Learning Gains through Play
Acquisition of Oral English in Foundation Phase

October 2017

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Introduction to the Learning Gains through Play Project

For the past four years the DG Murray Trust has funded an innovative project integrating digital learning in Foundation Phase classrooms. This project, Learning Gains through Play, was implemented by SchoolNet South Africa in primary schools in the provinces of KwaZulu-Natal and the Western Cape over the period from 2014 to 2017.

The focus of the Learning Gains through Play project was to:

- employ new and innovative teaching strategies and pedagogies which promote learner-centred activities;
- involve digital learning in the classroom; and
- facilitate meaningful learning through play.

The purpose of the Learning Gains through Play project was to transform learning environments and to change teaching practice in the Foundation Phase grades of the project schools. The ultimate outcome was that learners would be equipped with foundational skills

and attitudes for future academic success. Learning Gains through Play was undertaken as a research project based on empirical evidence of learner performance to track academic progress. The intention was that, should findings support the value of integrating digital tools and resources for learning through play, this model could be scaled up to include all South African primary schools.

Ten schools were selected from two provinces, five from KwaZulu-Natal and five from the Western Cape. The KwaZulu-Natal schools were all situated in the Howick Circuit and comprised two town centre schools, a township school and two farm schools. The Western Cape schools were all managed by the Metropole East District which extends from Khayelitsha to Gordon's Bay. The Western Cape sample comprised a town centre school, a suburban school, a township school and two informal settlement schools.

The Learning Gains through Play project inputs were threefold:

Digital Tools and Resources – Each teacher received a 10" Android tablet which they were encouraged to use both personally at home and professionally in their classrooms. Connectivity was provided for each school by installing a router with data provided by the project, loaded by SchoolNet on a regular basis. Each school received a bank of 7" Intel tablets in a specially customised, protective, charging-enabled mobile box. Each learner tablet was preloaded with educational apps and further carefully selected recommended apps were shared with all of the teachers. Each school received an Xbox Kinect console, donated by Microsoft with a data-projector built into a protective mobile box, specifically designed by SchoolNet's Themba Mabaso. The design facilitated the use of the Xbox and the insertion of DVDs without learners having access to interfere with other peripherals. A lightweight tray was included in the box for the young learners to easily carry 25 tablets to their classroom. Xbox games were provided, many donated by Microsoft South Africa and later in the project, additional Xbox consoles were provided to schools who had been using the digital tools and resources effectively. Large-screen televisions were then donated to all schools by Samsung South Africa to optimize Xbox use. Hands-on technical support was provided to the schools by the project throughout the first three years for all the donated devices. It was particularly important to ensure that all equipment was in good working order at the end of this period so that its effectiveness could be sustained.

Teacher Professional Development – All Grade R and Grade 1 teachers from the ten project schools in both provinces attended clustered training sessions at central venues. There were 53 teachers, 30 in the Western Cape and 23 in the KwaZulu-Natal. Initially they completed the Teacher Professional Development with Tablets Course based on the ICT4RED content. This course covered new and innovative teaching strategies for embedding the effective use of digital learning in the classroom. Modules included Jigsaw Cooperative Learning, Story-telling, Role-play, Learning Stations, Mind-mapping, Field Trips, Gallery Walks and Reflective Practice as well as a specially designed Games-Based Learning module specifically focusing on the effective use of the Xbox Kinect.

Senior management teams at all project schools also underwent a Change Leadership for Digital Learning course which aimed to provide school leaders with strategies to deal with the influx of digital tools and resources. All course materials were supplied in project-specific, hard-backed files and all the professional development content was also made available on the Learning Gains through Play website here: http://learninggains.schoolnet.org.za/our-courses/
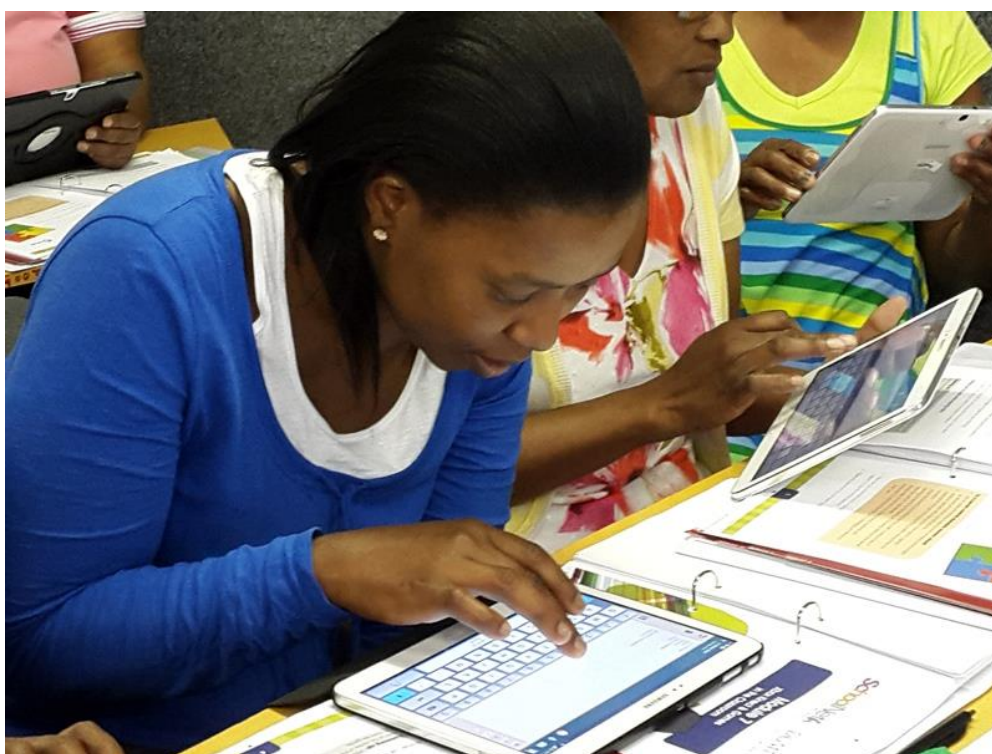
In 2015, teachers completed a customized course with content exploring tablet apps and Xbox games for Foundation Phase development of gross-motor skills, fine-motor skills, visual literacy, emotional literacy, numeracy and oral English language skills. The focus of each workshop was to link the apps and games to the CAPS curriculum and to promote teaching opportunities and stealth learning through the effective use of digital tools and resources. Further workshops were designed to share the learner assessment data with teachers and analysing this in school groups to identify strengths to build on and weaknesses to address. The monitoring data was used to empower teachers to implement data-driven practice in their schools at a classroom level. Further new content for professional development included the analysis of the Life Skills CAPS requirements, particularly for Physical Education and a specific focus was on the importance of play as it features in CAPS. Workshop dosage was deliberately incremental, allowing for ongoing classroom visits and teacher support from the project team. In 2016 a Peer-mentoring Course was conducted, to strengthen collegial support for using digital tools and resources in the classroom in each school so as to sustain the change after the project has ended. The teacher professional development approach

encouraged teachers to create environments where learners discovered and explored concepts and skills. It also promoted an approach that recognised the need for cognitive development, through encouraging thinking, problem-solving, fantasy and creativity and developing ways for learners to be active – physically, cognitively and emotionally – by creating activities that were fun, challenging and relevant to their lives in the real world outside of the classroom. Active professional development workshops ceased from the end of 2016 with teachers being sustained by the peer mentorship programme that each school had established.

Supportive School Environment – From experiences in other projects, the Learning Gains through Play team felt strongly that the teachers required a supportive school environment in which to change their classroom practice and pedagogies as they integrated digital learning in a play-based learning environment in their classrooms. Not only was it vital to communicate the need for change but it was crucial to build support for that change. It was decided that Senior Management Teams should undergo a course in Change Leadership to prepare them for the introduction of the digital tools and resources to their schools. The Change Leadership course modelled the same pedagogies as advocated in the teacher professional development course but also addressed issues such as distributed decision-making and shared vision. Authentic case scenarios were provided which tackled practical problems that consistently arise in digital learning in school interventions. These could include questions around whether learners should be allowed to take tablets home, how to deal with the resistant teachers, technical support, developing a communication strategy and building a learning culture.

These case studies, in turn, modelled collaborative problem-solving strategies including peer-coaching. Throughout the project, principals were encouraged to reflect on, monitor, evaluate and communicate about what was happening in their schools. In the Western Cape, the education department E-Learning district officials were actively involved in the LGP project, participating in the professional development workshops and providing additional technical and educational support to the teachers in their schools. Active school leadership inputs from the project team ceased from the end of 2016 with teachers being sustained by the support structures that each school had established.

Data Collection - The evaluation design of the Learning Gains through Play project was to test and collect learner performance data and track learner progress from Grade R to Grade 2 in five foundational literacies. These were:

- gross-motor skills,
- fine-motor skills,
- visual literacy,
- numeracy and
- oral English language acquisition.

The data that was collected and analysed provided numerous opportunities for research as well as to evaluate the impact of the project within each of these five foundational literacies. One of the reasons that the learner testing and data collection was so rigorous was due to the assertion by Andreas Schleicher[1] that, "Without data, you are just another person with an opinion". In the final synthesis of results, it was clear that, overall, the LGP project learners had outperformed the control learners in all five foundational literacies. However these differences were small and in some cases, localised in specific schools, where project uptake and engagement had been substantial. The exception was oral English skills. In oral English skills assessments, the LGP project learners had significantly outstripped the control learners and the differences were extraordinary. This prompted an extension of the project from its planned end in 2016 (when the first cohort of learners were in Grade 2) through to 2017. This enabled further assessment of oral English language acquisition to include progress made by the first cohort of learners up until Grade 3 and thus inform on the full Foundation Phase period. It is important to note that the project inputs were only provided directly from 2014 through to 2016. From 2017, the use of the digital tools and resources in the Foundation Phase classrooms was self-sustaining with the schools maintaining the digital tools and resources, teacher support and environmental support themselves.

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[1] *Use data to build better schools,* (2015) Andreas Schleicher is Director for Education and Skills Initiatives at the Organization for Economic Co-operation and Development (OECD) Head of International Student Assessment and creator of the PISA test

The Oral English Language Acquisition Study

Introduction

In order to understand the impact of an intervention on language in the classroom, it is important to know what languages learners speak at home and school and what language their teacher uses in the classroom. Not all of the LGP Project schools participated in the oral English Acquisition tests. This was because schools where English was the language of learning and teaching (LoLT) or dual-medium schools with English language streams were excluded so as to focus the investigation on the impact of digital resources on English language acquisition for non-English speakers. Only schools where learners were taught in isiZulu or isiXhosa in Foundation Phase were used for the measurement of oral English acquisition. At all of these schools, learners are expected to switch from mother tongue to learning in English as they begin Intermediate Phase. An initial survey of LGP teachers suggested that most classes at these schools were made up of learners speaking at least three different languages. In the Western Cape schools, these languages were isiXhosa (the LoLT), Sesotho and Shona with the latter two spoken by up to 20% of the class in some cases. In KwaZulu-Natal schools these languages were isiZulu (the LoLT), isiXhosa, Sesotho and Shona. IsiZulu was more dominant in KwaZulu-Natal than isiXhosa was in the Western Cape with most KZN teachers recording all learners in their class as isiZulu speakers.

The Learning Gains through Play project involved the implementation of an innovative programme model and therefore, content and some processes were adapted over the course of the three years that the project unfolded. The oral English language acquisition component of the project and its evaluation followed a similarly developmental approach. Data was tracked and analysed as the project developed. This data was documented, interpreted and shared with the teachers and school leaders. Oral English data records were kept and each year's new evidence was checked with earlier records to ensure standardisation and reliability of the assessment process. The final project report includes findings on learning gains across all the foundational literacies, whereas this report presents only the oral English acquisition data.

The LGP project and control schools were not randomly chosen but were allocated by the respective district education officials upon request. While the project included twelve schools, only six project schools and one control school met the language criteria for inclusion in the English acquisition research. The control school was not provided with any LGP inputs at all. The control school learners were assessed in the same manner and at the same time each year as the learners in the project schools. The 2017 extension of the project involved only the measuring of oral English language skills and these are were included with the data collected from the start of the LGP project in 2014. Results from the control school were compared with the project schools to establish any learning gains achieved by the LGP intervention and its inputs.

Language in South African Schools

In a country with eleven official languages and where low levels of English language competence characterise many rural primary schools, the use of English as the language of teaching and learning (LoLT) is one of the most challenging issues facing South African teachers. According to the CAPS curriculum, learners learn Language, Mathematics and Life Skills in their home language in Grade R. No other language is expected to be used or taught in Grade R. In Grade 1 learners start learning an additional language along with their home language. The Learning Gains through Play project targeted Foundation Phase while learners were still learning in their mother tongue. Research has shown that oral language skills have a profound impact on children's preparedness for Foundation Phase and on their success throughout their academic career. Children typically enter school with a wide range of background knowledge and oral language ability, attributable in part to factors such as their experiences in the home and their socio-economic status (SES). Any gaps in their academic ability tend to persist or grow throughout their school experience (Fielding, Kerr, & Rosier, 2007; Juel, Biancarosa, Coker, & Deffes, 2003).

In South Africa "learners who speak English as a second-language clearly perform worse on average than their first-language English counterparts" (Van der Berg, Taylor, Gustafsson, Spaull, & Armstrong, 2011). The NEEDU National Report of 2012 (National Education, Evaluation and Development Unit, 2013) notes that many school principals are facing demands from parents to offer English as the Language of Learning and Teaching (LoLT) even though all the learners speak African languages at home. The report makes the recommendation that "schools must make a special effort to improve the proficiency of learners and teachers in both Language of Learning and Teaching (LoLT) and First Additional Language (FAL)" (p.73). It is noted that across the country evaluators encountered the view that English is the preferred language of instruction for Mathematics from Grade 1 and that some schools are unofficially already adopting this strategy.

In the Learning Gains through Play project and control schools in which English oral skills were assessed, the majority of Foundation Phase learners were taught and learn in their mother tongue (isiZulu and isiXhosa). In all of these schools, at the start of Grade 4, learners switch to English as their Language of Learning and Teaching (LoLT). This change is accompanied by the expansion of the three subjects they began in Grade R to six subjects as they enter Intermediate Phase. This is a difficult academic transition and it is for this reason that many schools assign their most able teachers to tackle the challenges faced by learners entering Grade 4.

Language Acquisition and Learning

Professor Stephen Krashen[2], a pioneer in the field of linguistics and language development, distinguishes between "language acquisition" – the manner of gaining a practical knowledge of a language by subconscious immersion; and "language learning" – a formal, structured and conscious learning of the theoretical components (vocabulary, sentence structure, grammar) of a language. According to Krashen, the former is more important than the latter. Krashen's Second Language Acquisition (SLA) stages of development and his teaching approach, called the Natural Approach, is based on decades of research and his theory, which in his words is: *"that language acquisition occurs in only one way: by understanding messages. We acquire language when we obtain comprehensible input, when we understand what we hear or read in another language."*

The inclusion of the measurement of oral English Language skills in the Learning Gains through Play project design was motivated by the potential for language acquisition afforded by the digital tools and resources and the fact that almost all tablet apps and Xbox games use the medium of English to connect to the user. Considering that digital learning was clearly a source of enjoyment for the learners, Stephen Krashen provided further incentive to the LGP team to track oral English skills through his statement that "*language acquisition proceeds best when the input is not just comprehensible, but really interesting, even compelling; so interesting that you forget you are listening to or reading another language.*"

According to Krashen, students learning a second language move through five predictable stages: Preproduction, Early Production, Speech Emergence, Intermediate Fluency, and Advanced Fluency (Krashen & Terrell, 1995). The oral English language skills of both the Learning Gains through Play project learners and the control school learners were measured on these stages through their Foundation Phase years.

Testing the assumption that using the digital tools of the Xbox Kinect and tablets would enable English language acquisition was further supported by the work of James Paul Gee[3] (literacy and digital learning researcher). He proposed that environments which focus on acquisition rather than learning should be emphasised if the goal is to help non-mainstream children (low-income, minority children) attain mastery of literacies. This description certainly applied to the majority of the LGP project learners.

Collecting the Data

A unique assessment tool was designed to collect the oral English skills data. This was based on the LGP theory of change, the assumptions about the impact on acquisition of oral English through the use of the digital tools and resources (Xbox Kinect and games and tablets and

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[2] Krashen, S. and Terrell, T. (1995). *The Natural Approach - Language Acquisition in the Classroom*, Hemel Hempstead: Prentice Hall Europe.

[3] James Paul Gee Literacy, Discourse, and Linguistics: Introduction, *The Journal of Education*, Vol. 171, No. 1, Literacy, Discourse, and Linguistics (1989), and *Learning with Video Games* (2012)

apps) and the language policy and requirements of the CAPS curriculum for Foundation Phase. An oral English scripted interview test was conceived specifically for South African Foundation Phase children for whom English was not the Home Language. The same assessment was conducted with all Foundation Phase learners no matter which Grade they were in as language acquisition rather than language learning is independent of grade level learning.
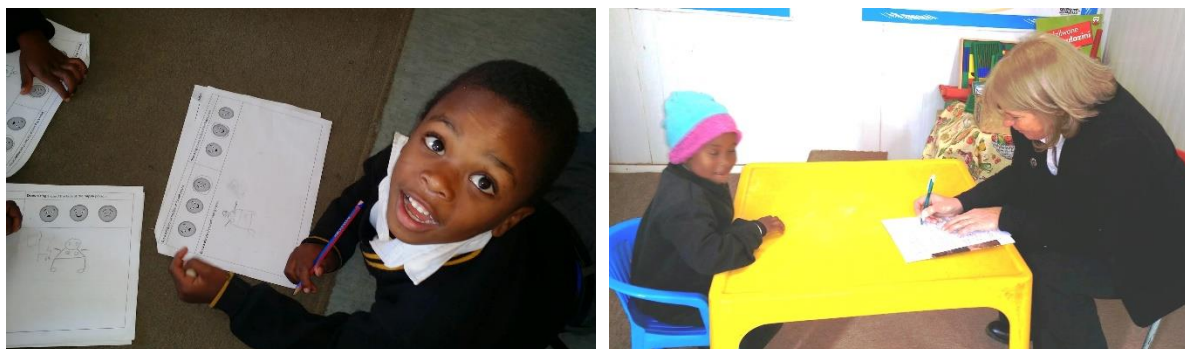
Baseline data was collected between June and August of 2014 from Grade R and Grade 1 learners at each school. In 2015, Grade R and Grade 1 learners were tested again. The 2014 – Grade R learners became the 2015 – Grade 1 learners and formed the first LGP project cohort. These learners were tested again in 2016 in their Grade 2 year. The 2015 – Grade R learners were tested again in 2016 in their Grade 1 year to form the second LGP project cohort. The extension of the LGP project to 2017 enabled the first cohort to be tested in their Grade 3 year and the second cohort to be tested in Grade 2. This enabled a full set of data for Foundation Phase for Cohort 1 (Grade R to Grade 3) and an opportunity to compare with a different cohort (2) for most of Foundation Phase (Grade R to 2).

COHORT 1	2014	2015	2016	2017	
LGP Project	Grade R	Grade 1	Grade 2	Grade 3	The same 136 learners tracked over four years.
Control	Grade R	Grade 1	Grade 2	Grade 3	The same 37 learners tracked over four years.
COHORT 2		2015	2016	2017	
LGP Project		Grade R	Grade 1	Grade 2	The same 94 learners tracked over three years.
Control		Grade R	Grade 1	Grade 2	The same 35 learners tracked over three years.

Only isiZulu, isiXhosa and other African language mother tongue speakers participated in the oral English skills assessments. One project school in the Western Cape did not provide Grade R teaching so this school was excluded from Cohort 2 (hence the lower numbers) as too few measurements could be made for comparison. Learners at the other schools who, due to attrition or absenteeism, had not been assessed each year were also excluded from their

cohort. All learners completed the same assessments each year. The control data gave an indication of any changes of performance on these assessments for learners not participating in the project. Any changes beyond these have been attributed to the LGP project as learning gains.
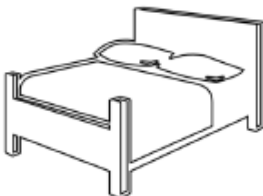

The Acquisition of Oral English Skills Assessment Tool

The Acquisition of Oral English Skills Test was conducted as a scripted interview, one-on-one with each learner outside of their classroom. All verbal responses and non-verbal actions were recorded on task scripts and scored according to the rubric scoring guides.

Acquisition of Oral English Skills – Facilitated Task Script and Rubric Score-card

Name: _____ School: _____ GRADE __

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1. Introduction:

Hello, I am _____. (Shake hands) What is your name? *Response* _____

How old are you _____? (Prompt: how many years?) *Response* _____

I'm going to talk in English. I would like you to talk in English too. _

What languages do you speak and understand? (Prompt: me English, you?) *Response* _____

	LISTENING Skills – Engagement & Attentiveness		SPEAKING Skills – Vocabulary & Language Use
0	= no engagement	0	= no verbal response or single name only
1	= sporadic engagement	1	= monosyllabic/single word responses to 2 questions
2	= simple engagement	2	= simple phrase responses to all 3 questions
3	= full engagement (eye-contact, focus, connected)	3	= sentence responses to all/ volunteers more

2. Identification Card Questions:

What is this a picture of?	What is this a picture of?	What is this a picture of?
Response? _____	*Response?* _____	*Response?* _____

	SPEAKING Skills – Vocabulary & Pronunciation
0	= no responses verbally
1	= verbal responses are incorrect/ not recognisable/ not in English/ OR only 1 correct in English
2	= verbal responses are recognisable in English but monosyllabic/ OR 2 correct in English
3	= all responses correct in clear English - may even volunteer more verbally/ OR 3 correct in English

Comments:

3. Action Identification Questions:

What am I doing? (Perform action of clapping hands together to make a repeated sound)	What am I doing? (Perform action of touching head with right hand and remove)	What am I doing? (Perform action of winking - closing and opening one eye)
Expected Response Guide: No verbal response = (0) Non-English verbal response = (1) English – single noun base = hands (2) English - single simple verb base = clap (2) English - single present participle = clapping (2) English multiple correct words = clap hands (3)	*Expected Response Guide:* No verbal response = (0) Non-English verbal response = (1) English - verb only = touch (var. hit?) (2) English - noun only = head (var. hand?) (2) English - multiple correct words = touch head (var.) (3) English - multiple correct words = you touch your head (var.) (3) English - present participle + noun = you're touching your head (var.) (3)	*Expected Response Guide:* No verbal response = (0) Non-English verbal response = (1) English - noun only = eye/s (2) English - verb only = wink (var. blink) (2) English - multiple correct words = close eye (var.) (3) English - multiple correct words = you're winking/ you're closing your eye (3)

	SPEAKING Skills – Vocabulary & Language Use
0	= no verbal responses at all
1	= all verbal responses incorrect/ not recognisable/ not in English
2	= verbal responses correct in English but singular words (verbs OR nouns but not both)
3	= verbal responses correct in English with at least one multiple word phrase (verb + noun)
4	= all three responses correct in clear English using sentences with nouns and verbs and correct grammar

4. Carrying Out Verbal Instructions: (no demonstration provided)

Please will you … … clap your hands together *(pause for understanding)* … two times.	Please will you … … touch your nose *(pause for understanding)* … with your thumb.	Please will you … … stand up *(pause for understanding)* … and turn all the way around.
Expected Response Guide: Listen for instruction – eye-contact and concentration Follow instruction – enaction and precision	*Expected Response Guide:* Listen for instruction – eye-contact and concentration Follow instruction – enaction and precision	*Expected Response Guide:* Listen for instruction – eye-contact and concentration Follow instruction – enaction and precision

	LISTENING Skills – Focus & Enaction
0	= no correct physical responses
1	= poor enaction - e.g. claps once/ touches face/ stands/ OR only 1 fully correct
2	= basic enaction - e.g. claps more than twice/ touches tongue /half turns/ for two/ OR 2 fully correct
3	= exact enaction/ ALL 3 fully correct

5. Conclusion

Thank you _____. (Shake hands) Goodbye. Enjoy the rest of your day.

Comments:

Scores were collected in MS Excel and an average percentage (out of a total score of 16) was calculated for each learner in each school, each province and an overall average for all project schools. An average percentage for each of Listening Skills (out of a total score of 6) and Speaking Skills (out of a total score of 10) were also recorded. The same treatment was applied to the control school data.

The Acquisition of Oral English Skills test and rubric also enabled the LGP team to identify which of Krashen's Second Language Acquisition (SLA) stages each learner was at when testing was conducted each year.

These SLA stages are:

Stage 1 – The Silent Period
Learners express no verbal expression except their name and may respond by nodding, pointing, gesturing or performing an act.
Stage 2 – The Early Production Stage
Learners can speak in one- or two-word phrases. Can demonstrate comprehension by short answers to simple yes/no, either/or, or who/what/where questions. They nod and shake heads and may say "I don't know".
Stage 3 – The Speech Emergence Stage
Learners begin to use dialogue and can ask and answer simple questions. Learners use basic and repetitive patterns of speech. They may produce longer sentences but often with grammatical errors that interfere with communication.
Stage 4 – The Intermediate Language Proficiency Stage
Learners start to make complex statements, state opinions, ask for clarification, share thoughts and voluntarily speak at greater length.
Stage 5 – The Advanced Language Proficiency Stage – Advanced Language Fluency
Learners are now equipped to participate fully in grade-level classroom activities. They may need occasional support but they use grammar and vocabulary comparable to a native speaker.

Learners were recorded on each stage according to their scores on the following criteria:

Acquisition of Oral English Skills – Facilitated Task and Rubric – SLA Stage Scoring Guide

1st Test Criterion	1st Test Task	Score	2nd Test Criterion	2nd Test Task	Score	Stage
Speaking Comprehension	Action Identification Questions	0 →	-			Stage 1
		1 →	-			Stage 1
		2 →	-			Stage 2
		3 →	Speaking Engagement	Introduction: Speaking Skills	1 →	Stage 2
					2 →	Stage 3
					3 →	Stage 3
		4 →	Speaking Engagement	Introduction: Speaking Skills	1 →	Stage 3
					2 →	Stage 3
					3 →	Stage 3
			At discretion – learner comfortably conversing, volunteering thoughts, using correct words and grammar			Stage 4
			Native speaker equivalence – measures beyond this test			Stage 5

The test was not designed to distinguish between SLA stage 4 and SLA stage 5 performance.

The first criterion was measured in the action identification questions part of the interview half way through the test to accommodate learners who may be shy to introduce themselves at the start of the interview. The introduction was used as a second measure of SLA stage as shown above.

Oral English Skills – Results and Discussion

While both LGP Project and Control groups show improved achievement in Oral English Skills from the start of the project to the end, the increased improvement in the overall average LGP Project achievement compared with that of the Control achievement is significant for both cohorts.
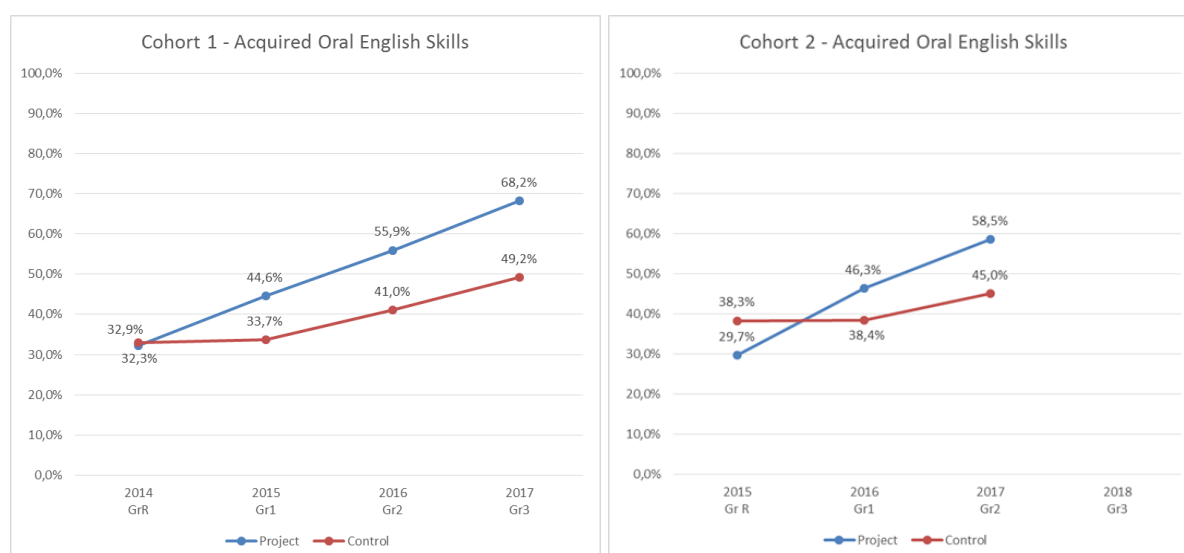

It is most interesting to note that the starting point of the LGP Project group and the Control group in each cohort was quite different but the patterns of progress are similar. In Cohort 1, both groups started out with very similar low levels of proficiency in English. In Cohort 2, the LGP Project group was measurably weaker than the Control group. Despite this both LGP Project groups showed large improvements in their Oral English Skills. In fact, the Project learners of Cohort 2, who were initially weaker than the Control learners in their cohort and weaker than the Project learners of Cohort 1 learners of the year before, were able to "catch-up" on the same improved trajectory as the Cohort 1 over the transition from Grade R to Grade 1, such that these Cohort 2 LGP Project group were achieving better results in Grade 2 than the Cohort 1 learners had achieved when they were in Grade 2. This greater impact may be an indication of a "maturing" of the LGP project resulting in increased familiarity with digital learning in the classroom and greater teacher proficiency with integrating the digital tools and resources within lessons.

The Control group of Cohort 2 started out stronger than the Control group of Cohort 1 but the progress of the two Control groups is each cohort is almost identical in its pattern. Both

groups show almost no progress from Grade R to Grade 1 (a less than 1% rise). This is not unexpected as they were not learning any English in class in Grade R. However it highlights the fact that LGP Project learners did make meaningful progress in their oral English skill development in their Grade R year and this evidence strongly supports the finding that the use of digital tools and resources raised the learners' English language skills. In fact with Cohort 2, the LGP Project learners overtook the Control learners scoring significantly higher in Grade 1. While both LGP Project learners and Control learners improved from Grade 1 to Grade 2 (English as FAL was taught in all schools from Grade 1), the gap between LGP Project learners and Control learners in both cohorts widened from Grade 1 to Grade 2. This pattern was also evident among Cohort 1 learners progressing from Grade 2 to Grade 3. These results confirm that the progress evident in the LGP Project groups is due to the LGP project inputs as the only difference between these learners and the Control group learners was that the LGP Project learners were able to acquire English language from the tablet apps and Xbox games they were playing.

The acquired oral English skills test measured both listening skills and speaking skills. Both LGP Project learners and Control learners achieved overall poorer results on speaking activities compared to listening activities. The English speaking skills results follow a similar pattern to the overall Oral English skills results. A steady improvement in both listening and speaking skills over the progressive grades was measured with a larger regular improvement in speaking skills. Speaking results of LGP Project learners *tripled* over the successive grade measures. As Stephen Krashen's SLA stages are informed by speaking skills, these were the focus of the analysis of the LGP data analysis.
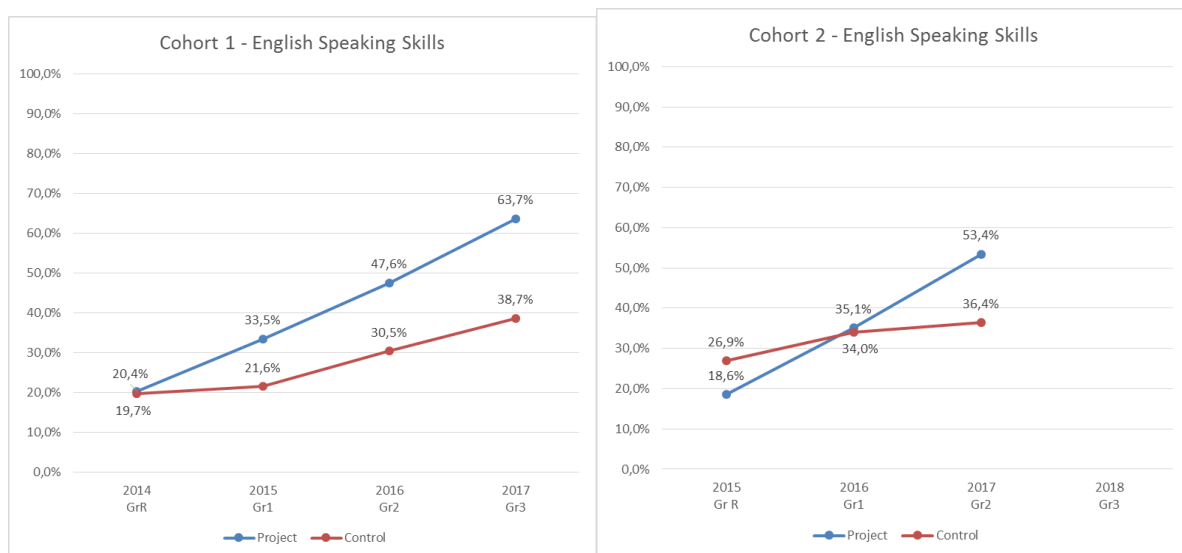

When the learners were assessed on the Second Language Acquisition Stages that Krashen has identified, the extraordinary progress made by LGP Project learners became more apparent.

Cohort 1 – Progress in SLA Stages

Oral English - Comparing SLA Stages in Grade R - LGP Project versus Control - Cohort 1
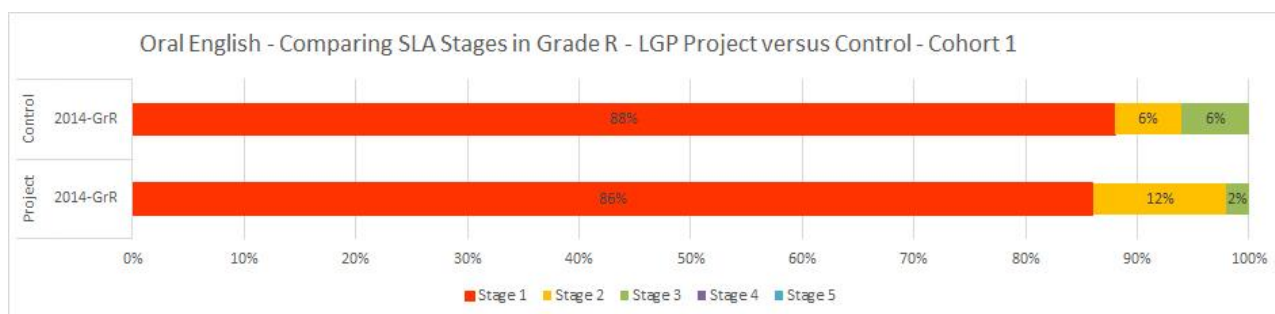
Learners in the LGP Project group and the Control group started out with similarly low levels of English oral proficiency. 88% of the Control group and 86% of the LGP Project group were on Stage 1, also known as the Silent Stage.

Oral English - Comparing SLA Stages in Grade 1 - LGP Project versus Control - Cohort 1
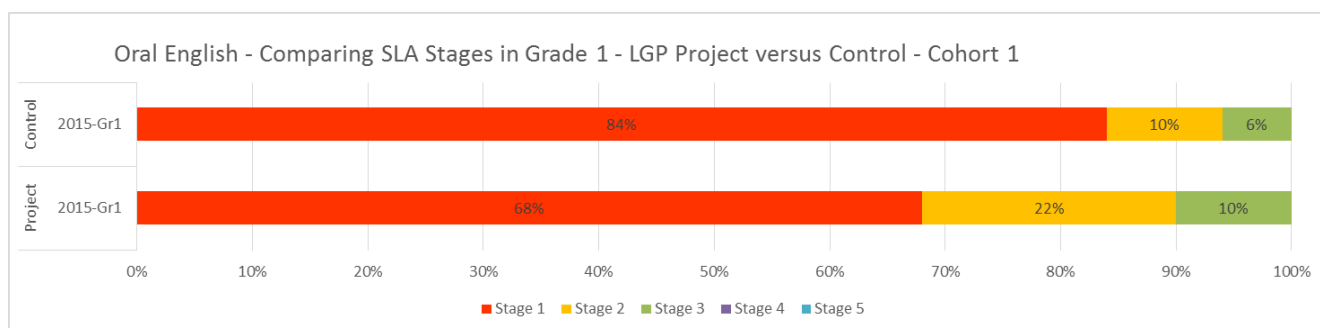
In the first year, only 4% of the Control learners were able to progress beyond Stage 1 to Stage 2. However 18% of the LGP Project group were able to progress beyond Stage 1 with 8% of learners in project schools actually skipping Stage 2 to Stage 3.

Oral English - Comparing SLA Stages in Grade 2 - LGP Project versus Control - Cohort 1
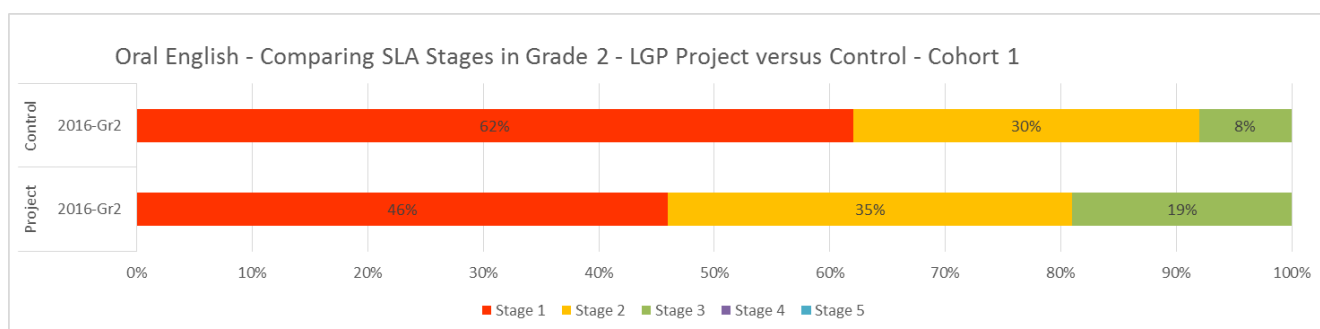
With the introduction of English as FAL in Grade 1, both groups show more progress in the Grade 1 to Grade 2 transition however the LGP Project group still outperforms the Control group.

Oral English - Comparing SLA Stages in Grade 3 - LGP Project versus Control - Cohort 1
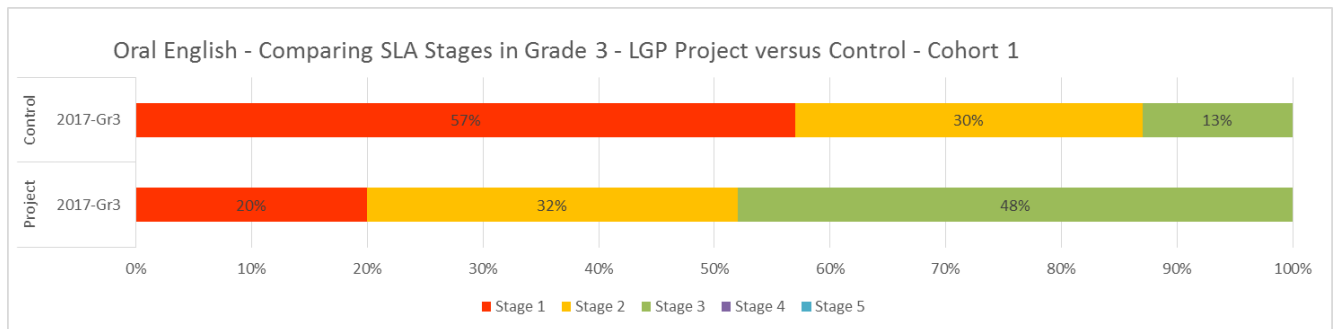
This gap widens in the Grade 2 to Grade 3 transition with 80% of LGP Project learners leaving the Silent Stage 1 with the majority of these learners (48% of the total) performing at Stage 3 level. By the end of Foundation Phase, there is still a majority of Control learners (57%) on the Silent Stage 1. Only 7% of Control learners were able to progress to Stage 3 over the Foundation Phase period compared with 46% of LGP Project learners.
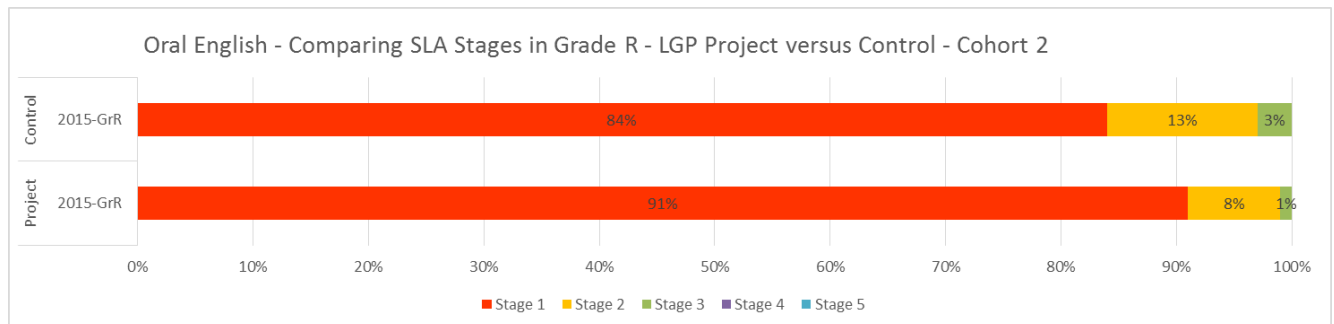
When analysing the data, one school's results stood out from the rest, achieving results that were markedly better than the results of all of the other schools. This school was Solomon Qatyana Primary School in the informal settlement of Asanda Village in the Western Cape. The SchoolNet LGP implementation team had already noted that teachers and school leaders at Solomon Qatyana Primary School had demonstrated the most successful adoption and use of digital learning of all the schools in the LGP Project.

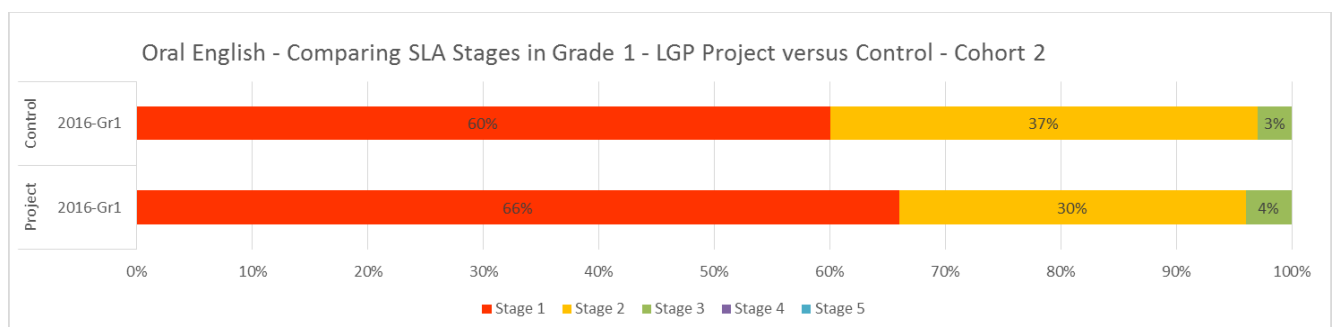Oral English Progression by SLA Stages - Solomon Qatyana PS Cohort 1
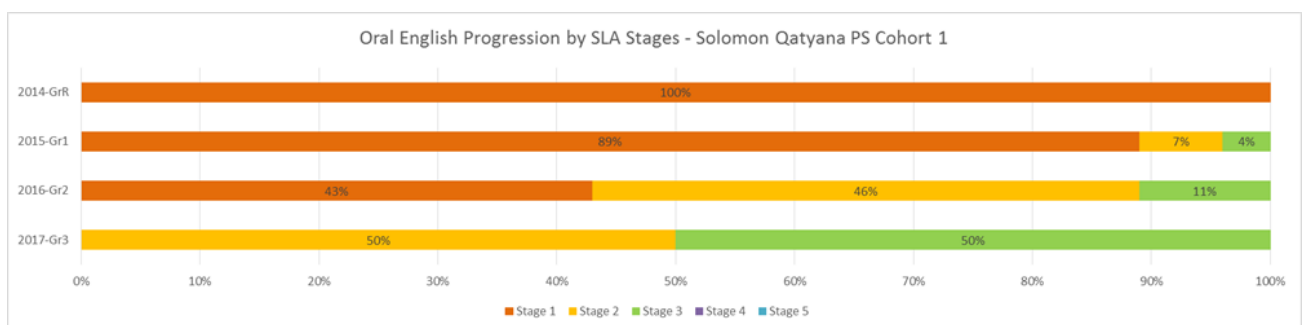
The graph for Solomon Qatyana Primary above clearly indicates that all cohort 1 learners had progressed beyond stage 1 by the end of the project. When considering oral English skills results at this isiXhosa-speaking school, 100% of SQPS Cohort 1 learners were on the Silent Stage 1 at the start of the project. While there was a small percentage of learners moving off Stage 1 in 2015, some of these even skipped Stage 2, moving from Stage 1 to Stage 3. In 2016, there was a large improvement with only 43% of learners remaining on Stage 1. By 2017, with the learners in Grade 3, all of them (100%) were off the Silent Stage 1 with a significant 50% on Stage 3. The SchoolNet team had noted in classroom visits over the course of the LGP project that SQPS teachers had embraced the use of the digital tools and resources with greater enthusiasm and faster growing expertise when compared with teachers at the other project schools. For a number of SQPS teachers their own tablet in their classroom had become an essential teaching tool. What is most encouraging is that for 2017, the LGP project had been concluded and there were no further project inputs provided. The Foundation Phase

teachers at SQPS achieved this final year progress by applying their new pedagogies while sustaining their peer collaboration approach to digital learning.
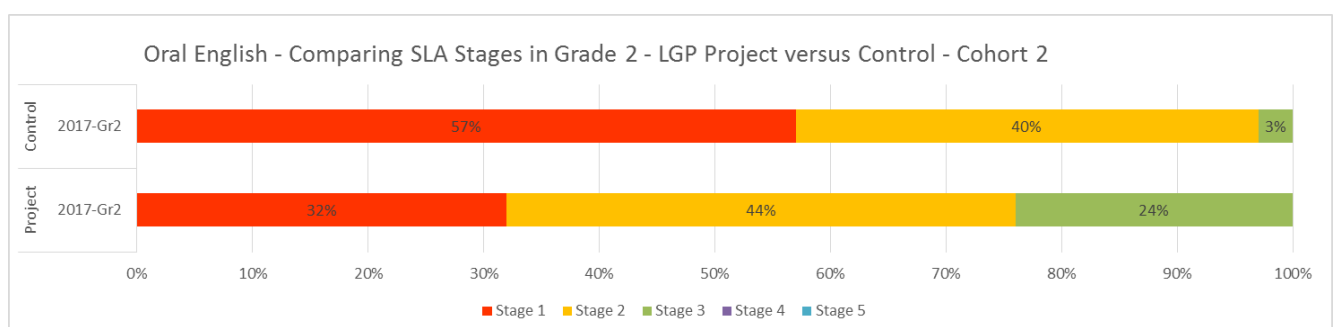
Cohort 2 – Progress in SLA Stages

Oral English - Comparing SLA Stages in Grade R - LGP Project versus Control - Cohort 2

Control	2015-GrR	84% · 13% · 3%
Project	2015-GrR	91% · 8% · 1%

Stage 1 ■ Stage 2 ■ Stage 3 ■ Stage 4 ■ Stage 5

In this cohort, the learners in the LGP Project group started out with poorer English oral skills than the learners in the Control group. 91% of the LGP Project group were on Stage 1 compared with 84% of the Control group.

Oral English - Comparing SLA Stages in Grade 1 - LGP Project versus Control - Cohort 2

Control	2016-Gr1	60% · 37% · 3%
Project	2016-Gr1	66% · 30% · 4%

Stage 1 ■ Stage 2 ■ Stage 3 ■ Stage 4 ■ Stage 5

This resulted in more LGP Project learners remaining on Stage 1 after Grade R compared with Control learners, however overall the LGP Project learners made greater progress than the Control learners.

Oral English - Comparing SLA Stages in Grade 2 - LGP Project versus Control - Cohort 2

Control	2017-Gr2	57% · 40% · 3%
Project	2017-Gr2	32% · 44% · 24%

Stage 1 ■ Stage 2 ■ Stage 3 ■ Stage 4 ■ Stage 5

This changed considerably in the following year (2017) with only 32% of the LGP Project group remaining on Stage 1 compared to 57% of the Control learners. No Control group learners were able to progress to Stage 3, the 3% of learners who started on Stage 3 remained on Stage 3 over the three years with no additional learners making this transition. Almost a

19

quarter (23%) of LGP Project learners were able to progress to Stage 3 from Stage 1 over the same period. It is important to note that for this cohort, the final testing was done while they were only in Grade 2. Comparing their Grade 2 results with the Grade 2 results of Cohort 1 shows that they have actually achieved better overall results. Cohort 2 started with 94% of learners on Stage 1 in Grade R compared to 86% of Cohort 1 learners and by Grade 2, Cohort 2 has only 32% of learners still on Stage 1 compared to the 55% of Cohort 1 learners still on Stage 1 at the equivalent time. It is feasible that by the end of Grade 3, all of Cohort 2 learners would have progressed beyond Stage 1.

Again, considering the learner performance of Solomon Qatyana Primary School separately shows the extent of their success within the LGP Project. With 84% of SQPS learners on Stage 1 at the start, this dropped to 50% in the first year. SQPS had more than a third of the learners (34%) progressing from Stage 1 to Stage 2 and Stage 3.
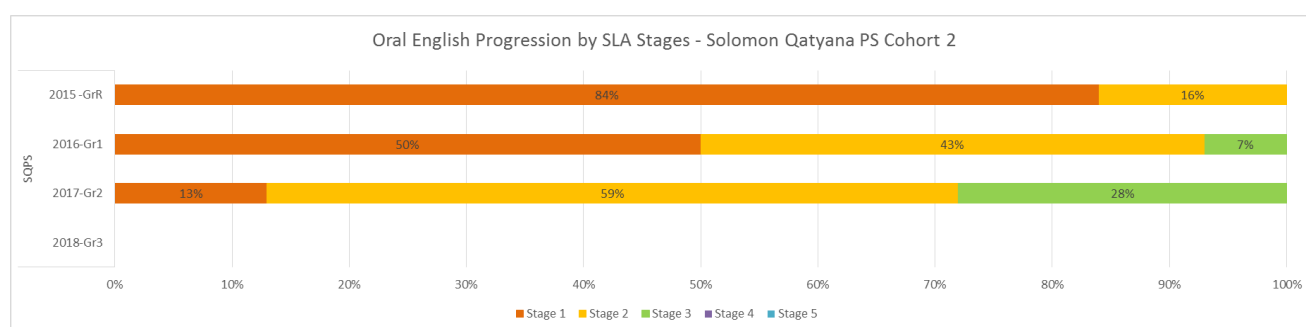
The following year, this progress was even greater. It is worth comparing SQPS Cohort 1 learners in 2016 with these SQPS Cohort 2 learners in 2017 as they were both in Grade 2. In 2016, 43% of Cohort 1 (Grade 2) learners were on Stage 1 and all of them (100%) were able to progress beyond this stage by 2017. The Grade 2 SQPS cohort of 2017 found only 13% of learners remaining on Stage 1 so it seems most likely all would progress beyond Stage 1 by the time they would be in Grade 3 in 2018.

Conclusions to the Study

The most important finding resulting from the Learning Gains through Play project is that *Oral English skills can be improved simply by engaging with the tablet apps and video games which use English as the medium of communication*. This research supports the theory that successful language acquisition occurs through understanding messages – that making understanding of English in order to play engaging games on a tablet or Xbox console creates the necessary comprehensible input. From the earliest days of the project, feedback from teachers frequently expressed the view that apps and Xbox games had extended their

learners' English vocabulary and helped learners to improve their listening skills and pronunciation. This was noticed and confirmed by teachers at the LGP Project schools who were teaching higher grades that were not directly involved in the project but who were now teaching learners who had been through the project. The purpose of the LGP 2017 extension to include Grade 3 learners set out to answer the following questions:

Questions:	Findings:
With continued access to digital tools and resources in the classroom, can all of the isiZulu- and isiXhosa-speaking learners progress off SLA Stage 1 by the end of Foundation Phase?	It is possible that through the LGP Project inputs to enable all learners to advance beyond the silent stage of SLA Stage 1 as demonstrated by Solomon Qatyana Primary School learners. Even the other LGP Project schools who did not achieve this benchmark still showed significant progress in oral English skills when compared to the Control schools. This progress was enabled through the acquisition of English language through the project inputs. The legacy of the LGP Project remained such as to enable progress even after active project inputs had ceased. In fact the greatest progress was made in the final year of Foundation Phase. This suggests that early English acquisition may offer learners an important advantage in English FAL when it is introduced in Grade 1.
Can the method of language acquisition raise isiZulu and isiXhosa learners' English skills beyond Stage 3 or is this the ceiling for acquisition and formal learning is required for further progress?	SLA Stage 3 was the highest level of achievement of English through acquisition measured in the LGP Project. Learners that started on Stage 3 remained on Stage 3 throughout the LGP Project. Learners starting on Stage 1 and Stage 2 were able to attain Stage 3 level skills but not beyond this.
Is English at Stage 3 level sufficient to cope with the Grade 4 shift to LoLT in English in South African schools? Will the Learning Gains through Play project learners with their improved English oral skills achieve better results than the control learners in Grade 4 in English First Additional Language (FAL) and in their other subjects?	This question remains unanswered as the learners are in the final term of their Grade 3 year. It would only become evident in Grade 4 whether improved English oral skills (up to Stage 3) adequately equips learners to cope with the transition in Grade 4 from mother tongue instruction to English as LoLT and whether these improved English skills translate into improved academic results in English and the other Intermediate Phase subjects.

It is clear from these results that providing isiZulu- and IsiXhosa-speaking Foundation Phase learners with tablet apps and Xbox games in the classroom that use English as the medium of communication, enables acquisition of English language and advances learners' oral English communication skills. While the Department of Basic Education and its e-Learning directorates in the provincial education departments is committed to providing digital tools and resources in public schools, the focus tends to be on older learners: high school or senior primary school learners. The Learning Gains through Play research suggests that a wise focus for digital learning in the classroom should be on Foundation Phase in order to prepare learners for the difficult transition from learning in their home language to learning in English from Grade 4 so that they are best equipped to achieve in their growing number of academic subjects and to build a strong knowledge base for continued success in their school careers.