

Our dream is that every child learns to read and gains confidence with numbers ... these are life's essentials. We believe technology can dramatically help and that the best way to do it is to make it lots of fun and to make it FREE!



Skoolbo Improvement Analysis

Improving educational outcomes is at the core of everything we do at Skoolbo. It is our reason for being and we are nothing short of obsessed by it. Skoolbo may look and feel like a game; however, every component has an underlying rationale for maximizing student improvement. Our blog "[Ten Essential Components of Great eLearning](#)" provides a greater breakdown of the educational pedagogy underpinning Skoolbo. Always remember, Skoolbo is a learning company that happens to use games as a central medium in learning as opposed to a gaming company that adds some learning.

We've been analyzing the 10 million correct answers that students have made on Skoolbo since our launch. In particular we've looked at what evidence of student improvement is showing across the system.

There are nearly two hundred literacy and numeracy concepts within the Skoolbo Core Skills program. To determine improvement for an individual concept we look at the early performance of a student (average score of the first two games) and compare it to the average of the later performance (ninth and tenth game) of that concept. Typically children will have answered around 150 questions on the concept after 10 games. There are more than 60,000 questions on Skoolbo so the children have to learn the skills as opposed to memorize the answers.

Across the entire Skoolbo system:

Early Performance: Average Game 1 & 2 Score =13.20

Later Performance: Average Game 9 & 10 Score =14.87

Average Improvement After 10 Games = 12.66%

In other words we are finding a 12.66% improvement across the entire range of Core Skills literacy and numeracy activities. It should be noted that 10 games takes a child only 10 minutes, so significant improvement is occurring at an extremely rapid rate.

In addition to individual concept skill development, children are also given benchmark literacy and numeracy tests every 100 games on Skoolbo. Literacy is tested after 100, 300, 500 games and so on, whereas Numeracy is tested after 200, 400, 600 games.

Average Improvement in Literacy after 100 Games = 19.19%

Average Improvement in Numeracy after 200 Games = 12.17%

Average Improvement in Literacy after 300 Games = 23.26%

Average Improvement in Numeracy after 400 Games = 15.25%

Interestingly, we are seeing higher improvements across literacy as opposed to numeracy, although both are significant.

Are Children Randomly Guessing?

An important facet of the Skoolbo methodology is to provide the student with two possible answers. Research suggests this is an optimal way to build automaticity in skill development. One concern that is sometimes raised with us is if the children are simply randomly guessing. We are seeing an average accuracy performance of 89% across the entire Skoolbo system which conclusively indicates that random guessing (where you would assume 50% accuracy) is not an issue. We are currently analyzing thinking time taken on each individual question and we're establishing algorithms to determine when a particular child is guessing based on both their results and thinking time. Later, we will introduce an alert system for parents and teachers to indicate if randomly guessing is an issue for a particular child.

What do Children Find Most Difficult?

One of the most exciting aspects about eLearning is what it can tell you about how children learn. When designing curriculum, it's incredibly important to know just how difficult children find a particular concept.

Literacy Concept	Accuracy	Avg Improvement After 10 Games
Nouns, Verbs and Adjectives (Grammar)	76.9%	5.22%
Alphabetical Order (Alphabet)	78.5%	30.28%
Verb Tenses 1 (Grammar)	82.1%	9.72%
Verb Tenses 2 (Grammar)	83.3%	14.89%
Sound Introduction 3 (Phonics)	85.3%	49.68%
Listening 1 (Early Comprehension)	85.4%	24.06%
Sound Introduction 1 (Phonics)	85.4%	31.58%
Spelling 3 (Spelling)	85.7%	11.36%
Sentence Construction 2 (Grammar)	85.8%	1.52%

It was to be expected that Grammar concepts feature highly on literacy areas that children find complex. The most surprising aspect to us as educators was the difficulty that children have with Alphabetical Order – their accuracy rate is considerably lower than that of Spelling. Pleasingly, we are seeing a rapid improvement rate (30.28%) on Alphabetical Order.

Numeracy Concept	Accuracy	Avg Improvement After 10 Games
Addition to 10 – Missing (Number)	76.0%	6.62%
Addition to 20 – Missing (Number)	77.0%	16.37%
Addition to 6 – Missing (Number)	77.1%	20.42%
Time – Analogue 4 (Time)	78.2%	21.66%
Number Pattern – Decreasing 2 (Pattern)	78.4%	54.60%
Number Pattern – Increasing 2 (Pattern)	78.4%	16.89%
Subtraction from 6 – Missing (Number)	79.3%	1.78%
Counting to 10 (Number)	79.4%	12.60%
Two Digit + One Digit With Carry	80.9%	14.32%

It's clear from the data that children have more difficulty with slightly abstract versions of the original concept. This is particularly highlighted when comparing "Addition to 10 – Missing" as opposed to straight "Addition to 10".

	Example Question	Accuracy
Addition to 10 – Missing	$4 + \underline{\quad} = 9$	76.0%
Addition to 10	$4 + 5 =$	87.6%

We also found that children have considerable difficulty telling the time on an analogue clock (accuracy = 78.2%), whereas they find using a digital clock almost trivial (accuracy = 96.2%).

Skoolbo Curriculum Selection Algorithm

The Skoolbo Curriculum Selection Algorithm is designed to give every child the optimal curriculum regardless of his or her actual age. It starts by pre-testing the child in both literacy and numeracy and then continues to reassess after each game. An optimal blend of new content; not yet mastered content; and revision content is served to each child. Literacy and numeracy content decisions are made separately and it's common for us to see children with skills significantly advanced in one over the other. We are also seeing a wide range of ability across most classes. For example most 2nd grade classes tend to have around 70% of children operating at a typical 2nd grade level, while the remaining 30% are spread across from a kindergarten through to 5th grade level of ability. Many teachers have indicated that this in-built differentiation is one of the strongest features of Skoolbo.

Skoolbo Testimonials

"I have to say my students are "crazy" about Skoolbo. They have become so loud during the play as they shout when they win."

Caroline Both, National Teachers' Academy, Chicago

"Thank you so much for this program. I have a young man in 4th grade who has a severe reading disability and SKOOLBO has been one of the programs he has taken to!!! We are so excited to see how much he has improved. Thanks a million..."

Dr. Adam, St. Catherine Catholic School, Florida

"Skoolbo is another favorite app that our district has been working hard with the developers to get this free app working with our demand. Our children LOVE LOVE LOVE this app! You get to use the skills of reading, math, grammar and spelling to race against friends or other students playing at the same time. They even love "versing me!"

Mrs. Smith, Fairview School, Maine

"What I like most about Skoolbo is the differentiated instructions for my students. This helps them learn at their own level even when challenging friends who may be at a higher or lower level. I LOVE the in-built differentiation. I appreciate that someone else has done the hard work of figuring out where the student is as well as moving them up and challenging them when they have achieved mastery."

Ms. Unertl, Clark Elementary School, Wyoming

"One of the main challenges a teacher faces is providing differentiation to their struggling students and their advanced students. Skoolbo allows my students to work at a pace and challenge that is most appropriate for them. While other education games struggle with a balance of learning and fun, Skoolbo has created an engaging, challenging, and rewarding app that my students don't want to put down! This app covers so many topics at so many different levels that I have yet to see another app do all of this, while still maintaining high interest, motivation, and engagement from all of my students!"

Mr. Hobson, King-Chavez Arts Academy, San Diego

"As a school, AIS has been delighted by the level of engagement of our students and by the improvement of their skills both in Literacy and Numeracy. Skoolbo has certainly captured their attention and motivated them to earn points and to reach 'Superhero' status. Above all, however, it is the ability of the program to adapt to the skill levels of each individual child that has proven to be so attractive to us as a school. In this way, we know that each child is being challenged at his or her own level and is able to move forward at his or her own pace. This is a winning formula for us and is reflected in our results to date."

Ms. Pike, Head of Junior School, Australian International School, Singapore