The Efficacy of Digital Support Specialists in Telkom High School Support Programme (HSSP)Schools

Prepared by Open Education Consulting

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Introduction and Background

The Telkom Foundation launched the High School Support Programme (HSSP) in July 2017 pledging over R200 million over a five-year period to contribute towards improving the quality of teaching and learning with a specific focus on Mathematics, Science and English in disadvantaged communities. The project aligns well with the overall goal of the South African Department of Basic Education's Action Plan to 2024: Towards the realisation of Schooling 2030 *'to improve the quality of learning outcomes and improve educational inequalities.'* The HSSP has been rolled out to seven schools, two in the Eastern Cape and five in Gauteng Provinces.

As part of the HSSP, the Telkom Foundation included a supplementary programme to support learners from grade 8 through to matric to improve the quality of their pass rate. According to SchoolNet South Africa (SNSA) the programme also included a psychosocial element, which aimed to sustain the learners' performance by supporting and understanding the effect their home environment can have on their academic performance and life skills.[1]

SNSA has been responsible for all teacher professional development activities as well as the capacity building and management of an intern programme that saw technical support interns, now named Digital Support Specialists being allocated to each school. Open Education Consulting was contracted to determine the efficacy of Digital Support Specialists in *Telkom HSSP Schools*.

Research Questions

The following research questions were used to guide the data collection for this report.

1. To what extent does having Digital Support Specialists, based at *Telkom High School Support Programme (HSSP) Schools*, lead to optimal use of Telkom sponsored equipment in classrooms for teaching and learning?
    a. What factors contribute to the successful fulfilment of the expected roles and responsibilities of Digital Support Specialists?
    b. What successes and/or challenges are experienced when integrating ICT in each of the *Telkom High School Support Programme (HSSP) Schools*?
2. To what extent does SchoolNet's approach to supporting and empowering the Digital Support Specialists enable them to fulfil their expected roles and responsibilities?

Approach

Open Education Consulting (OEC) adopted a mixed method retrospective evaluation approach at all seven *Telkom HSSP schools*. Three schools in the Gauteng region were randomly selected and visited to conduct face-to-face interviews with teachers, principals, and Digital Support Specialists. Video interviews were conducted with principals and Digital Support Specialists from the remaining four schools not visited as well as a Corporate Social Investment (CSI) team member from the Telkom Foundation. Digital surveys were developed and circulated to all seven *Telkom HSSP schools* to garner additional data and information from teachers and learners. A survey was also developed and shared with the SNSA project team members. Project documentation shared by SNSA was reviewed to better understand the intended roles and responsibilities of the Digital Support Specialists.

[1] Telkom Connected Schools Programme. SchoolNet South Africa. (n.d.). Retrieved March 3, 2022, from https://www.schoolnet.org.za/schoolnet-at-work/projects/telkom-connected-schools-programme/#:~:text=The%20Telkom%20Foundation%20launched%20the,and%20English%20in%20disadvantaged%20communities.

Limitations

Impact evaluations can be divided into two categories: prospective and retrospective. Prospective evaluations are developed at the same time as the programme is being designed and are built into programme implementation. Retrospective evaluations, such as this one, assess impact after the programme and/or intervention has been implemented. Although the results of retrospective evaluations produce strong and credible evaluation results, the findings are often not generalisable beyond the scope of the evaluation and/or circumstances of the project.[2].

Data Collection

Data Collected

Between 28 February and 24 June 2022, the following data was collected:

Table 1 Overview of data collected

SCHOOL/ORGANIZATION	DATA COLLECTION
M. H. Baloyi Secondary School	• 1 x face-to-face interview with principal • 1 x video interview with Digital Support Specialist • 2 x face-to-face interviews with teachers • 36 x responses to online survey for teachers • 2 x responses to online survey for Digital Support Specialist • School photos
Winterveldt High School	• 1 x video interview with principal • 1 x video interview with Digital Support Specialist • 19 x responses to online survey for teachers • 29 x responses to online survey for learners • 2 x responses to online survey for Digital Support Specialist
Ruabohlale Junior Secondary School	• 1 x face-to-face interview with principal • 1 x video interview with Digital Support Specialist • 3 x face-to-face interviews with teachers • 40 x responses to online survey for teachers • 54 x responses to online survey for learners • 1 x responses to online survey for Digital Support Specialist • School photos
Seageng Secondary School	• 1 x video interview with principal • 1 x video interview with Digital Support Specialist

[2] Gertler, P., Wilde Martínez Sebastián, Premand, P., Rawlings, L., & Vermeersch, C. (2016). Impact evaluation in practice. World Bank Group.

	• 38 x responses to online survey for teachers • 50 x responses to online survey for learners • 1 x response to online survey for Digital Support Specialist
Ndzondelelo High School	• 1 x video interview with principal • 1 x video interview with Digital Support Specialist • 1 x response to online survey for principal • 27 x responses to online survey for teachers • 43 x responses to online survey for learners • 1 x response to online survey for Digital Support Specialist
Khwezi Lomso Comprehensive School	• 1 x video interview with principal • 1 x video interview with Digital Support Specialist • 47 x responses to online survey for teachers • 37 x responses to online survey for learners • 1 x response to online survey for Digital Support Specialist
NMTsuene High School	• 1 x face-to-face interview with principal • 1 x video interview with Digital Support Specialist • 3 x face-to-face interviews with teachers • 22 x responses to online survey for teachers • 16 x responses to online survey for learners • 1 x response to online survey for Digital Support Specialist • School photos
SchoolNet South Africa	• 3 x responses to online survey for SchoolNet project team members
Telkom Foundation	• 1 x member of the CSI team

Table 2 Breakdown of data collected/Response rate (principals, teachers, DSS, learners and others)

SCHOOL/ORGANIZATION	PRINCIPAL	DIGITAL SUPPORT SPECIALIST	TEACHER	LEARNER	OTHER	TOTAL
M. H. Baloyi Secondary School	1	2	36	0		**39**
Winterveldt High School	1	2	19	29		**51**
Ruabohlale Junior Secondary School	1	1	40	54		**96**
Seageng Secondary School	1	1	38	50		**90**
Ndzondelelo High School	2	1	27	43		**73**
Khwezi Lomso Comprehensive School	1	1	47	37		**86**
NMTsuene High School	1	1	22	16		**40**
SchoolNet South Africa					3	**3**
Telkom Foundation					1	**1**
Total	**8**	**9**	**229**	**229**	**4**	**479**

It should be noted that data was cleaned to remove duplicate responses. Response Rate

Table 3 Response rate (principals, teachers, DSS, learners and others)

	PRINCIPAL	DIGITAL SUPPORT SPECIALIST	TEACHER	LEARNER	OTHER
Total Number	8	12	263	1017	4
Number of Respondents	8	9	229	229	4
Response Rate (Percentage)	**100%**	**75%**	**87%**	**22 %**	**100%**

The response rate of the principals, teachers, Digital Support Specialists, and other project team members was very high. Although the learner response rate was low (22%), it was useful to corroborate the findings.

Demographics of Respondents

Table 4 Demographics of respondents (principals, teachers, DSS, learners and others)

SCHOOL/ORGANIZATION	PROVINCE	GENDER
M. H. Baloyi Secondary School	Tshwane West, Gauteng	Male: 13 Female: 26
Winterveldt High School	Tshwane West, Gauteng	Male: 22 Female: 28 Prefer not to say/non-binary: 1
Ruabohlale Junior Secondary School	Tshwane West, Gauteng	Male: 36 Female: 57 Prefer not to say/non-binary: 3
Seageng Secondary School	Tshwane West, Gauteng	Male: 29 Female: 61
Ndzondelelo High School	Qqeberha, Eastern Cape	Male: 36 Female: 37
Khwezi Lomso Comprehensive School	Qqeberha, Eastern Cape	Male: 57 Female: 29
NM Tsuene High School	Tshwane West, Gauteng	Male: 13 Female: 27
SchoolNet South Africa	Johannesburg, Gauteng	Male: 0 Female: 3
Telkom Foundation	Johannesburg, Gauteng	Male: 1 Female: 0

61.79% of respondents identified as female, 37.16% identified as male and 0.83% identified as either non-binary or preferred not to say.

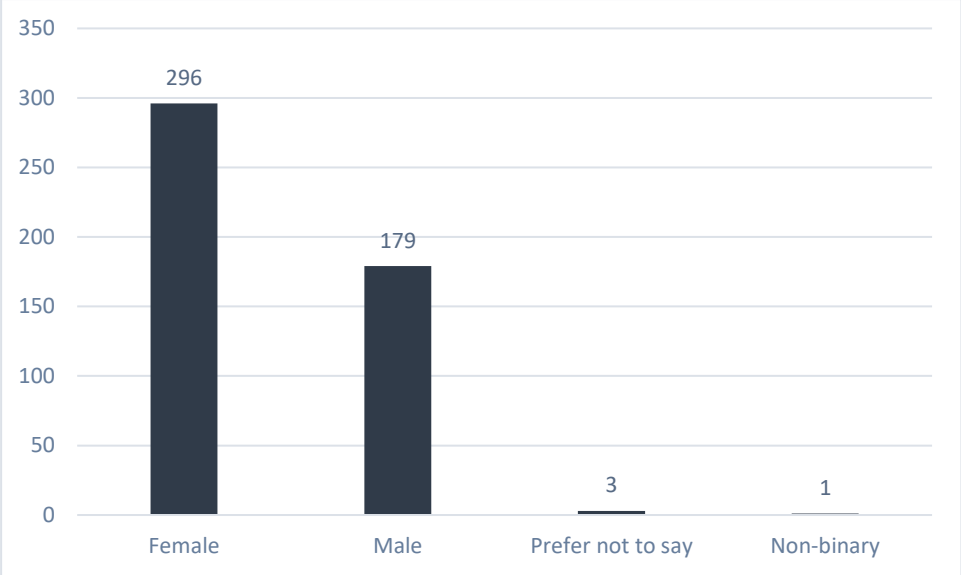


Figure 1 *Gender ratio*

Most respondents were between the ages of 15 to 18 and 51 to 60 years old.

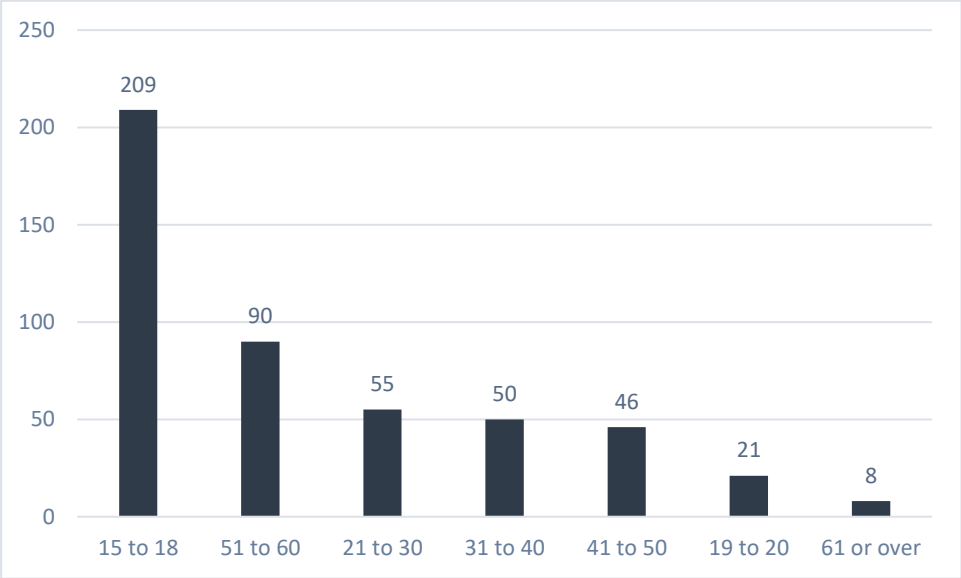


Figure 2 *Age range of respondents*

Most respondents were from Tshwane West, Gauteng which is proportionate as the HSSP has been rolled out to seven schools, two in the Eastern Cape and five in Gauteng Provinces.

Figure 3 *Number of respondents per province (principals, teachers, DSS, learners and others)*

Many respondents (principals, teachers, DSS and others) were well qualified, having either undergraduate degrees or a post graduate qualification.

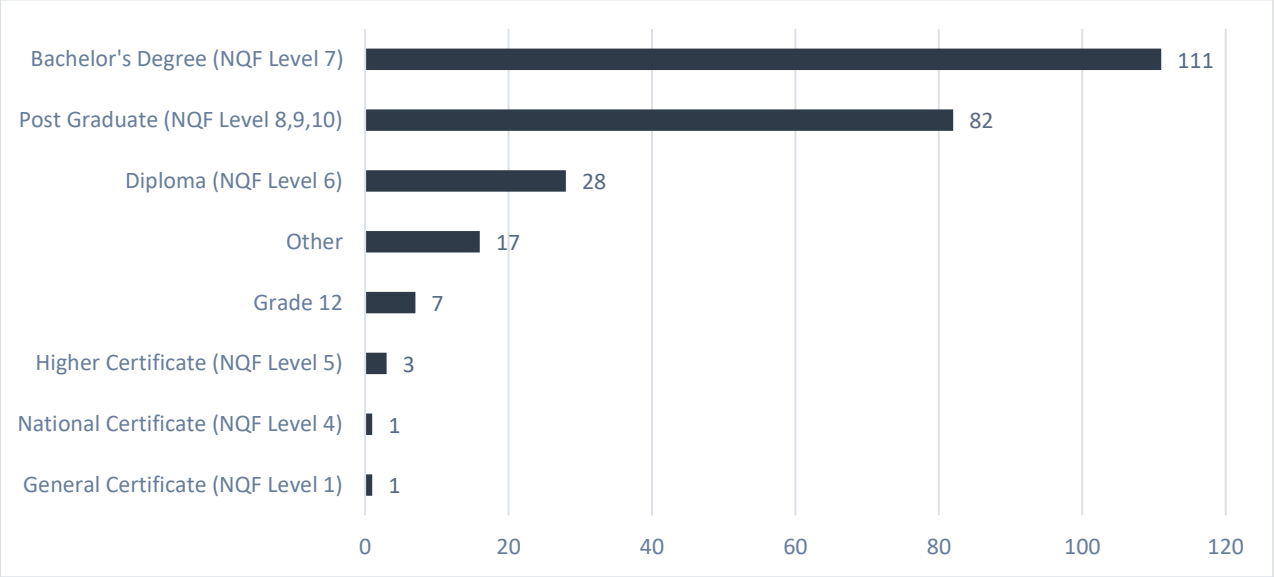


Figure 4 *Level of education of the respondents (excluding learners)*

82.96% of learner respondents reported to being in grade12.

Table 5 Grade of learner respondents

GRADE	NUMBER OF LEARNERS
Grade 12	190
Grade 11	38
Grade 10	1

More than half of the teachers (57.20%) had 10 years of more experience, working as a teacher.

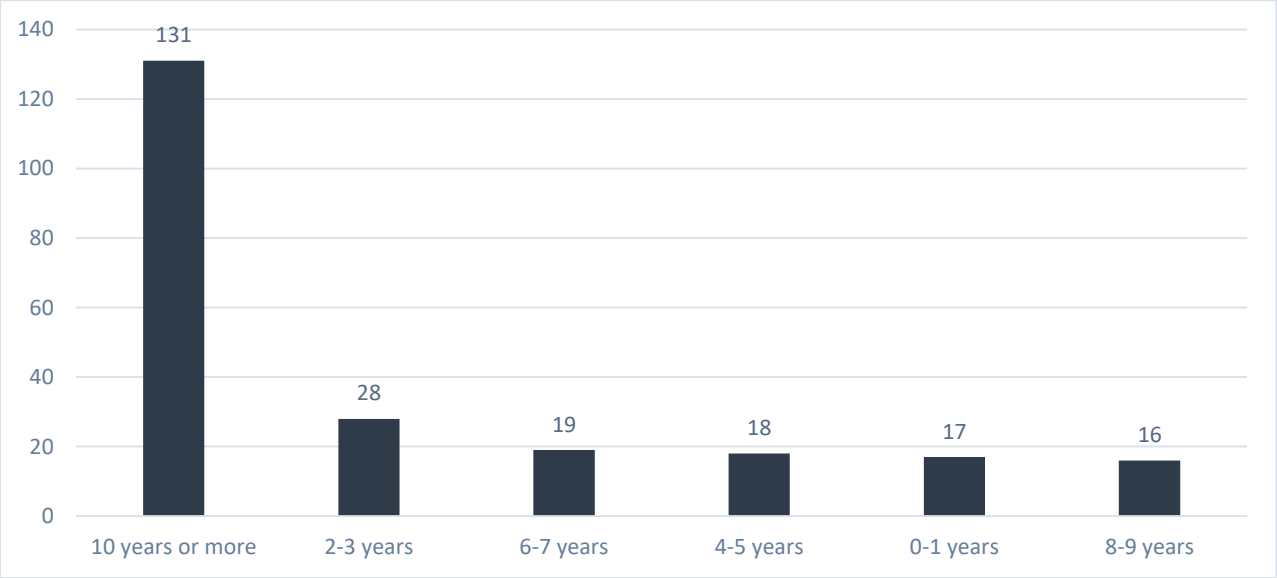


Figure 5 *Teaching experience of respondents (teachers)*

A wide range of subjects were taught by the teacher respondents, with the most common subjects being English, Life Orientation and Mathematics Core.

Table 6 Top 10 subjects taught by teacher respondents

SUBJECTS	NUMBER OF TEACHERS
English	50
Life Orientation	42
Mathematics Core	35
Natural Science	26
Social Science	25
Setswana	25
Geography	22
Creative Art	21

Economics Management Science	20
Technology	20

Other subjects taught include Physical Science, Math Literacy, Tourism, History, Economics, Business Studies, Life Sciences, Accounting, Consumer Studies, Sepedi, IsiXhosa, Engineering Graphics and Design, Life Orientation, IsiXhosa, isiZulu, Civil Technology, Technical Science, Basic Computing, Computer Application Technology, Economics Management Science, Technical Mathematics, Dramatic Art, Woodworking, Computer Applications Technology, Electrical Technology and Mechanical Technology.

Table 7 Subjects taken by learner respondents

SUBJECTS	NUMBER OF LEARNERS
English	217
Life Orientation	196
Mathematics Core	190
Physical Science	166
Life Sciences	145
Geography	129
Setswana	94
IsiXhosa	73
Accounting	53
Business Studies	44
Economics	41

Other subjects taken by learners include Math Literacy, Consumer Studies, Technical Maths, Technical Science, Tourism, Technology, History, Natural Science, Basic Computing and Social Sciences.

Digital Support Specialist Experience

Respondents (76%) reported having worked with Digital Support Specialists for between 4 to 5 years, which provided adequate time to be able to reflect on their experiences.

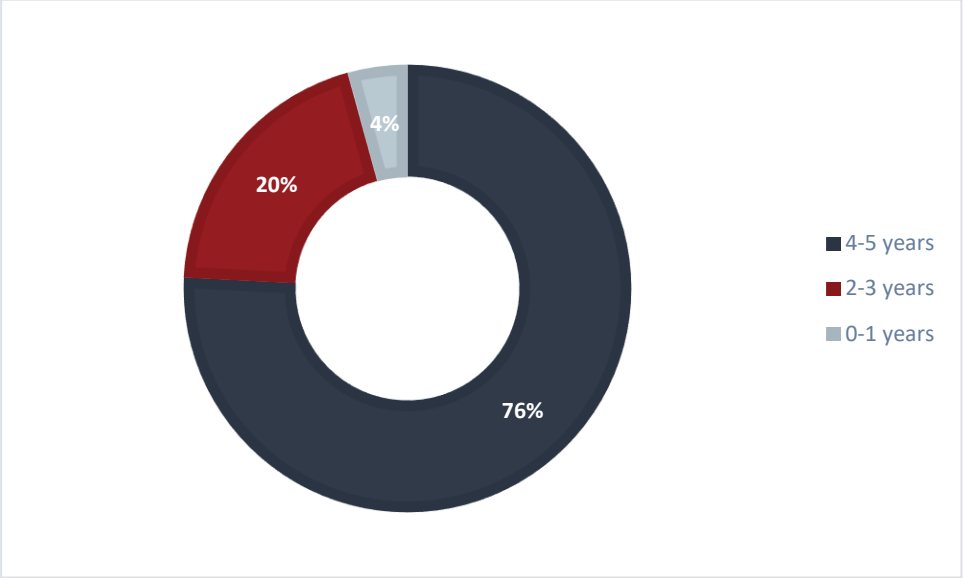


Figure 6 *Duration of Digital Support Specialist Support at Telkom HSSP Schools*

Roles and Responsibilities

According to the project documentation and information provided by the SNSA team, the roles, and responsibilities of Digital Support Specialists are divided into four categories including technical support, teacher support, learner support and reporting support.

> *'DSS were responsible for maintaining the technical assets, this includes keeping records and lists of serial numbers, escalating troubleshooting issues, maintenance, checking working status, maintaining the computer lab and connectivity at the school. DSS had to support SchoolNet to support teachers which meant attending all Teacher Professional Development activities, then supporting teachers on an ongoing basis as needed during school hours. They were also instrumental in supporting learners. DSS were also responsible for reporting on their weekly/daily activities so that we had on the ground knowledge of what was happening at each school.'*
>
> *'The role is split into four main categories:*
>
> *Teacher support - The specialist was invited to all training sessions offered to teachers and school leaders; their role was to participate in training then offer support to teachers in completing the portfolios of evidence after each training session.*
>
> *Learner support - The specialist was responsible for attending training sessions offered by other project partners in the Telkom HSSP Schools and then support the learners with any homework or challenges that they may experience as they complete the tasks.*
>
> *Technical support - The school had a computer lab, learner tablet devices that the specialist was meant to account for, they had an inventory list of all the devices, and should know which one's work and which ones don't work. They were also responsible for doing basic maintenance of the school's interactive boards. They were there to escalate any technical faults that the school experiences with*

the digital devices that they are responsible for. The specialist was also responsible for the schools Microsoft 365 administrator accounts and… creating e-mail addresses for both teachers and learners.

Report writing – (The specialist) *…was also meant to provide report writing support in the school. This served as a feedback channel to the SchoolNet team and allowed the specialist to share their struggles and concerns to enable the SchoolNet Team and the Telkom Foundation team to support them.*

The support specialist was also meant to be completing some professional development courses that are shared to them i.e., IBM skills build platform, CompTIA Essentials course, Microsoft Educator Centre, and Google Digital skills for Africa. The aim for this is that they sharpen the skills that they require in their roles whilst they also develop themselves professionally.'

When asked which activities the Digital Support Specialists had been assisting with, most respondents, including principals, teachers, Digital Support Specialists, SchoolNet and Telkom representatives, reported that the Digital Support Specialist in *Telkom* HSSP Schools had been delivering technical, teacher and learner and reporting support as intended and in accordance with the with the 'Telkom Specialists Roles and Responsibilities' document compiled by SNSA, see *Annexure A Telkom Specialists Roles and Responsibilities*.

Table 8 Overview of technical support received by respondents (principals, teachers, Digital Support Specialists, SNSA and Telkom representatives)

TECHNICAL SUPPORT	YES	NO
Managing project assets including, interactive devices, laptops, tablets, data sim cards and e-mail addresses.	98.02%	1.98%
Charging learner devices.	92.46%	7.54%
Calibrating and managing interactive boards including setting or changing passwords, carrying out antivirus checks daily/weekly and remove unnecessary stored content as required.	94.44%	5.56%
Providing technical support to learners and teachers on use of the devices.	96.03%	3.97%
Reporting technical challenges to the SchoolNet Project office.	94.84%	5.16%

Table 9 Overview of teacher support received by respondents (principals, teachers, Digital Support Specialists, SNSA and Telkom representatives)

TEACHER SUPPORT	YES	NO
Supporting Telkom and project partners ensure that teachers optimally use sponsored equipment in their classrooms for teaching and learning.	98.00%	2.00%
Supporting, monitoring, and reporting on teachers use and preparation of lessons for teaching.	95.21%	4.79%
Attending all development programs offered by SchoolNet SA and other project partners.	94.42%	5.58%
Supporting teachers in their practice of ICT skills in their classrooms	98.40%	1.60%

Table 10 Overview of learner support received by respondents (principals, teachers, Digital Support Specialists, SNSA and Telkom representatives)

LEARNER SUPPORT	YES	NO
Assisting and monitoring learners use of the Lightbulb Learning Platform.	92.03%	7.97%

Table 11 Overview of reporting/other support received by respondents (principals, teachers, Digital Support Specialists, SNSA and Telkom representatives)

REPORTING/OTHER SUPPORT	YES	NO
Supporting Telkom and all project partners with updating requested information, supporting all programme facilitated by other partners and assisting where required.	96.01%	3.99%

Other support provided by the Digital Support Specialists, include:

- Issuing of tablets to learners.
- Retrieval of tablets from Grade 12 learners.
- Supporting teachers with e-Administration.
- Using digital content to compile learners' assessment.
- Motivating and encouraging teachers and learners to be actively involved in all activities.
- Teaching Computer Literacy, Mathematics, Coding, Robotics and Type Master to learners.
- Assisting learners with applications and bursaries to higher education institutions.
- Providing Internet connectivity and data.

One Digital Support Specialist felt that his/her responsibilities were never clear and would change based on the needs of the teachers and learners.

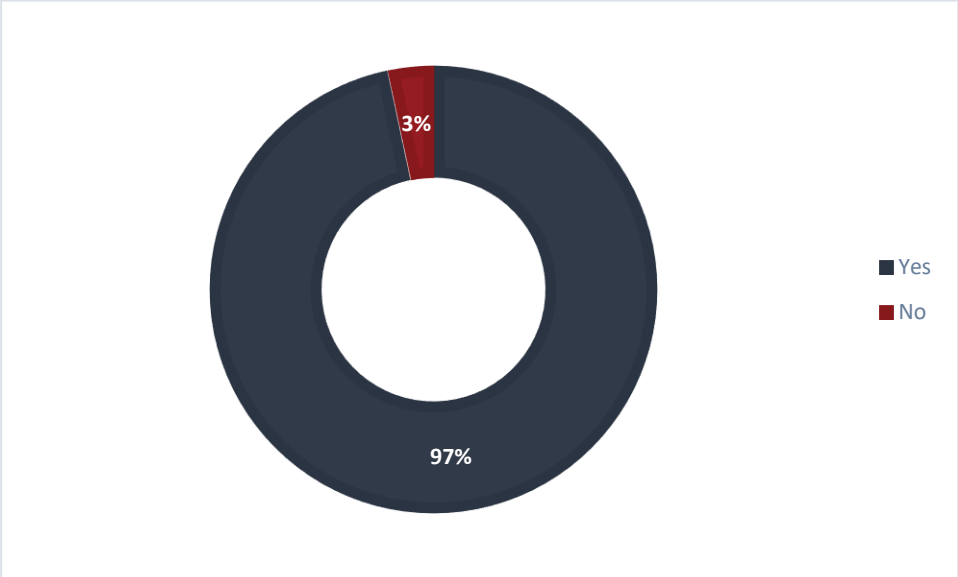
> *'Truly speaking the responsibilities were never clear as it would change based on the needs of the teachers and learners. But the main responsibility was to support the Teachers and Learners with IT related issues and look after the Computer Lab.'*

However, as employment contracts cannot change without a consultative process, the roles and responsibilities include broad categories that cater for all aspects of the job. It would not be possible to provide an exhaustive list outlining every detail of the job required. It might be worthwhile to update *Annexure A Telkom Specialists Roles and Responsibilities* to reflect additional support provided as examples for new any contracts with Digital Support Specialist.

Training of Digital Support Specialists

Many respondents (97%) felt that the Digital Support Specialist had received sufficient training to be able to do their jobs effectively.

Figure 7 *Adequacy of training received by Digital Support Specialist to do their jobs effectively*



One of the main reasons given as to why respondents felt so positively about the training Digital Support Specialists had received was that they could assist with most challenges faced by principals, teachers, and learners.

'Any challenge that come across, she always assists.'

'Because he has the skills, he's always able to assist in technical issues.'

'They are able to support in any way required.'

'There is no problem we have come to her with that she wasn't able to assist with.'

'They support us every time you need them.'

'She manages all queries in a professional manner and provides support as required without any hesitation.

'The specialist is confident with whatever digital issue needs to be solved. She performs her duties with ease and efficiency.'

'The support specialist could offer all the required support and even extra support to the teachers and learners.'

The learner respondents (90%) confirmed that the Digital Support Specialists had been able to give them the help they needed to use the computers and ICT equipment at school.

'Because she gives us support, when we need to use the computers and ICT equipment at school.'

'Because I've improved a lot.'

'Our digital specialist helped us a lot.'

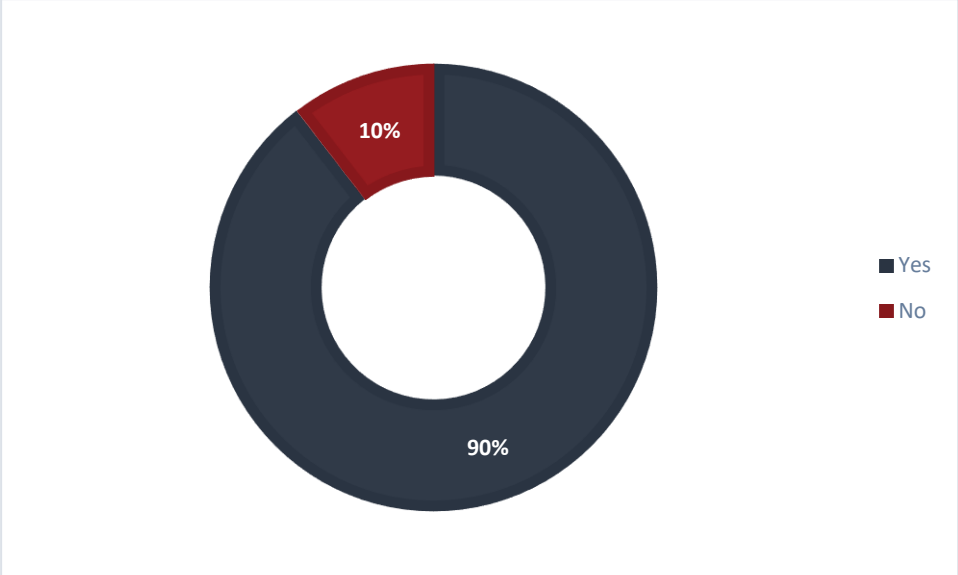
'They provide us with every information about the ICT equipment.'

'I was supported whenever I'd asked for help.'

'She's been helpful a lot. She makes sure that everyone is supported, and she helps us when we are in need of help. '

'Always charging tablets and get them ready whenever we have a task and make sure she fixes the smartboard when requested by teachers.'

Figure 8 *Level of learner satisfaction to support provided by Digital Support Specialists*



The learners who were not satisfied with the support provided by Digital Support Specialists cited the following reasons, which are beyond the control of the Specialists:

- Lack of connectivity/Internet access.
- Insufficient computers for all learners.
- Lack of time to interact with the Digital Support Specialist.

Although most respondents were satisfied with the training the Digital Support Specialist had received, three Digital Support Specialists felt that they would have benefited from receiving the following additional training:

- Facilitating training.
- Time management.
- Teaching Course (SACE) on how to deal with learners.

Support of Digital Support Specialists

Six of the Digital Support Specialists confirmed that they had received additional support from Telkom, SNSA as well as teachers at school and that the support had helped them to fulfil their roles and responsibilities.

> *'Teachers were working with me very well especially during training times and their attendance was amazing.'*
>
> *'My leaders and colleagues are constantly checking up on my progress and are very much hands on with me doing the relevant and correct job.'*
>
> *'We got SchoolNet that always assist us no matter what they always show interest in assisting us'*
>
> *'At any time one can reach to the office-based management and they assist.'*

The SchoolNet team confirmed that additional support had been provided, that the team had been acting as mentors to the specialists and that the specialist had been offered workshops on report writing as well as presentation and public speaking.

Challenges Experienced

While most principals, teachers, and learners (61.37%) didn't cite any challenges, regarding their experience of working with Digital Support Specialists. Some of the challenges raised by respondents include:

- Initial resistance from teachers to see Digital Support Specialists as part of the schooling environment.
- Schools' reliance on Digital Support Specialists.
- Insufficient time.
- Scheduling and time clashes/conflicts.
- Poor or inadequate connectivity or unstable connectivity and coverage.
- Load shedding/technical issues (such broken devices)

Use of Sponsored Equipment

Almost all respondents (96.25%) felt that the having Digital Support Specialists in *Telkom HSSP Schools* had contributed to the optimal use of the sponsored equipment in classrooms for teaching and learning.

Table 12 Number of respondents who felt Digital Support Specialists had contributed to optimal use of the sponsored equipment in classrooms for teaching and learning.

	YES	NO
Principals	9	0
Teachers	219	10
Digital Support Specialist	8	1
SNSA Team	3	0
Telkom Representative	1	0
Total	**240 (95.61%)**	**11 (4.39%)**

When asked to explain the rationale for their positive responses, the following explanations were given.

> *'Because if the teachers were having challenges, they have someone close by to help them solve whatever. If a teacher doesn't know something they can ask this person in private. It solved a number of challenges the teachers may have had. The teachers having someone locally in the school to report challenges.'*
>
> *'Because he has come with creative ways of managing files and giving engaging lessons.'*
>
> *'We used to use smart board as whiteboard, but she showed us how far it can go beyond just typing an activity for learners.'*
>
> *'… the teachers here are quite old and were not used to working with the technology that Telkom introduced. If something goes wrong some teachers panic.'*
>
> *'The gadgets were not used optimally before she arrived at the school.'*

Unfortunately, three of the teachers who felt that the having Digital Support Specialists in *Telkom HSSP Schools* hadn't contributed to optimal use of the sponsored equipment in classrooms, didn't provide any details regarding the rationale behind their reasoning. The rationale for the other negative responses included the following explanations.

'The computer lab is still non-functional and not all learners have tablets.'

'The computer room is not utilized widely out of fear of equipment being stolen or damaged.'

'The specialist did the best she could but what else can you do if devices are not well maintained.'

'Most of the time there was no access to Wi-Fi'

'There were challenges with connectivity and some gadgets not working properly and reluctance from teachers to use the equipment.'

The data revealed that 20% of the teachers, who made negative comments, were from the Eastern Cape, which is only slightly lower than the overall percentage of respondents (33%) from that province. The group also consisted of teachers from a range of schools, so the negative feedback could not be attributed to a particular province, school and/or Digital Support Specialist.

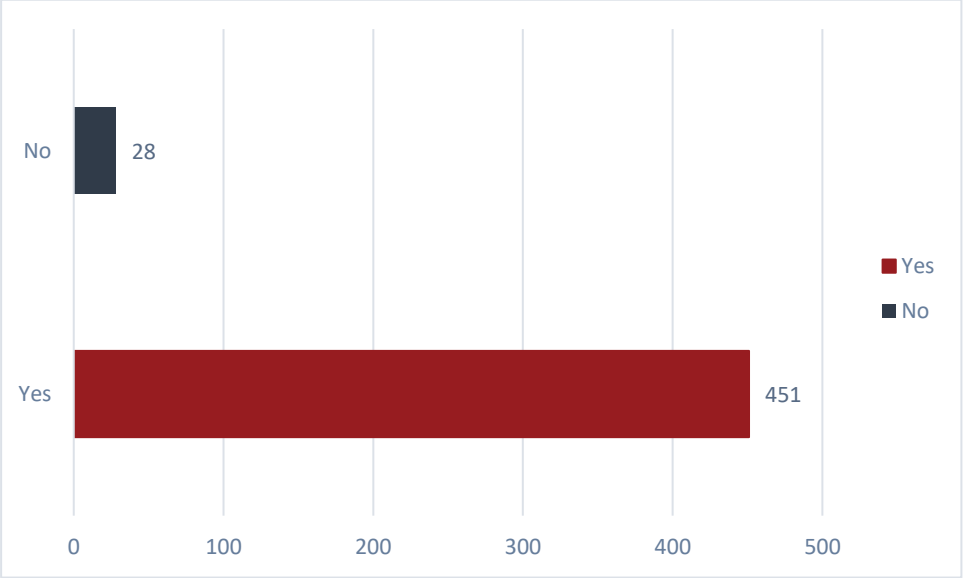
The Specialist who indicated that having Digital Support Specialists in *Telkom HSSP Schools* hadn't contributed to optimal use of the sponsored equipment in classrooms for teaching and learning, noted that *'Teachers are now able to plan their lesson using ICT devices and they improve their ICT skills.' which infers that they* inadvertently selected the incorrect response.

Classroom Support

Reduce Challenges when Integrating ICT in Classroom and/or School

In terms of classroom support, 94.15% of respondents indicated that having a Digital Support Specialist in the classrooms at *Telkom HSSP Schools* had helped to reduce challenges experienced when integrating ICT in classroom.

Figure 9 *Number of respondents who felt Digital Support Specialists helped to reduce challenges experienced when integrating ICT in classroom*



In terms of reducing challenges faced when integrating ICT in classrooms the respondents felt that the specialists provided essential technical support without which the integration of ICT would not have been possible, especially during lockdown when learners were at home and attending school on a rotational basis.

> *'The specialist would assist the educators who wanted (to) connect with learners while they are at home, during the rotational timetable.'*

> *'There was a mediation between how teaching should be done. There were challenges that would have been worse without help. Specifically help(ed) with connectivity.'*

> *'Most of teachers do not have knowledge when it comes to technical/digital challenges so anything that they come across they will call you to assist.'*

> *'Because network connectivity is usually a problem at the schools.'*

Many respondents who indicated that the Digital Support Specialist hadn't been instrumental in the reduction of ICT challenges were learners (71.4%) - they cited the following reasons:

- Hadn't worked with the Digital Support Specialist.
- Lack of time.
- Connectivity issues.
- Technical issues.

Learners Understanding of Concepts

Most respondents (90.38%), including principals, teachers, learners, Digital Subject Specialists as well as SNSA and Telkom representatives felt that working with Digital Support Specialists had helped increase learners understanding of the concepts taught. Respondents believed that through technology the Digital Support Specialist had helped to increase the learners access to information and accelerated their learning. They also noted that the visual format of the content had helped to deepen learners understanding of difficult concepts.

'Technology provides students with easy-to-access information, accelerated learning, and fun opportunities to practice what they learn. It enables students to explore new subjects and deepen their understanding of difficult concepts.'

Several principals and teachers credited the improvement in learners understanding of concepts being taught to the use of multimedia which enables teachers to cater for various preferred styles of learning.

'Helps me to make my lessons more understandable. Those learners who learn better visually because they are seeing things that we are taking about.'

'It helps them to understand concepts - when you see something it's better than just hearing it.'

'When learners are taught by what they see it is much better than being taught with what they imagine. '

'Because learners can … see examples and relate to what is happening because of ICT. We also show them videos that relates to concepts that are being taught.'

'Different modes of learning, better suited to the way young people learn.'

Respondents attributed the fact that learners enjoyed using the devices and being in the computer lab to an increased understanding of the concepts taught. Respondents also mentioned that learners were taking more responsibility for their own learning and that their marks had improved.

'Learner results improved because she assists them in the lab.'

'Learners percentage passes have improved since we are using the smartboard and laptops.'

'Now I obtain good marks.'

It has not been possible to gain access to the learner's marks over the period to corroborate these statements.

Although 82.5% of learners reported the way in which they were learning had changed, much of the detailed feedback provided demonstrated increased access to information, a higher level of understanding and ease of use rather than an actual change to the learning process.

'Doing research on the web is much easier. '

'… easy to grasp a wide range information.'

'In this generation we will be using online learning most of the time.'

'Because more learners are taking part in their schoolwork.'

'We have been able to merge technology with learning.'

'Learning has become easier and fun.'

'It has changed because most of the things I do them in my computer or my phone.'

'Digital is very easy to analyse and understand.'

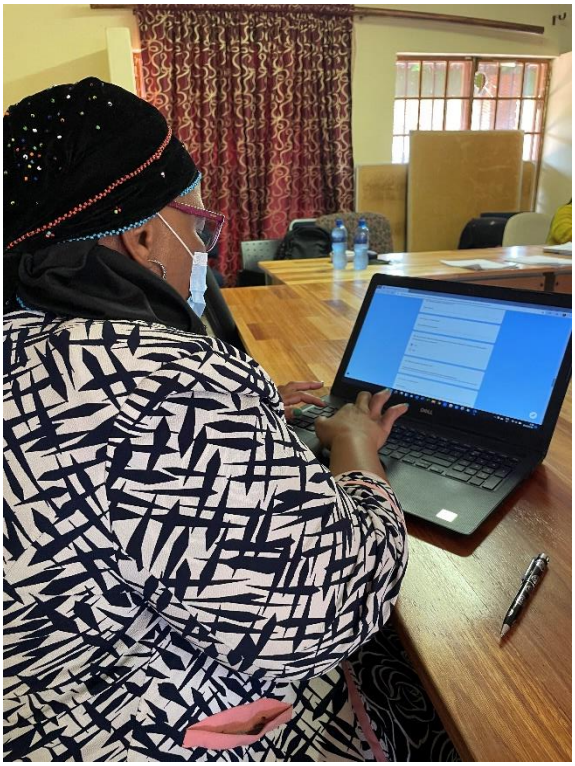
A Digital Support Specialist noted *'Learners are coming to me to ask for assistance in terms of wanting to learn more about the use of computers and searching the internet.'*

‘Learners are inspired to research more on their own by venturing into other concepts that have not been dealt with in class.’

Figure 10 *Seageng Secondary School*

Quality of Teaching

95.86% of respondents felt that the quality of teaching had improved by having Digital Support Specialists in classes, attributing the improvement to increased teacher confidence, visually stimulating content, time saved in developing quality materials as well changes to teaching methodologies which enabled learners to be actively involved in lessons.



‘I can also use different online apps that can assist learners to gain more knowledge which even myself I can improve from those apps. For example, Siyavula is a great website to use!’

Figure 11 *Increased confidence using technology*

'Because I'm confident when I'm front of learners and when it comes to technology.'

'Lessons became more interactive and both learners and educators report that the lessons are more fruitful now.'

'Improved the visual aspect. It minimizes time spent for teachers to prepare as the content is accessible.'

'Shifting away from traditionally Chalk and Talk to digital methods - helps with learners who are more visually inclined.'

'I think the learners understand better. I teach Geography, I showed the learners a lesson with the smart board. They are able to see the videos of the global winds which helps them to understand better.'

'Learners are even actively involved in lessons.'

'I can plan my own digital lessons on my own.'

Training of Teachers (including Principals) and Learners

All respondents confirm that both teachers (including principals) and learners received substantial training due to the Telkom *HSSP Schools* project.

Training providers included:

- SchoolNet SA
- Reflective Learning
- Nunnovation
- Protec
- LightBulb Education
- Read to Learn
- Bridge
- FAMSA
- Lovelife
- Childline

Table 13 Training provided to/received by teachers (including principals) and learners

TRAINING	TEACHERS	LEARNERS
Change Leadership for Technology Integration	√	
Peer coaching	√	
ICT Integration	√	√
Leadership in the 21st Century	√	
Hour of Code/Coding with scratch	√	√
ICT4RED	√	
Using Digital Resources in the Classroom	√	
Maths Webinar	√	
One on one teacher sessions	√	
Classroom Observations	√	
DDD	√	
C-Delta Digital footprint		√
The secret to self-promotion		√
Building professional profile	√	√
Building personal brand and strategies for job application		√
Digital skills	√	√
Introduction to IBM Skills build	√	√
CompTIA IT Fundamentals		√
Google Skills for Africa	√	√
Reflective learning-Maths/Science Gaps in Learning	√	√
CodaNathi program		√
IBM Coding		√
Academic Support Programme (Saturday Classes)		√
Lightbulb Content Platform	√	√
Language Improvement Workshops		√
Community of Practice	√	√
Psycho-social support (Learners, Parents, Teachers)	√	√

Respondents indicated that the exposure to ICT resources and skills development of teachers and learners had worked well in terms of providing Digital Support Specialists to *Telkom HSSP Schools*. They felt that the Digital Support Specialists had helped to change teachers' attitudes towards ICT and motivate them to incorporate technology into their lessons, which had provided additional motivation for both teachers and learners. Some respondents felt that the availability to resolve certain technical issues on site immediately played a significant role in successful implementation. One respondent mentioned 'teamwork' and having a

clear understanding of roles, and responsibilities as a key driver to the success and productivity of the initiative.

'Assisting teachers with preparing lessons using technology and management of the computer lab.'

'Having dedicated human resources to manage any technical issues, Integration challenges for both teachers and learners.'

'It was a great initiative because we always had someone on site who can attend to challenges that were experienced by educators and learners on the spot. Rather than having to wait for someone from outside the school who would take forever to come.'

'The workshops from the Digital Support Specialist helped educators gain confidence in the usage of ICT in the classrooms and helped them with preparations.'

'Providing ICT capabilities to schools can therefore have a huge impact on both the learners and educators as they give them the ability to tap into better experience.'

'It worked, because we now see ICT in a more positive light than previously when we just saw it as a challenge to use such devices.'

'Teamwork was key. Understanding each other's roles ensured productivity of the whole project.'

'Facilities from Telkom are of great help in achieving better results for the learners.'

'Focused on improving Maths and Science School results. Improving teachers ICT skills. Introducing 21st century skills to teachers.'

When asked what should be improved and/or changed about the initiative the respondents indicated the following:

- More schools should be included as part of the Telkom Connect initiative.
- More/all learners should be equipped with gadgets.
- Network connectivity and data issues should be resolved.
- Teachers and principals need more clarity as to whether the Digital Support Specialist will continue working in schools.
- Provide more than one Digital Support Specialist per school (possibly two).
- School security was reported as an issue and needs to be improved as well as the fact that several schools and learners had been victim to theft and burglaries.
- Ongoing/regular maintenance of devices.
- Malfunctioning devices to be fixed.
- Improve the response time when resolving technical issues.

‘Report and respond to technical support issues. There are smartboards which never worked from the day of installation, it has been over a year reporting the same issue, nothing has been done. We are struggling in those classes because we cannot use them.’

Figure 12 *Computer laboratory at Ruabohlale Secondary School*

It is important to understand why malfunctioning devices have not been fixed. As Mustek, the technology partner, is responsible for the maintenance of the equipment. It may be the case that faults are not being reported, maintenance contracts did not cover the duration of the project and/or are not followed up by the Project Office.

Personal Impact

All except seven teachers, felt that working with the Digital Support Specialists had had a positive impact on their teaching. Unfortunately, none of these seven respondents provided a rationale for their reasoning.

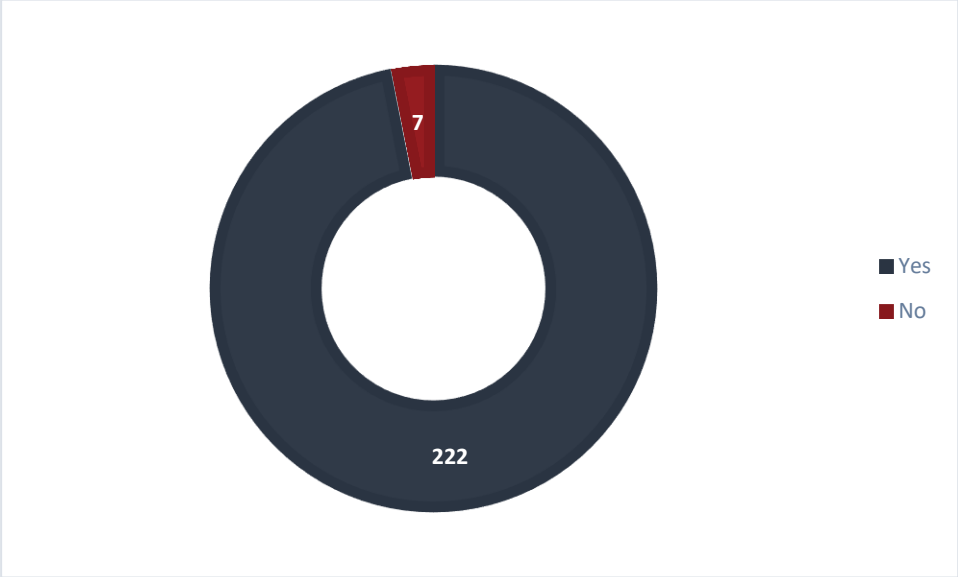


Figure 13 *Teacher respondents that experienced a positive impact on their teaching*

Teachers indicated that they felt working with the Digital Support Specialists had helped them gain the confidence, competence and ICT skills required for successful implementation of ICT integration. The teachers also felt that the Digital Support Specialist had helped them to save time when preparing lessons and made lesson preparation and delivery much easier.

> *'As a teacher I have also learnt more about technology, now I can plan my lesson with the laptop, and know the easy way of making lesson interesting!'*
>
> *'I have learnt a lot of ICT skills and still applying these skills in my day-to-day teaching.'*
>
> *'Doing online classes with confidence.'*
>
> *'I developed confidence in digital use.'*
>
> *'Simplified the process of instruction delivery.'*
>
> *'Working with ICT Gadget makes things easy and saves time.'*

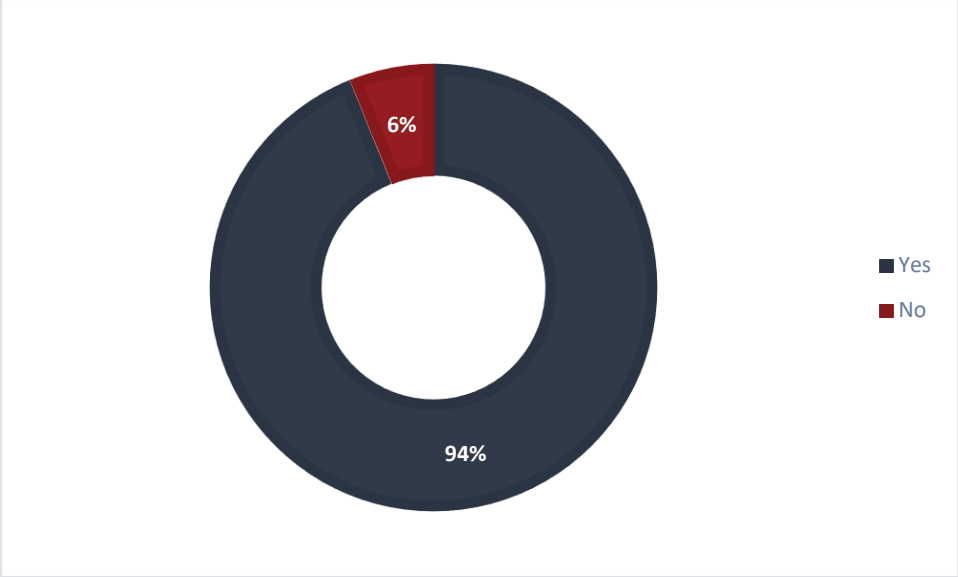


Figure 14 *Percentage of teacher respondents who gained additional skills*

94% of teachers, 92.13% of learners and 100% of Digital Support Specialists reported having gained additional skills due to either working with or working as a Digital Support Specialist. Skills reported to have been gained include the following.

Table 14 Percentage of teachers, learners and Digital Support Specialists who felt they had gained new skills

SKILLS	TEACHERS	LEARNERS	DIGITAL SUPPOIRT SPECIALIST
Learning and Innovation Skills			
Communication	88.64%	85.58%	88.8%
Collaboration	75.54%	64.62%	100%
Creativity	85.58%	72.05%	100%
Critical thinking	82.09%	-	77.7%
Information, Media, and Technology			
Use of various multimedia to support learning	88.20%	-	88.8%
Promoting sound learning principles	80.34%	-	88.8%
Life and Career Skills			
Life-long learning	72.92%	-	
Presentation/Public speaking (Confidence)	74.67%	52.83%	88.8%
Organisation (catering, training session etc.)	58.95%	-	88.8%
e-Administration	58.95%	-	66.6%
Managing budgets	46.28%	-	44.4%

Report writing	58.95%	-	88.8%
Business Skills	42.79%	-	44.4%
Data collection for reporting	64.62%	-	88.8%

Most teachers, learners and Digital Support Specialists reported having gained considerable 'communication', 'collaboration' and 'creativity' skills. Both teacher and Digital Subject Specialist respondents reported developing additional competency in the use of various multimedia to support learning.

Final Comments

Respondents interviewed and those who submitted surveys online demonstrated immense appreciation for the work done by the Digital Support Specialists, SchoolNet South Africa, and the Telkom Foundation. The respondents indicated that they had learned a great deal and that the Digital Support Specialists had helped to develop their confidence and motivated them to continue developing their competency in terms of ICT integration. There was also a sense that the Digital Supported Specialists are needed and would be missed should their contracts not be renewed.

'A big thank you to the Telkom Foundation.'

'Thank you to Telkom and SchoolNet. The Digital equipment provided, and digital specialist placed in our schools really played a huge role in the way we teach our learners, in the way they interact with content. Change is huge, as a teacher you enjoy going to class. Facilitation is easy and enjoyable.'

'Support specialist they must get permanent post.'

'Digital support specialist highly appreciated.'

'We are great full for having the Digital ICT specialist in our school it's helping a lot.'

'We very much appreciate having them around hence they encourage us to do things and go an extra mile regarding ICT.'

'The Digital support specialist is important in the school. I appreciate working with them.'

'I just want to say thank you to Telkom and SchoolNet. Now I know so many things that I didn't know before. I hope Telkom will make sure that these people keep helping us, because we need them, I need them.'

'We need to Specialists permanently placed in our institutions.'

'Having a Digital Support Specialist on site eases our fear of integrating ICT in the classroom.'

'What I can say it that, at this stage I am a better person and a better teacher. I have acquired a lot of knowledge from where I started. The DSS is passionate and patient. I really gained a lot from working with her. There is so much I have learned.'

'I recommend that the project should go on. Thank you for everything I have gained from the Digital Support Specialist - Especially Lerato Tjale, she really went the extra mile. We miss her. She kept following up with us. She pushed us. I'm proud to say I'm a 21st Century educator, I'm up to date. We need access to more data.'

Findings

The respondents (including principals, teachers, learners, and Digital Support Specialists) interviewed as well as those who submitted surveys online demonstrated immense appreciation for the work done by the Digital Support Specialists, SchoolNet and the Telkom Foundation. There was overwhelmingly positive feedback received pertaining to the quality and efficacy of the training and support provided by Digital Support Specialist in *Telkom HSSP Schools*. The data confirmed that Digital Support Specialists had been adequately trained and received sufficient support to be able to deliver technical, teacher, learner and reporting support as intended and in accordance with the 'Telkom Specialists Roles and Responsibilities' document compiled by SNSA, see *Annexure A Telkom Specialists Roles and Responsibilities*.

To what extent does having Digital Support Specialists, based at *Telkom HSSP Schools*, lead to optimal use of Telkom sponsored equipment in classrooms for teaching and learning?

Almost all respondents (95.61%) felt that the having Digital Support Specialists in *Telkom HSSP Schools* had contributed to the optimal use of the sponsored equipment in classrooms for teaching and learning.

What factors contribute to the successful fulfilment of the expected roles and responsibilities of Digital Support Specialists?

1. Roles and responsibilities of Digital Support Specialists

Data confirmed that the Digital Support Specialists in *Telkom HSSP Schools* had been delivering technical, teacher, learner, and reporting support as intended and in accordance with the with the 'Telkom Specialists Roles and Responsibilities' document compiled by SNSA and that the support provided had been effective.

2. Training provided to Digital Support Specialist

Most respondents (97%) felt that the Digital Support Specialists had received sufficient training to be able to do their jobs effectively. One of the main reasons given as to why respondents felt so positively about the training Digital Support Specialists had received was that they could assist with most challenges faced by principals, teachers, and learners. The learner respondents confirmed that the Digital Support Specialists had been able to give them the help they needed to use the computers and ICT equipment at school. Although adequately trained, three of the Digital Support Specialists thought it would be useful to have received training on facilitation, time management and teaching methodologies and practises.

3. Support provided to Digital Support Specialist

Digital Support Specialists confirmed that they had received additional support from Telkom, SNSA as well as teachers at school and that the support had helped them to fulfil their roles and responsibilities. The SchoolNet team confirmed that additional support had been provided, that the team had been acting as mentors to the specialists and that the specialists had been offered workshops on report writing as well as presentation and public speaking.

4. Training Provided to Teachers (including Principals) and Learners

All respondents confirmed that both teachers (including principals) and learners received substantial training due to the Telkom *HSSP Schools* project. Respondents indicated that the exposure to ICT resources and skills development of teachers and learners had worked well in terms of providing Digital Support Specialists to *Telkom HSSP Schools*. They felt that the placement of Digital Support Specialists at each school had helped to change teachers' attitudes towards ICT and motivated them to incorporate technology into their lessons, which had provided additional encouragement for both teachers and learners.

5. Classroom Support provided to Teachers and Learners

In terms of classroom support, 94.15% of respondents indicated that having Digital Support Specialists in the classrooms at *Telkom HSSP Schools* had helped to reduce challenges experienced when integrating ICT in the classroom. 95.86% of respondents felt that the quality of teaching had improved.

Most respondents (90.38%), including principals, teachers, learners, Digital Subject Specialists as well as SNSA and Telkom representatives felt that working with Digital Support Specialists had helped to increase learners understanding of concepts taught. Respondents believed that through technology the Digital Support Specialist had helped to increase the learners access to information and accelerated the learning process. They also noted that the visual format of the content had helped to deepen learners understanding of difficult concepts. Certain respondents attributed the fact that learners enjoyed using the devices and being in the computer lab to an increased understanding of the concepts taught. Some respondents (Digital Support Specialist and teachers) mentioned that learners had been taking more responsibility for their own learning. Although 82.5% of learners reported that the way in which they were learning had changed, much of the detailed feedback provided demonstrated increased access to information, a higher level of understanding and ease of use rather than an actual change to the learning process.

Even though some respondents (Digital Support Specialists, teachers, and learners) reported that learners' marks had improved, it has not been possible to gain access to the learner's marks over the period to corroborate the statements.

What successes and/or challenges are experienced when integrating ICT in each of the *Telkom HSSP Schools*?

Teachers indicated that they felt working with the Digital Support Specialists had helped them gain the confidence, competence and ICT skills required for successful implementation of ICT integration. The teachers also felt that the Digital Support Specialist had helped them to save time when preparing lessons and made lesson preparation and delivery much easier.

One respondent mentioned 'teamwork' and having a clear understanding of roles, and responsibilities as a key driver to the success and productivity.

While most principals, teachers, and learners (61.37%) didn't cite any challenges, regarding their experience of working with Digital Support Specialists. A few respondents felt that the availability to resolve technical issues on site immediately played a significant role in successful implementation. Some of the challenges raised by respondents include:

- Initial resistance from teachers to see Digital Support Specialists as part of the schooling environment.
- Schools' reliance on Digital Subject Specialists.
- Insufficient time.
- Scheduling and time clashes/conflicts.
- Consistency, accountability, and monitoring of Digital Support Specialists.
- Poor or inadequate connectivity or unstable connectivity and coverage.
- Load shedding/technical issues (such broken devices).

With regards to reducing challenges faced when integrating ICT in classrooms the respondents felt that the specialists provided essential technical support without which the integration of ICT would not have been possible, especially during lockdown when learners were at home and attending school on a rotational basis.

To what extent does SchoolNet's approach to supporting and empowering the Digital Support Specialists enable them to fulfil their expected roles and responsibilities?

There is overwhelming evidence to confirm that the training and support provided to the Digital Support Specialists by SchoolNet enabled them to be able to do their jobs effectively, as intended and in accordance with the 'Telkom Specialists Roles and Responsibilities' document compiled by SNSA.

SchoolNet's approach to the capacity building and management of Digital Support Specialist allocated to each school has worked well. Only one teacher suggested there be more consistency, accountability, and monitoring of Digital Support Specialists. As a result of SchoolNet's support, 94% of teachers, 92.13% of learners and 100% of Digital Support Specialists reported having gained additional skills due to either working with or working as a Digital Support Specialist. Most teachers, learners and Digital Support Specialists reported having gained considerable 'communication', 'collaboration' and 'creativity' skills. Both teacher and Digital Subject Specialist respondents reported developing additional competency in the use of various multimedia to support learning. These developments can be credited to SchoolNet's approach to supporting and empowering the Digital Support Specialists.

Proposed Recommendations

The following proposed recommendations have been compiled based on input received from respondents:

- Update the 'Telkom Specialists Roles and Responsibilities' document compiled by SNSA to reflect the additional support provided by Digital Support Specialists as examples.
- Reinstate mechanisms for monitoring consistency and accountability of Digital Support Specialists.
- Provide additional training (facilitation, time management and teaching methodologies and practises) to Digital Support Specialists.
- Ensure that communication channels are clear and open to effectively and efficiently:
    - Provide ongoing/regular maintenance of devices.
    - Repair broken/malfunctioning devices.
    - Provide schools and Digital Support Specialists with more clarity as to whether they will continue working in schools and if applicable renew their contracts.

Ideally the lessons learned from the *Telkom HSSP Schools* should be shared widely. It is recommended that the Telkom Foundation in consultation with the relevant government Departments and stakeholders devise a draft approach/strategy document for future 'connected' schools' projects. The strategy document should outline the process and associated costs required to rollout similar projects to additional schools throughout South Africa, taking cognisance of the lessons learned from the HSSP such as:

- The value of building prospective evaluations into future projects.
- The roles and responsibilities of Digital Support Specialists.
- The approach to the capacity building and management of Digital Support Specialists.
- The process required to provide ongoing/regular maintenance of devices effectively and efficiently.
- The process required to repair broken/malfunction devices effectively and efficiently.
- A proposed process for the gradual integration of Digital Support Specialists as formal school staff members into schools.
- Potential funding strategies to equip as many teachers and learners, as possible, with their own devices.
- Strategies to improve school security.
- Strategies to resolve network coverage, connectivity, and data issues, as far as possible.

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