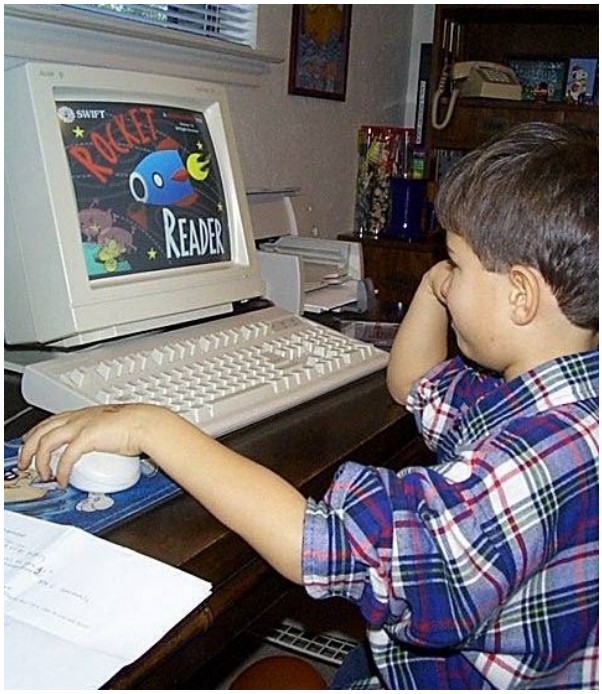
Rocket Reader

Research and Development for the Next Versions



Prepared by:

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Rocket Reader

Recommendations for Enhancing Learning

We recommend that version two of Rocket Reader have tasks to support learners in building their phonemic awareness. The activities should be designed to scaffold the learner by building on prior skills. The new version should be targeted at ages 5 - 7 and assess the learner's progress throughout the activities.

Details and Rationale for Enhancing Learning

Rationale for recommending phonemic awareness

The **research** and an **interview** with an expert in Early Literacy stressed phonemic awareness as critical for beginning readers.

A. What is phonemic awareness?

1. Phonemic awareness is the ability to segment words and syllables into constituent sound units, or phonemes. It is separate, but often associated with, phonics, which is the system of instruction that helps children use the correspondence between letters and sounds to learn to read and write

A. Expert support for teaching phonemic awareness.

1. Dr. Kamil pointed out during our interview with him that the question is not whether phonemic awareness is important but how it should be taught.

B. Research support for teaching phonemic awareness.

1. We have seen this skill was emphasized in: a) The National Institute of Child Health and Human Development's (NICHD's) report entitled "30 Years of Research: What We Now Know About How Children Learn to Read " (1995), b) Adams, Treiman, and Pressley's Reading, Writing, and Literacy (1998), and c) Bill Honig's Teaching Our Children to Read (1996).
2. It is the best predictor of reading success. According NICHHD review of thirty years of research, "The best predictor in K or 1st grade of a future reading difficulty in grade 3 is performance on a combination of measures of phonemic awareness, rapid naming of letters, numbers, and objects, and print awareness."
3. The California Department of Education (1993) document states "Effective teachers of you students offer ... activities including listening to stories; learning and reciting nursery rhymes; hearing rhymed stories and making rhymes; clapping and dancing to syllabic rhythms; identifying letter sounds in words, part of words, and words in sentences." (pg. 4)
4. Examples from Reading, Writing and Literacy:

a. Juel (1986) tracked lower-middle class student from the first to the fourth grade. Juel found that performance in phonemic awareness predicted forty-nine percent of the variance in children's word recognition or decoding by the end of first grade after accounting for IQ and listening comprehension. He looked at these children again in the fourth grade. The likelihood of being a good reader in fourth grade was almost wholly predicted by whether they were a good or poor reader at the end of first grade, which was in turn predicted by their phonemic awareness abilities. As he tracked them over the four years, he found that children who were successfully learning to read were also surging in their listening comprehension, generation of ideas, and in the amount of reading they did outside of school. Those children who were poor readers remained flat on all measures.
b. Children from middle-class preschool, kindergarten, and first-grade classes were asked to tap out the number of phonemes they heard. Seventy percent of the first graders, seventeen percent of the kindergartners, and none of the preschool children reached criterion. The oldest group was reassessed the next fall. None of those in the top 1/3 of the class failed the tapping test, while those who failed were in the lower 1/3 of their class.
c. Turner and Nesale (1985) concluded after their experiment with phoneme-tapping, decoding, and reading tests that phonemic segmentation skills were causally related to decoding abilities, which in turn was causally related to reading comprehension.

C. Is phonemic awareness deficient in many children according to research?

1. Phonemic awareness doesn't develop naturally over time.
2. Thirty percent of students in Liverman and Liverman's study did not understand the internal phonemic structure of words at the end of a full year of school.
3. "About two in five children have some level of difficulty with phonemic awareness. For about one in five children, phonemic awareness does not develop or improve over time. These children never catch up, but fall further and further behind in reading and in all academic subjects." (NICHD)

Rationale for recommended activities and how they should be taught for supporting phonemic awareness

1. Activities recommended by "Thirty Years of Research"

    1. Tasks that have had a positive effect on reading acquisition and spelling for pre-readers are: rhyming, auditory discrimination of sounds that are different, blending spoken sounds into words, word-to-word matching, isolating sounds in words, counting phonemes, segmenting spoken words into sounds, deleting sounds from words
    2. **Phoneme deletion**

        : What word would be left if the /k/ sound were taken away from cat?

    3. **Word to word matching**

        : Do pen and pipe begin with the same sound?

    4. **Blending**

        : What word would we have if you put these sounds together: /s/, /a/, /t/?

    5. **Sound isolation**

        : What is the first sound in rose?

    6. **Phoneme counting**

        : How make sounds do you hear in the word cake?

    7. **Deleting phonemes:**

        What sound do you hear in "meat" that is missing in "eat?"

    8. **Odd word out:**

        What word starts with a different sound: bag, nine, beach, birch?

    9. **Word to word matching**

        : Is there a /k/ in bike?

    A. Marilyn Adams (1990) five levels of phonemic awareness

1. The ability to hear rhymes and alliterations as measured by knowledge of nursery rhymes.
2. The ability to do oddity task (similar or different; beginning, middle, or ending sounds).
3. The ability to blend orally (What words do the sounds /m/ /a/ /p/ make?) and split syllables (break off the first phonemes)
4. The ability to perform phonemic segmentation
5. The ability to perform phonemic manipulation tasks (say hill without the h).

A. Explicit instruction: "Explicit instruction in how segmentation and blending are involved in the reading process was superior to instruction that did not explicitly teach the children to apply phonemic awareness to reading." (NICHD) This includes ones where spelling and reading were separated in the day, where children were asked to guess from use of analogies, and where children were in a print-rich environment. In the current RR, there are explicit directions for each task, but not in reading strategies.
B. Along with sound-spelling associations: While phonemic awareness should be introduced alone at first, teaching sound-spelling concurrently significantly accelerates phonemic awareness, even if only for 15 minutes a day over a year (Foorman, Franscis, Beerly, Winikates, & Fletcher, in press, using an adaptation of the Danish curriculum cited above). Sound-spelling associations are also critical in and of themselves in reading. The current Rocket Reader assumes that the reader already recognizes sound-spelling associations.
C. In a scaffolded manner where activities build on each other: This comes from a recommendation from UC LINKS. UC LINKS is a research conglomerate of the nine University of California campuses plus several California State Universities working in conjunction with school districts to develop curriculum. Their recommended curriculum sequence is design to scaffold learners through building on previously learned skills. Help the learner to do the activity then gradually add complexity and difficulty. The "easy" levels of the current Rocket Reader doesn't prepare the learner for "harder" ones, in fact, the levels on several planets change not in difficulty but in topic only. Nor does it fade out.
D. With appropriate vocabulary: Words should be decodable and familiar. By that, the words should be meaningful to the children and should contain only "sound-spelling correspondences that children have learned to that point and a limited number of sight words."(Foorman, Franscis, Beeler, Winikates, and Fletcher in press). The words should be meaningful and familiar to the children. The vocabulary of the current Rocket Reader, as evidenced by user tests, is not meaningful and cannot be said to be decodable, since learners aren't explicitly taught.

Rationale for recommending ages 5 -7

"Every school child is ready for some instruction in phonemic awareness."

A. At least one study has shown that "kindergarten children with explicit instruction in phonemic awareness did better than a group of first graders who had no instruction."(Cunning ham, 1990)
B. Danish researchers (Lundberg, Frost, and Petersen, 1988) engaged preschoolers in games and activities involving rhymes, syllables, segmentation, and blending of initial sounds, final sounds, and internal sounds (phonemes). By the end of the year, the experimental group, who had historically under-performed in relation to the control group, had a greater sensitivity to rhymes, syllables, and phonemes. Another year after that, these children did better than the control group on spelling and word recognition. This held when it was tested again after another year.
C. Prevention, not intervention: "Children who fall behind at an early age (K and grade 1) fall further and further behind over time." Targeting a product at an early age will have the greatest effect.

References:

1. Adams, M. J., Treiman, R., and Pressley M. (1998). Reading, Writing, and Literacy. In I.E. Siegel & K.A. Renninger (Eds) Handbook of child psychology. Vol. 4. Child Psychology in Practice (5th ed., pp. 275-355). New York. Wiley.
2. California Department of Education (1993). "Early Reading Instruction: A Balanced Approach"
3. California Department of Education (1994). "The Framework in Focus: Answers to Key Questions About Implementation of the English-Language Arts Framework"
4. Grossen, Bonita (1995). "30 Years of Research: What We Now Know About How Children Learn to Read."
5. Honig, B. (1996). Teaching Our Children to Read.....

Recommendations for New Features

Basic level (based on a limited budget)

- Develop 5 new planets emphasizing phonemic awareness

Overall Framework / Metaphor

- Provide a ubiquitous navigational map

- Allow planets to build on one another for scaffolding

- Develop standard roles for characters
- Create a parent involvement feature
- Develop complementary web components

User Control

- Provide access to control panel from all screens

- Add controls to let user determine pace
- Use control panel consistently
- Changing levels
- Accessing instructions
- Viewing progress report
- Develop an option for typed input

Learning Feedback

- Change emphasis of progress report from right and wrong to improvement and understanding

Middle level (based on a medium budget)

Basic Level plus

Learning Feedback

- Add computer adaptive component to diagnose and respond to user

High level (based on an unlimited budget)

Middle Level plus

Learning Feedback

- Develop an option for voice recognition input

Details and Rationale for New Features

Theory and Goals

New features incorporated into educational media must be carefully designed so that they enhance the learning experience, rather than distract from it. User studies conducted with the existing software reconfirmed our overall concern, as they showed that the design should spend less screen time and energy on characters and scenery and more on the concepts to be transferred. We would like to suggest new features which work consistently and cohesively with the subject of intended transfer, the real world, and within the application itself. In doing so, the interface becomes invisible, thus allowing focus upon the subject of reading and language comprehension. We would like to incorporate the concept of "meaningful reading:" the application should convey that reading is a means to attain knowledge, as opposed to simple memorization of decoding symbols and sounds. Our recommendations specify both revisions of existing features and new, innovative features. The recommendations fall within three major categories: Overall Framework/Consistent Metaphor, Increase of User Control, and Useful Learning Feedback.

Basic level (based on a limited budget)

Overall Framework / Metaphor

Each individual game (world/concept) should be linked to the others. Reading is not a series of particular skills in isolation, but rather a menagerie of practices that are interrelated. Each world should provide the user with better skill, or an increase of abilities in other worlds. Thus, the users would build up their repertoire of abilities and concepts, and would become familiar with the idea that they are related, as opposed to isolated skill sets that are an end in themselves.

- **Provide a ubiquitous navigational map**

In keeping with the existing space metaphor, the solar system will be used as the main navigational scheme with the five planets revolving around the sun. A small version of the solar system will be present at the bottom of each activity screen to alert users of which planet they are on; the relevant planet will be highlighted for quick reference. If this map is clicked on, a larger version will appear with a dotted line showing where the user has been, and where they can go. User tests of the existing software lead to definite recommendations for: a clearer path and progression (letting user know: where they are, where they have been, where they can go, where they should logically go, where they want to end up eventually).

- **Allow planets to build on one another for scaffolding**

In order to provide a more cohesive framework, as well as to reinforce the idea that reading is not a series of isolated skills but rather a menagerie of practices that are interrelated, the planets are linked to each other in that students have to move from one planet to another in a sequential order: 1) Letter recognition, 2) Rhyming, 3) Missing letters (deleted phonemes), 4) Syllable, 5) Blending words. In this way, each planet provides the users with better skill or an increase of abilities in other planets, thus providing the users with necessary scaffolding to progress and expand their individual knowledge.

- **Develop standard roles for characters**

Revise the current roles for Dinky and Stinky: assign Dinky the role of the consistent guide and Stinky the role of a bit player in each activity. (We also propose to change their names to reflect the educational value of the software.)

- **Create a parent involvement feature**

A new feature that will set Rocket Reader apart from its competitor is an opportunity for parents to get involved and help their children learn to read. Often, the interaction between parent and child is not utilized when designing educational software; however, it is shown that with media such as television, parent/child interaction promotes a greater understanding of the intended concepts of transfer. The new feature will be in the form of a parent button on the ever-present control panel. If this button is pushed during an activity a dialogue box will appear which poses questions or activities related to the activity concept. The advanced questions will encourage children to think and discuss the answers with the adult. The activities will encourage using the themes to create things. The rhyming planet may ask the child to create a poem and give them the space to do so. These additional questions and exercises posed by the adult button are ones that children would not have the patience or the expertise to be involved in without structure, as they are more open ended. The involvement of the parent would serve to extend the concepts and provide greater understanding, however the game is still fully functional without the use of this feature. This feature would act alone, as it would not be part of the progress report and would not have a diagnostic component.

- **Develop complementary web components**

Features

  - Ability to send and receive **e-mail**
  - **Archive of images**: a collection of images recognizable from Rocket Reader or relating to common interests of children ages 5-7 displayed on a page. The user will be able to select these images for postcards or for storyboards.
  - **Archive of words**

    : a collection of words recognizable from Rocket Reader displayed on a page. The user will be able to select words for a storyboard or a postcard.

  - **Reader's Hall of Fame**

    : a page with an archive of postcards and stories created by the users of Rocket Reader and submitted.

Activities

- **Send and Receive Postcards and Post in the Reader's Hall of Fame**

The postcard images: The images may be tailored according to the child's interests (Interests may be determined by the information provided by the child on the postcard), or the image may be the final image that child created after completing a level-the completed progress report. Sharing the accomplishment with others in this way may be motivating for the child without fostering a competitive environment. These postcards with images representing the child's accomplishments may be posted to a Reader's Hall of Fame.

First Level: Child sends a postcard to a character in Rocket Reader.

The child will be able to choose from a collection of pictures to be the front of her postcard. The child will then respond to a few questions such as-What is your age? What do you like? The child will respond to the question What do you like? by selecting one or more items from a list provided. These items will be words that were previous covered in one of the lessons of the software. This information about what the child likes may be used to tailor various aspects of the experience so that the child remains engaged. After the child sends the postcard, she will receive a personalized response back from the character based on information provided by the child on the postcard and by the parent during registration.

Second Level: Child sends postcards to other registered users in the community.

The child will choose from a collection of pictures and will be able to write or choose images and words to appear on the postcard to someone else. The child may also receive postcards from other members of the community.

- **Create a Story and Submit to the Reader's Hall of Fame**

First Level: The child may create a series of storyboards by putting together images and words from a selection. The word selection will come from the planet lessons and consist of words from lessons the child has completed. The entire story, consisting of all of the storyboards, may be submitted to the Reader's Hall of Fame and be made available to all of the community.

Second Level: The child may create a series of storyboards by putting together images chosen from the archive of images with words that they type in on the keyboard. These stories may be submitted to the Reader's Hall of fame and be made available to all of the community.

User Control

We advocate an increase of user control. One aspect where the computer is preferable to other mediums is that it can tailor each session to the individual needs of the user. We would like to capitalize on this aspect and heighten the abilities of the user within the software. Each child should be able to move through at his/her own speed, and easily receive information, explanation, and feedback.

- **Provide access to control panel from all screens**

Even during activities, the user should have access to all options available on the main splash screen control panels. User testing clearly showed a need for this feature, as most users became frustrated that they could not access options while involved in a specific activity.

- **Add controls to let user determine pace**

The user should be allowed to stop or pause or go back within each game, letting her/him have control over the speed and the progression of the game. This added control will let the user pace his/her own level of learning and understanding.

- **Use control panel consistently**

User testing done with the existing software provided clear recommendations for the following user control aspects: Control panel itself should be clearer, every option should be clearly indicated and should be active, all options should be available all the time (even within planets and games). The user should always have the ability to change level, get instructions, get hints to help them solve the *game,* go back to review, and quit.

- **Develop an option for typed input**

Some activities ask for the user to pick a certain word from a group of words, others ask the user to choose the correct letter to add to a word. In both cases, the only way that the input is received is by physical manipulation of the mouse. We suggest incorporating the ability of the user to type in the correct answer as an alternative method of input. This would encourage recognition and understanding of multiple representations and would encourage specific spelling and accuracy as opposed to simply manipulating already formed objects. It would also allow children to use the program as they matured and were more familiar with the terms, thus allowing the application to progress with their increased knowledge.

Learning Feedback

Computers have the ability, especially over other media, to specifically tailor interaction and information according to the user's individual responses. This component becomes extremely important when designing an educational tool; it can be used as a tool to heighten or reinforce information transfer and should be used to its potential. By taking into account what the users know and how well they are accomplishing set tasks, the application can grow with the user and remain appropriate for a longer time.

- **Change emphasis of progress report from right and wrong to improvement and understanding**

  We will eliminate the current progress report that emphasizes right and wrong answers as well as the final certificate given at the end. Instead, the new progress report will provide an overview of all the activities, the purpose of each activity, and the percentage of successfully completed questions. In this way, students can gauge which sections they need additional reinforcement and practice and can return to those sections at their own leisure. The user can access the progress report at any time, as it will be one of the permanent options available.

  On the simplest level, the diagnostic component will be incorporated into the progress report. When the user chooses to view the progress report, the report will inform him/her of the sections in which they need additional reinforcement and practice. The software will calculate the percentage of correct answers during activities, and based on this assessment will suggest cities or activities to return to or move on to. In addition, the user will be informed of their overall performance by the progressive creation of a 2-dimentional picture which the user chooses from an array presented to them at the beginning of each game. As they complete activities, the pictures will fill in accordingly so that the user can gauge the percentage of the task or the game they have successfully completed.

Middle level (based on a medium budget)

Basic Level plus

Learning Feedback

- **Change emphasis of progress report from right and wrong to improvement and understanding**

  The progress report will expand according to expansion of diagnostic ability. On the middle level the basic structure of the lower level progress report will remain intact with the addition of an interactive component. The user will be able to add new pictures and words to their progress report with each successful completion of an activity. They can then manipulate these elements to form their own picture/story as they move through the software. This would not only allow the user to assess their own performance, but would also serve as a motivating factor as children feel a sense of accomplishment as they build new, and increasingly complex structures.

- **Add computer adaptive component to diagnose and respond to user**

  The purpose of Rocket Reader version 2.0 is to support/reinforce existing reading skills of children ages 5-7. A proposed revision for version 2.0 is to incorporate a diagnostic component to each planet. Based on the concept of computer-assisted learning, the relative difficulty of subsequent questions depends on the response of students to each question as they progress through the game. In this way, students having problems with a particular concept are given ample practice opportunities with questions that are not too difficult for them.

  The software will analyze the questions in each activity and if the user gets a bulk of answers correct, will suggest accordingly, that the user move on to a subsequent game (activity) or planet (higher concept). The software will, therefore, not be analyzing and responding to every question the user answers, but rather responding to the general overview of a user's performance per activity.

High level (based on an unlimited budget)

Middle Level plus

Learning Feedback

- **Add computer adaptive component to diagnose and respond to user**

  The software will analyze each question in each activity and will put forth a subsequent question accordingly to the user's response. The software will analyze and respond to every question the user answers in order to guide them on a path that is specifically suited to their own abilities.

- **Develop an option for voice recognition input**

  As technology improves over time, there will undoubtedly be the option of incorporating voice recognition software that will evaluate and give direct correctional feedback to the students. Though this technology is not at an optimum level of consistency, computers are becoming more adept at voice recognition and feedback. When this stage is reached, we advocate the incorporation of voice recognition technology into Rocket Reader (version 3.0?). As our goal is to increase the use and importance of phonemic awareness, this feature would prove infinitely useful. It would allow yet another method of input, and perhaps could guide the child through stages by having the lower levels focus mainly on audio information and input and gradually incorporating the textual components. Incorporation of this tool of error correction feedback, students will not only understand how to read, they will also be able to read aloud.

  When this technology becomes very accurate, we advocate its incorporation into the software as both a form of input, and as part of the diagnostic component, as it has the ability to respond to user's remarks.

Recommendations for Web Integration

Access Softek should consider creating an Access Softek Web Activity Site that can host activities for Rocket Reader and any future children's software titles. The site should be both motivational and educational. The activities should be integrated fully with the content and should support the learning objectives of the version 2.0 software release.

- Provide access to web-based activities in an environment that is safe for children ages 5-7
- Ensure that a parent or guardian is present at least the first time a child accesses the web-based activities and encourage parent
- Provide access to the web from the CD-ROM via a method that is accessible to both parent and child
- Develop activities that can adapt to the individual learning level of the student based on the diagnostic test built into the software and the status of the learners progress report

Details and Rationale for Web Integration

Characters and activities across the software products can be highlighted on a single access site and updated monthly, or as needed. Through a company, the Access Brand as well as development funds can be leveraged across all products for children, creating demand across products. The site will need to be specifically designed for the target age group and should include both independent activities as well as those designed for use with a parent. The company activity site should provide reading related, fun activities that provide interactivity and serve as extensions of the existing software.

According to a recent Forrester Report on Entertainment and Technology Strategies, it was concluded that children have very clear preferences for software content - games, communications and creativity. In addition, children report that they like to use the Web. The suggested activities for the web site were designed with the children's preferences in mind.

- **Provide access to web-based activities in an environment that is safe for children ages 5-7.**

Child-safety on the Internet concerns what information the child may have access to and who may have access to the child.

We recommend that the web-based activities be provided on a private site accessed through a customized browser. The URL for the site may consist of a long alphanumeric string that will prevent accidental browsers from stumbling onto the site. In addition, the site may be accessible only with a password that will be encoded in the product software. Through the web-based activities, the child will only be able to interact with registered users and employees of COSMI.

- **Ensure that a parent or guardian is present at least the first time a child accesses the web-based activities and encourage parent participation with the child via the web-based activities .**

We recommend that upon initially entering the website, the child's parents be asked to register the child before the child can participate in the activities. The registration process will make the parents aware of any potential dangers and offer advice for monitoring the child's use of the internet. This process also will simply make the parent aware that the child is in fact on the Internet.

The registration process will offer the parent advice for using the activities to work with their child throughout their child's reading development with Rocket Reader.

The registration process will also allow us to gain access to demographic and other pertinent information for product development and marketing.

- **Provide access to the web from the CD ROM via a method that is accessible to both parent and child**

Because a child of this age will, in all likelihood, not be able to type in a URL and because not all parents may be familiar with Internet conventions, we recommend that the child access the Internet activities through a visual icon located within each city of each planet. Selecting this icon will open the customized browser at the start of the activities.

- **The activities should adapt to the individual learning level of the student based on the diagnostic test built into the software and the status of the learners progress report.**

We recommend the above based on the recommendation of the Learning Group and the New Features Group.

The level of the Internet-based activities will be determined by the point of access from the software and by the child's current progress report. Within each type of activity offered on the website, there will be two levels one requiring word recognition and the second requiring typing in words from the keyboard

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Recommendations for Distribution of Future Versions

Basic Level

- Continue current price model
- Continue use of Cosmi as primary distributor.
- Add an online distributor

Middle or High Level

- Increase price accordingly

- Conduct a full study of options regarding branding of the product such as
- Negotiating with Cosmi for marketing in a line of premium educational software
- Partnering with publisher with brand-recognition in higher price educational software market
- Distributing in-house and developing Access Softek as a brand

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Recommendations for Distribution of Future Versions

Basic Level

Because of the current market for educational software, the low prices of all products (even premium, branded products) within that market, and their previous experience with "bargain" software, we recommend that Access Softek implements the basic level of features at the lowest cost possible. This will enable the company to maximize profits within two distribution channels: their current distribution channel, using Cosmi as the main distributor, and distribution over the internet, using a distribution company such as NetUSA (see the supporting materials for more information and a copy of the distribution agreement).

All research, including through Forrester Reports and the Software Publishers Association, as well as with a representative from Academic Systems, has indicated that recognition is the key factor in sales and profitability. The main form of recognition is brand recognition; seven of the top ten edutainment software titles (for the first three quarters of 1998) were put out by the same company in two well know product lines, while an eighth title was a follow up on a previously successful product. The other form of recognition is similar but is recognition of some other strong asset originating outside the software world. The final two top-ten edutainment titles, both from the Tonka series, are examples of this recognition. Because Access has neither a well known character, a brand, or the infrastructure to develop a brand, we recommend that they minimize costs and continue to seek their niche in the "bargain software" market, through Cosmi.

Additionally, the internet provides another opportunity for distribution with a nearly negligible up-front cost, and a return of 60% of the retail price of each unit sold. Internet distribution companies, such as NetUSA, contract to sell the product in their online stores in return for 40% of the unit price. NetUSA assumes responsibility for marketing and online receipts; meanwhile, they pass the remaining 60% of the receipts to Access Softek along with the orders. Access Softek's sole responsibility is to ship the product to fill the orders.

This raises two questions. First, if the return is so much greater (60% vs. 5%) why not use this as the main distribution method? The percentage of American households with access to the internet is low, and only one percent of buyers of edutainment software buy online (from Forrester Reports). That means that while the return per unit is high, the number of units sold and the total return will be low. Because of the low risk, it is worth augmenting distribution using this method. However it should not be the main distribution channel. The second question remains: how will Access handle the new responsibility of shipping individual orders? Again, this depends on the anticipated, initial low sales rate. With a small number of units being sold, shipping can easily be done by someone in the offices of Access Softek in a very small portion of their at-work time. The costs can be recovered through shipping and handling charges. If sales rise and the responsibility takes that person away from other tasks, the increased profit will warrant outsourcing order fulfillment to specialized company.

Middle or High Level

If a higher level of features is implemented, at a higher cost to Access Softek, the cost of the product will have to increase as well. In this case, a more thorough distribution study should be conducted. That study should consider the likelihood is that the software will go from the bargain software category ($10-$15) to the premium software category ($24+, note that only two of the top selling edutainment titles from 1998 were priced below $24). If this happens, efforts must be made to associate the product with a recognized brand (also note that all of the top ten titles were published by three publishers).

Several options exist for brand association of the Rocket Reader product. The most feasible seems to be partnering with another distributor or publisher that already has brand-recognition in the premium educational software market. While cutting Access Softek share of per unit profits, this will raise unit sales. It will also cut costs associated with developing a recognized brand.

A second option is to court a partner with a recognizable character or product from outside the software world (perhaps using Tony the Tiger or the Keebler elves in software). This has many of the same benefits and costs as the first option.

Another possibility is to do the distribution in-house and develop the Access Softek brand. This has the advantage of maximizing Access Softek's share of sales. However, the costs of developing a brand are enormous. As well, by committing to a brand of educational software, Access Softek would be limiting it's flexibility in product development. They would be committed to developing additional educational software titles.

Finally, because of existing business relationships with Cosmi software, it might be possible to convince them to develop a premium line of educational software. In this case, the risks and benefits of brand development would be spread between Access Softek, Cosmi, and the other educational software developers who work with Cosmi.

Appendix A: Examination of Version 1.0 Failure

Synthesis of User Study Findings

- 70% of users won't play again
- 60% of users experienced system crashes
- Long, confusing instructions
- Requisite motor skills too advanced
- Software not flexible to user
- Difficult to identify hot spots
- Sights and sounds overwhelmed the game
- Insufficient wait time
- Confusing graphical responses
- Lack of visual cues
- Rocket navigation was clear
- Matching was favorite game for majority
- Motivation was fueled by desire to win

Appendix A: Examination of Version 1.0 Failure

User Study Questionnaire for Users

Things to keep in mind:

- Try to have user visit all five planets
- Try to record specifics during observation

Pre-test Questions

- How old are you?

- Do you have a computer at home?
- How often do you use the computer?
- Where do you use the computer most often?
- What is your favorite thing to do on the computer? Why?
- What's your favorite CD on the computer?
- Do you have a favorite character? Can you describe the character to me?
- Do you use the internet? How often?
- If you do use the internet, what types of sites do you like?
- Do you have some favorites that you visit often? What are they? How often do you visit them?
- What kind of things would you like to be able to do on the internet?

Post-test Questions

- Did you like the games?

- Did you learn anything?
- What was your favorite game? Why?
- Was there anything that bugged you? Anything yucky?
- Did you find the games easy or hard?
- Did you like the sounds? Did they help you in any way?
- If Stinky and Dinky had a TV show, would you watch it?

Appendix A: Examination of Version 1.0 Failure

User Study Questionnaire for Parent

- Do you own a computer at home?
- Do you use the internet? How often?
- If you do use the internet, what types of sites do you like?
- What are some of your most frequently visited sites?
- Does your child use the internet?
- Would you like your child to use the internet? For what purpose?
- Would you like to have access to a site in conjunction with your child's educational software?
- What type of site would that be?

Appendix A: Examination of Version 1.0 Failure

User Study #1

February 14, 1999

boy, age 6 1/2, first grade

Background Information

- He has a computer at home which he uses almost everyday.
- He occasionally uses a computer at school, at his father's office where he writes email, and at his grandparents' house where he has used the Internet.
- He enjoys sending email, usually through a scribe, and visiting PBS online where he downloads Arthur pictures for his sister, age 4, and enjoys the interactive parts of Kratt's Creatures online.
- His favorite game on the computer is the game Diggity Dug. He especially likes to blow up the invaders and enjoys being the only one who can get high scores. *This proved important in his playing with Rocket Reader.*
- His favorite educational cd-rom is the Magic School Bus. He likes it because there are many titles in the series with the same characters and he wants to own them all.
- He likes products that tie to educational television shows.

Observed Play

- enjoyed animation of rocket arriving and Dinky falling out
- typed in name and hit the enter key - when nothing happened he clicked the "done" button
- paid attention to introduction screen and narrative
- went to Alphabet Race first - was the first planet seen
- sits on the edge of his seat as he listens to the instructions
- after he hears it is a race he wipes his hand on his pants and gets it in ready position on the mouse
- has no problem with the task
- pulls over the first given word as other two load
- if a third word appears and requires him to change the placement of the two he already has in order, tries to move it to where it belongs even though that slot is already occupied
- "How do I get back?"
- does not click around on the screen
- does only what instructions tell him to do
- chooses Space Soccer after reading all planet names - "I'm gonna like this one."
- missed the first two on level one - got a frustrated look on his face
- was happy to make a goal
- chose a ball to make an incorrect word and did not realize that it was wrong because Stinky kicked it like it was correct - he did not see that the ball was knocked out of the goal
- was sounding out a word slowly and the instructions automatically began to repeat and the word he was sounding out disappeared
- began clicking around the background some
- to make a word, clicks on Stinky to kick the ball instead of the ball itself
- after 8 minutes of play: "This is getting a little boring. There's not many games."
- goes to the Gopher game: "This one's way easy."
- mentions that the gophers move up and down really fast
- reads the words on one pop and choose the correct one on the second pop

- gets faster as he continues
- looking for a long I, misses the word 'spy': "There wasn't an 'i' in there."
- after the prompt is repeated: " . . . oh, sound."
- recognizes how many to go before he gets a letter: "I want that extra letter."
- game prompt changes from long 'o' to long 'o' again
- sounds out the words and repeats the sound he is looking for
- a random gopher appears - likes that
- stays with the game until wins a letter
- goes to the Matching game - never acknowledges that he is going to planets
- hears instructions to match words and sees example with same word
- "This is kinda like a memory game."
- reads aloud instruction about matching opposite words
- seems easy - tester prompted him to change levels - doesn't want to because "easier to score more"
- does not wait for auditory feedback - makes next move so quickly that Dinky gets cut off
- uncovered the word 'old' and expected the opposite to be 'new' not 'young'
- played until earned a letter
- moves to Rhyming game
- laughed aloud at Dinky playing the piano
- about Stinky "I'm actually doing the work, he's just doing the writing."
- leaves rhyme accidentally and returns - his place has been saved - thinks that is cool
- tester points out the skip button - knows the function and begins to use it to win sooner
- likes the silly sentences
- exits after urging from tester
- looks at report, but is unable to decipher it so he reinterprets the matching score in his favor

Follow Up

This user seemed very concerned with giving a correct response or a very useful response to the follow-up questions (e.g. "This would be educational for children . . ."). This inhibited genuine responses. His favorite part was when Dinky got "smooshed" by Stinky. He thought he would play the game again, but would be bored playing it when he reaches second grade. He liked the sounds and music and would "definitely" watch Stinky and Dinky on television if the show was educational. When asked if he learned anything from the program his response was, "I learned lots." After prodding for a specific something he could only confirm that he had learned that "trial and error" are important.

Appendix A: Examination of Version 1.0 Failure

User Study #2

Feb 15, 1999

User tests were conducted in three separate sessions with the assistance of three users. First

two sessions were held at Plugged In, a community computer center in East Palo Alto, and

the last one was held at the Meyer Lair on campus. All three sessions were recorded on

paper and the instructions were given verbally. Following is a description of the three stages of the user tests including Pre-test questionnaire, Observation, and Post-test questionnaire. Findings and suggestions follow.

1. Pre-test Questionnaire

Prior to the observation session, we administered a questionnaire to assess general background, i.e. name, age, computer possession at home, etc. and attitudes towards computers, i.e. frequency of computer usage, favorite thing on the computer. Before we began, we informed each user of a summary of the software and procedures and intents of the test. We opted out of playing the software with the kids unless they asked for help, rather requested the users to "do whatever you would like." Each Session was scheduled to finish after about 30-40 minutes due to time constraints of both the center and our users. We informed the user that a few questions will follow the game. Pre-test question results are as follows:

1) User #1 - A 7 year-old-girl goes to kindergarten. She does not have a computer at home. She uses computer twice a week although she comes to the center with her brother everyday. She has a positive attitude toward computers and she likes playing computer games (she did not specify why). Her favorite thing to do as well as favorite CD was software called "Madeline", a Thinking game produced by Creative Wonders. She does not have a sense of Internet yet.

2) User #2 - A 6 year-old girl goes to elementary, 1st grade. . She does not have a computer at home. She uses a computer twice a week at the Plugged In. She likes drawing pictures on the computer. Her favorite CD is also "Madeline".

3) User #3 - A 5 year-old boy just moved into California so he does not attend any school

yet. He has a Macintosh computer at home and uses it almost every day. He likes Disney characters such as Toy Story, and he likes "Blues Clues" shown on channel Nick Jr. Since he likes the show a lot, when he uses the Internet, he visits the Nick Jr. site.

2. Observations

1) User #1 - In the introduction, she already lost her patience so she did not pay attention to the instruction. She typed her name at the opening, but it took a while for her to figure out to push "done" button to move on. She visited Space Soccer first. She did not listen to the instruction to the end as well as did not understand it. She did not know what she was supposed to do, so she got frustrated. She just clicked on the ball continuously. After three minutes, she started stretching, showing her boredom. We realized that she did not experience any reading. She said she wants to try another game, but she did not know how to get out of the current game. We had to tell her to click the rocket on the screen. Next, she chose Alphabet Race. Since the instruction was long, she, again, did not listen to it. Although she learned alphabet in the kindergarten, she did not know how to drag the word, so she was not able to move words from one side to the other side. She still did not know how to go back. Then, she went to Rhyming Planet. She ignored the instruction because she did not understand it anyway. She had fun, saying she liked the music a lot. She still did not know how to exit. She moved onto Pop-up Gophers. The sound effect that comes out when she got the wrong answer discouraged her. She said that one was hard and words moved too fast. She figured out how to exit. Lastly, she played Matching Game. She enjoyed the game because the sound effect made her excited. Overall, she did not stay at the same game more than five minutes. It took her 30 minutes total.

2) User #2 - She visited Rhyming Planet First. The game was too easy for her, so she

quickly moved onto the different level, 2-medium. However, the 2nd level was also easy for her. She wanted to challenge another game, but she did not know how to go back. Next, she chose Alphabet Race. Instruction seemed to be confusing for her and she did not understand what alphabetical order meant. Although she knew how to drag, she seemed to have a hard time to drag-and-drop. She remembered how to exit. Then, she went to Space Soccer. She did not understand the instruction again although she listened to it carefully. She looked confused. She did not know what to do with a part of a word shown on one side and the other part of the word on the other side. She moved onto Matching Game. She said it was her favorite. She seemed to like clicking around and making the words disappear. Lastly, she played Pop-up Gophers. She immediately found out that the game was too easy, so changed the level into the hardest. Still, she got the correct answer quickly. It took her 30 minutes total.

3) User #3 - First, he visited Pop-up Gophers. He understood the instruction, but he did not like the game. Shortly, without help, he chose the next game, Matching Game. He said he likes the game. Then, he went to Alphabet Race. While he was listening to the instruction, he said "This one's easy". However, we could see that he did not fully understand it because he kept clicking on the whole alphabet list already existing on the screen. Even after we told him how to play the game, he still had a hard time in moving the words by dragging. Since he was so competitive, he did not stop for awhile even though he kept losing. He did not like Rhyming Planet at all, so he left after three games. Once he saw Space Soccer, he loved it because he likes to play soccer. He said that one is his favorite. In addition, he liked the sound effect the ball makes. It seemed, however, he enjoyed the sports game, without getting the spelling of each word. After he finished all five games, he went back to the 2nd level Matching Game and Space Soccer. For Space Soccer, he went through all the way up to the hardest level. He was jumping up and

down whenever he made goals.

3. Post-test Questionnaire

At the end of the observation, we followed up by asking questions designed to assess the users' experiences, i.e. whether or not s/he liked the game, whether or not s/he learned, etc. and suggestions for improvement, i.e. how they felt about the sounds and the characters etc. The result of post-test questions results are as follows:

1) User #1 - She liked the games, but she did not know what she was supposed to get out of the games. Her favorite game was the Matching Game and her next favorite was the Rhyming Planet. Nothing in the program bothered her. Overall, she thought the games were hard for her and she did not like the character. As she expressed her affection on 'Madeline' at the beginning of the test, she was expecting to watch her TV show that is supposed to come out soon, however, she said she would not watch 'Stinky and Dinky' show. In fact, it seemed she never realized who Stinky and Dinky were.

2) User #2 - She liked the games although she did not learn anything. Her favorite game was also the Matching Game as was the first user's. Her favorite game was Matching Game and her next was Space Soccer. She said there was nothing she did not like. She found out all five games and different levels were easy. She had positive attitude on the music and sounds. She liked Stinky and Dinky so she would watch if they were in a TV show. She pointed out the character and asked if it was Stinky while she was playing.

3) User #3 - He also liked the games, however, he said he did not learn anything from the games. His favorite was Space Soccer. He did not like Alphabet Race, which is obvious in who is winning, all because he hates losing. He found out all the games except for the Alphabet Race were easy for him. He liked the sound effects, especially in the soccer

game. When he was asked if he would watch so-called 'Stinky & Dinky' show, he said he does not know. He said he did not like Stinky because of the name (he thought his name was funny), however, he liked Dinky because of his big ears (he thought Dinky's ears looked like those of monkeys).

4. Findings

Pre/Post-question results and observation revealed the following:

1) Obvious fun

All three users liked the games. We assume that they enjoyed playing with the computer itself, i.e. clicking the mouse, moving the cursor, listening to sounds, etc. User #1 liked the Rhyming Planet because she liked the music from piano and singing. We infer that User #2 also had fun so did User #1 because that was new software, new experience. She asked us if we are coming again tomorrow. For User #2, she liked Space Soccer because putting two parts of a word together was fun. She liked sounding out the words, for example, 'te-' and 'nt', 'in-' and 'clude' etc. However, there was an example of 'passage' which the game divided the word as 'pass-' and 'age', which might mislead kids to pronounce incorrectly. User #3 enjoyed because he likes computer games and cartoons. Space Soccer was the most fun for him. In short, there are different features to attract different users of various tastes such as music and sports.

2) No learning occurred

Although all three users had fun while playing with the games, user testing confirmed that no learning occurred for the user either who already knows how to read nor who does not have prior knowledge of reading. Both User #1 and User #3 did not have

experience in reading, so especially Pop-up Gophers which is supposed to teach vowels and Rhyming Planet which is designated to teach rhyming turned out to be useless. Those two kids had differences in speed in that User #1 was comparatively slower than User #3 to get into the program, so mixed comments disclosed in terms of the level of difficulty of the games. User #1 said the games were hard whereas User #3 said they were easy except the Alphabet Race. Nevertheless, none of them learned "reading" from the program. On the other hand, User #2, who already learned reading, found out all five games were so easy that she did not learn anything at the end. In brief, there was no target audience, which is critical for the program.

3) Long and confusing instructions

None of the users listened to the instructions to the end or carefully, which is necessary to play the games. Instructions were too long and complicated for young children to understand clearly. While instructions were coming out, they got bored so they were just clicking around the screen. Although User #2 and User #3 sometimes paid attention to them, they still did not get what they were supposed to do, so they had to depend on us. For all three sessions, we had to rephrase the instructions all over again and give them examples to make them understand readily.

Appendix A: Examination of Version 1.0 Failure

User Study #3

February 15, 1999

The user test took place at Plugged In, a community computer center in Palo Alto. Three female users participated in the software evaluation. No parents were present during the user testing. Pre and post test questions were administered. The duration of the user test was 45 minutes.

Observation based on the three criteria of learning: engagement, feedback, practice.

Engagement

The sights and sounds of the software mesmerized all three participants. In fact, they liked the ambient visual and auditory effects so much that they did not heed any of the instructions provided by Stinky and Dinky. For instance, once they got to the opening screen with Stinky and Dinky on Planet Z, the users began to click around incessantly rather than listen to the characters' discourse that provided the context and purpose of the CD. This same pattern continued throughout the duration of the user testing. The users simply clicked around on everything visible rather than listen to the characters who provided the instructions at the beginning of each game. This continuous random sequence of clicking on all the objects on the computer screen caused the computer to freeze three times. That the users had to wait for the computer to reboot multiple times elevated their frustration level and lowered their motivation to continue. This was particularly true for one user. After the computer froze the second time, she refused to continue play and left the testing area. There was a general sense of confusion on how or where to proceed within each of the game because the users did not pay attention to the instructions provided in the opening narrative. All three users kept looking over at the tester for guidance. The tester had to ask the users several times whether or not they understood the purpose of the game. The users said that the purpose was "to win." None of the users got around to play all five games. The tester encouraged them to do so but was met with "I don't want to" resistance. The eight-year-old visited all five planets but exited as soon as she entered. She was quite adept at finding and clicking on the navigation rocket. She only stayed around long enough to play with the soccer game and the matching game. The other two users played with the rhyming game and the matching game.

Feedback:

Feedback was inadequate and confusing. An example of inadequate feedback was the rhyming game.

Every incorrect response was accompanied by an annoyingly loud buzzer sound that did not explain to the user why the option selected was incorrect. The tester had to interrupt several times when the users stared at the screen in befuddlement to restate the purpose of the game and to provide clarifying examples.

An example of confusing feedback was during the soccer game. The task was for Stinky to kick the ball and score a goal although it wasn't clear what it meant when Stinky scored vs. when he did not. It was confusing (even for the tester after an initial pass at the game) whether the letter on the ball were suffixes or prefixes, what word they spelled or how they were pronounced. Again, when the users clicked on Stinky for clarification, they found a repeat of the same set of instructions which did not provide them any new insights.

Practice:

While each game provided four different opportunities within each level for practice on the concepts introduced in the game, none of the users spent enough time during the user test to take advantage of the practice opportunity within the user test time frame. Even if the users had more time, it was questionable whether they would invest any additional practice time due to their lack of game objective comprehension and the software's lack of helpful feedback provision. The tester asked whether the users would play the games again and the users responded with a resounding "no."

Recap of games played:

Soccer Game

This game was quite confusing even for an eight year old. The user kept on clicking on Stinky and Dinky for clarification but was frustrated by the repeat of the same set of instructions. After a few minutes of self-exploration, the tester intervened and asked the user whether or not she understood the purpose of the game. She responded that the purpose was "to score and win" although she did not know why she could not score every time and became quite frustrated with every missed attempt.

Rhyming Game

Only the five and six year olds played with this game. Upon entering the game, the users clicked on every object visible on the screen. They found much delight in clicking on the microphone and see it rise and fall as well as making sounds by clicking on the piano keys. They completely ignored Stinky's instructions at the beginning of the game. Consequently, they did not understand the game's objective and found much frustration when they kept clicking on the wrong answer. Each time the wrong answer buzzer sounded, the users looked to the tester for guidance. Again, the tester attempted to explain the game's purpose and provided examples. The users continued to click randomly on the choices provided. They were delighted when Stinky put on his sunglasses and sang with each correct response but they did not understand why they answered correctly.

Matching Game

This was the most enjoyable game (perhaps because it was the most familiar). The users had a difficult time at first realizing that they were supposed to find opposite pairs. It was only after the tester intervened that the users knew what they were supposed to do. The users played at least one round of this game and indicated that it was their favorite because they "could win."

Appendix A: Examination of Version 1.0 Failure

User Study #4

The user test results verified that five and six year old children do not have a positive educational experience with the Reader Rabbit software. The tests used nine members of the target audience (five and six year old boys and girls) from various socioeconomic strata, all of which are located in the San Francisco Bay Area. The duration of the test was approximately 40 minutes. The user and parent were asked several questions before and after using the software (the test). Results from the questionnaires can be found in

Appendix A. The results that follow elaborate on why this product was not educationally successful. To illustrate this clearly, there are three critical components of learning discussed: engagement, feedback, and practice.

Engagement

All of participants were actively involved in playing the game. Unfortunately, they did not understand what was happening in most of the games and continually tried to get hints from parents so they could increase their score and 'win' by going onto the next level. The games were too difficult for the five year olds and very challenging for the six year olds. This led to frustration, which was demonstrated by a continuous sequence of clicking on everything at random. This clicking frenzy ended up giving us a script error and they had to restart the game.

Upon opening the software, they immediately went to the rocket ship and blasted off from the planet before the initial narrative even began. They were very intrigued by the purple martian characters, but since they did not see the introductory story, did not understand the role that character played. The children gravitated towards the rocket and the control panel. It was obvious to them how to exit games through the rocket motive, although they didn't understand why all of the controls on the control panel did not "do something."

The first game that the boys went to was the auto race. There were few instances in the game where the children were able to sit through and listen to all of the directions, but in this game, it came the closest. Even the five-year old was able to articulate what he was supposed to do in the game (this was the only game the five-year old fully understood). After starting the race game, it became obvious that the children did not have enough coordinated motor skills to drag the word from one sign to the other. They were also completely oblivious of the alphabet written on the second sign. The users stayed in this game for only one set of words to alphabetize because there was not enough action, it was too difficult to move the words, and they did not receive adequate feedback.

The second game they went to was the pop-up martian game. It was completely beyond their comprehension and there was a 100% failure rate. After clicking around the screen to some fun effects, they exited before completing one vowel sound successfully.

The third game visited was the soccer game. They quickly exited because they did not know what to do, but then reentered because they wanted to score points by kicking the ball. The objective became to kick the ball, not to get the ball in the goal. After eight kicks, they realized that the letters on the ball fit with the letters on the screen. They found it very difficult to figure out how to pronounce the two sets of letters into one word and quickly became dependent on any adults in the vicinity to give them hints. They stayed in this game the longest and realized when they got 10 points that they did not win. At this point, they became disheartened and only shot one more ball, not comprehending why they hadn't moved onto the next level or some other illustration of winning that set. The rhyming planet where you sing songs proved to be the least interesting for the boys. They found the songs to be "dumb" and quickly began clicking everywhere to get some special effects. They seemed to find this game easier than the others, although they still relied on some adult support for pronunciation. After two rhymes, they left the planet.

The matching planet was the most familiar game. Unfortunately the example (back, back, in, in) showed identical words and the first game asked you to match opposites. The children automatically tried to find identical words and didn't realize the goal of matching opposite pairs until all of the cards had been turned over without a successful match of an identical pair. This game was the most engaging and all children played at least one complete round of word cards, it also was their favorite game.

Feedback

There was inadequate, irritating, and/or confusing feedback for many of the tasks. An example of inadequate feedback was the martian pop-up game. In this game, they did not listen to the instructions nor did they understand what they were doing. They tried to find the letter on the main card on one of the smaller cards held by the martians. If only this game was as simple as represented on the box, where the letter on the card not only has the same sound, but is the only vowel in the words. This game just was too difficult because it did not provide any coaching or feedback. By the time the children read all of the words on the card, the martians would go back down the hole and the cards would disappear. Several loud groans and obvious body language exaggerated their misunderstanding of the feedback.

An example of irritating feedback was in the auto race game. In this game, they successfully alphabetized one word of the three given. Once they had dragged all of the words over, they all disappeared since two words were out of order. The children immediately reacted to the game feeling it was unfair that all of the words disappeared when not all of the words were wrong. They were too irritated with that feedback to continue with the game and promptly exited.

An example of confusing feedback was during the soccer game. The main goal seemed to be to kick the ball and it wasn't clear what was happening and why. The characters were far more prominent than the sets of letters and it was not clear what the letters spelled, how it was pronounced, or why they didn't move onto a new level when they reached 10.

In general, there needs to be more clear and helpful feedback included in the games. It would be of benefit to add some feature that could provide assistance as you are trying to figure out the answer (NOT repeating the directions). None of the children reacted strongly to any of the characters except the bee. The most favorite characters seemed to be the purple martians because they did the most tricks. The bee was the least favorite because it kept repeating information that the children already 'knew', whether or not this information was correct, it still proved to be the most irritating character. More screen real estate should be given to the actual words in the game rather than the setting or the characters.

Practice

This was the most evident area in which the Rocket Reader software failed. There was no learning occurring during these experiences because none of the children spent long enough in a game to have practice with the concepts presented in games on each planet. There is insufficient practice game because of the level of difficulty, comprehension of game objectives, and lack of helpful feedback.

Features Recommendation

- Make all tasks easier
- Change control panel: make present in all games, add functionality to change levels, get instructions, and get hints for how to solve questions.
- With the new hint button you can hear the word or letter pronounced before you chose what to do with it. (i.e. soccer game, pop-up, singing).
- Get rid of the bee.
- Have it so when you reach 10 you move on to the next level, you 'win' and receive plenty of feedback.
- Change the score panel to not change level and have more prominent 1/10, 2/10, 3/10 so it is obvious you are trying to get to 10 and when you do something will happen.
- Matching - start with identical words
- Make all controls on control panel do something.
- Add lots of fun special effects for frequent clicking.
- In road race, have cars go the whole time, faster than they are.
- In road race, get rid of alphabet, keep words that are in right order, provide feedback during alphabetizing, and make it easier to alphabetize (i.e. motor skills to drag are poor).
- Get rid of instructions in each game and make that an obvious feature on the ever present control panel.
- Less narrative, kids don't have the patience to listen to it all.
- Spend less screen real estate on characters and scenery and more on actual words or letter groups. For example soccer and road race versus pop-up.

Parent Questionnaire

Computer @ home? Yes

Internet Access Yes

Sites Visited Shopping and News

Frequent Sites Nytimes.com & Barnes and Noble

Child's Use No

Child's Purpose on Internet No, because of age (5)

Site & Software No, can't really see why it could provide a service not possible on a more reliable cd-rom

User Questionnaire

Age? 5, 6, 6

Computer @ home? Yes, Yes, No

Favorite Game Science Blasters, Lego Chess, Power Rangers

Favorite Rocket Reader Game Soccer, Matching, Matching

Easy or Hard? Hard, Hard, Hard

Dinky and Stinky TV show? No, No, No

Appendix A: Examination of Version 1.0 Failure

Packaging Review

Study Location

All respondents are parents of elementary or toddler aged children. Half were approached at Keplers in Menlo Park the other at a Movie Theater in Mountain View.

Which Would You Buy?

- Ages 5 and Up

- Buy 1 Get 1 Free

- Stinky and Dinky

- Teacher Approved

- Ages 5-7

- Goofy Characters

18 voted Rocket Reader

- 12 cited preference in the characters: The Reader Ready characters looks too much like Beevis and Butthead or represent negative values or stereotypes, characters look more dynamic or more fun,
- 2 because you got something for free
- 2 other
- 2 more fun and less educational

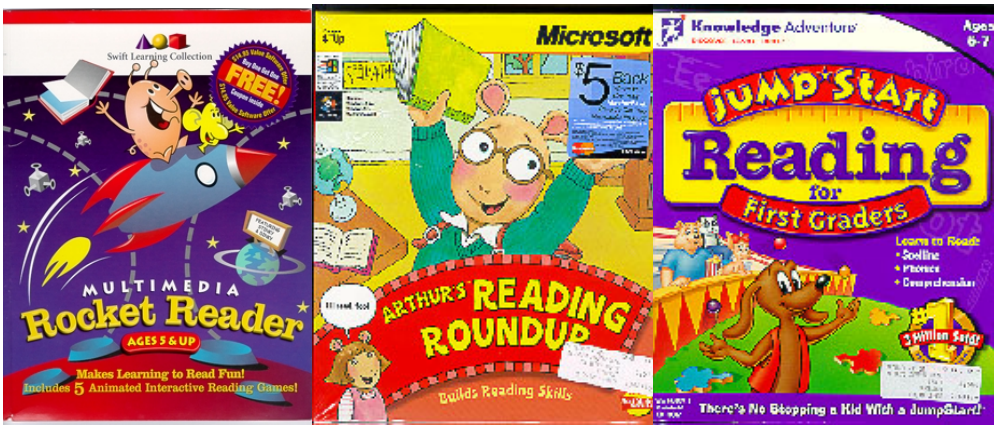
2 Voted Reader Ready

- Both cited that it looked more educational

Interesting Notations

- The people I spoke to responded to the characters more than anything else on the package.
- They developed general impressions about the relative educational values but did not base their decision on their assessment.
- No one had specific comments about their child's preference but most were concerned about which characters would be more appealing to their child.

Which Would You Buy?



4 voted Arthur

- 1 "Believes in Microsoft"

- 1 Heard it was "good" from word of mouth

- 2 has a niece or child who "likes it"

4 voted Jumpstart

- 1 Likes the package character, MAC user, little cheaper than Arthur

- 3 Says it looks newer, "looks more interesting", "graphics look better"

2 Voted Other

- 1 for Rocket Reader because it has the same features but cheaper

- 1 for Learning Company because of brand loyalty

Interesting Notations

Reasons for selection were all over the board.

Not one person cited "it looks more educational" nor did anyone mention child's preference.

1 out of 10 isn't bad for Rocket Reader. However, there are some brand names (e.g. Reader Rabbit) that are selling for $10.00 after rebate and they are not included here. I predict decision will be based on the characters.

Study Location

Each a visitor at a doctor's office; all are parents, mix between fathers and mothers ages range from mid 20's to early 40's.

Appendix B: Evaluation and Research of Quality of Learning Application of Various Learning Theories

Question

Where does Rocker Reader fit when its elements are viewed in the light of fundamental learning theory? Are there elements of Rocket Reader that are behaviorist, constructivist or situative in origin? If so, were they planned that way? While, to be effective, learning design does not have to embody one school alone, and some learning design might combine some of the elements of the three schools of thought, it is important to consider whether that is being done consciously and in a principled manner or whether that has occurred by chance.

Rocket Reader and Behaviorism

In general, in the behaviorist tradition, knowledge is considered a collection of patterns and ways to act on them, learning is the process of exposure to new patterns and response to them, and educational technique is generally direct instruction followed by practice. While Rocket Reader does test to see if students can manipulate patterns, there is no direct instruction occurring; thus, one of the primary tenets of behaviorism is absent. A behaviorist would generally recommend structured activities which build on one another in order for the learner to achieve higher order skills; this does not occur in Rocket Reader. Whether one looks at the whole skill-set of reading with the above

procedures in mind, or at the specific skills addressed in Rocket Reader (rhyming, alphabetizing, etc.), in neither case can the product be termed an example of behaviorist learning.

Rocket Reader and the Cognitive Model

According to Case and Bereiter (1984), the basic elements of the cognitive approach to learning consist of: identifying the task to be taught and developing a measure for assessing success; diagnosing the strategy that experts use for succeeding at this task; diagnosing the strategy used by novices or those who fail at the task; designing a paradigm for showing the learner why their current strategy is inadequate and for enabling them to assemble a more powerful one; minimizing the working memory load of the instructional program; providing sufficient practice at each step.

If we look at Rocket Reader as addressing the entire skill-set for early reading, it clearly does not qualify as a cognitive model of teaching. While it does identify some tasks to be taught, it does not pose a measure for assessing overall reading success. It poses no strategy for learners and does not enable the learner to develop a paradigm for success. If we examine Rocket Reader with respect to the five specific areas it addresses (including spelling, matching, alphabetization, rhyming, and vowel sounds), it does not use cognitivist methods either. While it does give practice in each area, it does not try to identify the mental model of the learner, nor does it attempt to teach a better mental model.

Rocket Reader and the Situative Model

According to Greeno (1998), the situated model of learning helps learners "become attuned to constraints and affordances of activity and helps them become more centrally involved in the practices of a community." The notion of becoming pat of a community of practice (e.g. students learning scientific skills and principles by working as real scientists do) is a critical one. In the situated view of learning, motivation springs from "social practices that are organized to encourage and support engaged participation."

It is also important to note that in the situative model, computer technology is part of the surrounding learning environment, and interaction with it is acknowledged as an important part of learning. That being said, it is clear that Rocket Reader does not attempt to orient a young learner to a community of practice in authentic ways. There is no connection for the young learner to a world outside the banal cartoon-world of Stinky and Dinky.

Appendix B: Evaluation and Research of Quality of Learning

Application of Whole Language Theory

Rocket Reader Activities in terms of the Whole Language Philosophy as applied in the 1987 California State Framework on English Language Arts and in follow up documents- 1993 California Department of Education's Early Reading Instruction: A Balanced Approach and 1994 California Department of Education document The Framework in Focus

What is Whole Language and how has it been applied to teaching students reading in California?

Whole Language has been defined as "a constructive, meaning-oriented process in which language is viewed as an authentic, natural, real-world experience and language learning is perceived as taking place through functional reading and writing situations." (pg. 458)(Lapp,D. and Flood, J.)(1992) Teaching reading to every child (3rd ed.)New York: Macmillan Publishing Company http://www.indiana.edu/~eric_rec/ieo/bibs/whole.html

This philosophy is applied in the 1987 California State Framework for kindergarten through sixth language arts education as "the understanding of meaning is the first and most important reason for learning language and the primary focus of all language activities."(pg. 27) This sentiment is again echoed in the 1993 California State Department of Education document Early Reading Instruction: A Balanced Approach. "While comprehension is the focus and goal of reading instruction, the weaving of decoding strategies in a balanced language arts program that includes stimulating, age-appropriate and language-appropriate literature..."(pg. 13) In other words, this document is saying that there is no one method of instruction for teaching reading. (pg. 3) It describes three instructional methods: phonetic, semantic, and structural cueing which are taught through meaningful contexts. In addition, writing is an "integral part of the reading program."(pg. 5) This reflects the definition of whole language stated above.

Another California State Department of Education document on language arts, which is the follow up to the 1987 framework, is called Framework in Focus. It again emphasizes "instruction on students' acquiring meaning." (pg. vi) Again, to achieve meaning, it re-emphasizes the balanced approach of teaching phonetic skills in context . It stresses that literature-based classrooms have a variety of print materials so students are not all reading the same book at the same time, but are reading things of interest or which are meaningful to them and are at their level of reading proficiency.

In sum, the whole language approach to reading as seen through California State Department of Education documents sees reading as learned through meaningful context which incorporate thinking, listening, speaking, reading, and writing throughout the learning process.

Do Rocket Reader Activities reflect the Whole Language approach applied in the California State Department of Education documents?

Activity	**Does reflect whole language**	**Does not reflect whole language**
Opening	• Says whole language philosophy of a variety of reading materials - reading books, doing cross-word puzzles, writing stories • Mentions having fun with words and letters	
Rhyming Planet	• Use of structural cueing- Use of seeing sentence • Says words aloud • Listening to sounds are focused on • Words seen as whole	• Does not show whole sentence at first in level1 until correct word is chosen • Does not highlight words until correct word is chosen • No use of pictures with key words • Meaning of words/ sentence not focused on • "Silly" sentences are used, no authentic/

		realistic sentences • No writing or speaking involved in activity
Alphabet Race	• Words seen as whole	• Words not put into context • There is no way for students to learn meaning • The scene does not represent the words used • No use of writing or speaking skills • Level of words used are not appropriate for different levels
Pop-Up Gophers	• Uses listening skills for sounds • Words seen as whole	• Words not put into context so does not build meaning • Does not require writing or speaking skills
Matching Game	• Develops meaning of words through use of finding opposites • Uses listening skills for when words are said when a match is made • Words seen as whole	• No context for words such as pictures or sentences • Does not build speaking or writing skills
Space Soccer		• Words not used in context • No development of meaning of words- no pictures, sentences • No listening, speaking or writing skills • Breaks up words into parts instead of showing them as whole words

Overall Rocket Reader does not reflect the whole language approach to learning to read. Throughout the program, the activities are designed for one person so the experience of learning in a social context is not fostered. The overall story of Stinky and Dinky does track into the individual activities so children lose the meaning of the overall context. None of the activities have the words or sentences situated in authentic contexts which are meaningful to children. The different levels do not represent different levels of ability for reading proficiency. Finally, the program does not incorporate the use of writing or speaking skills through use of stories so that the California emphasis of developing meaning and comprehension as then end result of a reading program is in no way developed by the program.

Appendix B: Evaluation and Research of Quality of Learning

Consultation with Reading Specialist, Michael Kamil

Major Points

- ***Phonemic awareness a critical skill (we should concentrate there).***
- ***Remember this isn't a school product.***
- ***Rhyming is a critical issue. . . include.***
- ***Don't separate vowels and consonants.***
- ***Letter recognition could be before rhyming.***
- ***MK will send us list of phonics rules if he can find them.***
- ***Context is necessary to help understanding when rules don't apply.***
- ***Basis of phonics: students already have some aural understanding. . . phonics gets them to take symbols on the page and make them sounds. Translating symbols to speech that they can decode.***
- ***Words taught in phonics must already be in student's vocabulary.***
- ***Problem with "when two vowels go walking, the first one does the talking.***
- ***Whoa! translated as hoo-a.***
- ***Don't use prefixes or suffixes. Syllable chunks better. Better even than compound words.***
- ***Associate letters and sounds in meaningful contexts.***
- ***Some part of the software should be diagnostic. . . finding out what student knows. Then track the user into appropriate activity.***

Appendix B: Evaluation and Research of Quality of Learning

Designs for Planets to Support Phonemic Awareness

Based on our understandings, we recommend that Rocket Reader have five planets of activity, including:

- ***Letter Recognition Planet***
- ***Rhyming Planet***
- ***Word Starter Planet***
- ***Syllable Planet***
- ***Blending Planet***

Letter Recognition Planet

Objective: Learner should connect visual symbols to names of letters and appropriate sounds.

Activity: Space Station Task

Level 1

Learner plays against the computer.

The learner must travel upward to each station and fuel up by identifying a letter which is presented both on the screen and aurally. Letters may be either in lower case or upper case.

The learner must type in the correct response.

If the learner provides the correct response, she earns points; score measures progress.

Level 2

Same as Level 1, but information is presenented only aurally.

Rhyming Planet

Objective: Learner increases sight-sound vocabulary, in context, through completing rhyming sentences.

Activities: On the Rhyming Planet, for each activity the learner is given four screen graphic images (e.g. boat, rocks, chair and tree) with the words spelled out underneath. In Level 1, the learner is presented with both text and auditory sentences with a blank in place of the last word.

The goat wore a coat when she sat by her ____.

The bee and the flea were under the ____.

The fox put her socks beside the _____.

The learner must click on the appropriate image.

Word Starter Planet

Objective: This is a phonemic awareness task that helps the learner break words into their constituent phonemes It takes a limited approach in that it is only breaking off the initial phoneme, which is often the easiest for children to deal with. Teaching sound-spelling relationships enhances phonemic awareness.

Activity:

Level 1: Learner separates graphic objects into a pile based on first letter sounds. Rolling over an object causes word to be pronounced.

Level 2: Objects now have labels. Learner is told specifically that letters make certain sounds. Again, learner sorts.

Level 3: Pictures disappear, leaving only label words. Again, learner sorts.

Level 4: Learner asked to click on sound that is present in one word and not another (e.g. cape and ape pictures are shown, learner clicks on correct letter in a group to respond). Learner may roll over responses to hear letter sounded.

Level 5: Same activity; pictures have labels.

Level 6: Same activity; no longer able to roll over responses for pronunciation.

Syllables Planet

Objectives: Learner will be able to differentiate the different groupings of sounds (syllables) found within a word. Learner will be able to apply this strategy to decode unknown words with other strategies while reading.

Activities: For all activities, the definition of the word "syllable" is given as combination of one or more letter sounds. The example "syl-la-ble" is given to students as a word broken down into its syllables.

For all activities, the learner is given an example activity to perform before starting the activity by himself.

Syllable Counting: By counting the number of syllables in a word, children will gain familiarity in hearing how words can be pronounced by their syllables and in seeing how words can be broken into their syllables.

Activity 1: A word is presented on the screen with a picture representing it. As the word is said aloud to the child, the syllables in the word are highlighted. Each syllable is highlighted a different color. The child types in the number of colors highlighting the word.

Blending Planet

Objective: The student should be able to take several discrete sounds and form them into one word. Conversely, she should be able to articulate the separate sounds that occur in one word.

Blending Activity #1

Three space gophers pop up. They have cards with phonemes on them in their hand, and they separately make the sound of the phonemes. (e.g. /s/ /a/ /t/)

The learner can click to listen to them again, click to make them go faster, or click to make them go very fast (so that the word is almost sounded out).

He then is given three options from which to choose (e.g. cat, sad, and sat). Mousing over them will sound them out.

He will then click on the correct word.

Blending Activity #2

The same exercise, but this time the gophers hold no letter cards, so the exercise is completely aural. The learner then gets three options from which to choose.

In both activities, success at shorter, easier words gradually gives way to longer words.

Appendix B: Evaluation and Research of Quality of Learning

Full Development of Syllable Planet

- ***Name:***

  Show Stopping Syllables Planet

- ***Objectives (Goals):***
- ***Children will be able to differentiate the different groupings of sounds (syllables) found within a word.***
- ***Children will be able to apply this strategy to decode unknown words with other strategies while reading.***
- ***How does teaching syllables provide scaffolding to build on for the blending of sounds?***
- ***By showing children the component sound groups (syllables) which make up a whole word, children should be able to transfer that knowledge to help them recompose a whole word by sounding out its component sounds. If a child is having trouble sounding out a word (blending), then they could look for familiar syllables (sound groups) which make up the word.***
- ***Diagnostic Activity at Beginning***

  :

- ***The diagnostic at the beginning is designed to assess students' prior knowledge of syllables or knowledge about sound groups within words. It assesses if students are able to orally pick out the number of syllables contained in a word. The number of syllables a child can orally distinguish will determine the kind of activity the child will start with.***
- ***Activity:***

  Children will pick the word that has the same number of syllables presented. For example, the word "car" is presented on the screen with a picture of a car. The computer will say "Car has one syllable. Pick the word that has one syllable." The child would then be presented with the words "top" and "children." Each would have a picture next to the word. The computer would then say each word- "top" "children." The child would then click on the word which has one syllable. The child can also click on the repeat button so that the computer can repeat the choices for the child to make their decision. The activity would be repeated several times to see if the child could distinguish up to four different syllables in a word and to see how many repeats the child has asked for before determining the number of syllables.

- ***Diagnosis would also continue through out the activities. As students get more of the activities correct, they would be moved to different activities. When the child has gone through the activities and gotten the majority of the activities correct, the computer would move the child to the next planet. This is "CAL" - Computer Aided Learning.***
- ***Activities:***
- ***For all activities, the definition of the word "syllable" is given as combination of one or more letter sounds. The example "syl-la-ble" is given to students as a word broken down into its syllables.***
- ***For all activities, the child is given an example activity to perform before starting the activity by themselves.***
- ***Syllable Counting***

: By counting the number of syllables in a word, children will gain familiarity: in hearing how words can be pronounced by their syllables and in seeing how words can be broken into their syllables.

- ***Activity 1:***

  A word is presented on the screen with a picture representing it. As the word is said aloud to the child, the syllables in the word are highlighted. Each syllable is highlighted a different color. The child types in the number of colors highlighting the word.

- ***Activity 2a:***

  A word is presented on the screen with a picture representing it. As the word is said aloud, the child claps their hands every time they hear another syllable. The child then clicks on one of the three choices of numbers representing the number of times they clapped their hands. If they get it wrong, the choice they picked is dropped and the word is repeated but slower. If the child gets it wrong again, then the word is repeated with a hand clapping under each syllable. (Note: It would have to be user tested to figure out the average speed of speech to understand the syllables.)

- ***Activity 2b:***

  This is the same activity as above, but instead of clapping their hands, children could stomp their feet.

- ***Activity 2c:***

  The same activity could again be repeated but students could count the syllables using the space bar or mouse clicking.

- ***Recomposing Words from Syllables/ Match the Syllables to Make a Word:***

  By having children recompose words from the component syllables, students will gain familiarity in what a syllable looks like and sounds like.

- ***Activity 3:***

  Children will choose syllables from columns to create words. At first they will be presented with two columns, then three, then four. Children will highlight a syllable in each column to create a word. The computer will say each syllable when it is highlighted. The computer will say all the syllables together when one has been chosen from each column. The child will know when they have created a word by the fact that the syllables they highlighted in each column are the same color. The word then will be placed at the bottom of the chart. They will know that the syllables they highlighted in each column do not make a word because their highlighted colors will not match. For example,

• chil	• light
• sun	• dren
• be	• hind
• be	• gin

- ***Highlighting Syllables***

  : By having children highlight the syllables in words, they will able to break down a word into its component syllables.

- ***Activity 4***

  : A child will be presented with a word. The word would be said aloud naturally. The child will then decide the number of syllables in the word by choosing from three choices given. Once the child has determined the number of syllables, the child will drag across and highlight the letters in the word which make the first syllable. The child will then hit a submit button. The computer will say the letters highlighted. If the child is correct, the letters will stay highlighted. If the child is wrong, the letters will not stay highlighted and the child will click and drag again. The child will be done when all the different syllables in the word are highlighted a different color.

Appendix C: Research on Competitive Products

Summary Notes

Motivation and Support

The successful programs we've looked at share some kind of motivational goal structure. Even if the games themselves aren't engaging due to their lack of diversity, kids may be motivated nevertheless by the idea of a reaching a goal, for maybe an award? Many of the products seemed to display diversity in types of activities - matching, memory, letter recognition - a diversity of tasks helps increase attention and motivation.

The better programs had means of supporting multiple levels of ability. This increases the longevity of the product. Two of the customers interviewed emphasized this as a deciding factor when purchasing software - it's an investment and they want it to last, they don't want their kids to grow out of it in three months - the varying levels of difficulty provide continuing challenges

Better programs also provided meaningful feedback to support learning, explain mistakes in a positive way to prevent discouragement. Some very successful products, however, did not address this issue at all. In fact, some made almost no distinction at all between correct and incorrect answers. There were two products that quietly made the mistakes disappear without pointing them out at all. Presumably children are expected to understand their mistake automatically when they do not hear the usual success sounds. It is likely that the programs would be much more effective if children had the option of learning from their mistakes.

Some programs offered a manual written for parents. This provides motivation for the parents to become engaged in their child's efforts. Parents may enjoy the option of supporting their child's efforts by providing scaffolding with just a little guidance from a manual. Certainly parents are at least interested in knowing what the software is intended to teach.

PACKAGE

The package must accurately represent what's in the product, there cannot be any misstatements or misrepresentations. It is popular to outline activities on the back, and to outline (in a chart) expected learning outcomes from each activity - this may sell the product to parents concerned about learning

Many boxes featured cute characters. Familiar characters (like Elmo) draw positive attention. The package must be attractive, bright colors, glossy paper, professional yet fun finish.

Learning / Teaching Strategies

As the comparison chart (below) indicates, most of the programs, with the exception of Arthur's Reading Race focused almost entirely on phonics skill building. There was very little reading of entire sentences and words and in many of the programs words were not always associated with their meanings in any way.

None of the programs focused on making sounds. Students were not asked to say words out loud as they often are in reading classrooms but in many cases words were read out loud so children would at last learn to recognize their sounds.

While many of the programs had more than one level, none had sophisticated movement systems adjusting the difficulty level to the students progress. Students and parents might easily have a hard time deciding on the appropriate settings and focusing more on the levels than necessary because they must be adjusted by the user.

Overall, very little association was made between reading and communication in any of the programs. A child might do well with a combination of Arthur to tell them why to read and one of the better skill based programs to help them learn to read. A child might easily be motivated by some of the more exciting of the reading games in the programs but the motivation would definitely be extrinsic to the reading.

What almost all of the programs (again the exception is Arthur's reading Race) shared was that the relationship between the game the children play and the reading they were learning was entirely artificial. The games could just as easily be adapted to a math or spelling lesson. It seems that nobody has yet come up with a game that intrinsically connects educational, reading related activities to it's structure. Arthur was in some way the exception here in that the relationship between the material taught (not reading itself but an understanding of the importance f reading) and the storybook style adventure was a natural one that did not feel contrived. As you work through the Arthur program, it feels like you are being read a story. The story itself demonstrates how much fun reading can be.

It would be a true innovation to come up with a game that could more naturally be associated with reading. Something like The Logical Journey of the Zambooni's where the concepts being taught are part of the games themselves. Programs like this are likely to hold a child's attention for a bit longer too as the motivation too is intrinsically related to the concepts learned.

Appendix C: Research on Competitive Products

Criteria for Comparison

Top Software

We evaluated the 5 leading products in the early reading instruction category. We selected the products based on their prominent position in the market (eye level shelf space) and their positive reviews according to the parent reviewing clubs.

These products are:

- ***Reader Rabbit (we looked at Reader Rabbit 1, the first in the series)***
- ***Jumpstart Kindergarten***
- ***Elmo's Preschool***
- ***Fisher Price, ABC***
- ***Arthur's Reading Race***

In addition, along-side the evaluations of the competitors, we have evaluated both the existing Version 1 and the proposed Version 2 of Rocket Reader.

I. Learning

A. What prior knowledge does it assume in the child?	Listening and Understanding Instructions
	What Age group is it designed for?
	Understanding Technical Terms (e.g. opposites, rhyming etc.)
	Letter Recognition, the whole alphabet
	Sounding out vowels
B. What Does it Teach in Reading?	Contextualized
	Meaning oriented
Whole Language Approach	Structural cueing
	Writing as an integral part of reading
	Listening as an integral part of reading
	Rhyming
Phonetic Approach	Letter recognition
	Blend syllables into multi-syllabic words
	Process words containing silent letters

C. Does it give meaningful correction of errors?

II. Appeal and Motivation	Are the activities engaging for children? Are the activities varied? Does it adapt to the child's level of learning? Are there any innovative elements? Does it motivate children to read?
III. Usability Issues	Is it easy to install? Is it easy to use? Does it require constant supervision from adults?
IV. Packaging	Is it attractive? What message does it send? Educational? Fun? Is there a useful manual? Is learning covered in the manual?

Appendix C: Research on Competitive Products

Comparison Chart

Criteria	**Reader Rabbit 1**	**Jumpstart Kindergarten**	**Elmo's Preschool**	**Fisher-Price ABC**	**Arthur's Reading** **Race**	**Re** **ve**
Learning Criteria A. What Prior knowledge does it assume of the child?						
• Listening and understanding	Yes	No. It is not necessary to	Yes	Yes	No, you can ignore the	Ye

instructions		instructions.			explore. You'll still get something out of the program. Actually, there is a real shortage of instructions. More guidance would be nice.	
• What age group?	3-6	4-6	3-5	3-5	3-7	5
• Understanding technical terms e.g. opposites, rhyme, arrange in order	For the sorter, you must know what either a beginning sound or a first letter is but there is the choice	In some games it asks specifically for language arts terms such as opposite.	Sparkle, exit, click etc.	Words like click.	For all prior knowledge below, knowing these things would add to the experience but would not be required.	Ex gi an ve
• Sound vowels	No	No	No	No	See above	Y

Criteria	**Reader Rabbit 1**	**Jumpstart Kindergarten**	**Elmo's Preschool**	**Fisher-Price ABC**	**Arthur's Reading Race**	**R ve**
B. What does it teach in reading? *(Whole Language Approach)*						
• Contextualized	No	Some are done in a context such as making a funny sentence	No	No	Yes, all of the reading is done in a context	N
• Meaning-oriented	Yes, Words are compared to pictures and sounds	Yes, Words are compared to pictures and sounds	No	Yes, Words are compared to pictures and sounds	Yes. Meaning is emphasized, reading tasks are not. Storybook style lessons	N

• Structural cueing	No	No	No	No	Yes	N
• Writing as an integral part of reading	No	No	No	No	No	N
• Listening as an integral part of reading	Individual words only. There are no phrases and sentences involved.	Yes	No	Yes	Yes	Y G
C. What does it teach in reading? (Phonetic Approach)						
• Rhyming	Yes	No	No	Something similar but not exactly rhyming.	Yes	Y
• letter recognition	Yes	Yes	Yes	Yes	Yes	N

Criteria	**Reader Rabbit 1**	**Jumpstart Kindergarten**	**Elmo's Preschool**	**Fisher-Price ABC**	**Arthur's Reading Race**	**R ve**
• blend syllables into multi-syllabic words	This CD is level 1. This level is only single syllable words but there are two more levels available	No	No	No	Yes	N
• blending phonemes into syllables	Yes	No	No	No	Yes	N
• sounding out	Yes	No	No	No	No	Y

vowels						
• process words containing silent letters	No	No	No	No	Yes	No
II. Appeal and Motivation						
• Are the activities engaging for children?	Some are. The sorter and word train I doubt would be very engaging	Yes, they are. Some might be a little difficult for ages 4-6	Fun but not necessarily engaging.	Maybe some are, but not much.	Yes, this program would be engaging for a child of this age. Perhaps not for 3-7 year olds but at least for 3 - 5 year olds.	No ar Ch fru bo

Criteria	**Reader Rabbit 1**	**Jumpstart Kindergarten**	**Elmo's Preschool**	**Fisher-Price ABC**	**Arthur's Reading Race**	**Re ve**
• Are the activities varied?	4 on this CD but several other disks are available. There is variety.	Yes, very much. There are several.	Yes, games and an adventure.	3 activities with 2 modes only. Monotonous.	Yes, the activities are varied. In a single activity there are varied tasks.	Ye int en
• Does it adapt to the child's level of learning?	Child/Parent selects a level. Nothing automatic.	Each activity starts at a relatively easy level. As you go through, it becomes more difficult, but not much.	No, there is very little learning at all. Just the letter recognition.	There are two levels. One is slightly more difficult than the other but not much. Children can go back and forth anytime	Since the program can be appreciated on many levels it has something like an adjustment to the students level in that students will get more of it if they know more.	No ha lev lev di ac is int ad us
• Does it give meaningful error	No, wrong answers are almost ignored and disappear	No, wrong answers are repeated by the guide but he does	It gives 2 tries and then Elmo pops up to help.	No, Some wrong answers disappeared.	N/A Much of the program does not involve answering	No

correction?	after a few seconds so there is little time to make sense of the mistake.	not explain what's wrong.			questions.	
• Are there any innovative elements?	No. I feel like I have seen these games before but I have never seen the pgm.	Some activities seemed fairly unique	Elmo himself if any.	No	No	No

Criteria	**Reader Rabbit 1**	**Jumpstart Kindergarten**	**Elmo's Preschool**	**Fisher-Price ABC**	**Arthur's Reading Race**	**Re ve**
• Does it motivate children to read?	Nothing gives an idea of what makes reading fun or important	There are some rewards after completing each task. It might motivate children to learn to read.	No	Not really	No	No
III. Usability Issues						
• Is it easy to install?	Yes, very	Yes, only 3 clicks	Yes	Yes	Yes	Ye
• Is it easy to use?	Yes, very	Yes	Yes	Yes	Yes	Ye
• Does it require constant supervision from adults?	No, just the login. Requires spelling name.	No. The first time a child uses the software, they must type their name. After this they only have to select their name from a list.	No	No	No	No

• Is it attractive?	Yes	Yes	Yes, Elmo is	Yes	Yes	No no so an gr

Criteria	**Reader Rabbit 1**	**Jumpstart Kindergarten**	**Elmo's Preschool**	**Fisher-Price ABC**	**Arthur's Reading** **Race**	**Re** **ve**
Packaging						
• What message does it send? Educational? Fun?	Picture says fun, Text says educational	Both. Rewards for curiosity	Fun	Fun with some learning.	Packaging looks like nurturing educational fun.	M re
• Is there a useful manual? Is learning covered in the manual?	Yes. Some learning covered	Yes. All activities explained in detail. Parents could find out what their children are learning using the manual without knowing the program	N/A	Yes, some learning covered	Not in my box but mine is borrowed and I may be missing something	Ye ic an su ex of ob
Additional Comments						
	This product would probably bore a 6 year old but might be very engaging for a child closer to the 3 end of their age range.	I think that children could use this program to practice various skills through activities that look just like games	It looks like this one is more game than learning.	Many children would get bored soon because this program lacks variety.	That it's fun and gives you access to all kinds of information. I think it would motivate a child to learn to read but not actually	On en M ed En el re

					teach much.	Co in

Appendix D: Research on Web Integration

User Access, Considerations, and Motivation

User Access

The Number of Users On-line is suspected to be low, but growing. Although specific data about the percentage of Rocket Reader users who have internet access was not available, we do know that the number of households with children aged 6-12 who own a PC and have Internet access is around 38% and 22% respectively. This translates to roughly 6 million children who are on-line today. Considering the increase in access by children through schools and the increase in kid-specific content being developed for the Internet, this number is projected to rise to 13 million by the year 2003, and then grow at an even faster rate. Since the primary target user of version 2.0 will be five to seven-year-olds, we suspect that only a small percentage of children will go to the site independently, while the majority will access the site with a parent or sibling.

Kids' companies are going on-line. Many kids' companies are getting aggressive on-line in order to build brand and extend product mindshare. As Adrienne Conant, Assistant Producer for the Houghton Mifflin website discusses, "the greatest advantage of providing activities online for kids is that parents are always looking for activities for children. If they find ours and the kids enjoy them, then maybe they will continue to visit our web site for new activities, or, even better, they might buy our software titles. It is all about marketing. It is the same reason why toy makers create advertisements for children, not adults. If you create a desire in children, you will create a demand from parents." Rocket Reader can profit from those benefits and should consider pursuing Internet integration now in order to take advantage of its increased importance in the future.

Identify ways to support and encourage on-line access. For those customers who do not access the Internet, the Company should consider ways to offer introductory trial access. This can include strategies such as providing AOL disks with Rocket Reader, or possibly including some number of hours included with purchase of the upgrade.

Considerations and Trade-offs

Safety. The biggest concern in developing a site on line is security. The two main concerns are 1) the potential damage to brands from unsafe sites and 2) inviting censure from the FTC by impinging on children's privacy. The utilization of common safety measures such as embedding a password script into the CD ROM and developing a customized browser will be effective in providing this security.

Technological Constraints. Adrienne Conant of Hougton Mifflin and Marney Morris of Animatrix describe current trade-offs in using the technology of online environments. However, both agree that as the technology is changing, the cost benefits of designing products for online environments is increasing. Marney Morris quotes, "we decided to integrate cd-rom and online as an interim measure. Until bandwidth gets cheaper for the general public, it just takes too long to download high bandwidth

graphics and sound. Eventually, the cd-rom will go away, and we can't wait until it does." Concerning the integration of cd-roms with the Internet, Adrienne Conant comments, "this is a direction that we (Houghton Mifflin) are moving in as Web technology improves, along with the number of schools and home PCs with web access. Lack of bandwidth is also an issue with any online development. I do think that these issues will be resolved sooner than we all think, however, and that the internet will be the most efficient way to distribute software at the lowest cost and allowing for automatic upgrades to content."

Technological Affordances. Web provides opportunities for the Company to enhance learning and provide additional motivation to emerging readers. Some of the main benefits include the following: activities can be continually updated, graphical libraries can be easily expanded, the support activities are authentic in their real-world applications, activities fostering parent-child interaction can be developed and updated, and kids can communicate with others using the skills they develop. The site will need to be intuitive and simple, relying largely on icon-based navigation.

Link to Distribution. The Web Activity Site should be linked closely to any Company distribution site, providing activities as well as advertising about the Company and it's products, tech support, on-line ordering (if feasible), distribution information, coupons or other promotional materials, registration, and contact information. The Web site should also be used to collect feedback from the users concerning the learning environment, as well as demographic and other sales-related information.

Little research is available to analyze the cost/ benefit trade-off. Currently, although 86% of educational software companies with a web presence have product marketing and corporate contact information on the Web, less than 10% provide upgrade ordering or download and technical support on their sites. The number of companies providing on-line learning activities in conjunction with products is increasing.

Motivation

As described by Connell and Wellborne, three key factors in motivation are competence, autonomy and relatedness. The affordances on an online environment support these factors:

Competence: Two key components of our online design concern the new features of scaffolding and feedback (through a diagnostic report). In keeping with the recommendations of the features group regarding the re-design of the score card, progress reports need to be geared toward learning objectives and not toward scores, speed or other non learning-based criteria. Game scores could also be recorded and displayed on the site, as well as progress chart, graph or other progress-oriented documentation to provide the kids and parents feedback. Creating an environment in which children can see their progress and can share their successes with others, provides increased opportunity for competence and intrinsic motivation.

Autonomy: The activities provided on the website will draw from the particular skills and activities provided in the CD ROM. While a parent's involvement is encouraged (and necessary for preliminary registration), the child is free to explore the site at her own pace.

Relatedness: A Community of Users. A component of the site will be to host user-created content for the purpose of developing ownership by and for the emerging young readers. Our intent is that Access Softek will provide a kid-friendly, online environment for children to publish their own drawings, stories and activities which are related to the themes, characters and activities of Rocket Reader. There are several reasons we have chosen this approach. First, sites that incorporate content created by the users create a compelling reason for users to return to the site. The web is an easy forum to host user produced content. Kids love to see their work published and parents love to see children's progress. Second, writing and creating for a real audience increases motivation and interest in learning. Examples from other kids can provide role models for high quality work, and provide a forum for kids to assess their own progress by viewing others' work.

Appendix D: Research on Web Integration

Resources

Online search engines for kids

- ***Yahooligans!***
- ***www.simonsayskids.com***
- ***www.funschool.com***
- ***www.kidsdomain.com***

Learning to Read: Resources for Language Arts and Reading Research

- ***http://toread.com***

Reading Online

- ***http://www.readingonline.org/home.html***

Kindergarten Stories: Writing and Drawing at the Computer

- ***http://www.readingonline.org/electronic/kindergarten/***

Software Reviews

- ***http://thereviewzone.com/***

Pure-play Activity Sites

- ***MamaMedia***
- ***Bonus.com***
- ***Headbone Interactive***

Pure-play character based Activity Sites

- ***Purple Moon***
- ***Hoffman + Associates***
- ***Disney (BLAST Jr.) http://www.disney.com***
- ***Cyber-Seuss***

  http://www.afn.org/~afn15301/drseuss.html

- ***www.livingbooks.com***

Privacy policies for children

- ***Disney's Guide to Online Safety-http://www.disney.go.com/cybernetiquette/***
- ***Children's Online Privacy Protection Act: http://www.cdt.org/legislation/privacy/coppa.html.***

Report on user access

- ***1998 Internet and Electronic Commerce Survey: http://www.spa 98 ecommerce.htm***
- ***The Forrester Report: http://www.forrester.com***

Appendix D: Research on Web Integration

Online Interviews

Houghton Mifflin

> ***X-Lotus-FromDomain: HOUGHTONMIFFLIN***
>
> ***From: "Adrienne Conant" <Adrienne_Conant@hmco.com>***
>
> ***To: kemery@leland.Stanford.EDU***
>
> ***Date: Wed, 17 Feb 1999 10:47:26 -0500***
>
> ***Subject: Re: Safety on the net?***
>
> ***Hi. I am the Assistant Producer for Web Development at Houghton Mifflin***
>
> ***Interactive. Both of the questions that you have asked are huge issues***
>
> ***with any development that we consider. I could probably discuss them both***

extensively, but I am going to try to keep this brief.

When designing for an online environment for children, what are the considerations you make?

There are, of course, the basic design scheme and layout to be considered. It must be one that will be attractive and appealing to the intended audience. If the activities are for very young children, like The World of Curious George is, than the design has to consider that children in this age group are not likely to be surfing the internet alone, but with parents. This means that the navigation must be natural for the adult, who is probably doing the driving for the child. Online safety and the privacy of children are very important for us to ensure that we, as a company, are trusted by consumers to create a safe atmosphere for children, no matter what the medium. For online activities, this means that we do not have activities, in which or by which anyone can identify or contact a child participant. Of course, once children leave our site, there is little that we can do to protect them. We do not usually make references to other sites on the portions of our web sites that are intended for young children, since we can be held liable for content on sites that we link to as well. There is a legislative act that addresses these issues, called the Children's Online Privacy Protection Act. If you don't mind sifting through the legal jargon, I suggest that you read this, as it is determining the direction of all content for children online. You can find a copy of this act on the web at http://www.cdt.org/legislation/privacy/coppa.html.

What are the advantages of providing activities for kids on the web? Are you able to track the number of hits to the site?

The greatest advantage of providing activities online for kids is that parents are always looking for activities for children. If they find ours and the kids enjoy them, then maybe they will continue to visit our web site for new activities, or, even better, they might buy our software titles. It is all about marketing. It is the same reason why toy makers create advertisements for children, not adults. If you create a desire in children, you will create a demand from parents. It sounds terribly manipulative, but that's marketing. The other advantage to online activities is that there are ways of gathering demographic information about our consumers from our website- through parental survey and registrations. This information is valuable to me, as a producer, as well as to our marketing and sales teams.

There are also ways of tracking "hits" and such, but this information tells you very little about the people who are coming to the site. These applications provide little more than traffic numbers. From these stats we can see how our general traffic is improving and in what areas (which are most popular) but that is about all.

Lastly, concerning the integration of CD-ROMs with the Internet, this is a direction that we are moving in as Web technology improves, along with the

number of schools and home PCs with web access. Lack of bandwidth is also a an issue with any online development. I do think that these issues will be resolved sooner than we all think, however, and that the internet will be the most efficient way to distribute software at the lowest cost and allowing for automatic upgrades to content.

This is longer than I intended, but I hope that my comments are useful. Fell free to contact me again if you have further questions on this matter. Good luck with your research.

Adrienne Conant

Assistant Producer, Web

Houghton Mifflin Interactive

120 Beacon Street

Somerville, MA 02143

617-503-4815

adrienne_conant@hmco.com

Sprocketworks

Date: Tue, 16 Feb 1999 23:08:38 -0800

From: marney@animatrix.com (Marney Morris)

Reply-To: marney@animatrix.com

Organization: Animatrix

X-Mailer: Mozilla 4.05 (Macintosh; I; PPC)

To: Katherine Emery <kemery@leland.Stanford.EDU>

Subject: Re: Thank you and questions

hi katherine.

we decided to integrate cd-rom and online as an interim measure. until bandwidth gets cheaper for the general public, it just takes too long to download high bandwidth graphics and sound. eventually, the cd-rom will go away, and we can't wait until it does.

we had planned to keep our online site as a closed site, but since the presentation at stanford, we have changed our business strategy. we are now going to have an open site and a cd subscription. we did this for a few reasons.

one- technically, we couldn't make a safe site on the mac (has to do with the lack of support with microsoft's active server pages which we were imbedding in a shockwave wrapper). and we hated not shipping on the mac.

two- we kept wanting to share things with kids whose parents might not have the resources to subscribe to sprocketworks.

three-the open website will drive cd-sales.

so we probably spent 6 man months creating an elaborate architecture for

updating the menu structures to seamlessly integrate patches, corrections and additions with the cds. it was a noble (and elegant) experiment, but the business issues became overriding. we are going to use the website for exposure to the cd. simpler. more fun.

best of luck to you, and thanks for the feedback on sprocketworks!

marney

Appendix D: Research on Web Integration

Competitive Web Research

Title/Company/Website	**Tech Help**	**Sold Online**		**Online Activities**	
	Yes	Direct	Indirect	Yes	Types
****Reader Rabbit** (various games) **TLC** http://www.learningco.com/ The Learning Company has a well developed web site, including on-line store plus sites for 1) Kids Only (fun activities), 2) Family (a catalogue highlighting products for age categories: students - Preschool, Kindergarten, Elementary, Middle, High School, College, parents, and grown-ups) and 3) Educators (purchasing, lesson plans, tips). Site includes all product info, screen shots, tech support, contact information, school discount program, and 4 fun activities.	x	x	x	TLC site	On TLC Kid's Activity Page http://www.learningco.com/tlckids/default.htm 1. Read bedtime stories - html http://www.learningco.com/tlckids/stories/default.htm 2. Surf previewed links http://www.cyberpatrol.com/616/default.htm 3. Clue Finder's Clubhouse - More adventure. More mystery. Read the latest installment of the Clue Finders' adventures! --Software, not online 4. Maze - select and print http://www.learningco.com/tlckids/Maze/default.htm 5. Color Me - select and print http://www.learningco.com/tlckids/color/Mathmun.htm

** **Reading Mansion** **GreatWave software** $39.95 Grades: Pre-K-3	X	X	X		(Activities are not on the web, but a reviewers downloadable version is available) • Link to review (doesn't work) Smartkidssoftware.com • Option to download reviewers guide • Students learn phonics, word skills, sentence mastery and following directions. • Automatically adjusts problem levels to student's abilities. As the student succeeds, the difficulty level increases. • Customizable, so teachers and parents can adapt the program to meet diverse learning needs and track students' success.
**** **Jump Start 1st Grade Collection** **Knowledge Adventure** $44.95 (all subjects combined) http://www.knowledgeadventure.com/features/kids/ Kids Activities (toddlers, preschool, kindergarten, http://www.kidspace.com/kids/	x	x	x	KA site	Preschool Activities- coloring book, sticker book connect the dot, slider puzzles • Slider Puzzle Unscramble the tiles to make a picture. To move, click a tile in the same row or column as the empty square. Click the arrows to see a variety of JumpStart characters. • Connect The Dots http://www.kidspace.com/kids/connect_dots/?1 To begin, click on the dot by the numeral or mathematical result equal to 1. To finish the drawing, connect the rest of the dots to the drawing by clicking on them in order.
** **I'm ready for Kindergarten, Huggley's Sleepover** **Scholastic** (not avail on web, avail in all stores, advertised on web) **Ages**: 4-6	X				Info online, but product available directly from Scholastic. • Beginning reading-"learn phonics while collecting pillows for the pillow bounce."
** **Curious George Reading Series**	X	X	X		Free Demo, Downloadable

Houghton Mifflin $15.95 **Ages**: 3-6					• Exchanging, sharing "Things" • Website, www.georgeworld.com has postcard emails, interactive games • By actively participating in an ever-changing story line --choosing places to go, characters • to visit and things to do -- children learn storytelling and problem solving in a creative, fun-filled environment.
****Curious George Learns Phonics,** Houghton Mifflin **Ages**: 4-6 $19.99	X	X	X	X	Website, www.georgeworld.com has postcard emails, interactive games • George is up to his usual antics, sending circus animals flying through the air in dashing acrobatics, laughing at the clowns' jokes, playing music and chasing down letters and their sounds. Six games and activities teach children to recognize letters and sounds and to sound out words as they build basic reading skills. They'll have hours of laughs and fun! • Phonemic awareness and phonics are the building blocks of independent reading. As children learn about letter names, the sounds in language (phonemic awareness), and letter-sound associations (phonics), they learn the basic skills of reading and writing.
****Curious George Reads, Writes and Spells!** Houghton Mifflin **Ages**: 6-8 $19.99	X	X	X	X	• Website, www.georgeworld.com has postcard emails, interactive games. George embarks on a new adventure as a cub reporter at the local newspaper. George is assigned to cover a story all on his own, and manages to get into a little trouble along the way. In one action-packed day, kids encounter a dozen unique activities which they complete in order to help George complete his assignments. Users become part of the story while practicing their reading, writing and spelling skills. Each of the twelve different "episodes" offers a specific spelling, reading or writing activity. • Reading Skills your child will acquire: • Vocabulary • Spelling Pattern Recognition • Phonics • Proofreading and Editing • Writing
Rugrats Adventure Games. Broderbund $27.99 Ages 6-10	X	X	X	X	Website: http://www.broderbund.com/rugrats/ • Adventure Game: Problem Solving, Strategy, Logical Thinking (Hidden picture, alien chase, cabinet climb) • Print Shop: Create online greeting cards, send an email, host an online party, make invitations, photos and stickers with Rugrats images.

					• Suggested links

Appendix E: Research on Distribution and Marketing

Breakdown of U.S. Households with Computers

Percent of U.S. Households with a Computer, Modem, Telephone, and E-mail, 1994 vs. 1997

	Computer	Modem	Phone	E-mail
1994	24.1%	11%	93.8%	3.4%
1997	36.6	26.3	93.8	16.9

Percent of U.S. Households with a Computer by Region and Rural, Urban, and Central City Areas. 1997

	All U.S.	Rural	Urban	Central City
Northeast	35.2%	41.7%	33.4%	24.7%
Midwest	36.5	36.2	36.7	31.1
South	33.4	30.2	34.8	31.1
West	43.4	40.3	43.9	42.9

Percent of U.S. Households with a Computer by Income and Rural, Urban, and Central City Areas, 1997

	U.S.	Rural	Urban	Central City
Under $5,000	16.5%	15.0%	16.9%	16.4%

$5,000-9,999	9.9	7.9	10.5	11.0
$10,000-14,999	12.9	11.0	13.5	13.2
$15,000-19,999	17.4	17.0	17.5	17.8
$20,000-24,999	23.0	20.9	23.7	24.4
$25,000-34,999	31.7	31.7	31.7	31.0
$35,000-49,999	45.6	45.0	45.9	46.4
$50,000-74,999	60.6	59.6	60.9	60.0
$75,000+	75.9	75.3	76.0	73.9

Percent of U.S. Households with a Computer by Household Type, and Rural, Urban, and Central City Areas, 1997

	U.S.	Rural	Urban	Central City
Married Couple w/ Child >18	57.2%	53.9%	58.6%	52.0%
Male Householder w/ Child <18	30.5	30.2	30.6	28.0
Female Householder w/ Child <18	25.0	28.1	24.5	20.2
Family Households w/o Child	36.4	32.0	38.2	34.1
Non-family Households	23.5	17.0	25.0	26.1

Appendix E: Research on Distribution and Marketing

Distribution Research

The packaged personal computer software market in the United States is estimated at nearly $30 billion of this, $24 billion is business software, $5 billion is home use products and $800 million worth of software is designed for schools.

Growth rates for the packaged software industry have been extremely vigorous through the '90s, with an average growth rate of 12% per year. Projections are always fraught with difficulties, but the growth of software has in the past been closely tied to the placement of new computers. Bear, Stearns & Co. (enclosed) forecasts 18%

worldwide annual growth for global PC shipments through the year 2000. This is about 2% a year slower than growth for 1993 ñ 1996, so we might realistically expect a 10% annual growth for software.

Source: National Communication and Information Administration

Declining prices and store sales are driving the Entertainment and Educational PC software market, states NPD SofTrends' Consumer Purchase Study. The $1.8 billion market in 1997 realized strong unit growth but only moderate growth in revenue due to falling prices.

Price continues to be the most important purchase influence for consumers when acquiring software. According to the study, 33% of all Entertainment and 25% of all Education titles were sold via a store sale. For the 1997/98 Winter season, 26% of all Edutainment titles had an average retail price of under $20.00, up six percent from the same time period a year earlier.

With over 6,000 Edutainment titles selling through retail, consumers have a broad selection to choose from. Only 59% of shoppers knew what type of software they were looking to purchase before entering the store. Overall, 37% of all Educational and 49% of all Entertainment titles were planned purchases by the specific title. "Since the majority of consumers make their software purchase decision in the store, a good pricing strategy and in-store promotions offer great opportunity for Edutainment software publishers to increase their sell-through," commented Ilene Haase, SofTrends' Account Manager.

SofTrends' Consumer Purchase study also reports that of all Entertainment titles, 53% were purchased by males, while 75% of Education titles were purchased by females. The heavily weighted female purchasing of Educational software can be attributed to more educated female shoppers, a fairly new category segment of girl-oriented software, and recent in-store positioning of these titles.

Source: NPD SofTrends Consumer Purchase Study

Appendix E: Research on Distribution and Marketing

Sample Software Distribution Agreement - NetUSA, Inc.

NetUSA, Inc. (hereinafter "NetUSA" or "Distributor") and _____ (hereinafter "Vendor") hereby agree to the following:

1. *NetUSA agrees to place listings for Vendor software products, as listed in Appendix A (hereinafter "Vendor products"), on NetUSA's Software Center (www.softwarecenter.com) and make reasonable efforts to publicize the Vendor products under this agreement on the Software Center website.*
2. *NetUSA agrees to accept customer orders for Vendor products, through electronic mail, telephone, or other similar means.*
3. *NetUSA agrees to forward all customer orders for Vendor products to Vendor as soon as practically possible.*
4. *NetUSA agrees to pay Vendor 60% amount NetUSA receives from customers for Vendor products.*
5. *NetUSA and Vendor agree that NetUSA shall pay Vendor the costs due to Vendor specified in Section 4 above no more than thirty (30) days following when the amount is due.*

6. ***Vendor agrees to provide the same level of technical and other support for customers who purchased Vendor products through NetUSA distribution channels as customers who purchased directly from Vendor.***
7. ***Vendor agrees to send the Vendor products sold through NetUSA distribution channels to the customers as soon as reasonably possible, but in no case more than three (3) business days following the transmission of the order from NetUSA to Vendor.***
8. ***Vendor agrees to clearly display the methods in which customers may contact Vendor directly for customer support on Vendor products.***
9. ***Vendor authorizes NetUSA to utilize Vendor trademarks in manners that would be compatible with the nature of this agreement, and which would not confuse third parties on the origins of Vendor products.***
10. ***Vendor represents that to the best of its knowledge that Vendor products do not infringe on known copyright, patent, trademark, or other similar rights of any third party. Vendor further agrees that in case any third party claims are made against NetUSA based on the infringement of copyright, patent, trademark, or other similar rights of such third party by Vendor products or trademarks that Vendor shall assume the liability for such claims and hold NetUSA harmless. Vendor also agrees to hold NetUSA harmless in all other tort, contract, and similar legal actions brought by third parties against NetUSA arising out of any user's use of Vendor products.***
11. ***NetUSA and Vendor agree to hold all information exchanged between NetUSA and Vendor regarding this Agreement to the highest degree of confidence, and shall not publicize such information to any third parties except as otherwise provided for in this Agreement or as explicitly authorized by the other party.***
12. ***NetUSA and Vendor agree that should any dispute arise out of this Agreement that they submit to reasonable procedures for binding arbitration. If such arbitration is not possible, the parties agree to submit to the jurisdiction of the appropriate state or federal court in Santa Clara County, California and waive all claims contrary to the submission to such jurisdiction. The parties further agree that the Agreement shall be interpreted under the laws of the State of California.***
13. ***NetUSA and Vendor agree that this Agreement shall run for duration of one year. During this initial one-year term, each party may terminate the Agreement on a sixty (60) day notice to the other party. Following the expiration of the one-year term, the Agreement shall continue until thirty (30) days following one party's notification to the other of intention to terminate the Agreement.***

NetUSA, Inc.

201 San Antonio Circle, C250.

Mountain View, Ca. 94040

Team Credits

Examination of Version 1.0 Failure

Courtney Glazer**

JaeJung Kim

Jacqueline Mai*

Karen Martin

Kristin Palmer

Evaluation and Research of Quality of Learning

Damon Kerby

Robin Klein

Keli Sato*

Robert Vejar

Research on Competitive Products

Pauline Brutlag*

Yoko Mizuno

Julie Remold

Mun See Tham

Development of New Features

Julie Mai

Caitlin Martin*

Deborah Stephens**

Research and Development on Web Integration

Katherine Emery*

Kimberly Jacobson

Cindy Mazow

Research on Distribution and Marketing

Kalee Gregory

*Everett Harper***

Martin Lee

*Josh Sheldon**

*** denotes member of Synthesis Team***

**** denotes member of Facilitation / Presentation Group***