

SCHOOLNET SOUTH AFRICA

October 2019

- 1. PROJECT NAME:** Maths, Science and Technology Curriculum Support Project
- 2. PROJECT BACKGROUND:** The Rand Water Foundation requested proposals for the delivery of tutoring and teacher support for selected project schools. This project was conceptualised to provide teacher and learner support on the use of digital technologies and resources to improve teaching and learning in Mathematics, English, Science and Technology. The goal was to use existing resources and sponsored resources to achieve curriculum goals, and assist teachers to use digital skills to design engaging teaching and learning activities for the classroom. Teachers would also be able to analyse learner assessment data and to provide remediation where learners have conceptual gaps or provide academic extension activities for gifted learners.
- 3. PROJECT GOALS AND OBJECTIVES:** The overarching goal of the project is to ensure that teachers gain support to improve the integration of digital learning into their teaching practice and for learners to gain support to learn curriculum content in Mathematics, English, Science and Technology. Too often we find that public sector schools do not have sufficient resources to fulfil the curriculum goals, and this project would assist the project schools to find resources, and use digital skills to create engaging learning experiences in the primary phase of learning.
- 4. PROJECT LOCATION** - There are ten project schools, located in the Johannesburg West District. Six schools are situated in and around the Braamfischerville area, two schools in Soweto and two schools in Roodepoort. The ten schools are divided equally into five schools with no ICT equipment and five schools with full ICT. In this case full ICT is defined as per the Gauteng Department of Education's programme to rollout tablets to all Grade 7 learners, pre-loaded with curriculum content and a smart board in Grade 7 classrooms.

5. PROJECT IMPLEMENTATION PERIOD

The project was due to start in August 2018, however, it officially started in February 2019. Schoolnet's partnership is in place for the next three years.

6. PROJECT PERFORMANCE INDICATORS:

- Professional development of ten project schools' teachers who teach Maths, English, Science and technology.
- Teachers who actively participate and complete course activities will earn SACE continuing professional development points (CPTD)
- Learners completed baseline assessments in Mathematics at the start of the project and will then complete end-line assessments at the end of the project.
- A teacher workshop was conducted on the analysis of the learners' results so that these can inform lesson and assessment planning.
- Facilitate learner engagement with the sponsored and GDE devices during Maths, English, Science and technology lessons to improve access to multimedia curriculum content and digital literacy skills.

7. RESOURCES MANAGEMENT:

7.1. Resources in 2018

In 2018, fifty 10" Samsung tablets were purchased with two charging cases for easy mobility. Tablet applications aligning to curriculum content in Maths, English and Science were pre-loaded onto the Rand Water resources. The same applications were loaded onto the Grade 7 tablets at the full ICT schools.

Two professional development courses for training were provided to teachers. The courses were firstly, Using Digital Resources in the Classroom and secondly, One Step Further.

The learner support work focused on identifying the conceptual gaps using a baseline mathematics assessment with an analysis of learners' gaps in learning.

7.2. Resources for 2019 & Activities to Date

In 2019, a further sixty 9.6" Samsung tablets were bought with an additional three charging cases. Coupled with the resources from 2018, this will result with at least one case at each of the five non-ICT project schools. These cases and devices will be insured as per agreement with Randwater and will be officially handed over when Randwater agrees on a suitable date.

Contractually, we are due to have one teacher professional development refresher training, however the focus will be on at least ten days of tutor support for each of the project schools.

The schools assessment data for the project grades will be gathered in preparation for an analysis into the impact of the project at the end of 2020.

Overview of 2019 Follow-up Support Visits

As we were required to provide ten days or more of classroom support visits, the first set of support visits started in May and the follow up visits were scheduled for the month of October 2019.

Roodepoort Primary School also received fourteen days of classroom support visits as the school is one of the schools that welcomed this project from the first time it was introduced to them. As a result, it became easier to work with them as they are a school that is always interested to know more and ready to experience new things. Although it was a pleasure working with them, there were few challenges faced. Learners do not understand that for now, the project can not accommodate all learners, as a result, learners would flee their classes to look through the windows in an attempt to see their fellow learners

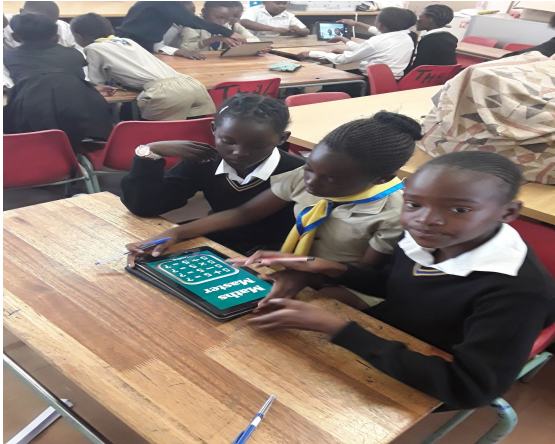


experiencing learning using technology. Roodepoort Primary School is one of the ICT schools, meaning the school has tablets, however, just like Nkone Maruping only Grade 7 learners get to experience learning with them. The support specialist also had learners asking when they are going to experience learning using tablets. Nokubonga who provided classroom support visit at this school also reported that learners were protesting at the entrance of the classroom demanding to be taught using tablets too. On the last day of the classroom visit the Support Specialist had a session with all Mathematics, Science and English teachers to demonstrate in detail how the applications work in order to be able to work independently and confidently even when the Specialist is not there. This is also because they were unable to make it to the workshop as the date was clashing with other school activities.

Tumang Primary School is one of the four schools that also received more than ten days of classroom support visits, reason being that the school is led by a team of open-minded individuals who accepted any opportunity to better themselves, learning and teaching. From day one, the leadership of the school saw the vision of the project and that was why it was easier



to work with the school. Like most schools the only concern was that the project currently did not include all learners but selected classes. They were hopeful that in future, Rand Water would be able to provide funding so that every learner would get an opportunity of this amazing experience. Mr Khoza, who is deputy principal said that in January they were going to meet with staff and draft a plan on how they are going to use the resources they were provided with by both SchoolNet and Rand Water in an attempt to implement all they have learnt this year.



Thabaneng Primary School also received fifteen days of classroom support visits. The staff at Thabaneng Primary School is very pleasant to work with because they are always ready whenever an opportunity is presented to the school as long as it is going to benefit the professional development of teachers and improve learning and teaching. Whenever a proposed appointment date is communicated to the school they are always keen to fit the dates in their schedule for that week. Thabaneng only has one project class,

Grade 4, and we worked with all four grade 4 classes. On our third classroom support visit to the school, the Mathematics HOD suggested topics to be covered in preparation for the final examination. They were Division, Multiplication and Fractions and English Grammar. Teachers said that they definitely spotted learner improvement since they started using Mathematics Apps activities.

Nkone Maruping Primary School



During the second classroom support visit most attention was given to the grades 4-6 as learners as not time was spent with these grades during the first visit. This is because the school prioritized the grade 7's more as it is their last year of primary school. Nkone is one of the ICT schools and they have more than one hundred tablets mainly for the grade 7's. It looked like the other grades are not afforded the opportunity to be taught or learn using these tablets because they are strictly for the Grade 7 classes. Some teachers raised concerns regarding this idea. Other than that, the school is very happy to be part of the project and they also said that they are witnessing some changes. Ms Madonsela made a suggestion that the project is extended to the Foundation Phase too, as teachers there are very much interested.

Braamfischer Primary School is currently under construction as they were using mobile classes all the years. They have limited space for teaching because even the mobile classes they have, some can not be used as the space they occupied before form part of the construction site, so they had to be moved. Everything is congested at the school but despite those challenges the classroom support visits were done. Learners get very excited when they see our Support Specialist walking in the school premises and they cannot get enough of the lessons where they get to learn using tablets Applications.



During a school visit a project coordinator was at the school for observation and at the end of the lesson learners chanted “we want more” at the Support Specialist as he was preparing to move to another class. They cannot wait to start adopting the culture of using digital resources on a permanent basis as the school has never used them before. Mr Phalane, who is Mathematics HOD is very engaging and inquisitive during the visits and there is no doubt that him and his team will

continue where the Support Specialists have left. The concern Mr Phalane (HOD) raised was the sharing of tablets and the fact that some of the classes are not included in the project even though the Support Specialist had spent some time with some of the classes that were not project classes. He felt that was not enough and hoped that in 2020 Rand Water will meet their wish to extend the project to other classes with a possibility of adding more tablets.

Tshepisong Primary School- as mentioned in the previous report, is currently facing some challenges, security being one of them. The school is not well run due to the fact that it is a no fee school and sometimes they run out of funds to keep up with the daily running of the school.



However, the Mathematics department is determined to contribute and cooperate in order to make the vision of this project a success. The school also had fifteen days of classroom support visits. This is also the school that requested the Support Specialist to make time to see other classes who are not project classes. As teachers, they understand the reasons behind the classes selection but their fear is that learners and parents might take it the wrong way. The Head of Department said that they are truly grateful for the opportunity to be part of the project.

Moses Kotane Primary School didn't have enough classroom support visits because the Mathematics Head of Department left the school to work at the district office. The HOD who left was the one who was always hands on and kept her department open to trying out new things, like teaching using tablet applications. We tried to get the school to agree to a follow up visit but this is the response we received from Mr Moeng (ICT Coordinator) below :

Good morning

We as Moses Kotane p/s appreciates the effort you making to improve our learners education related to 4IR. Your visit has made a difference however the 2nd visit can't happen this year/term, we as educators are under pressure to ensure curriculum is well taken care of. We will have to discuss dates for 2020.

As per our conversation, this email is to confirm that the laptop in question, please talk to Miss QP Ndlovu. Mr Mathye the principal made it clear that he will not sign any acknowledgment letter since the laptop is not at school. He further suggested that should you need more clarity regarding this matter, you should talk to Miss Ndlovu directly.

Hope this will assist

Thanks and regards

Gabriel Moeng
072 020 5091

During the support visit we also found out that the laptop that was donated for this project was lost and nobody could account for it, especially after the Ms Queeneth Ndlovu (HOD) left the school. The principal suggested that we contact her directly. She was the one who accepted and signed for the laptop upon delivery. It is still not clear how the laptop was lost but the matter is still under investigation. The school is still happy to be part of the project and will make sure in 2020 they include it in their planning and also make sure they implement fully everything learnt in 2018.

JB Marks Primary School is fully involved in the project activities, some teachers more than others. On the first day of the classroom support visits the teachers were not keen on giving the Support Specialist time to demonstrate how the Mathematics, Science and English applications work because they did not believe that they could be relevant to teaching. Quintres, who provided classroom support to the school, had a meeting with them prior to the classroom interaction and she showed them the applications and that is then that they decided that she can continue with the classroom support visits at their school. They had few suggestions like developing more Curriculum based Apps but unfortunately the project did not cater for such. There are quite a few free applications that can be of benefit to learners like BCX supported by Telkom and the ones that we are currently using. As they explored them with the help of our Support Specialist finally they saw that they are helpful and the learner response was pleasing. At first they had declined the follow up visit but after the experience with the applications, the second classroom support was accepted with ease. Mr Marengoa who taught Mathematics helped them see the benefit the resources has to learners and teachers too. The school trusted his judgement as he is one of the most hands on teachers at JB Marks primary School.





Julius Sebolai Primary School every classroom support visit to the school was a success and the school is happy with the progress shown so far. The only challenge at the school is the electricity cuts that are due to cable theft, as a result of this, on the week of the follow up support visit the school was using a generator and there was also no water. The duration of the classes was shorter because the entire school had to be off by 11 am on that week. All the

applications the Support Specialist used during the classroom support visits were all installed in 50 of the tablets belonging to Julius Sebolai Primary School. The HOD assured the Support Specialist that even though the Specialist did not have enough time with learners during the second visit, they will continue where he has left because they have all the resources and they will put to use.

Nomzamo Madikizela Mandela Primary School - the Support Specialist who did the follow up classroom visit to the school reported that she had enjoyed it a lot because teachers welcomed her and she felt like one of them and that made it easy to work there. She did not provide classroom support only to the project classes as the time table for the week she was given included the non project classes as well. At times she assisted Mathematics, Natural Science and English revision classes. They used the applications and sometimes they did not. Quin, the Support Specialist, was also in class alone with learners when teachers had to attend to urgent administration matters. That could be challenging as far as disciplining the learners because sometimes they take advantage and behave badly especially when their teacher is not present in class. Quin was able to handle it all because of her past experience with tutoring in school.

Professional Development Workshop for teachers



A Professional Development workshop took place on the 30th October 2019 at Nkone Maruping Primary School. The idea behind this training workshop was to reintroduce teachers to the learner applications installed on the devices and share ways in which teachers could use these applications and include them in their planning for the coming year.

This workshop was also used as an opportunity for teachers to practice using the applications with minimal assistance from the interns, this was so that teachers built their confidence in the usage of the devices.

During the workshop started with a skype interaction where teachers were taken through the project the project plan and how far the project was in implementation; The interns then started introducing the different applications installed in the tablets and in groups shared how each of the applications could be used for teaching and learning.

There were three demo stations set up where Mathematics, Natural Science and English applications were introduced to the teachers. Teachers were then grouped into three groups and were given 10 minutes at each station to explore the apps while the support specialist was explaining how the apps worked in a classroom setup. The workshop was a success, teachers gave feedback by answering questions in an online survey.

Some of the responses by teachers were the following ,

"Will for ever be greatfull about being part of this project very good facilitators you have very energetic and active thank you thank you be blessed "

"I have hope that this will improve education if it will be done in the entire school not only grade 7"

"Learner were generally excited and looked forward to partaking in the lessons."

"We wish that the program can start early next time. It's good for our learners and gives them other learning ideas but it needs enough time. "

"I truly appreciate the efforts you are putting into making our lives easier and learning much more exciting."

Teachers were really excited and keen on learning more so they can go back to their classrooms and use the tablets and applications in a meaningful way.

8. OVERALL PROJECT EVALUATION:

8.1. Challenges:

The following challenges were experienced:

- The project classes have more than 50 learners per class which meant that we are working with more than the expected 40 per class.
- Teachers complained about the selection of one class per grade rather than working with a complete grade ie all classes in the grade.
- Teachers complained that whilst they were grateful for the one sponsored laptop, this meant that only one teacher could be responsible for the device and it therefore could not be used for all the focus subjects i.e. Mathematics, Science and English.
- The schools have also expressed concerns about the security at schools. Having digital devices at school means additional risk. Insurance premiums for schools are quite exorbitant and it would be difficult for the school to ensure the devices after the handover from Randwater.
- Teachers have also indicated that some of the apps don't completely cover the curriculum sections and paid for apps such as IXL would be most welcome.
- Some teachers leave the interns in the classroom with learners, rather than teaching and asking interns to assist in the classroom. This is indicative of a low commitment in these schools.
- Teachers have voiced concerns about their not being enough devices for each learner or project teacher and would like Rand Water's assistance in this regard.

8.2. Delays in 2019 project implementation:

A delay in the signing of the contract caused a knock on effect with not enough time being planned for and used in the school year. Devices took longer to procure, as the budget had to be maximised to allow for insurance of the devices which had to be agreed. Downloading and installing apps for learning further took time, which meant that implementation started in the middle of September, just before the end of term.

Schools are complaining that devices take time to open and in this term, teachers can't afford to waste time. We have asked the Interns to be responsive to schools needs and become teacher assistants in the classroom and where teachers might be absent then use the digital technologies to allow playful learning using the installed Apps. Some schools are taking to the devices which makes the Rand project truly valuable.

8.3. Success Factors:

The project somehow made some teachers excited to start adopting a different approach to teaching, especially in learning areas like Mathematics and English. They have plans to continue using the new tricks learned during the classroom support visits from our Support Specialist. Ms Madonsela who is a Mathematics Head of Department at Nkone Maruping Primary School suggested that we ask Rand Water to including Foundation Phase teachers and learners on the project. Mr Khoza once again making plans for next to involve every teacher from Tumang Primary School. They will include a plan from the first term on how they will implement all the lessons learnt in their teaching and learning throughout the year.

8.4. Lessons Learnt:

The project would run smoothly if the project programme for the year is included in all the schools year plan. Planning for the next year should happen in the preceding year so that all the details are agreed to in advance and we are able to implement from February when schools have normalised.

Ideally we should have one intern placed at each school so that the intern can provide dedicated support to the schools and provide on the ground data on the project gains.

The project goals need to fit in more closely with the school programme and Interns need to work more closely with class teachers to plan lessons with apps on topics the teacher is teaching. Some schools are less accommodating to fit project activities into the school day and see this as extra work rather than complementary work. Our intention is to implement a survey with teachers and schools to better understand their immediate needs and then make recommendations to Randwater for the 2020 programme.

9. CONCLUSION:

Overall the project is proving to show some success already with some teachers becoming more open to using digital teaching in the classroom. We have brought access to schools and learners and are showing that digital devices can be used for learning and not only for social media.

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