

USABILITY TEST PLAN - KEY SEEKER

Keyboarding for Kindergarten

(prototype)<http://keyseeker.org>

ANN WHITE

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Purpose of the Key Seeker Usability Test

Usability testing provides information vital for user-centered software design. By investigating user's interactions with software, usability testing provides the designer and the developer with information fundamental for designing a positive user experience.

Traditional usability testing asks users to complete specific tasks. Testing usability with children varies greatly from the traditional tests. Children's software usability tests need to be enjoyable for the child. A child will interact with software to have fun they are likely to have difficulty completing an assigned task for the software. Adults, even those who are familiar with children and with related research, cannot accurately predict children's interaction with software. This makes usability testing essential for creating well-designed children's software.

"Usability testing is necessary because a product's designers and creators cannot anticipate the wants, needs, and reactions of actual users. The nature of software design causes the people involved to become far too familiar with the product to accurately predict the interactions of average users. In many cases, the product's designers and creators are more technically advanced than the average user. In the case of children's software, the differences between the people involved in the product's design and the product's intended users are enormous."¹

Goals for the Key Seeker Usability Test

Overall Goal: To ensure ease of use and meaningful learning, it is important that the Key Seeker application is:

Simple enough for young children to use.

Sufficiently engaging to capture children's limited attention spans.

Provides an element of practice for mastery of associative paired values

¹ Alexander, Hanna, Risdén. (September – October 1997). **Guidelines for Usability Testing with Children.** Interactions, ACM.

Problem Statements and Test Objectives

Two Levels of Testing: This application requires some initial help from adults. Teachers interactions with the children will be observed as well. They will also be asked to complete a post questionnaire. Students will need parental consent to participate in the testing. Parents will be asked to complete a demographic survey and consent form for their child's participation.

Teacher/Parent

1. Is the application easy for you to explain and provide assistance with?
(is it easy to load?/exit?)
2. Do you feel this is helpful to the learning process, why or why not?
3. Is the level of interaction needed by the adult overwhelming?

Student

1. Is the interface easy to learn for kindergarten children
2. Are the instructions clear
3. Are the interactions entertaining enough to hold interest?

User Profile

Personas:

Personas are a way to personalize the users of a site. The personas created in this document were created using research referenced in the Additional Supporting Research section of this document.

If we keep our approach personal, we are more likely to meet the needs of the user.

Primary User: The Kindergarten Student

Susan Johnson Personal Profile

Quote:

“My favorite things are ice cream and my dog.”



Susan has recently entered kindergarten at Brown Elementary School in Cobb County, Georgia. She spends ½ day at school and enjoys being with her new friends. She especially likes puzzles and games. She is new to sharing as she is an only child.

She enjoys school and always talks about her dog named Bunny.

Background:

- 5 years old
- Attend Brown Elementary School Cobb County
- Concerned what other kids think

Attributes:

- Outgoing
- Physically active
- Concerned with the friends and having fun

Needs:

- Simple navigation and instruction
- Motivation
- Stimulation to activity
- Attention
- Learn Letters, recognize and by sight sound

Kindergarten Student Scenario	Needs	Feature	Behavior
<p>Sue is given a choice of activities in kindergarten at one of the many learning centers. She chooses the computer and chooses to “play” with Key Seekers.</p> <p>There may be times when she needs to share the experience with another student as the computer stations are limited.</p> <p>She and a few friends take turns and sometimes work as a group to obtain proper hand use and correct letter recognition.</p>	<p>to start program</p> <p>to hear instructions</p> <p>to be reminded which hand to use</p> <p>match letter with picture and or sound</p> <p>Encouragement</p> <p>Feedback</p>	<p>Large buttons to start program</p> <p>Sound on or Off Option (headset)</p> <p>Audio/Visual cues of hands use.</p> <p>Color matching to find correct key and use correct hand</p> <p>Audio and Visual encouragement – correct answers will display “fun” meaningful animation correlated to the illustration displayed.</p> <p>Adult Supervision</p> <p>Audio and Visual feedback for correct and incorrect answers</p> <p>Adult Supervision</p>	<p>She places the disc in the drive or logs on to the site using a desktop shortcut. She is greeted with a colorful screen and listens to the instructions. She is prompted to start with audio and visual highlight of a large GO button.</p> <p>She proceeds through the “game” matching pictures with letters and matching her left hand letters with the left hand letters of the keyboard. She has trouble with left and right so colored tape is placed on the corresponding hands to help remind her where to find the letter on the key board and what hand to use to press the letters.</p>

Secondary User: The Kindergarten Teacher

Barbara Lee Personal Profile

Quote:

“Stay focused on the task, persevere, and you will succeed.”



Barbara is committed to her life as an early childhood educator. She spends much of her free time researching new and effective ways to make a difference in the learning environment for her kindergarten class.

She is relatively familiar with computer usage and feels comfortable incorporating it into the classroom. She is very picky about the quality time kids spend on the computer as the class time is limited. She is looking for software that meets the needs of her students and kindergarten literacy expectations.

Barbara is researching schools for her Masters Degree in education.

Background:

- 28 years old
- Teaching Kindergarten for 3 years
- Single
- Enjoys reading, board games, gardening
- Dreams of learning to salsa dance
- Uses the internet and email to communicate with family and friends and research.

Attributes:

- Caring
- Positive attitude
- Task oriented and studious
- Extremely well organized
- Dedicated to children's success

Needs:

- Additional Support for language arts teaching
- New ways to incorporate computer into early learning environment

Kindergarten Teacher Scenario	Needs	Feature	Behavior
<p>Barbara allows her students 20 – 30 minutes twice a week to choose computer time as an optional activity.</p> <p>She is limited in the amount of supervision she can provide to the students and encourages them to work together at the computers.</p> <p>She sees that three children have chosen to use the computers. There are two available for the students in the classroom.</p>	<p>Software that the children can operate with minimal supervision</p> <p>Incorporate group use when there are not enough computers</p> <p>offer additional activities to support the keyboard project</p>	<p>Audio/Visual instructions</p> <p>Turn taking or children who know left right to help remind and encourage children just learning the concept.</p> <p>Children can speak the word displayed, say the color and the left-right hand that should be used.</p> <p>Supporting Materials that have the same look and feel as the interactive project (These are still being discussed)</p>	<p>She will assist the children in getting situated. She will supervise the loading of the program to be certain the child does understand what to do and how to do it.</p> <p>She will describe to the other children ways they can cooperate in the use of the game. Or redirect some children to other supportive activities (possible low tech key boards where they can play along)</p> <p>She may use class time as a group to play a low tech version of the software using flashcards and a large keyboard layout. These materials will have the same look and feel as the interactive program. (still being designed and discussed)</p>

Methodology

Usability testing will be conducted in the classroom at Brown Elementary School. Each session should take no more than 20 minutes. The sessions will be administered and observed by one facilitator and a teacher.

Children need to be encouraged to participate. The observer, and or teacher should stress the value of the child's input and show appreciation and gratitude. It is extremely important to make the child feel at ease. For this reason, testing will be done in the classroom (familiar environment) with the aid of the teacher.

When testing with young children observer notes are crucial. Rather than relying on verbal comments, expressions such as smiling or sighing often are used to judge the quality of interaction. When teachers are present during testing, teachers will be asked to complete a reaction questionnaires at the end of the session.. Teachers are often better judges of student's mannerisms than observers.

Testing Outline

- ___ Make certain consent form has been completed by parent
- ___ Make certain demographic questionnaire has been completed by parent
- ___ Introduce yourself to each child
- ___ Explain a little about Key Seeker
- ___ Explain How the observation works - observations must be recorded on paper (no taping allowed)
- ___ Assess the navigation
- ___ Complete Task Scenarios (instructions, start the game, end the game, print mastered letters)
- ___ Complete Post Questionnaire with Child
- ___ Have teacher complete Post questionnaire as well


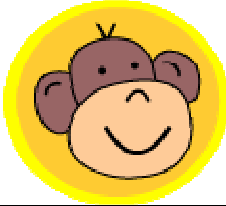

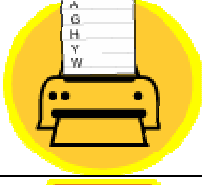

Scenarios and Task Lists

_____Participant ID

First they will be asked to do a navigation assessment. This assessment is done to test for intuitiveness of the labels/icons used on the site. They will then be given the opportunity to “play” the game to test specified features. The evaluation form for those scenarios is displayed after the navigation assessment.

Navigation Assessment:

Ask about each icon (visual interpretation) . What do you think this does?

	
	
	
	
	
Other comments before beginning:	

Note to facilitator: In observing the tasks be aware of body language, facial expressions and comments. Record all verbal comments and where they occur in the testing process as well as facial expressions and body language.

Scenarios/User Tasks

Key Seeker OBSERVATION FORM

_____Participant ID

Browser _____ Platform _____ Screen Size _____

Introductory animation focus:

- Focused
- Unfocused

Introductory animation reaction:

- Positive
- Neutral
- Negative

Go button interaction:

- No facilitator prompting
- Objective prompting
- Interaction walkthrough
- Facilitator completed

Round One – Key Seeker

Beginning game play

- No facilitator prompting
- Objective prompting
- Interaction walkthrough
- Facilitator completed

When did the child type the correct letter (was the appropriate hand used?)

- First try
- Second try

- Third try
- Fourth or greater try
- Never

Overall game focus

- Focused
- Unfocused

Overall game reaction

- Positive
- Neutral
- Negative

Game Mastery – the child understood the following:

- Game concept (type the correct letter and get animation reward)
- Left Hand Right hand Green/Purple relationship
- Did the child correlate the images with the letters? (prompting or no prompting)

Did the child have trouble using the mouse?

- Yes No

Total Activity Time ___ minutes

Test Environment and Equipment

The kindergarten classroom will serve as both the observation and evaluator room. Clients will not be present for the testing, however teachers (those responsible for implementing the use of the application will be present)

Roles

Test Administrator/Facilitator: Overall coordination of the individual test, explain the test activities and administer questionnaires. Responsible for taking observation notes. Primary person the test subjects will interact with.

Evaluation Measures

The evaluation measures will be a combination of quantitative measurements and subjective observations. The quantitative and qualitative data measures are listed below

Quantitative Data	Qualitative Data
Number of problems encountered Number of errors or unsuccessful tries Length of time users spend playing the game Interviews before the test Interviews after the test	Facial Expressions Verbal comments when they think out loud Spontaneous verbal expressions (comments)

Report Contents and Preparation

Recommendations report: The report will include the complete testing plan and task list, result summary, and findings/recommendations. All notes and participant comments will be included.

It will be presented in a formal text format:

- Title Page
- Executive Summary
- Contents
- Background of the project
- Complete test plan
- Testing Scenarios and Task Lists
- Summary of findings
- Analysis of collected data
- Recommendations on the basis of analyzed data
- Any questionnaires, consent forms, etc.

Forms and Surveys

Consent Form

Thank you for participating in the usability testing for the Key Seeker , keyboarding game.

I, _____ voluntarily agree to let my child
_____ participate in this testing, and observation. I understand
that the observation and testing is being done for educational purposes only. Any feedback
provided will be used to enhance the educational software. The child may stop at any time.
Any information provided by me for this testing is to be used solely for research purposes in
relationship to this project.

Parent Signature

Parent Demographic Questionnaire

_____ Participant ID

(Please note, your information will not be sold or given to outside entities. It is for internal educational use only.)

Name		
Gender	Male	Female
Age		
<p>How would you classify your child?</p> <p>Note: This is a sensitive question that can help content developers to understand the needs of current software users--it is not intended to offend.</p>	<input type="checkbox"/> Rather Not Say <input type="checkbox"/> Caucasian/White <input type="checkbox"/> African American <input type="checkbox"/> Indigenous or Aboriginal <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Hispanic <input type="checkbox"/> Multiracial <input type="checkbox"/> Other: Specify _____	
<p>How long have you been using the Internet (including using e-mail, gopher, ftp, etc.)?</p>	<input type="checkbox"/> less than 6 months <input type="checkbox"/> 6 to 12 months <input type="checkbox"/> 1 to 3 years <input type="checkbox"/> 4 to 6 years <input type="checkbox"/> 7 years or more	
<p>What do you usually do on the internet? (e.g., email, use reference materials such as encyclopedias and dictionaries, read news, curriculum activities, games, entertainment etc.)</p>		
<p>What is the primary language spoken at home? (i.e., the one you speak most of the time)?</p>	<input type="checkbox"/> English <input type="checkbox"/> Spanish <input type="checkbox"/> Chinese <input type="checkbox"/> French <input type="checkbox"/> German <input type="checkbox"/> Dutch <input type="checkbox"/> Japanese <input type="checkbox"/> Other: specify _____ _____	

How frequently do you use (or supervise) the computer with your child?	
Home	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Less than once a month <input type="checkbox"/> never <input type="checkbox"/> can't say
School	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Less than once a month <input type="checkbox"/> never <input type="checkbox"/> can't say
Work	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Less than once a month <input type="checkbox"/> never <input type="checkbox"/> can't say
Cyber Café	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Less than once a month <input type="checkbox"/> never <input type="checkbox"/> can't say
Other	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Less than once a month <input type="checkbox"/> never <input type="checkbox"/> can't say
Please indicate the highest level of education completed.	<input type="checkbox"/> Grammar school <input type="checkbox"/> High School or equivalent <input type="checkbox"/> Vocational/Technical School <input type="checkbox"/> Some College <input type="checkbox"/> College Graduate(4yr) <input type="checkbox"/> Master's Degree (MS) <input type="checkbox"/> Doctoral Degree (PhD) <input type="checkbox"/> Professional Degree (MD, JD, etc) <input type="checkbox"/> Other: Please Specify
What is your primary computing system platform?	<input type="checkbox"/> Windows <input type="checkbox"/> Macintosh <input type="checkbox"/> Linux <input type="checkbox"/> Unix <input type="checkbox"/> Other: Please Specify <input type="checkbox"/> Don't know

Child Questionnaire

_____Participant ID





























Observer or teacher will ask these questions of the child and complete the form.

Name		
Gender	Male	Female
Age		
How often do you use the computer?	<input type="checkbox"/> Every Day <input type="checkbox"/> Once a Week <input type="checkbox"/> Once a Month <input type="checkbox"/> Only when I need something	
Where do you use the computer the most	<input type="checkbox"/> School <input type="checkbox"/> Library <input type="checkbox"/> Home	
Who usually uses the computer with you?	<input type="checkbox"/> Parent <input type="checkbox"/> Sitter <input type="checkbox"/> Teacher <input type="checkbox"/> Other _____	

Post Session Survey CHILD

_____ Participant ID

Please fill out the following questions about the site:

	Yes, very much	Yes	Not really	Not at all
I understood the instructions.				
Mora the monkey was helpful				
The game was fun				
The game was easy to play				
I used my left hand/right hand correctly				
I want to play this game again				
I would like to play this game at home				

What did you like the most? What ideas do you have about the game?

Thank you answering the questions.

Post Session Survey TEACHER

_____ Participant ID

Please fill out the following questions about the site:

	Strongly agree	Agree	disagree	Strongly disagree
The child appeared engaged				
My level of interaction was minimal				
The child used left hand/right hand without my external prompting				
This is a useful learning tool				
The game meets one or more Cobb County learning objectives in alphabet recognition (Can you specify?)				
The game meets one or more Cobb County learning objectives with technology integration (Can you specify?)				

What ideas do you have about the game? :How can it be improved? Other comments

Thank you answering the questions.