**RUNNING HEAD: Lexia Software Evaluation**

**Improving Emergent and Developing Reading Skills: Using *Lexia* Software**

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**Introduction**

This report evaluated *Lexia* Computer-Based Program for second graders in the general education classroom. This computer-assisted instruction (CAI) works on strengthening phonics and decoding skills, sight words, fluency, vocabulary, and comprehension. This program was evaluated to determine if it is benefiting second grade students in the multi-faucets of reading comprehension. Students who participated in the evaluation study spent fifteen to twenty minutes on the program every two to three days. Then, students were tested using *Lexia’s CRT* assessment tool. The evaluation, using *Lexia CRT* assessment tool, indicated if the *Lexia* games were benefiting the second grade population in reading (phonics, sight words, comprehension, fluency, and phonemic awareness). Teacher surveys and questionnaires were also used to gather additional data and insights.

*Lexia* is a computer-based instructional program that provides research-proven methods to help students acquire the essential reading skills needed to succeed in school and in life ([www.lexialearning.com](http://www.lexialearning.com), 2010). This program is intended to for students in grades Pre-K through 12th grade and is geared in the direction of reading instruction. The program “contains five levels with twenty-four skill activities and 369 discrete units” (Macaruso & Rodman, 2009, p. 106). It is a program that is designed to present a detailed picture of student’s reading performance. *Lexia* “provides explicit, systematic, and structured practice on the essential reading skills of phonemic awareness, phonics, fluency, vocabulary, and comprehension” ([www.lexialearning.com](http://www.lexialearning.com), 2010). It provides students with the guided reading instruction at their level and provides additional practice on the skills that students are struggling with. It also keeps moving at the child’s pace without stopping the flow of instruction. Macaruso and Rodman (2009) also stated that they observed that the tool provides students with the opportunity to master skills before moving on to the next. It can assess and monitor students’ reading progress to provide a measurement of reading skills.

*Lexia* provides games and instruction in two forms: *Lexia Early and Primary Reading* which is designed for students in grades Pre-K through Third grade and *Lexia Strategies* which is designed for students in Fourth grade and above. *Lexia Early and Primary Reading* is a supplemental tool that my school system purchased to aid with teacher-directed instruction. Many teachers use the quantitative data gathered by this program to guide individual student instruction and differentiate small group instruction (this is an expectation required by the school system and the use of the program is highly emphasized throughout my current system). To determine if the games are worth instructional time, training, money, and teacher’s efforts, I conducted an evaluation research to determine if *Lexia Early and Primary Reading* games impact student’s reading comprehension skills.

 There are a growing number of adolescent students who do not understand what they read (McNamara, O’Reilly, Best, & Ozuru, 2006). Students who have a better understanding of reading strategies tend to perform better in comprehension than students who do not. Many students are very reluctant to read, feel discouraged because of experienced difficulties, and believe they will automatically fail (Biggs, Homan, Dedrick, Minick, & Rasinski, 2008). This program provides students with opportunities to experience individual success in a non-threatening environment. Through the use of this program, students’ performances are not compared to their peers, friends, or role models (Biggs et al., 2008). Another important aspect of this program is automatic feedback. Students do not have to wait on the teacher to grade their performance(s); the computer program evaluates their performance at the end of each session and provides them with an immediate evaluation.

**Background Information**

 Troup County School Systems adopted the use of the reading program called *Lexia* during the 2001-2002 school year. We continue to pay for the copyrights and use of the program since adopting. The program is designed “to supplement classroom instruction in building a foundation for emerging literacy skills” (Macaruso & Walker, 2008, p. 270). The program aids students with sound identification, rhyming, segmenting and blending sounds within words, and application of letters with immediate feedback. Training is minimal (yet needed) and the program, based on the results, has shown an increase in phonological skills among struggling reading students. The evaluation found that all students involved in using the CAI benefited from receiving phonics-based reading instruction that was offered as part of the computer instruction (Macaruso et al., 2008).

 Technology can be a means of integrating both traditional reading comprehension skills and higher order thinking skills that are often required during reading comprehension (Zawilinski, 2009). Stetter and Hughes (2010) quickly state that teachers are faced with new and unique classrooms that are different from the past; teachers need to know how to best meet the needs of their unique students. With this being said, I believe that technology can help with some of our reading needs in the classroom. But I also wanted to evaluate the effectiveness of one of the programs we currently implement—*Lexia*. Is it worth the money being spent on the program? Is it benefiting students the way we were hoping when the program was first adopted? Or is it worth letting this program go and move onto something newer and worth our well spent money and manpower?

**Purpose**

As a teacher of reading, as well as all subject matters, I am very concerned with reading comprehension among my students. “Successful reading requires the ability to recognize words in print as well as to comprehend the printed materials” (Macaruso & Rodman, 2009, p. 103). Reading is a skill as well as subject that affects all other subjects, and further problems stem from this. Reading comprehension and fluency of the required or personal material is critical for students to be successful in school, at their jobs, and as productive adults.

 I, the evaluator, did just that—investigated and evaluated the pros and cons of *Lexia* using teacher observations, surveys, questionnaires (see Appendix A and B), and *Lexia CRT* assessment tool*.* Once the evaluation of the program was complete, I reported my findings to my clients and stakeholders (principal, school system, and students). The report and evaluation was summative in nature and provided stakeholders and/or clients with data on the worth of the program. It was my purpose and hopes that the program would provide evidence that it is valuable and worth our time. But if it proved not to be, then we would look at eliminating the program and find something more beneficial to all stakeholders involved.

**Evaluation Questions**

 The ultimate goal of this evaluation was to see if there was enough evidence to support a continuation or elimination of the *Lexia* program in the second grade, general education classroom. In order to get to this point, the following questions were addressed:

* Is the program being utilized to its full potential?
* Do teachers and students fully understand how to use the program?
* How is the program being utilized in the classroom?
* What are the attitudes toward the program?
* Is the program effective? Is it yielding positive results on the *Lexia CRT* assessment?
* Is it aiding with classroom instruction?
* How often is it being utilized?
* How much time is being spent on or using the program?

**Methods**

Comprehension is an issue that many students still struggle with; educators work with this skill daily to help students become more competent, capable readers. *Lexia* is an assessment tool and program that is required to be used among educators at my school to assess phonics, phonemic awareness, fluency, and comprehension. It comes with a variety of grade appropriate games, such as *Lexia Early and Primary Reading Games* which were used in this evaluation.

*Participants, Instruments, and Procedures*

The sample consisted of four second grade classrooms, from which all students were asked to participate based on a parental permission slip form (See Appendix C). Of the seventy-nine second graders at Rosemont Elementary, fifty students volunteered to participate in the evaluation study.

|  |  |  |
| --- | --- | --- |
|  | Number of Students in the Class | Number of Students Participating in the Evaluation |
| Class A | 20 | 15 |
| Class B | 19 | 11 |
| Class C | 20 | 10 |
| Class D | 20 | 14 |

Once students returned the permission slip forms, they were given a pretest which was the *Lexia CRT* (Winter Session)*.* This is an assessment tool that is offered as part of the *Lexia* program; the program allows for the students to be tested at certain points in the school year—usually Fall, Winter, Spring, and two in-between sessions. The pretest provided researchers with a starting point and a means for indicating student growth with the use of the program.

After the pretests were administered, students began playing the *Lexia Early and Primary Reading* games two to three times a week for about fifteen to twenty minutes. After eight weeks of program use, teachers administered the *Lexia CRT* again for the Spring session. This allowed the evaluator to look at the numerical data and see if improvements were made by the students. Teacher surveys and questionnaires (twenty-five teachers from varying grade levels) were also used to gather information regarding how the program was utilized in the daily classroom. Both instruments were used to determine if the program is being used effectively and benefiting students.

*Design and Means of Addressing*

This evaluation plan consisted of the following activities designed to address each of the evaluation questions:

1. Strategy to evaluate: Determine how teachers are currently using and utilizing *Lexia* software program in their classrooms based on teacher surveys and questionnaires.
2. Strategy to evaluate: Determine if teachers understand the *Lexia* software program based on data received from teacher surveys and questionnaires.
3. Strategy to evaluate: Determine the positive and/or negatives of the program and worth of continuation based on the data from the *Lexia CRT* pretest and posttest results.

**Evaluation Instruments in the *Lexia* Evaluation**

|  |  |  |  |
| --- | --- | --- | --- |
| Project Objectives | Surveys | Questionnaires | *Lexia CRT* Assessment Tool |
| 1. Current uses of program
 | X | X |  |
| 1. Understanding and Training of program
 | X | X |  |
| 1. Program effectiveness
 | X | X | X |

*Data Analysis*

The research method approach, by nature, is both qualitative and quantitative—thus making it a mixed evaluation. The data shows both numerical data as well as non-numerical data such as words and pictures. Johnson and Christensen (2008) also affirm that both qualitative and quantitative research methods help to improve the quality of research and the number of mistakes will be fewer. I, the evaluator, used the quantitative data to see if there were improvements in the student’s numerical data.

Permission slips were sent home to all seventy-nine second grade students. After permission slip forms were returned and sorted, students who volunteered to participate in the evaluation were given the pretest using *Lexia CRT* (see results in table below). Once the pretest was completed, students began using the *Lexia Early and Primary Reading* games. After eight weeks of using the games, students were then tested again using the *Lexia CRT* assessment tool (see posttest results in table below). The results are indicated by class in the table below. Based on class results and individual student scores, every student’s score(s) increased in numbers in all components of reading (phonics, sight words, comprehension, and phonemic awareness).

**Pre and Posttest Results from *Lexia CRT*:**

|  |  |  |
| --- | --- | --- |
|  | Mean | Median |
| *Class A* |
| Pretest | 55.47 | 56 |
| Posttest | 76.53 | 76 |
| *Class B* |
| Pretest | 57 | 49 |
| Posttest | 73.36 | 78 |
| *Class C* |
| Pretest | 65.2 | 71 |
| Posttest | 76.4 | 88 |
| *Class D* |
| Pretest | 48.79 | 47.5 |
| Posttest | 72.71 | 72 |

In consideration to these findings (of the data gathered by the program and listed above), it tends to show positive results in favor of phonological development and comprehension when used regularly within the curriculum and classroom.

In regards to the qualitative data, thirty female teachers were asked to complete the surveys and questionnaires, twenty-four volunteered to participate (subject and grade levels did vary). Thirteen of the twenty-four teachers stated that “*Lexia* is used zero times per week” by them or their students. The eleven teachers who regularly use *Lexia,* only use it “one to two times a week as a supplement” with a “small group or one-on-one” bases. Based on the data from the teachers’ observations and questionnaires, they “like the assessment tool because it helps with documentation, parent conferences, and retention”. But many educators did state that “more time and training is needed with the program”. Some educators even went on to say that they did not know “the program was available” and/or “did not have any training on the program”. Of the twenty-four teachers, some have never received any training on the program while others have had an initial training.

**Conclusion**

After conducting the evaluation, I would like to point out that I do not feel that the CAI should stand alone; it should be used as a “supplement” and aid with teacher-directed instruction. All activities and/or technology should be carefully thought out before integration into the classroom curriculum. Since the evaluation results yielded positive effects in the direction of *Lexia*, then this should be a large motivating factor for teachers to continue incorporating *Lexia* into their daily lessons. But if the evaluation ever begins to yield negative results or teachers discontinue the use of the program, then it would be worth eliminating or/and investing in new supplemental software.

Subsequent to conducting and analyzing the data from this evaluation, the *Lexia CRT* results indicated that the *Lexia Early and Primary Reading* games helped to improve and strengthen reading skills (phonics and decoding, sight words, fluency, vocabulary, and comprehension) when used regularly and within the curriculum. Based on this data alone, I would emphasize the continuation and use of *Lexia CRT* and games. But when including the data gathered from the teacher questionnaires and surveys, it is not worth the money being spent to renew yearly copyrights when (based on the majority of the surveys) the program is not being utilized at all. Seeing as the majority of the teachers are not using it, the monetary means could be utilized elsewhere. My recommendations would be to continue the use of the program, but provide educators with training (during new teacher orientation) on the program, and live demonstrations of the program being utilized within the classroom instruction. I believe utilization and usage would increase if teachers could see “how” it was effectively being utilized.

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**Appendix A**

Survey – *Lexia* Program

This survey is designed to gather your input, professional judgment, and observations based on the *Lexia* Program that is currently available at Rosemont Elementary. It should only take two to five minutes, and your input is very important to us. No names will be used, so please feel free to be very honest, based on your observations.

1. How long have you been teaching?

\_ 0-5 years

\_ 6-10 years

\_ 11-15 years

\_ 16-20 years

\_ 21-25 years

\_ 26 or more years

1. How old are you?

\_ 20-29

\_ 30-39

\_ 40-49

\_ 50-59

\_ 60+

1. What degree do you hold?

\_ Bachelors

\_ Masters

\_ Specialist

\_ Doctorate

1. What grade do you currently teach?

\_ K

\_ 1

\_ 2

\_ 3

\_ 4

\_ 5

\_ Other

1. How often do you use *Lexia* in your classroom?

\_ 5 times a week

\_ 4 times a week

\_ 3 times a week

\_ 2 times a week

\_ 1 time a week

\_ 0 times a week

1. How much time do students spend on *Lexia*?

\_ 0 minutes

\_ 5-10 minutes

\_ 10-15 minutes

\_ 15-20 minutes

\_ 20-25 minutes

\_ 25-30 minutes

\_ 30 minutes +

1. How do you use *Lexia?*

\_ as a supplement

\_ as a lesson

\_ as a time-filler

\_ other

1. How do you incorporate *Lexia?*

\_ Large Group

\_ Small Group

\_ One-on-One

\_ Other

**Appendix B**

Questionnaire- *Lexia* Program

* What aspect(s) of *Lexia* do you find most effective?
* What aspect(s) of *Lexia* do you find least effective?
* Explain your experiences with *Lexia* (positive and/or negative)?
* Do you use the *Lexia Primary and Early Reading* games in your classroom?
* Do you find that the *Lexia* games help with reading comprehension skills?
* What reading skills do you feel *Lexia* helps with the most?
* Do you feel it is necessary to incorporate the *Lexia* games into a lesson or use as a lesson? Please explain.
* Are there any other aspects of the *Lexia* program you would like to share?

**Appendix C**

Parental Permission Form to Participate in Evaluation

**University of West Georgia**

**Parent or Legal Guardian Permission for Child to Participate in a Program Evaluation**

Improving Emergent and Developing Reading Skills: Using Lexia Software

**You are being asked to give permission for your child to participate in a program evaluation. Before you give permission for your child to participate, it is important you read the following information and ask as many questions as necessary to be sure you understand what you child is being asked to do.**

**Investigators**

My name is Leah Doughman. I currently hold my Bachelor’s in Early Childhood Education and Master’s degree in Reading Instruction. I am currently pursuing my Specialist Degree in Instruction Technology at the University of West Georgia. I can be contacted through my email at doughmanlg@troup.org for any questions regarding this study.

**Purpose of the Evaluation**

The purpose of my evaluation of Lexia Software is to determine if it is benefiting second grade students in the areas of reading (phonics, sight words, comprehension, fluency, and phonemic awareness).

**Procedures**

If you allow your child to participate in this study, he/she will be asked to spend 15 to 20 minutes 2 to 3 days a week on the computer working with the Lexia Software. Your child will do this for the next eight weeks. This program works on many reading skills that will benefit them in the classroom.

Your child will be asked to agree to participate in this research. He/she can refuse to participate without penalty or can stop participation at any time just by telling the investigator he/she wants to stop.

**Potential Risks or Discomforts**

There are no foreseeable risks associated with the study. Your child may feel frustrated or uncomfortable with the program. Hopefully, as they become more comfortable with the program these issues will disappear. However, if these issues continue the child or the parent may choose to not participate in the study any longer.

**Potential Benefits of the Evaluation**

The benefits that your child may receive from this study are the abilities to sound blend letters and words, decode words, comprehension strategies, along with fluency practice.

**Confidentiality**

All information collected will be recorded as numerical data and will only be shared with the professor in charge of the investigator, administrators and staff at Rosemont Elementary School.

**Participation and Withdrawal**

Participation in this research study is voluntary. You may refuse to allow your child to participate without penalty to you or your child. If you decide to allow your child to participate, you are free to stop his/her participation without penalty by just stopping and/or telling the investigator. Also, your child may stop participating by telling the investigator he/she wants to stop**.**

**Questions about the Research**

If you have any questions about the research, please feel free to ask them now. If you have questions later, you may contact Leah Doughman at (706) 812-7954 or email me at doughmanlg@troup.org.

***Parent or Legal Guardian Permission:***

I have read the information provided above. I agree to let my child participate in this research study. I also understand my child’s assent to participate in this study will be considered. Please return one copy of this consent form and keep one copy for your records.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name of Child (please print)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature of Parent/Legal Guardian Date

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature of Investigator Date

**Data Collection Organization Matrix**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Questions** | **Related** **Results** | **Level (Mega, Macro, Micro)** | **Required Data/****Measureable Indicators** | **Data Source** | **Data Collection Tools/****Procedures** | **Data Collected By (Date)** | **Primary Responsibility** |
| Is the program being utilized to its full potential?  | Survey and Questionnaire Responses | Macro and Micro | Survey and Questionnaire Data | Teachers | Survey and Questionnaire | March 25 | Evaluator |
| Do teachers and students understand how to use the program? | Survey and Questionnaire Responses | Macro and Micro | Survey and Questionnaire Data | Teachers | Survey and Questionnaire | March 25 | Evaluator |
| How is the program being utilized in the classroom? | Survey and Questionnaire Responses | Macro and Micro | Survey and Questionnaire Data | Teachers | Survey and Questionnaire | March 25 | Evaluator |
| What are the attitudes toward the program? | Survey and Questionnaire Responses | Macro and Micro | Survey and Questionnaire Data | Teachers | Survey and Questionnaire | March 25 | Evaluator |
| Is the program effective? Is it yielding positive results on the *Lexia CRT* assessment? | Survey and Questionnaire Responses*Lexia CRT* Assessment Tool | Macro and Micro | *Lexia CRT* assessment data | *Lexia* Software Program | *Lexia*, Survey, Questionnaire  | March 25 | Evaluator |
| Is it aiding with classroom instruction? | Survey and Questionnaire Responses | Mega, Macro and Micro | Survey and Questionnaire Data*Lexia CRT* assessment data | Teachers and *Lexia* Software Program | *Lexia,* Survey, Questionnaire | March 25 | Evaluator |
| How often is it being utilized? | Survey and Questionnaire Responses | Macro and Micro | Survey and Questionnaire Data | Teachers | Survey and Questionnaire | March 25 | Evaluator |
| How much time is being spent on or using the program? | Survey and Questionnaire Responses | Macro and Micro | Survey and Questionnaire Data | Teachers | Survey and Questionnaire | March 25 | Evaluator |