

***“Early Education is the passport to the future, for those young students who are preparing for it today”***

By Dr. Dennis “Kip” Herren

Superintendent Auburn School District(ret) Superintendent of the Year  
Washington State

The Accelerating Young Minds Preschool Project

Abstract

*(The AYM Preschool Project was a field test for the new AYM Preschool digital learning program. Seventy-Seven 3 year old, 4 year old and 5 year old participated in the project. Participants were measured on the mastery of Language Arts for Kindergarten literacy targets for letter recognition, phonemic awareness and word meaning using the AYM digital learning program that features reality-based, visual activities with high yield early learning strategies and skills for literacy readiness in Kindergarten. AYM Preschool program is a mastery based learning system specifically designed and aligned with quality standards for Kindergarten readiness. Results of the study were impressive with a 100 percent mastery of Language Arts Skills for all participants as well as expedited learning rates for mastery. ELL and Poverty students performed as well and slightly better than Non ELL/Poverty participants. Three year olds out scored four and five year olds. Results suggest that effective digital learning can be an effective tool for early literacy learning.)*

Introduction

Accelerating Young Minds is an innovative company, that has provided and developed early learning digital technology for almost two decades. Accelerating Young Minds (AYM) is a proven learning system that utilizes; cognitive development, executive function, best practice learning schema, reality-based visual learning, personalization, high-yield learning targets, and personalized data performance tracking. As a digital system, AYM accelerates learning for each participant in an active and visible fashion. It features an mastery instructional design that builds on the previous learning for each student.

The company conducts ongoing research utilizing the most current learning technology and best practice early learning strategies. In the 2016, Accelerating Young Minds engineered and launched a new prekindergarten digital learning program that aligns with the successful AYM K - 3 system of online learning. All AYM system targets are Common Core, critical thinking, executive function and depth of knowledge skill sets. The new AYM Preschool program is designed to reach students earlier and more often with the sets mentioned above but also in conjunction with other traditional, instructional practices that assure Kindergarten

readiness and beyond. The new preschool component is developmentally age appropriate and aligned with preschool learning targets for GOLD, WaKids, and Common Core standards for early learning.

In the late fall of 2016 through the winter of 2017, AYM conducted a field test of the preschool project in California and Washington state. This report is a summary of data collected in this six month project for preschoolers aged three through five. In 2012, AYM conducted action research with the Auburn and Kent school districts using AYM Kindergarten trials with three to five year old daycare students in each of the districts. The feedback from parents, preschool teachers and the students was significantly positive, demonstrating that preschoolers could use technology effectively, and efficiently for learning. This AYM Preschool Project is an evolution of that action research.

### Project Background

The preschool project involved 77 prekindergarten participants aged three through five years of age. A by-location breakdown of participants includes 44 Los Angeles County preschoolers, 13 Washington preschoolers from Moses Lake and Bremerton, and 20 Washington independent and homeschool preschoolers. The pilot tests were conducted over a six month period of time. While the AYM system of learning measures a number of skills and content areas for kindergarten readiness the measures of this project were specifically tied to the goals of language arts attainment at mastery demonstration levels.

### Project Purpose

The project was designed to measure the effectiveness of the AYM with the language arts performance of preschoolers as a standard of readiness for Kindergarten. Much research has been published about the predictive qualities of third grade reading comprehension for future grade level successes in school. Research suggests literacy gaps are evident when preschoolers enter Kindergarten and appear to remain throughout grade level measurements of reading comprehension. AYM provides a rich array of digital early learning experiences developing cognition, executive function and literacy through a variety of personalized domains which specifically target key language arts skills, thereby preventing literacy readiness gaps.

Too often, primary English Language Learners and Learners from poverty background lack exposure to rich language arts experiences. Once identified, the subsequent gaps determine inappropriate placements in remedial programs which, while reviewing basic skills, further limit the student's exposure to critical thinking and developmentally appropriate curriculum. AYM's comprehensive language skill instruction embeds rich language within its digital learning structure thereby enhancing language skills and reducing gaps in early literacy skills.

Also, the project is designed to measure the effectiveness and appropriateness of digital learning technology for preschoolers, particularly 3 year olds. And finally, the project looks at how English Language Learners and high poverty participants perform with early literacy learning and instruction with personalized technology. It is important to note that traditional

learning systems are somewhat resistant to the use of technology for preschool learning. This project examines how innovative technology is compatible with traditional early learning pedagogy. In fact, the AYM models research based classroom instruction for high yield learning results.

### Project Methodology

As mentioned earlier, 77 preschoolers participated in the AYM project throughout a six month window. The age distribution for the prekindergarten participants is 26 three year olds, 38 four year olds, and 13 five year olds. 53 percent of the preschoolers are identified as English Language Learners and 69 percent of the preschoolers are identified as high poverty (Table I.) All the preschoolers participated in the AYM on-line learning preschool program. Each participant performance was recorded for achievement on the Common Core targets for letter recognition, phonemic awareness and word meaning.

AYM system provides a variety of brain researched, visual learning activity trials until mastery of the language art components is achieved at 80 percent proficiency or better, at which point AYM accelerates each participant to the next level of learning. The system measures mastery for each component for accuracy and total time to demonstrate mastery of the targeted learning skills, for each preschooler. Seventeen of the 77 participants did not complete the third component of language arts. It is important to note that all 17 students were in a school computer lab setting and showed significant mastery in the earlier component trials for letter recognition and phonemic awareness. Further investigation revealed that these students missed scheduled time in the computer lab due to absences and makeup time was not available due the competing uses of the computer lab.

Data collected on 3, 4 and 5 year old participants compared mastery and performance time for completion. Comparison data by English Language Learners, Poverty and non ELL/Poverty were also collected, analyzed for both mastery and time of completion. Key literacy target results for Kindergarten Language Arts were gathered for Alphabet Letter Recognition, Phonemic Awareness and Word Meaning as identified by research based GOLD Standards, WaKids, and Common Core standards. The AYM assessment system measures all the above by individual student, class and language arts performance in real time.

The AYM Preschool Program is designed to run on an assortment of digital, one-line platforms including desktop, laptop, notebooks, Ipads, Iphones and other digital devices. Therefore, the preschool study participants used a wide variety of technical devices to participate successfully in this project.

### Project Results

The AYM literacy performance results for the 77 preschoolers was nothing short of dramatic. One hundred percent of preschoolers reached mastery (80 -100 percent) in alphabet letter recognition and phonemic awareness standards for kindergarten preparedness, while the mean

mastery proficiency was 94 percent for Alphabet Letter Recognition and 87.5 percent for Phonemic Awareness. The range of performance for Alphabet Letter Recognition mastery was 64 to 107 minutes, while the mean score for mastery completion was 76.6 minutes. The range performance for Phonemic Awareness mastery was 23 to 66 minutes, while the mean score for mastery completion was 35.1 minutes (Table IV.)

One hundred percent of preschoolers reached mastery (80 - 100 percent) in Word Meaning standards when adequate computer access was available. Seventeen students (22 percent) were in progress for completion for Word Meaning mastery but did not have access to the labs because of absences from school which compromised computer lab schedule availability and final completion of the unit learning trials.

The preschoolers who had adequate computer access (60 participants) met 100 percent mastery for Word Meaning and a mean proficiency of 87 percent with a range of 31 to 61 minutes for mastery completion. The mean score for mastery completion for Word Meaning was 46.1 minutes.

The total range for Language Arts mastery completion was 130 to 192 minutes while the mean mastery completion was 157.8 minutes. The total mastery proficiency for the Language Arts was 89.5 percent.

Comparison Data show that regardless of age or demographic preschoolers performed at similar expeditious rates. On the Alphabet Letter Recognition all three, four and five year olds reached mastery with mean completion scores of 76.6, 77.2, and 82.5, respectively. The same is true with the other Language Arts components where 3 year olds scored 33.6, 4 year olds scored 34.2 and 5 year olds scored 37.8 on Phonemic Awareness. Three year olds scored 45.9, 4 year olds scored 47.5, and 5 year olds scored 46.4 on Word Meaning (Table II.)

Participants identified as English Language and Poverty learners performed similarly or better on the AYM Language Arts Component Assessments. All participants with access, mastered all the Language Arts Components. Granted, the non ELL/Poverty group had only 19 participants as compared to the ELL/Poverty group's 58 preschoolers, however, the scores still suggest that the AYM approach to personalized learning, visual and interactive activities, cognitive processes and high-yield strategies accelerates learning regardless of traditional language and poverty backgrounds. ELL preschoolers scored a mean 80.1 on Alphabet Letters, 34.9 on Phonemic Awareness and 47.4 on Word Meaning while Poverty preschoolers scored a mean 76.8 on Alphabet Letters, 35.8 on Phonemic Awareness, and 46.4 on Word Meaning. Non ELL/Poverty preschoolers met mastery at a slightly slower rate than either ELL or Poverty with mean completion scores of 82.7 for Alphabet Letters, 36.7 for Phonemic Awareness, and 47.4 for Word Word Meaning (Table III)

### Implication of Results

The AYM preschool digital learning tool is an effective and efficient mastery system proffering one hundred percent mastery for all 77 preschool participants who had adequate access to digital technology. The range of mastery completion for the Language Arts Components 130 to 190 minutes demonstrates the individualized, customized AYM feedback and learning process for each preschooler. The mean mastery completion of 158 minutes for participants is an expeditious learning time for the mastery of letter recognition, phonemic awareness and word recognition standards for preschoolers, particularly compared to traditional classroom settings. AYM is a high-yield learning system that utilizes individualized, visible learning strategies that are highly effective for preschoolers.

The results of the AYM preschool study confirm the previous successful learning outcomes of the AYM K-3 programs. Most important, the project demonstrates the AYM program is highly effective with three to five year olds. In fact, three year olds in this study outperformed four and five year olds in letter recognition, phonemic awareness and word recognition (Table III.) This may be due to AYM's intentional design for the use of child brain research in the learning activities of the program.

The visual, brain researched AYM activities promote an accelerated learning pace for each student to individually master the Language Arts skill sets. The AYM high-yield instruction, imbedded in the digital program is reality and activity based, giving each learner an enriched and depth of knowledge learning experience. The high performance in this study by English Language Learner and Poverty participants is nothing short of remarkable. Not only did one hundred percent of these participants reach mastery, they did so at a slightly faster pace than the Non ELL/Poverty group (Table II.) The highest individual performances for mastery came from the ELL/Poverty demographic. The real time assessment feature of AYM reveals the current progress and future personalized learning goals for each learner. Without active individualized feedback data, ELL and Poverty learners are at risk of inappropriate placement in school settings that represent remedial placement.

The AYM preschool study also demonstrates the digital barriers in traditional learning settings. In the AYM Preschool Study, seventeen preschoolers were not able to complete the third component of the Language Arts program despite the fact that all seventeen had mastered earlier components. The school computer lab was scheduled for the project participants. Because of lab scheduling, students who missed labs did not have additional digital time. Additionally, participation in the study was dependent upon the technical confidence of teachers. Some educators are not comfortable with preschoolers using computers. The AYM Preschool Program is designed to operate on many digital platforms and devices that create more individual access than the standardization of the computer lab schedule. In this study homeschool parents successfully used cell phones, notebooks and Ipads with their preschool children. Consequently, AYM digital learning can be 24/7.

### Conclusions and Recommendations

The AYM Preschool Program can be utilized by any learning organization that is interested in equity, closing the learning achievement gap and the acceleration of learning for every student. The AYM program, with its personalized data system may be employed effectively in concert with other traditional classroom learning strategies. AYM creates added learning value for any periods of time outside the regular school day. For example, during periods of non attendance, illness, home and hospital, school breaks, and after hours, the tool may be used for lost classroom learning opportunities. As a pre-session to Kindergarten, preschoolers could be better prepared and teachers would have performance data for each student in a range of Kindergarten preparedness areas as the student enters school. Recoupment learning issues of summer can be abated.

An area not explored in this study was the use the AYM for students identified with special education needs. These data were not available for action research. However, the fact that one hundred percent of participants met mastery through a highly personalized process learning over a wide range of temporal mastery suggest the AYM would be an highly effective tool for learners with special needs. AYM also produces the progress on goals, important in the design implementation and monitoring of Individualized Education Plan.

Implementation of a highly effective digital learning tool like AYM may be met with school culture resistance because it is very different than traditional classroom settings, grade level designs, master schedules and bias against the use of digital learning for early learners. Additionally, the lack of successful experiences with digital instructional methods within a classroom setting by elementary teachers need to be considered in the effective use of this powerful learning tool with early learners.

The AYM Preschool Program is an excellent parent involvement strategy. The user friendly program can be utilized by any parent with access to most basic digital tools. Additionally, the progress feature of the program allow parents to track the progress of the child. The alignments of the program to Common Core standards taught at school empowers the parent with knowledge of not only their own student's achievement but increases parent knowledge about educational learning outcomes. The AYM Preschool Program also provides student performance reports that are parent useful for supporting student learning progress.

It is important to note that digital learning programs can be cost effective approaches for early learning literacy instruction as compared to traditional approaches that are staff intensive, therefore, far more costly. In this AYM Preschool Program Trial, the costs for each student was about thirty dollars which is on par with other curricular materials for literacy learning as opposed to adding more staff for individualized instruction.

## AYM Preschool Project Data Tables

Project Demographics (Table I)

| Age Groups    | No.       | ELL       | Poverty   | Non ELL Poverty |
|---------------|-----------|-----------|-----------|-----------------|
| 3-year olds   | 27        | 19        | 22        | 3               |
| 4-year olds   | 38        | 19        | 26        | 9               |
| 5-year olds   | 12        | 2         | 5         | 7               |
| <b>TOTALS</b> | <b>77</b> | <b>40</b> | <b>53</b> | <b>19</b>       |

Group Language Arts Component Mean Comparison Scores

Mastery Completion Minutes (Table II)

| Group           | Alphabet Letter | Phonemic | Word Recognition |
|-----------------|-----------------|----------|------------------|
| ELL             | 80.1            | 34.9     | 47.4             |
| Poverty         | 76.5            | 35.8     | 46.4             |
| Non-ELL Poverty | 82.7            | 36.8     | 47.4             |

Age Group Language Arts Component Comparison Mean Scores

Mastery Completion Minutes (Table III)

| Age Groups  | Alphabet Letter | Phonemic | Word Recognition |
|-------------|-----------------|----------|------------------|
| 3-year olds | 76.6            | 33.6     | 45.9             |
| 4-year olds | 77.2            | 34.2     | 47.5             |
| 5-year olds | 82.5            | 37.8     | 46.4             |

Total Language Arts Cluster Mean Scores

Mastery and Completion C (Table IV)

| Total Participants (77) | Mastery Percentage | Mena Completion Minutes |
|-------------------------|--------------------|-------------------------|
| Language Arts           | 89.5%              | 157.8                   |
| Letter Recognition      | 94%                | 76.6                    |
| Phonemic Awareness      | 87.5%              | 35.1                    |
| Word Meaning (60)       | 87%                | 46.1                    |