the early stages of labor and are asking for some narcotic pain medicine so they can get some rest. What are the maternal and fetal risks and benefits of that choice?**

**Rubric key:**

	Risks	Benefits
Maternal	Fever, unable to ambulate, unable to feel the urge to push	Comfortable, muscles in the birth canal relax, able to get sleep, able to interact with baby sooner
Baby	Fetal distress, maternal fever and presumed infection in newborn	Mom better rested, mom able to interact, bond and breastfeed sooner, shorter labor

**20. You have now completed the pain management module. Assuming that labor is progressing normally, select your preferred method of pain relief. Justify your choice based on risks, benefits and personal beliefs.**

- Narcotic medications     
  Epidural anesthesia     
  Behavioral approach

**Rubric key:**

(3) You Got It!	(2) Almost Got It!	(1) Uh, Oh!
A) The learner chose at least one of the pain relief strategies and: 1. Justified their option with at least two risks to mom and baby. 2. Justified their option with at least two benefits to mom and baby.  B) The learner chose at least one pain relief strategy and explained their reasoning based on at least one personal belief.	A) The learner chose at least one of the pain relief strategies and: 1. Justified their option with only one risk to mom and baby. 2. Justified their option with only one benefit to mom and baby.  B) The learner chose at least one pain relief strategy, but did not explain their reasoning based on a personal belief.	A) The learner chose at least one of the pain relief strategies and left out one or more of the justifications for their pain management option based on risks and benefits to mom and baby.  B) Learner did not mention anything about personal beliefs.