

Evaluation Research Plan

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Contents

I. Introduction.....	3
II. Stages of Evaluation.....	3
III. Objectives of Parents Portal Evaluation.....	4
IV. Parents Panel and Experts Panel.....	5
V. Usability Testing.....	5
1. Overview.....	5
2. Methodology.....	6
3. Ethics.....	6
4. Usability Tasks.....	6
5. Usability Metrics and Goals.....	7
6. Severity of Errors.....	8
7. Impact.....	8
8. Frequency.....	8
9. Reporting Results.....	8
VI. Summative Evaluation.....	8
Level One.....	9
Level Two.....	9
Level Three.....	9
Level Four.....	10
VII. References.....	11
VIII. Appendices.....	12
Appendix A – Screenshots of Splash Screens & “Plan” Homepage.....	12
Appendix B – Parent Portal Usability Test Booklet.....	14

I. Introduction

T/TAC Online is the Virginia Department of Education's Training/Technical Assistance Centers' website. It is a website for educators of children with special needs designed to provide information, resources, and training to educators. The 2010-2011 Design Team was tasked with creating a new version of this site that targets parents and families of children with special needs.

Evaluation is a data gathering process that determines the worth, strengths and weaknesses of instruction (Tessmer, 1993). The purpose of evaluation is to determine what, in terms of a project, needs to be improved or revised. Oftentimes evaluation is not accepted and time is not allowed to complete a proper evaluation. This was not the case for the Design Team and the Parents Portal. Ongoing evaluation was conducted throughout the project, in keeping with the instructional design process.

The Design Team had specific goals in terms of the Parents Portal: To determine, from parents, where and how they currently obtain information about special education; the specific information they seek, and how best to deliver this information to them. Evaluation of the Parents Portal included two rounds of Usability testing. Improvements will be made in response to feedback from the parents and changes will be made to the prototype based on this feedback.

“A properly designed and implemented evaluation provides an instructional designer with appropriate data that can be used to determine the success level of who or what is being evaluated” (Brown & Green, 2006).

As noted by Tessmer (1993), evaluation is conducted by collecting data about the project from a variety of sources using a variety of data gathering methods and tools. The Design Team formed two panels - a Parents Panel and an Expert Panel. Usability testing conducted with the panels contributed feedback on content and site design.

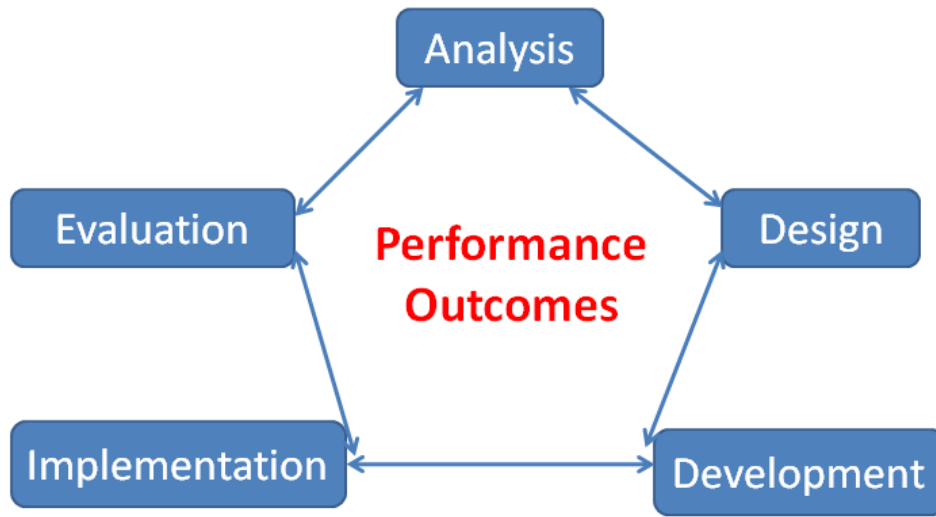
To make a product usable and compelling, conducting research is vital. Design teams must align the design of the product and the users' needs. “Unless the benefits and techniques of user-centered design and research are ingrained in the process, tools, and mind-set of the company, knowledge will do little to prevent problems” (Kuniavsky, 2003). According to Kuniavsky (2003), simply knowing what the users want is not enough to get users to continue using the product. In order for a design team to understand the customers' experience they must value it, and know how to act on it.

II. Stages of Evaluation

There are two stages of evaluation; formative and summative. Formative evaluation, according to Tessmer (1993), is the developmental stage of a program (or website), wherein data gathering takes place to determine the value, strengths and weaknesses of the process. As stated by Kirkpatrick (1998), summative evaluation refers to the evaluation of a program after its been offered, to determine if the goals set by the team were achieved.

As the design process is an iterative and recursive process (Piskurish (2006), the Design Team has used formative evaluation throughout the instructional design process to gather data that can be used to provide feedback on the process. According to Brown & Green, (2006), consistent

feedback allows the instructional designer to make improvements to the website before it is completely developed, which helps ensure that high quality instruction is created. Data gathered through a formative evaluation can be shared with the client to ensure that project goals and expectations are being met.



Adapted from Piskurich, 2006

III. Objectives of Parents Portal Evaluation

The purpose of the evaluation strategy is to determine whether the parents and families of children with special needs perceive the parents portal to be efficient, useful and usable.

In order to implement the evaluation strategy, the design team first agreed upon objectives that state what the team needs to achieve initially, in order to accomplish the above-mentioned strategy:

1. Determine what questions will allow the design team to verify if the system meets the project goals.
2. Identify content, design and technical experts who are qualified to review the system.
3. Develop expert review questions that will address the system in terms of content, design, and technicality.
4. Develop usability goals.
5. Develop realistic task scenarios that users will follow in order to test the system during usability testing.

IV. Parents Panel and Experts Panel

In order to be able to evaluate the prototype throughout the design process, the Design Team formed two research panels; an Experts Panel and a Parents Panel. Both panels have been communicating with the Design Team remotely. The Experts Panel includes 11 professionals in the field of special education, some of whom work for T/TAC. All the members are key stakeholders who are experienced with or have participated in previous T/TAC implementations. The design team has been working with this panel since January 2011. The panel members committed to 2 hours per month and assigned tasks have included testing approaches, concepts and confirming content. The panel provided the Design Team with suggestions for naming the website and feedback on the content.

The Parents Panel includes 16 parents, 2 from each of the eight Virginia regions. The panel committed to 3 hours of work per month. The Parents Panel provided feedback about the Design Team's findings from the fall 2010 semester. Currently the panel is testing the usability of the new prototype. In order to be able to conduct Usability testing, the Design Team prepared a Usability test plan.

V. Usability Testing

1. Overview

The goals of usability testing include; revealing the true needs and expectations of users, establishing a baseline of user performance, and identifying potential design concerns to be addressed in order to improve the efficiency, productivity, and end-user satisfaction. Usability testing is an iterative process of discovering issues in the user interface (Krug 2006).

“The best way to answer questions about your customers is to recruit some participants, run a quick test, and see what they say and do” (Van Duyne et al, 2006: P.825). If done properly, it could prevent an organization from spending money on a poorly designed product.

According to Krug, (2006), if you want a great site, you need to test it and test it again. The following describes a plan for conducting a Usability test during the development of a portal for parents and families of children with special needs.

The Usability test objectives are:

- Determine design inconsistencies and usability problem areas within the user interface and content areas. Potential sources of error may include:
 - Navigation errors – failure to locate functions, excessive keystrokes to complete a function, failure to follow recommended screen flow.
 - Presentation errors – failure to locate and properly act upon desired information in screens, selection errors due to labeling ambiguities.
 - Control usage problems – improper toolbar or entry field usage.
- Test the website under controlled conditions with representative users. Data will be used to access whether usability goals regarding an effective, efficient, and well-received user interface have been achieved.

- Establish baseline user performance and user-satisfaction levels of the user interface for future usability evaluations.

2. Methodology

The Design Team will conduct two separate rounds of Usability testing. The first round was conducted during the week of April, 11th, 2011. For the first round of Usability testing, an online survey was used. Participants were emailed the Uniform Resource Locator (URL) address of one of three versions of the survey, through Survey Methods, www.surveymethods.com. Versioning was incorporated into the surveys to differentiate between the three splash pages. One parent, who was sight-impaired, completed the survey in-person, at the Commerce Lab.

The first round of Usability testing measured; participants' reactions to the prototype, participants' perceptions and their recommendations for additional content. Using the feedback gathered from the first round of Usability testing, a second round will be conducted the week of April, 25th, 2011 using a similar methodology. New objectives, however, will be constructed based on the first round of feedback.

2.1. Participants

Participants for both rounds of Usability testing are the members of the Parents Panel. In addition, Kristine S. Neuber, AT/Parent Information Technology Coordinator, Kellar Institute for Human Disabilities and one of the Design Team's Subject Matter Experts (SMEs), helped recruit the visually impaired parent to test the website for usability, navigation and accessibility.

The participants' responsibilities were to complete a set of task scenarios representing the home page, the splash page, the landing pages and the fully built out section, "Plan My Child's Education" (please refer to Appendix A). They were asked to provide feedback regarding the usability and acceptability of the user interface.

2.2. Procedure

The Parents Panel participants will be seated at their computers in their work or home environment. Instructions on completing the tasks, along with the task booklets, were sent via email. The visually impaired parent completed the same survey questions while manually filling out the task booklet with the assistance of a member of the Design Team.

3. Ethics

All persons involved with the Usability testing are required to adhere to the following ethical guideline: (1) The performance of any test participant must not be individually attributable, and; (2) individual participant names should not be used in reference outside the testing session.

4. Usability Tasks

The usability tasks were derived from test scenarios developed from use cases. A use case is a description of a series of interactions between a system and a user (Goodwin, 2009). Use cases focus on what people will do rather than on how they will do it (Van Duyne et al, 2006). Due to the range and extent of functionality provided in the website, the tasks are the most common and relatively complex of available functions. The tasks are identical for all participants in the study.

5. Usability Metrics and Goals

This section describes the usability metrics and goals. Usability metrics refers to user performance measured against specific performance goals necessary to satisfy usability

requirements (www.usability.gov). Scenario completion success rates, adherence to dialog scripts, error rates, and subjective evaluations will be used.

5.1. Task Completion

Each scenario requires that the participant obtains or inputs specific data that would be used in course of a typical task. The scenario is completed when the participant indicates the scenario's goal has been obtained (whether successfully or unsuccessfully).

A task completion rate of 100% is the goal for each task in this usability test.

5.2. Critical Errors

Critical errors are deviations at completion from the targets of the scenario. Obtaining or otherwise reporting of the wrong data value due to participant workflow is a critical error. Participants may or may not be aware that the task goal is incorrect or incomplete.

In general, critical errors are design or technical flaws that prevent users from correctly completing a task. All critical errors will be addressed for round two of usability testing.

5.3. Error Free Rate

Error-free rate is the percentage of test participants who complete the task without any errors (critical or non-critical errors). A non-critical error is an error that would not have an impact on the final output of the task but would result in the task being completed less efficiently.

An error-free rate of 90 % is the goal for each task in this usability test.

5.4. Non-critical Errors

Non-critical errors are errors that are discovered by the participant. If not detected, they do not prevent the user from completing the task. Although non-critical errors can be undetected by the participant, when they are detected they are generally frustrating to the participant. These errors may be procedural, in which the participant does not complete a scenario in the most optimal means (e.g., excessive steps and keystrokes). These errors may also be errors of confusion (ex., initially selecting the wrong function). Noncritical errors can always be recovered during the process of completing the scenario. Exploratory behavior, such as opening the wrong menu while searching for a function, will not be coded as a non-critical error provided that they complete the task. Based on severity and frequency non-critical errors will be addressed for round two of usability testing.

5.5. Subjective Evaluations

Subjective evaluations regarding ease of use and satisfaction will be collected via the task booklets. The booklets utilized free-form responses, multiple choice questions and rating scales. These data are used to assess attitudes of the participants regarding the prototype.

6. Severity of Errors

To prioritize recommendations, a method of problem severity classification will be used in the analysis of the data collected during evaluation activities. The approach treats problem severity as a combination of two factors - the impact of the problem and the frequency of users experiencing the problem during the evaluation.

7. Impact

Impact is the ranking of the consequences of the problem by defining the level of impact that the problem has on successful task completion. There are three levels of impact:

- High - prevents the user from completing the task (critical error)
- Moderate - causes user difficulty but the task can be completed (non-critical error)
- Low - minor problems that do not significantly affect the task completion (non-critical error)

8. Frequency

Frequency is the percentage of participants who experience the problem when working on a task.

- High: 30% or more of the participants experience the problem
- Moderate: 11% - 29% of participants experience the problem
- Low: 10% or fewer of the participants experience the problem

9. Reporting Results

The Usability Test Report will be provided at the conclusion of the Usability test. It will consist of a report and/or a presentation of the results; an evaluation of the usability metrics against the targeted goals; subjective evaluations; specific usability problems and recommendations for resolution. The recommendations will be categorized by severity impact (impediments to user) and frequency to aid in implementation strategy.

VI. Summative Evaluation

As noted by Goodwin (2009), the summative evaluation is meant to help you clean up odds and ends and persuade people about the design. This is most effective when you have a complete or nearly complete design. The Design Team has been charged with completing the design of the Parents Portal, to include; the navigation systems, an improved search engine, an advanced search engine, the build out of one portion of the site (Plan My Child's Education), and a product name with recommendations for branding the new product. ****The summative evaluation will not be carried out by the Design Team as the website is not due to be completed until January 2012.*** *The Design Team does, however, have specific recommendations for the summative evaluation, based on Kirkpatrick's Four Levels of Evaluation.*

Level One

Level one, evaluating reaction: According to (Kirkpatrick, 1998) "evaluating reaction is the same as evaluating customer satisfaction." The goal of the Design Team is to have the user react positively to the website and then tell others about their positive experience with the website.

Continuing to evaluate the website for effectiveness is key to user retention and validity, and is recommended by the Design Team. A follow up survey (see the survey used by Design Team in Appendix B) by the T/TAC Online team may be used to obtain feedback on usage patterns. Feedback from surveys will confirm user satisfaction. Surveys should be sent after the initial site launch.

Level Two

In determining Level Two, according to (Kirkpatrick, 1998), evaluating learning is important, without learning, no change in behavior will occur. Design Team objectives for the Parents Portal include ensuring that the “must haves” uncovered in the team’s research have been met, that relevant information is provided, information is correctly categorized and that parents can easily find the information. Conducting focus groups with parents who have used the site for a year or more is recommended. Parents may be grouped by region or disability. Structured questions as well as open-ended questions should be asked to obtain parents’ feedback about the website and suggestions for future improvements of the site.

Level Three

Level three attempts to evaluate behavior, or the transfer of knowledge, skills and attitudes (Tessmer, 1993). Levels three and four can be more difficult to achieve than the first two levels.

The Design Team’s suggestion for evaluating level three is a popup survey. A popup survey would allow the web designer to ask questions quickly and easily. Survey questions should reflect the effective completion of the tasks that were uncovered in the Design Team’s Task Analysis and use cases. The purpose of the survey is to quantify parents’ transfer of skills and knowledge and would provide a brief “check” by capturing their response to questions referring to the “must haves:”

- Are users able to find the definitions of special needs?
- Are users able to locate policy information on local special education laws and regulation?
- Did users find reliable research on their child’s special education needs?

Sufficient time should be allocated to allow for a change in behavior, and the popup survey should be given to returning users only, not first time users.

Advantages of a Level Three Evaluation include identification of parents’ activities on the site, where parents are going on the site and what they do once they get there. This information would be useful in building out new sections of the site. The “My Community” section in particular would be an area to watch in the future. Ideas such as adding a community forum have been mentioned, allowing parents to communicate directly with each other. A challenge of implementing Level Three Evaluation would be the time it may take to implement and analyze results of the survey.

Level Four

Level four refers to the final results that occur because of attendance and participation in a project (Tessmer, 1993). It may be difficult to provide proof that parents and families using the Parents Portal become better informed over time about special education, however, there are ways to show usage results. From these results, projections can then be made as to the effects of time spent on the site and information acquired from the site.

There are two ways the Design Team recommends determining usage results:

- Web analytics using software tools such as Google Analytics and/or Webtrends
- Assessing parents’ usage via surveys

Web Analytics Measurements:

- Page views
- Repeat visitors
- Amount of time spent on the site
- Number of searches
- Conversions (e.g. visitors who opted in to the TTAC newsletter)
- Use of features (bookmarking, tagging, rating, etc.)

Assessing parents' usage:

- Contact area school administrators and Parent Resource Centers (PRCs)
- Ask for consent to query parents
- Send surveys to school administrators and PRCs
- Survey questions include:
 - Where do parents find information regarding special education needs?
 - How do parents go about searching for information regarding special education needs?
 - How do parents find out about PRCs?
 - How do parents know to request services for their child?
 - How do parents find out about available services?
 - How do parents prepare when approaching educators?

The impact of the Parents Portal will be apparent if the results show that the parents are getting their information from the site.

The advantages of Level 4 are that it would give the administrators of the Parents Portal actual results based on the usage of the site and would provide them information on the impact of the site on parents over time. Challenges might include not having a web standard analytics program and lack of time and budget to implement the survey.

VII. References

Brown, A, & Green, T., 2006. *The Essentials of Instructional Design, Connecting Fundamental Principles with Process and Practice*. Upper Saddle River: Pearson Education.

Goodwin, K., 2009. *Designing for The Digital Age: How to Create Human-Centered Products and Services*. Indianapolis: Wiley Publishing.

Kirkpatrick, D., 1998. *Evaluating Training Programs, The Four Levels, 2nd edition*. Berrett-Koehler Publishers: San Francisco.

Krug, S., 2000. *Don't Make Me Think: A common sense approach to web usability*. Indianapolis: New Riders Press.

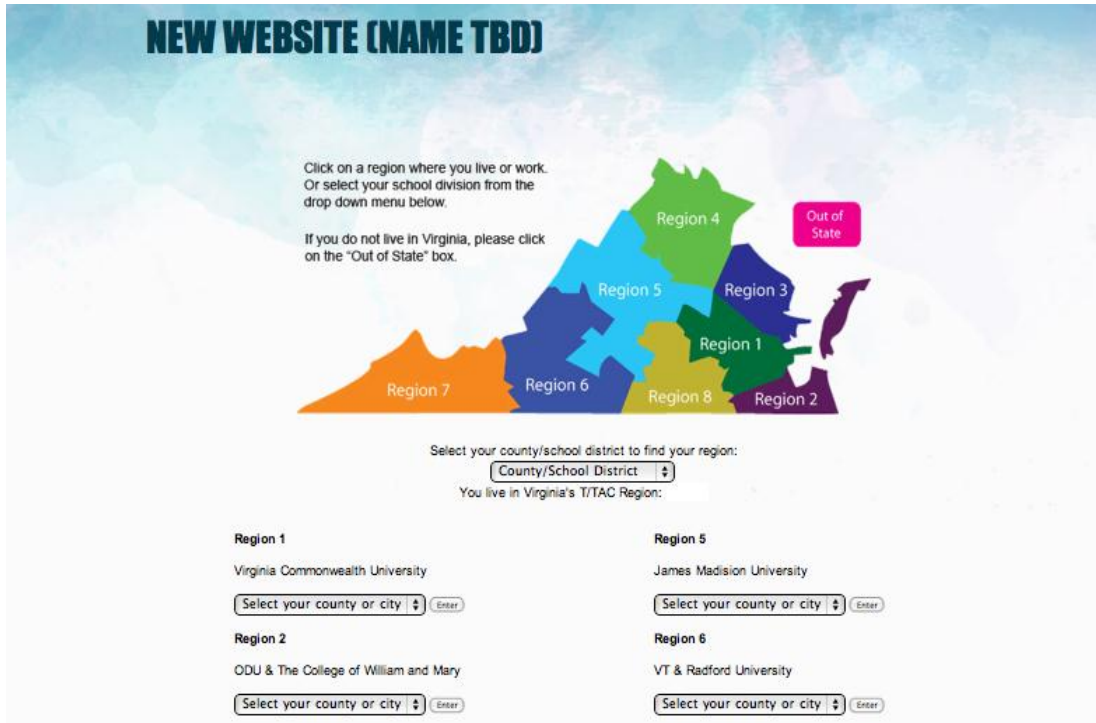
Kuniavsky, M., 2003. *Observing the User Experience*. San Francisco: Morgan Kaufmann Publishers.

Tessmer, M., 1993. *Planning and Conducting Formative Evaluations, Improving the Quality of Education and Training*. Philadelphia: Kogan Page.

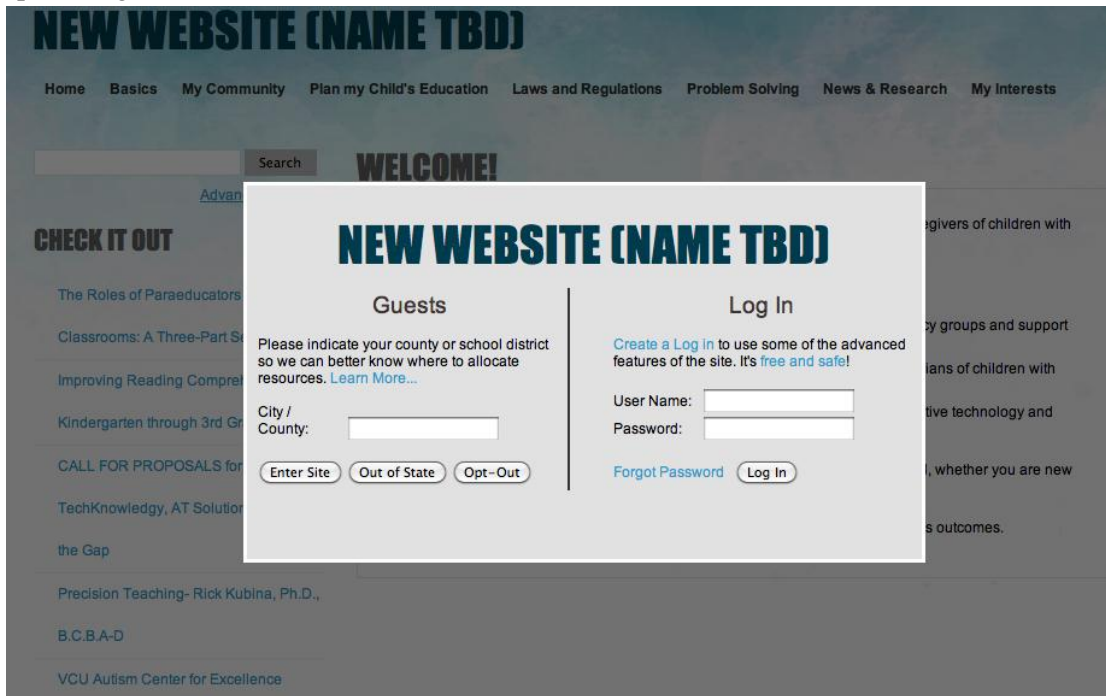
Van Duyne, D. K., Landay, J.A. & Hong, J.I., 2007. *The design of sites: Patterns for creating winning web sites*. Upper Saddle River: Pearson Education.

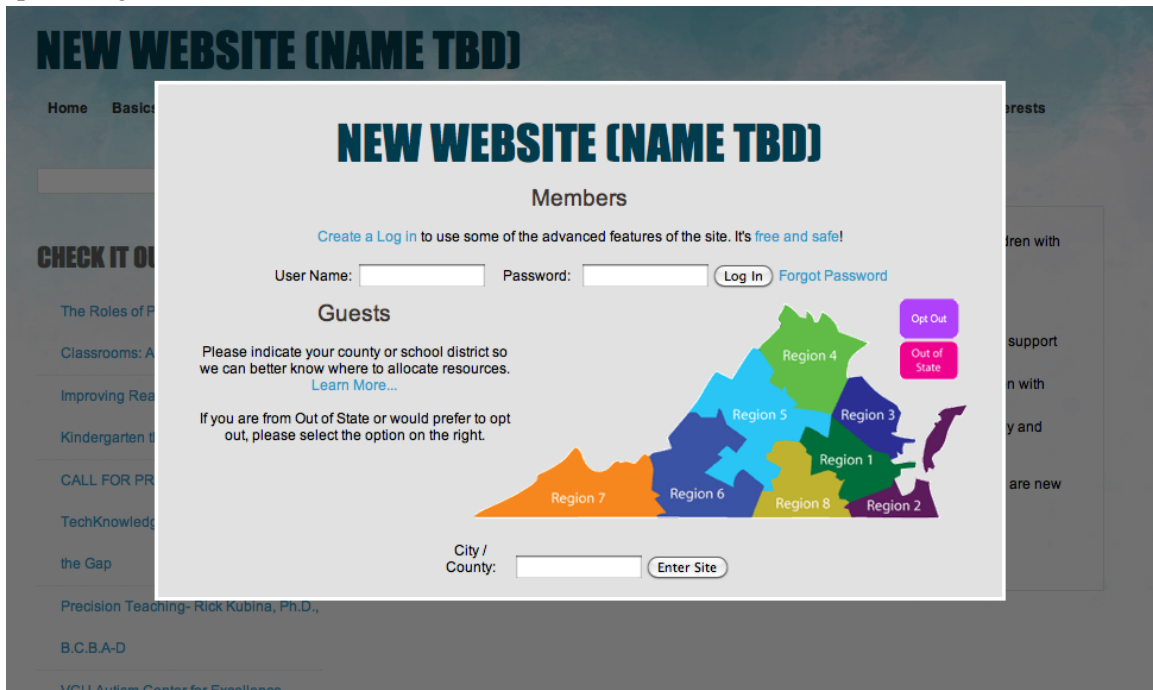
VIII. Appendices

Appendix A – Screenshots of Splash Screens & “Plan” Homepage Splash Page #1

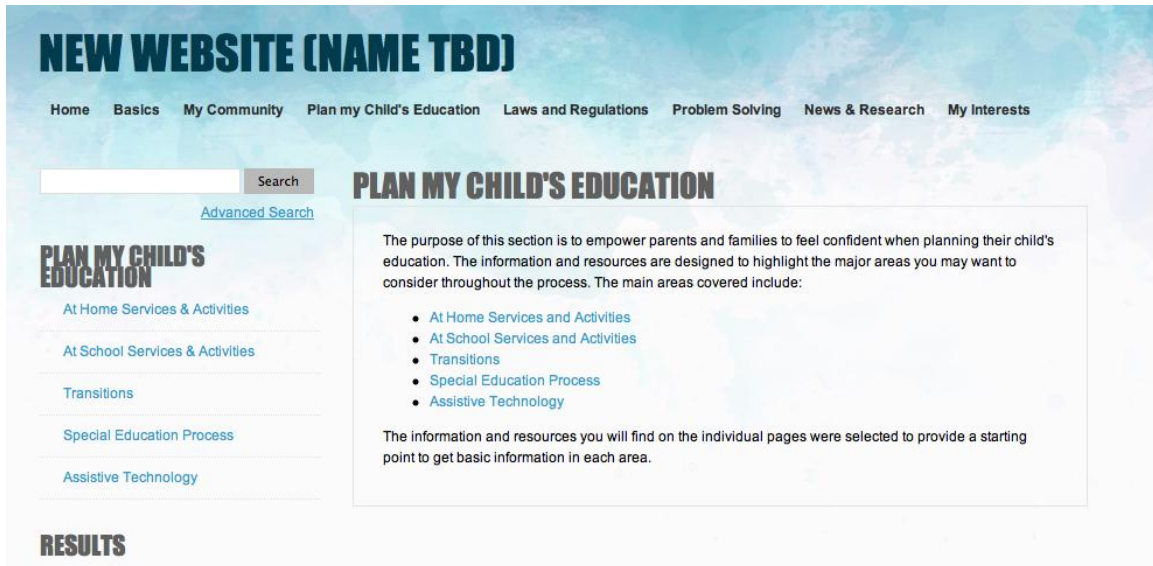


Splash Page #2





“Plan My Child’s Education”



Appendix B – Parent Portal Usability Test Booklet

Parent Portal Usability Testing

This survey presents 10 tasks that will provide valuable feedback to the Design Team concerning the Parent Portal website. A prototype has been created to give you an idea of the website layout and structure. ***However, this is only a prototype. Only one section of the prototype includes information for you to review.*** The other sections are placeholders only.

Please complete the tasks below, and provide any additional information that you feel would be beneficial for the Design Team. As you are completing the tasks, please keep in mind that we are ***testing the website***. This is not a test of your skills. If you have trouble finding information this is something we need to know.

The following list has questions regarding the tasks that you will do, please answer the questions in the order you see them.

Task One

1. Please type in the following URL into the browser:

2. Please follow the directions on the page to enter the site.
 - I. Are the directions clear?

- II. How did you enter the site?
 - a. _____ Click your Region number
 - b. _____ Type in your County or School District name
 - c. _____ Click on Out of State button
 - d. _____ Click the Opt Out button

Task Two

1. Take a few moments to read the page (please don't click on anything), then answer the following questions:

- i. Who do you think is the intended audience for this website?

- ii. Does this page describe any topics that would be of interest to you? Mark your topics of interest. (Mark as many that apply)

1. Basics
2. My Community
3. Plan My Child's Education
4. Laws and Regulations
5. Problem Solving
6. News and Research
7. My Interests

2. Move your mouse over the BASICS tab on the main navigation bar at the top of the page.

- i. Are the topics listed what you expected to find?

1. Yes
2. No

- ii. Do you recommend adding a specific topic to this section?

3. Move your mouse over the MY COMMUNITY tab on the main navigation bar at the top of the page.

- i. Are the topics listed what you expected to find?

1. Yes
 2. No
- ii. Do you recommend adding a specific topic to this section?
-
-

4. Move your mouse over the LAWS & REGULATIONS tab on the main navigation bar at the top of the page.

- i. Are the topics listed what you expected to find?
 1. Yes
 2. No
 - ii. Do you recommend adding a specific topic to this section?
-
-

5. Move your mouse over the PROBLEM SOLVING tab on the main navigation bar at the top of the page.

- i. Are the topics listed what you expected to find?
 1. Yes
 2. No
 - ii. Do you recommend adding a specific topic to this section?
-
-

6. Move your mouse over the NEWS & RESEARCH tab on the main navigation bar at the top of the page.

- i. Are the topics listed what you expected to find?
 1. Yes

2. ____ No

ii. Do you recommend adding a specific topic to this section?

Task Two

Let's suppose you have just received your child's diagnosis and you are looking for information.

1. Where on the site would you start? What was the **first** thing you clicked on or typed?

2. Why did you start there?

Task Three

Let's suppose you're a parent going to your child's IEP meeting. The following questions relate to locating information to the meeting.

1. What was the **first** thing you clicked on or typed?

2. Why did you start there?

3. What were the pages you clicked on after that? Please list them below in the order that you clicked.

- a. _____

- b. _____

- c. _____

- d. _____

4. Why did you choose that path?

5. What page are you currently viewing?

6. Did you find what you expected to find on that page? Mark your answer.

- a. ____ Yes

- b. ____ No

7. Are there any specific topics you recommend adding to this section?

8. Is there anything else you want to say about this task?

Task Four

Suppose you are interested in purchasing software programs for your child to use at home.

1. Where on the site would you start? What was the **first** thing you clicked on or typed?

2. Why did you start there?

3. What were the pages you clicked on after that? Please list them below in the order that you clicked.

a. _____

b. _____

c. _____

d. _____

4. Why did you choose that path?

5. What page are you currently viewing?

6. Did you find what you expected to find on that page? Mark your answer.

a. _____Yes

b. _____No

7. Are there any specific topics you recommend adding to this section?

8. Is there anything else you want to say about this task?

Task Five

What steps should a parent take if he or she does not agree with your child's evaluation report?

1. What was the first thing you clicked on or typed?

2. Why did you start there?

3. What were the pages you clicked on after that? Please list them below

a. _____

b. _____

c. _____

d. _____

4. Why did you choose that path?

5. What page are you currently viewing?

6. Did you find what you expected to find on that page? Mark your answer.

a. ____ Yes

b. ____ No

7. Are there any specific topics you recommend adding to this section?

8. Is there anything else you want to say about this task?

Task Eight

Suppose you are parent looking for activities that can you do to help your child at home.

1. What was the first thing you clicked on or typed?
 - a. _____
 - b. _____
2. Why did you start there?
 - a. _____
 - b. _____
3. What were the pages you clicked on after that? Please list them below
 - a. _____
 - b. _____
 - c. _____
 - d. _____
4. Why did you choose that path?
 - a. _____
 - b. _____
5. Did you find what you expected to find on that page? Mark your answer.
 - a. ____ Yes
 - b. ____ No
6. Are there any specific topics you recommend adding to this section?

7. Is there anything else you want to say about this task?

Task Nine

We are currently looking for a name for the website. The following are recommendations we received from several experts in the field of Special Education. Please rank the names based on your preference in order from 1-3.

- _____ Virginia Family Special Education Online
- _____ Virginia Special Education Advisor
- _____ Virginia Family Special Education Connection

Do you have any other suggestions of names for the website?
