The Turing Trust

Monitoring and Evaluation Report

Malawi, July 2019

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Acknowledgements

This report would not have been possible without the hard work of the team from our partners in Malawi, Centre for Youth and Development (CYD) who visited the schools to collect the data.

Cover photos:

Front: Marymount Catholic Secondary School, Mzuzu, Malawi

Back: Luwinga Secondary School, Mzuzu, Malawi

Executive Summary

- 13 schools who had been equipped with computers by CYD / The Turing Trust were visited in July 2019.
- At the time of the visit, the 10 schools who had been involved in our previous survey had had computers for an average of 27 months (range 17-30 months). The 3 schools who had not taken part in the survey in 2018 had had computers for 5, 10 and 14 months respectively.
- 4 of the schools were involved in the pilot of Kolibri as a learning management system.
- Questionnaires administered to headteachers, teachers and students using KoboCollect with data recorded on tablets in real time and uploaded automatically on return to base.
- Questionnaires were completed by 13 headteachers or their deputies, 13 teachers (of whom 11 were ICT teachers) and 107 students from forms 1-3 (students from form 4 had already left school after their exams).
- 38% of the schools were private (compared with 28% who had received computers from CYD / TT in the 2018 survey).
- Only 23% of the schools involved were in rural locations.
- Average class size 49 (range 18-140).
- Wide variation in the numbers of students going to university (1-59%) with a small average increase of 3% in 2018 compared to the previous year in schools that had had computers for a full academic year prior to university application . The 3 schools that showed a doubling of university entrance or more were all private schools. However, the rate of university entrance did not correlate with whether or not the school currently had a qualified ICT teacher.
- Headteachers' views on the impact of computers in the school were very positive overall with positive effects on:
    - Students' motivation (100%)
    - Teachers' motivation (92%)
    - Ability of students to learn the curriculum (92%)
    - Ability of teachers to teach the curriculum (85%)

Highlights from the teachers' survey

- 5/11 (45%) of the ICT teachers had an ICT qualification (4 degrees and 1 certificate).
- 8/11 (73%) of the ICT teachers had 3 years or less teaching experience.
- Only 1 of the teachers taught only ICT. All other teachers taught one of more additional subjects.

- Only 36% of ICT teachers had not had any additional training in maintenance and repair of computers (compared to 78% in 2018).
- All teachers had used Windows, but only 2 had ever used Linux and none had used a MacOS.
- Teachers' views on the impact of computers in the school were also positive with 100% agreeing that the ICT equipment and software have been easy to use and that the computer laboratory has:
    - Had a positive effect on enthusiasm and motivation of students (100%)
    - Had a positive effect on the literacy and numeracy levels of the students (100%)
    - Enhanced the students' overall academic performance (77%)
    - Made their job as a teacher easier (100%)
    - Made it easier to deliver the curriculum (92%)
- Teachers' views on the reliability and maintenance of the computers were more varied with only 69% (compared with 78% in 2018) agreeing that they had been reliable yet 77% (compared with 39% in 2018) thought they were easy to maintain. Those teachers who found the PCs were difficult to maintain commented that this was due to lack of experience or technical skills. The decrease in reliability was in 3 schools who had had computers for the longest (30 months).

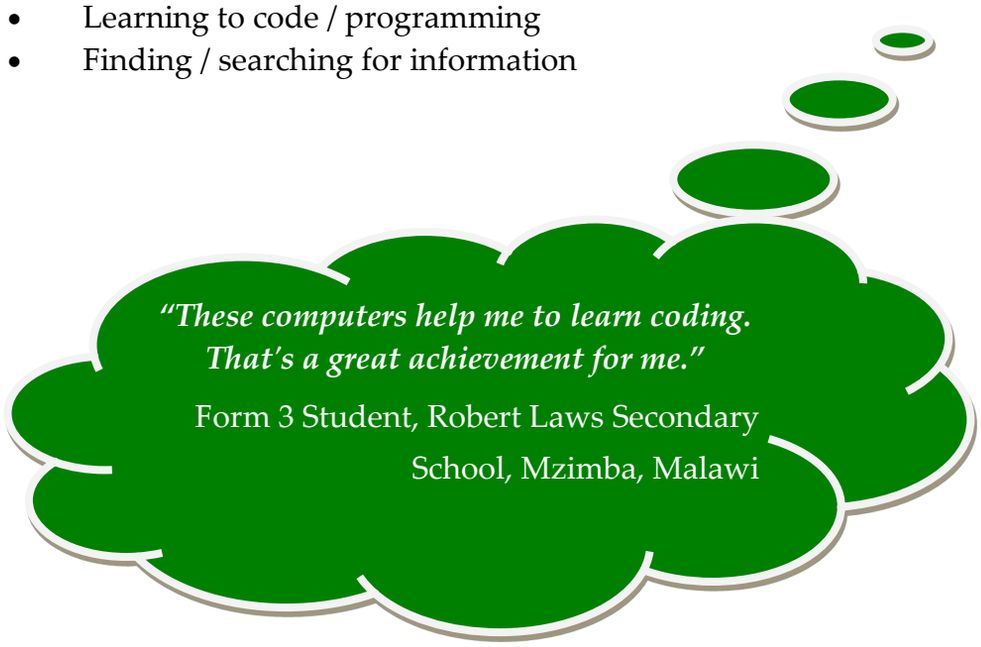
Headteacher with students in the computer laboratory at Marymount Catholic Secondary School, Mzuzu, Malawi

MSc student Nat Tantakasem with students from Chibavi Community Day Secondary School, Mzuzu, Malawi

- **Highlights from the students' survey**
- 50/107 (47%) of students were able to access computers out of school
- 25/107 (23%) of students were able to access the internet.
- 95/107 (89%) of students were studying computer studies for the MCSE (Malawi Certificate of Secondary Education)
- Student satisfaction with the computers was high with most agreeing that the computers improved their academic performance at school (94%) and made:
    - Learning easier (97%)
    - Learning more enjoyable (98%)
    - Learning ICT easier (92%)
- All except one of the students interviewed was planning to go to university.
- There was an increase in the numbers of students planning to study ICT / Computer Studies at university (27% compared with 11% in 2018), but decreases in the numbers planning to study other STEM subjects such as Biology, Mathematics and Physics.
- There was also an increase in the number of students planning to pursue a career in ICT (21% compared with 10% in 2018).

Use of the computer laboratory

- Used for teaching ICT lessons on average 6 hours per week (range 1-23 hours per week)
- Used by students and teachers out of hours on average 8 hours per week (range 0-20 hours per week). Overall this means that the average use of the computer labs is 14 hours per week.
- In most schools, students were sharing a computer during lessons (average 3 students per computer, range 1-7).
- In 10/13 (77%) schools the computer lab was available for use by teachers and students out of hours.
- This year our data showed gender parity in those using the computer lab out of hours, a considerable improvement from 2017 when the findings of an MSc student (Granaasen, 2017) indicated that girls have a disadvantaged position compared to boys when it comes to maximising meaningful use and access to computer education, both during lessons and out of hours.
- 38 % of students said they were not able to use the computer lab as often as they would like. The main reasons for this were:
    - Not enough computers
    - Computer laboratory is not open for long enough out of school hours
    - Computers are not always working
- The main activities done in the computer lab out of hours included:
    - Practising computer skills
    - Typing / word processing
    - Doing assignments
    - Learning to code / programming
    - Finding / searching for information



Main themes identified from the free text responses

- General approval and appreciation for the project
- Requirement for more computers so that students don't have to share during lessons
- Requirement for additional ICT equipment such as projectors and printers for the computer labs and laptops for teachers to help with lesson preparation
- More teacher training
- Many of the students requested more time for computer lessons and more access to the computer lab our of hours.

Teacher training session on using Kolibri learning management system

Here are a few of the comments made by students:

"I would love if I used a computer alone without another student"

Form 3 student, Multicareer Private Secondary School

"This project of computers will make our future to be bright as we are able to learn more things now with these computers"

Form 3 student, Robert Laws Secondary School

" These computers have brought a new way of learning. We sometimes even watch videos which makes me understand things more"

Form 1 student, Chibavi Community Day Secondary School

Overall, there is general approval for the project and evidence of a positive impact in those schools that have received computers. This monitoring and evaluation exercise has also highlighted some areas that require further work from both the Turing Trust / CYD and from the schools themselves.

Recommendations for the Turing Trust / CYD

- Improved teacher training and support, including annual refresher training days
- Work to develop networks of ICT teachers and set up mentoring schemes for inexperienced and unqualified ICT teachers
- Work to maximise the sharing of ICT teaching resources
- Extend the use of Kolibri as a Learning Management System, and focus on developing a specific channel tailored to the Malawi ICT curriculum that can be used to support schools without a qualified ICT teacher
- Continue to raise awareness of and encourage the use of the e-library in all schools (either as a standalone resource or via Kolibri)
- Continue to focus on primary objective of ensuring students' access to computers to be able to learn basic skills
- Ensure that all schools have access to typing tutorials on their computers
- Continue to work to provide schools with more computers to improve access for students
- Continue to improve awareness of the systems in place for responding to maintenance and repair issues

Recommendations for TT/ CYD to work with schools to address

- Electricity problems
- Work with schools with more experienced ICT teachers to develop systems and resources to support other schools in their area with unqualified ICT teachers
- Supporting unqualified ICT teachers to undertake basic maintenance of PCs
- Using the computer laboratory for teaching other subjects apart from ICT
- Improving access for students out of hours
- Improving the use of the e-library
- Developing systems for recording the use of the computer laboratory at each school

Contents

Students at Chibavi Community Day Secondary School using Kolibri

Background information

The Turing Trust (TT) is working in partnership with Centre for Youth and Development (CYD), based in Mzuzu, Malawi, to equip secondary schools in the Northern Region of Malawi with computers and other ICT resources. Our aim is to improve the ICT skills of students, enabling them to take computer studies as one of their MCSE subjects and preparing them to use computers in their future studies and careers. The project started in April 2016 and our first shipment of PCs arrived in Mzuzu in December 2016. Our first large scale monitoring and evaluation survey was undertaken in March 2018. This gave us a good insight into the impact of computers, but also several areas that we needed to focus on. Feedback from our survey in March 2018 had indicated that from the schools' point of view this was not a good time of year for us to be able to spend time with staff and students and so this year the survey was undertaken after exams had finished. Whereas in 2018 we wanted to compare schools without computers to those where we had set up computer laboratories, this year we wanted to look at schools who had participated in M&E previously to look at the impact of the computers over a longer time period, but we also wanted to evaluate the impact of computers in schools who have recently started using Kolibri as a Learning Management system.

Methodology

We decided that we would use KoboToolbox for researchers to collect data again. Our previous experience in using this was good and we based our data collection on the forms that had been used in 2018, but with some modifications and additional questions to improve our understanding in particular areas. One such area was about the number of students going to university each year. In 2018, almost all students said that they were planning to attend university, but we didn't know if this was representative of all secondary school students. We also wanted to understand more about the usage of the computer laboratory, both for teaching and for use out of school hours by students and teachers.

As in the survey in 2018, quastionnaires were designed to be administered to the headteacher, the ICT teacher and students in each school. All interviewees confirmed their informed consent to participating in the survey with an electronic signature. All questionnaires included skip logic, so interviewees were only asked the questions that were relevant to them. Each interview was designed to last 10-15 minutes. And to give each interviewee the opportunity to make any additional comments at the end of the questionnaire. These were recorded by the enumerators electronically.

The key areas of interest were: those identified in the recommendations from 2018:

- Improved teacher training
- Improved systems for responding to maintenance and repair issues
- In the longer-term work towards more computers per school
- Electricity problems
- Ensuring there is a qualified ICT teacher for each school
- Using the computer laboratory for teaching other subjects apart from ICT
- Improving access for students out of hours
- Improving the use of the e-library

In addition, we were interested in the numbers of students actually going to university, as our previous survey had shown that virtually all students aspired to go to university and yet this is not reflected in national statistics with only 8% of secondary school students going onto tertiary education (Government of Malawi, 2017).

All questionnaires used are available in the appendices to this report.

Data recording

All enumerators were provided with tablets and their own log in details to KoboToolbox. Initial training was provided by the CYD project manager and all enumerators visited the first school together to ensure adequate support and consistency in administering the questionnaires.

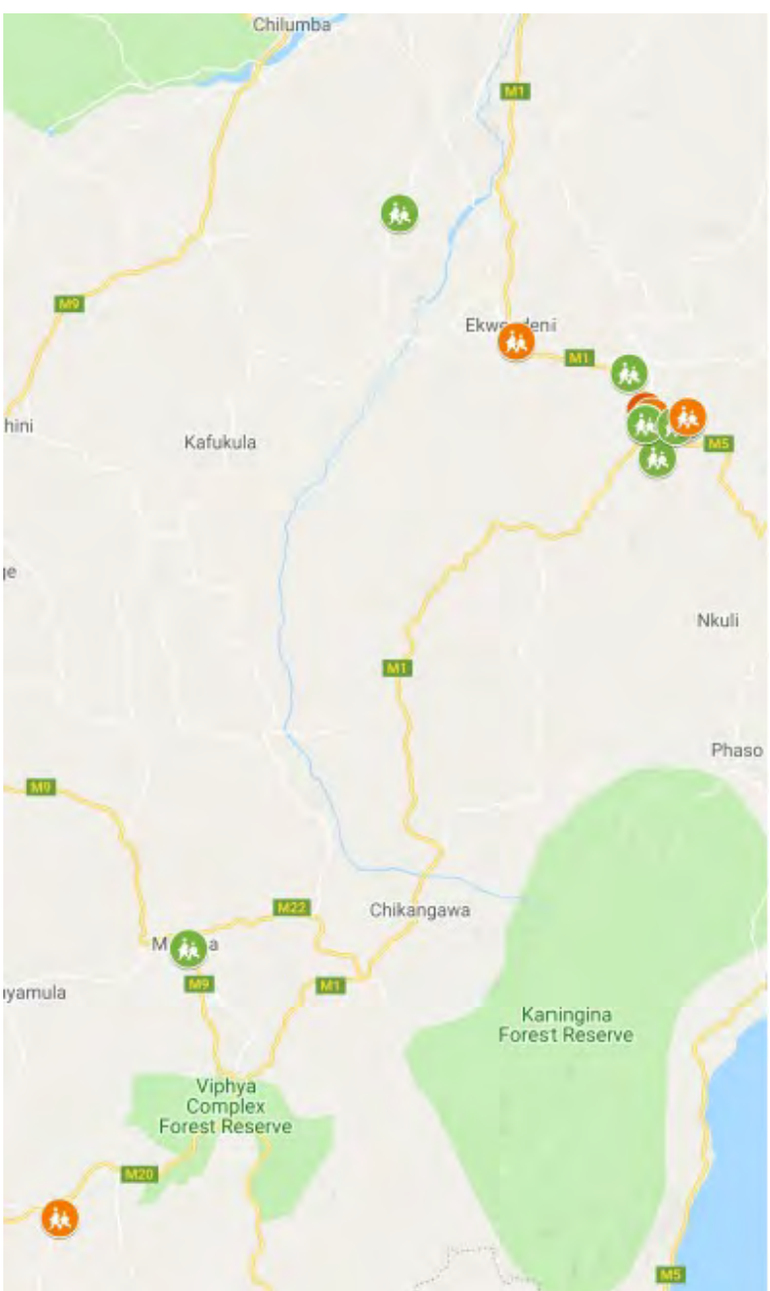
Data analysis

All data was uploaded from the tablets as soon as the enumerators were able to connect to the internet. Data was downloaded as an Excel spreadsheet and analysed in Excel. Data was reviewed as soon as it had been uploaded and any discrepancies queried with the data collection team in Malawi. All head teacher and teacher questionnaires included a question on location using GPS, allowing the production of a map showing the location of all the schools visited.

Results

A total of 13 schools were visited by our 4 enumerators during July 2018. At the time of the survey the 10 schools who had been involved in our previous survey had had computers for an average of 27 months (range 17-30 months). The 3 schools who had not taken part in the survey in 2018 had had computers for 5, 10 and 14 months respectively.

The map below shows the location of the schools in the Mzuzu and Mzimba districts. Kolibri schools are in orange.



Results

The headteachers' questionnaire was answered by 11 headteachers and 2 deputy headteachers. The teachers' questionnaire was answered by 11 ICT teachers (all but one of whom also taught other subjects as well) and 2 teachers who did not teach ICT.

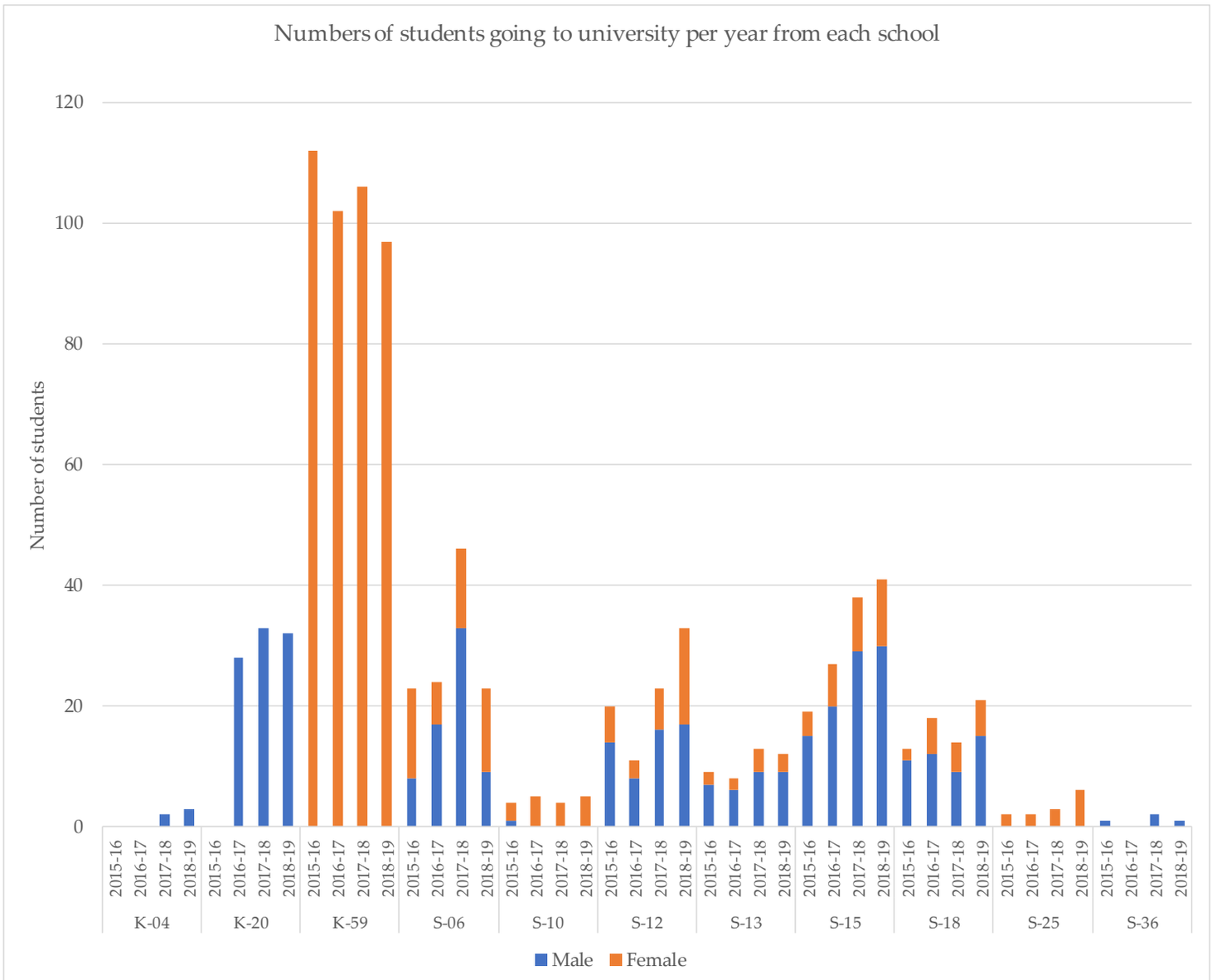
Background information on the schools				
School location	Urban	Rural		
	10	3		
Day or boarding school	Day School	Boarding		
	10	3		
Type of school	Community	Government	Grant-aided	Private
	6	1	1	5
Number of pupils	Male	Female	Total	
Average (range)	274 (0-588)	268 (0-660)	542 (70-1155)	
Number of teachers	Male	Female	Total	
Average (range)	14 (6-28)	9 (1-32)	23 (8-60)	
Ratio of pupils per teacher				
Average (range)	28 (8-83)			
Class size				
Average (range)	49 (18-140)			

Note: there were 2 all-girls schools and 1 all-boys school

Students going onto university from each school

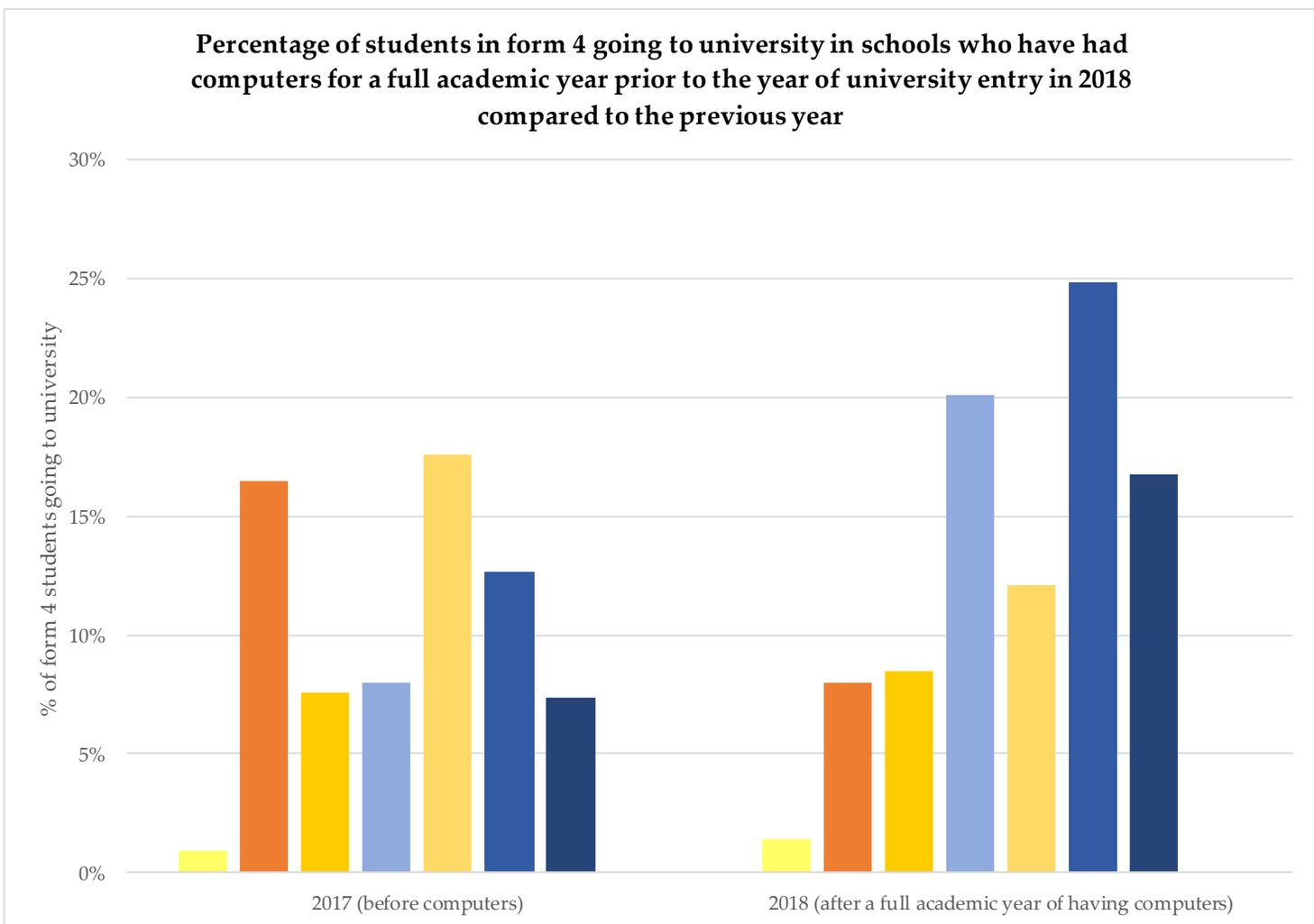
Most schools (11/13) were able to provide information on the numbers of students going onto university each year. There was a wide variation in the percentage of form 4 students leaving to go to university (1-59%) with the lowest numbers being from the community day secondary schools that typically have the smallest budgets and the highest numbers being from the private schools that are typically the best funded schools. Excluding the single sex schools and those schools with very low numbers (<5 per year) going on to university the proportion of girls going to university over the last 3 years was 25-39% (5 schools). However, this information must be put in the context of a tertiary education enrolment rate of 8% of the secondary school population nationally (Government of Malawi, 2017).

The graph below shows the numbers going to university per year from each school. We plan to continue to monitor this to assess whether access to computers affects the numbers who decide to study at university.



We have also looked specifically at the data from those schools who have had computers for at least a full academic year before students apply for university to see if there is any evidence that computers have an impact on the numbers going to university. Obviously, this data is preliminary and based on information from only a small number of schools (8 schools in total). However, although there was a decrease in the numbers going to university from some of the schools with computers, there was an overall small increase of 3%. If we looked at only the schools where university enrolment had increased we see that an average of 20% more students were attending university. Within this set there were 3 schools (all private) where the proportion of students in form 4 going to university had increased between two and three-fold – the highest increases going from 8% up to 20% and from 13 to 25%.

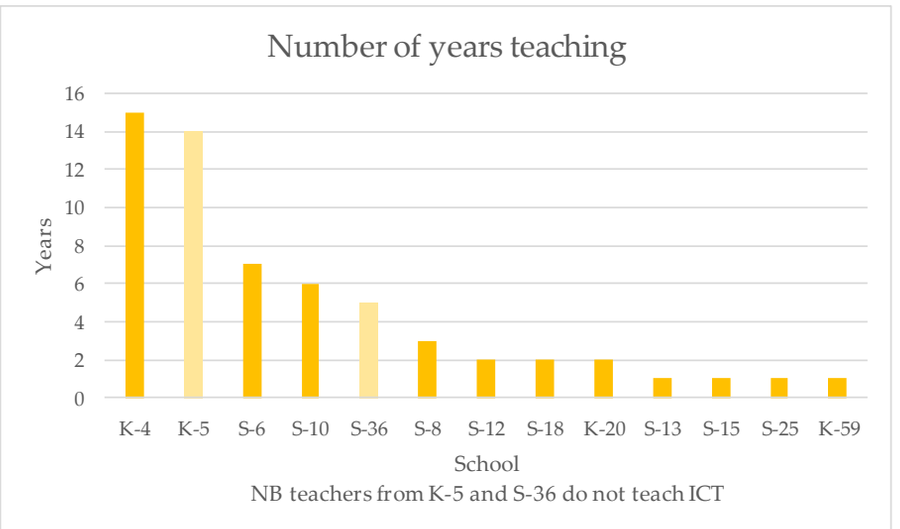
Type of school	Current qualified ICT teacher	Percentage number of those in form 4 going to university in schools who have had computers for a full academic year prior to the year of university entry in 2018 compared to the previous year	
		2017 (before computers)	2018 (after a full academic year of having computers)
Community	No	1%	1%
Government	No	16%	8%
Community	Yes	8%	8%
Private	Yes	8%	20%
Community	Yes	18%	12%
Private	No	13%	25%
Private	No	7%	17%



KEY
Private schools - blue
Community schools - yellow
Government school - orange

Background information on the teachers interviewed

Our aim had been to interview the ICT teachers. This was achieved in 11/13 schools. The teaching experience of the teachers interviewed is shown below, with 8/11 of those teaching ICT having 3 years or less teaching experience. Only 2/11 of the ICT teachers were female and only 5 of the teachers interviewed had an ICT qualification (4 with a degree in ICT and 1 with a certificate in ICT).



Only 1 of the teachers interviewed taught only ICT. All other teachers taught one or more additional subjects.

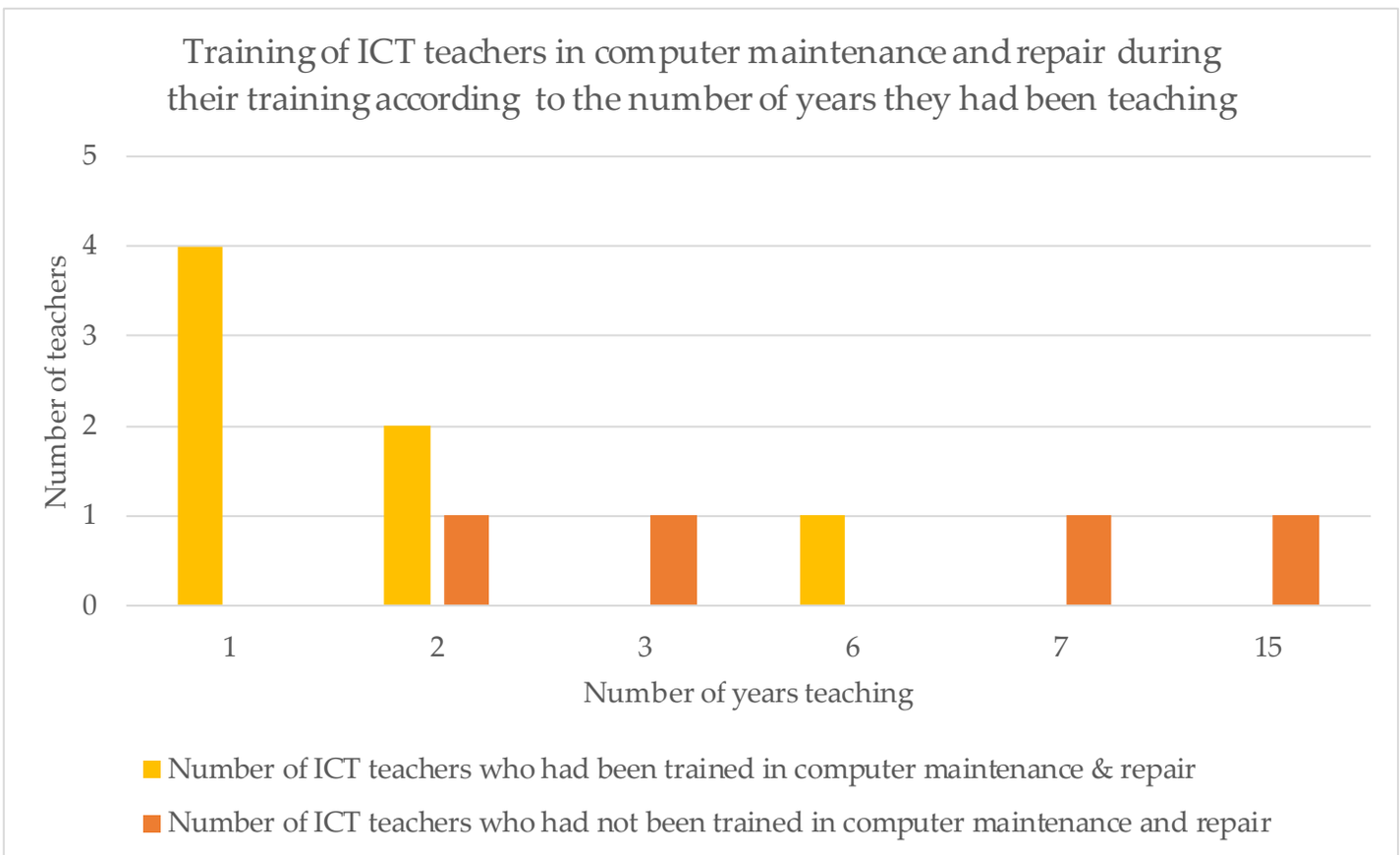
Other subjects taught with ICT for MCSE (Malawi Certificate of Secondary Education)	
Mathematics	4
Sciences	6
Humanities	6
ICT as extra-curricular activity	4
Business studies	1

We were also interested in whether the teachers had had training in the use and maintenance of computers.

	Training in maintenance and repair	Training in networking computers	Training in using computers to help teach lessons
When computers were installed	1	0	1
Another training course	2	1	2
During my education / teacher training	8	3	7
Internal training in this school			2
None	4	9	4

Comparing these results with those obtained last year the main difference was that only 36% of ICT teachers had not had any training in computer maintenance and repair compared with 78% in 2018. This difference seems to be mainly due to the increased number of ICT teachers that had received training in computer maintenance and repair during their education / training.

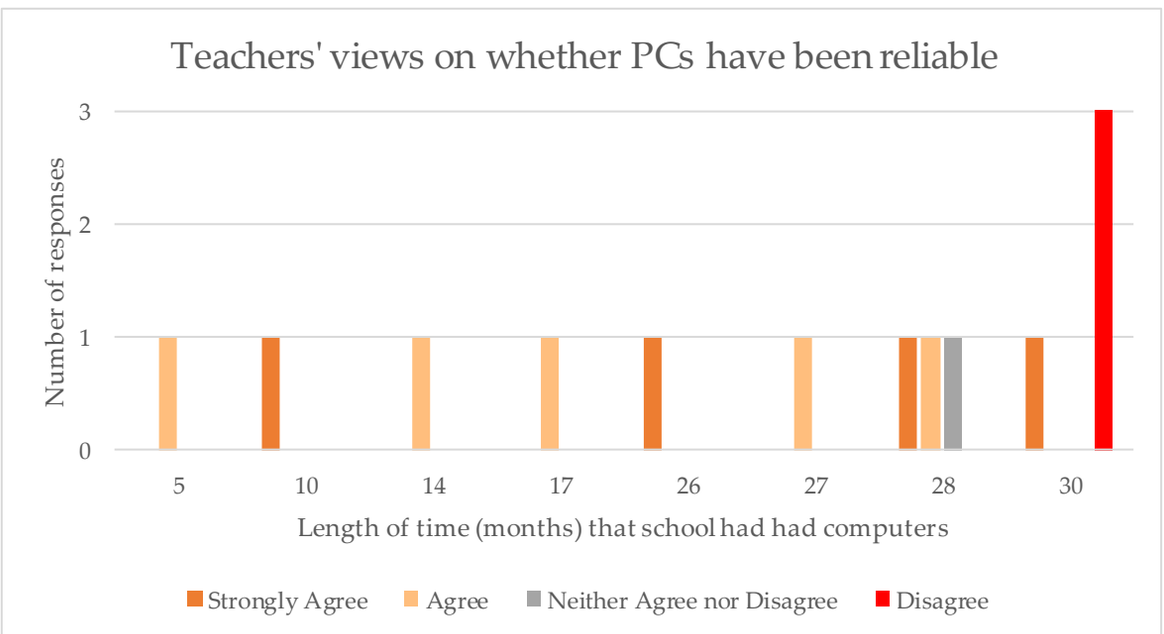
Percentage of teachers in schools with computers who have no training	Training in maintenance and repair (ICT teachers only)	Training in networking computers (ICT teachers only)	Training in using computers to help teach lessons (all teachers)
2018	78%	78%	35%
2019	36%	82%	31%

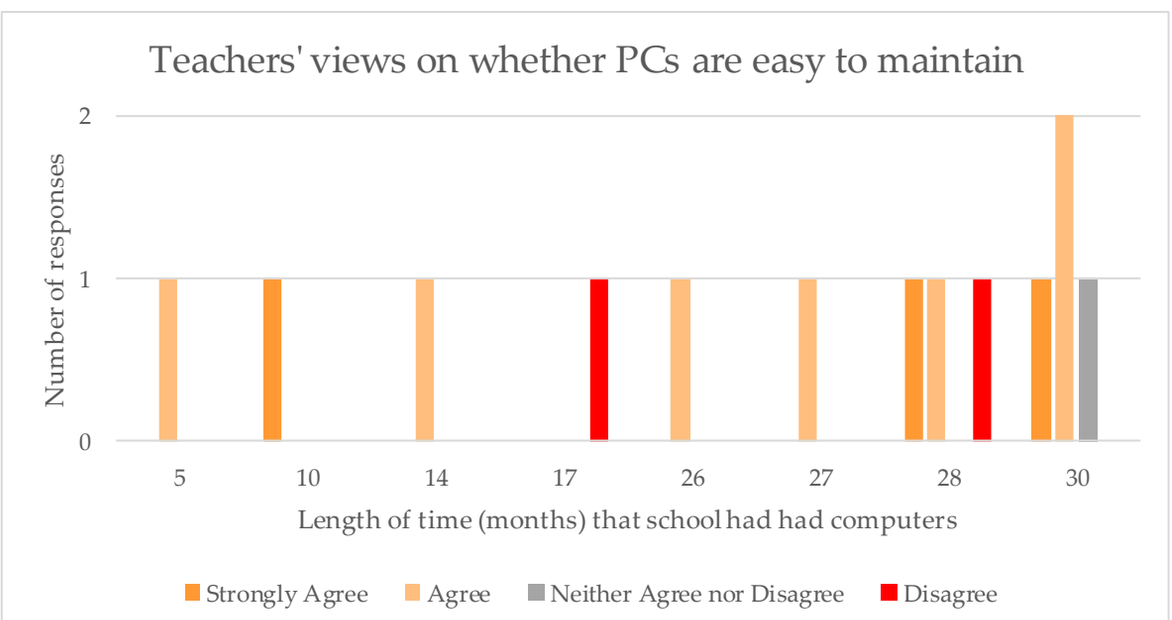


As in our previous survey, all teachers had experience of using Windows, but only 2 had ever used any other operating system (Linux) and none had ever used a MacOS. Overall, this data gives us greater confidence that younger teachers, or teachers that are being newly trained in Malawi are getting greater exposure to ICT training.

Teachers' views on maintenance and reliability of computers

Teachers' views on the reliability and maintenance of the computers were more varied this year with only 69% (compared with 78% in 2018) agreeing that they had been reliable yet 77% (compared with 39% in 2018) thought that the PCs were easy to maintain. Those teachers who found the PCs were difficult to maintain commented that this was due to lack of experience or technical skills. The decrease in reliability in 2019 compared to 2018 was due to the responses from 3 schools who had all had computers for 30 months by the time of the survey and so it is not unexpected that they are now seeing increasing numbers of maintenance challenges.





Background information on the students interviewed

The average number of students interviewed per school was 8 (range 3-15). There were 82 day-pupils and 25 boarders. The survey did not include any students from Form 4 as they had all left school once their exams were finished. The distribution of students in different forms and their ages are given below.

Form	Number of students interviewed
Form 1	18
Form 2	20
Form 3	69

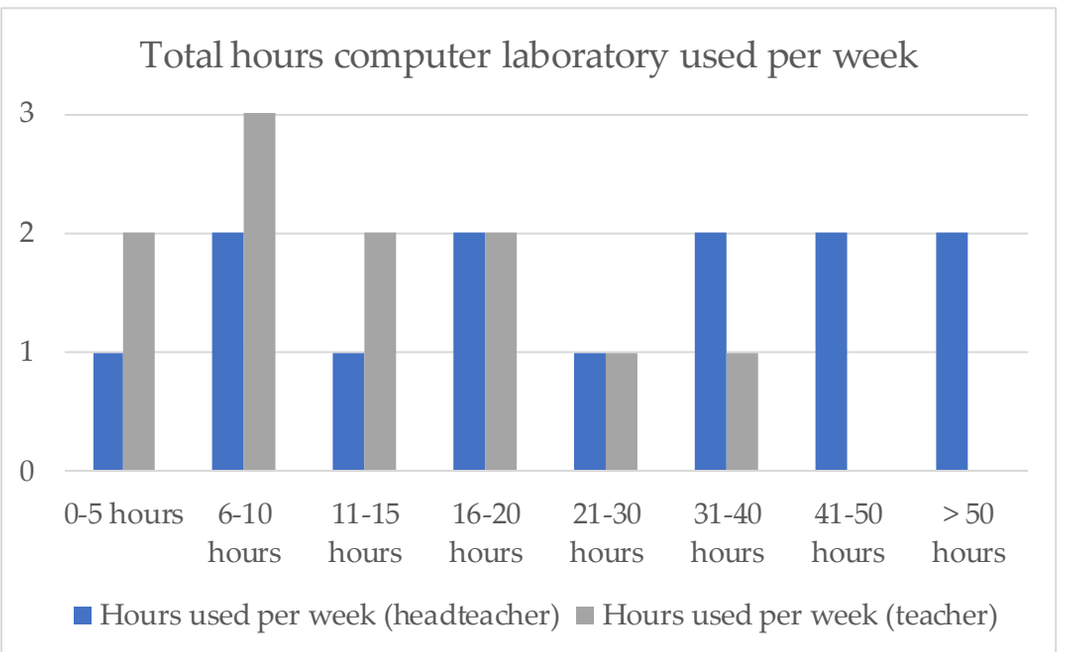
58% of the students interviewed were male and 42% were female. There were 2 all-girls schools and 1 all-boys school involved in the survey and if you exclude these, the gender balance was 53% male and 47% female.

A total of 50 /107 students reported accessing computers out of school (43 at home and 7 at an internet café, a library or game centre). There was no difference in the percentage of students interviewed able to access a computer at home according to the type of school they attended for community, government and private schools. The average was 33% which is significantly greater than the findings of 4.1% of computer use in Malawi (19.2% in urban areas) in the 2015 National Survey on access to and usage of ICT services in Malawi (MACRA, 2015). It seems likely that the students attending secondary school in Malawi are more likely to come from homes with a higher educational background and hence higher computer use (for example overall computer use in Malawi in 2015 was 31.1% in those who had completed secondary education). The exception was the grant-aided school where 60% of students were able to access a computer at home. Only 25 students were able to access the internet (13 at home, 7 attending private or grant-aided schools accessing the internet at school, 1 at an internet café and 12 on a phone).

95 of the students interviewed were doing computer studies for their MCSE exams, 11 were studying basic ICT as a non-exam subject and only 1 did not have any ICT classes. For those who were doing ICT classes, but not taking computer studies for MCSE, they were interested in computers as a subject, but either felt that they would not have enough time with the other subjects they were studying, or they didn't think there were sufficient computers for them to practise the skills they needed.

Use of the computer laboratory

We wanted to understand as much as possible about how the computer laboratory was being used, both for teaching but also out of hours. We did also ask about use of the computer laboratory by the community, but most schools do not allow community use and so this is not discussed any further in this report. Questions were asked in all questionnaires, but those in the teachers' and students' questionnaires were asked in more detail and then data on total usage aggregated for comparison with the estimated total usage from the headteachers' questionnaires. However, several of the headteachers commented that the number of hours they quoted for use of the computer laboratory were an estimate only and that they did not have any detailed information on this. In most schools the ICT teacher is the best source of information on overall use of the computer laboratory but was not available on the day of the survey in 2/13 schools.



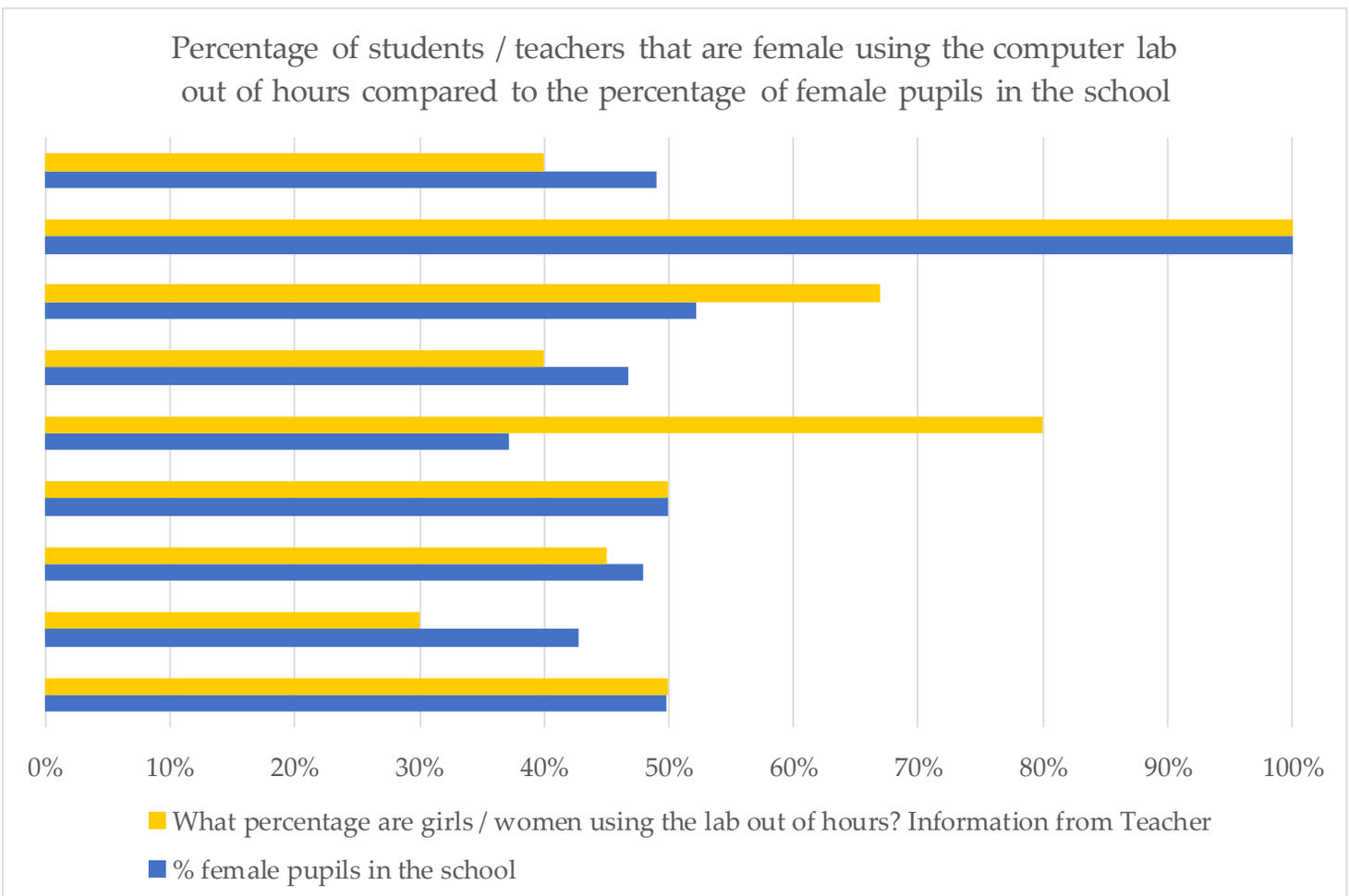
The number of lessons per week taught in the computer laboratory varied considerably with an average of 6 lessons per week (range 1-18). Lessons also varied in length from 30-45 minutes to 61-75 minutes. We did ask teachers for reasons if the number of lessons taught in the computer laboratory per week was less than 4 (which was the case in 3 schools). The reasons given were timetabling, lack of teachers' time available and other subjects not being taught in the computer laboratory. According to the teachers interviewed, subjects other than ICT were taught in the computer laboratory in only 5 schools and the main subjects taught were mathematics and biology by the ICT teachers and subjects including English, Geography, Agriculture, History, Physics, Chemistry and Social Studies by other subject teachers.

On average and using the information given by the teachers, the computer laboratory was used for scheduled lessons for 6 hours per week (range 1 – 23 hours per week) and out of hours access for 8 hours per week (range 0 – 20 hours per week). This means the total number of hours the computer labs are used on average is 14 hours per week.

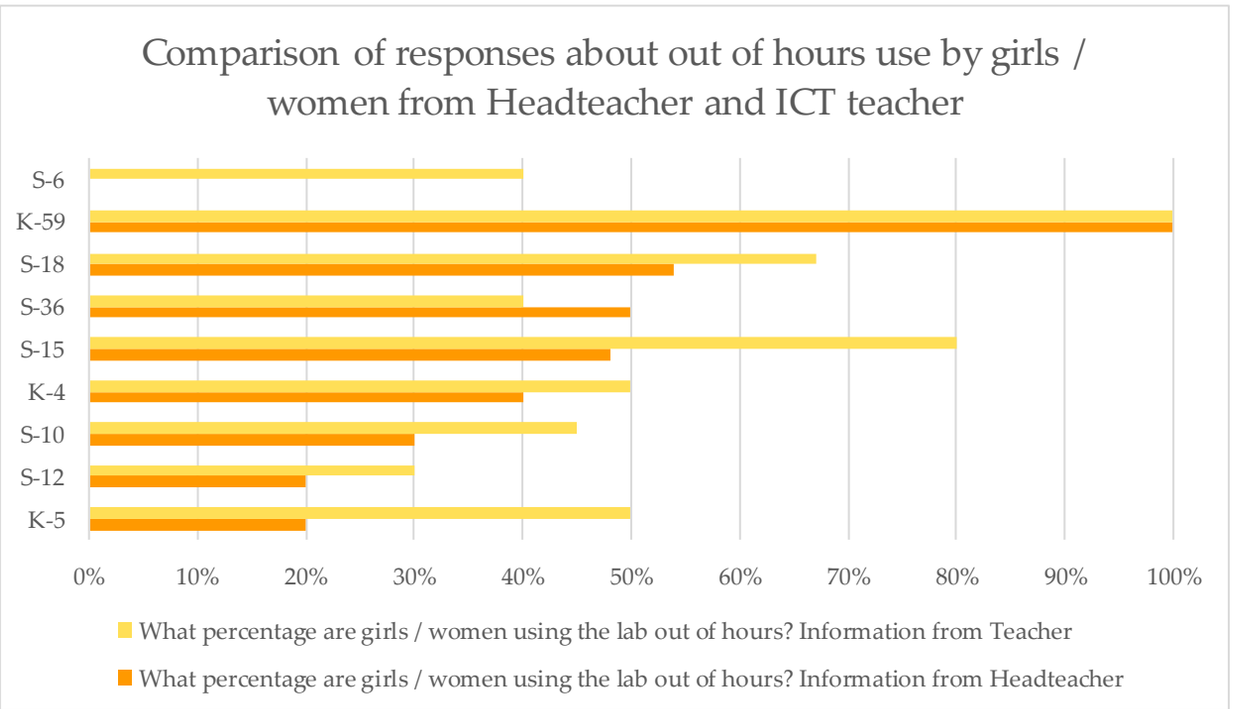
In most schools, students were sharing computers during lessons (average 3 students per computer, range 1-7).

We asked students how often they used the computers during ICT classes. Whilst most used them always / often, there were 24 who used them only occasionally or rarely. This only happened in 4 of the schools. Of these, one was a large school with >900 students and no ICT teacher, one had a new ICT teacher who was not yet familiar with the resources, one had issues with faulty computers and the other taught other subjects as well and so was unable to teach more than one computer class per week.

The computer laboratory was available for use by students and teachers out of hours in 10/13 schools. In most of these 10 schools the hours it was open were limited to an average of 8 hours per week (range 2-20). It was encouraging to find that girls were also using the computer laboratory out of hours, and that there doesn't seem to be a gender bias in out of hours use. This represents a considerable improvement since our study in 2017 when an MSC student found considerable barriers to female participation in computer studies, both during lessons and out of hours (Granaasen, 2017).



We did also compare the responses from headteachers and teachers on out of hours use and found that although there was some variation, overall the data was fairly consistent.



It is perhaps not surprising that 38% of the students said that they were not able to use the computers as often as they would like. The reasons they gave for this are below.

Reasons	Number of responses
There are not enough computers	21
The computers are not always working	13
There isn't always electricity	2
The computer laboratory is never open out of school hours	16
The computer laboratory is not open for long enough out of school hours	6
I don't have free time to use the computers out of school hours	5
Other	4

Other reasons related to the computers being used by other forms, to the lack of an ICT teacher and to concerns around potential security and safety issues.

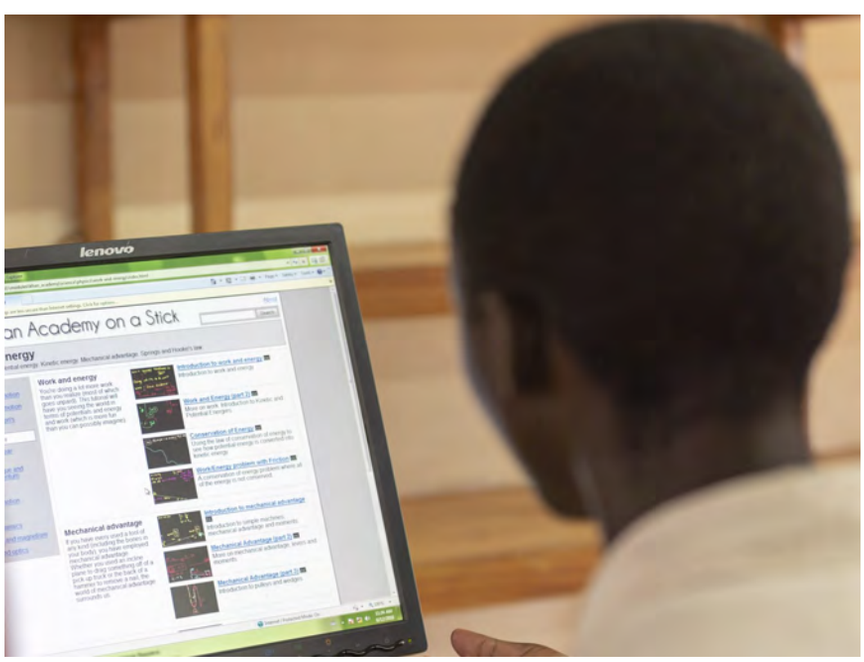
All questionnaires asked about what the computer lab was being used for out of hours, using a question with multiple checkbox options derived from the responses obtained in our previous survey and including 'other'. The responses are below and include 2 schools where the students are learning to code.

Computer laboratory use out of hours	Headteacher questionnaire	Teacher questionnaire	Student questionnaire
Doing assignments	6	8	19
Finding searching for information	3	3	15
Learning other subjects	3	2	6
Learning to code / programming	1	1	16
Listening to music	3	0	0
Playing games	2	1	1
Practising computer skills	5	9	28
Preparing lessons	4	4	Not applicable
Printing documents	4	1	2
Reading books / course notes	Not applicable	Not applicable	7
Typing / word processing	5	6	24
Watching movies	6	0	0
Other (technical drawing / designing posters)	1	0	2

Use of the e-library

Only 6 of the 13 teachers had used the e-library, most of them using it at least weekly. Of those who hadn't used the e-library, 5 said that it was not installed in the school and 2 weren't aware of it (1 of whom didn't teach ICT and 1 was new to the school).

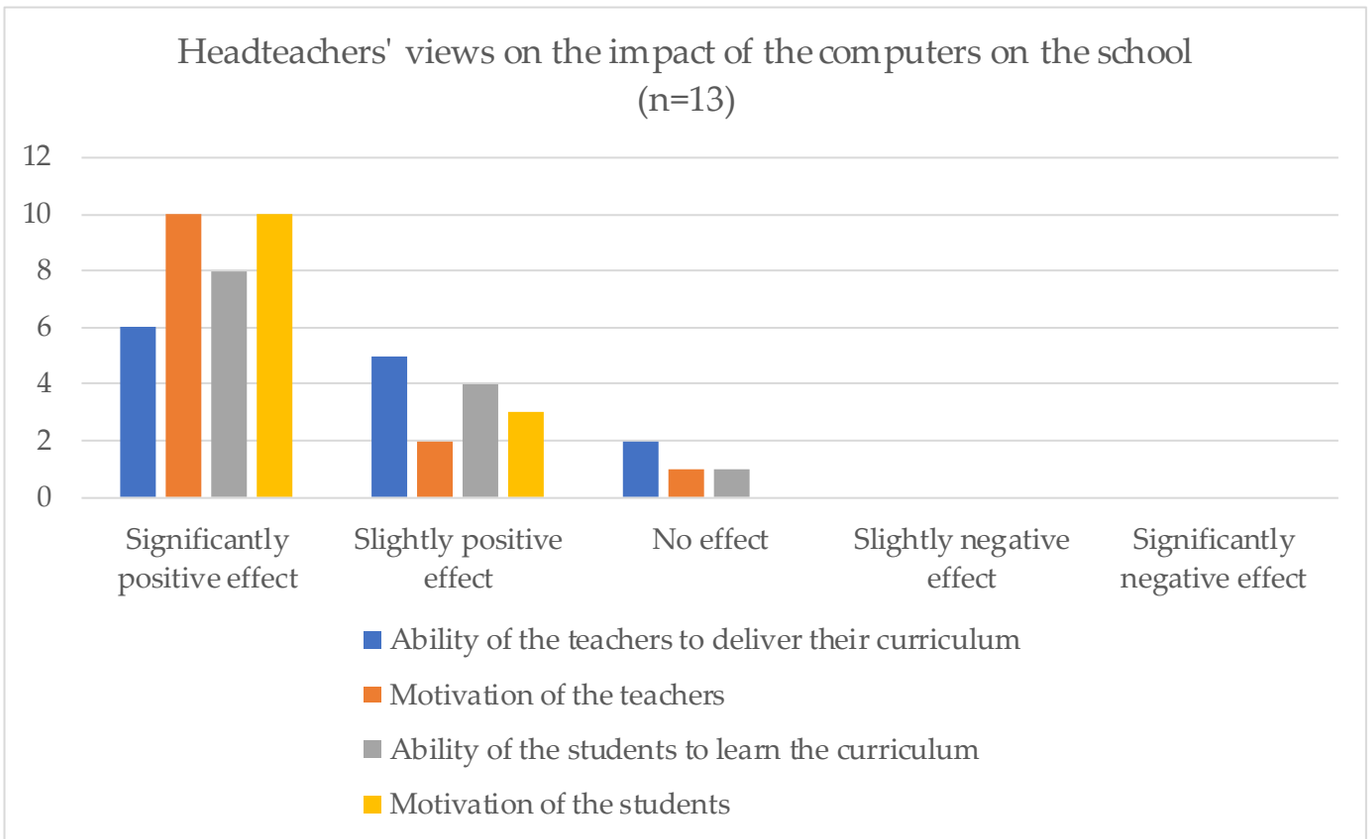
The most commonly used resources on the e-library were Khan academy, RACHEL, Wikipedia and MIT scratch.

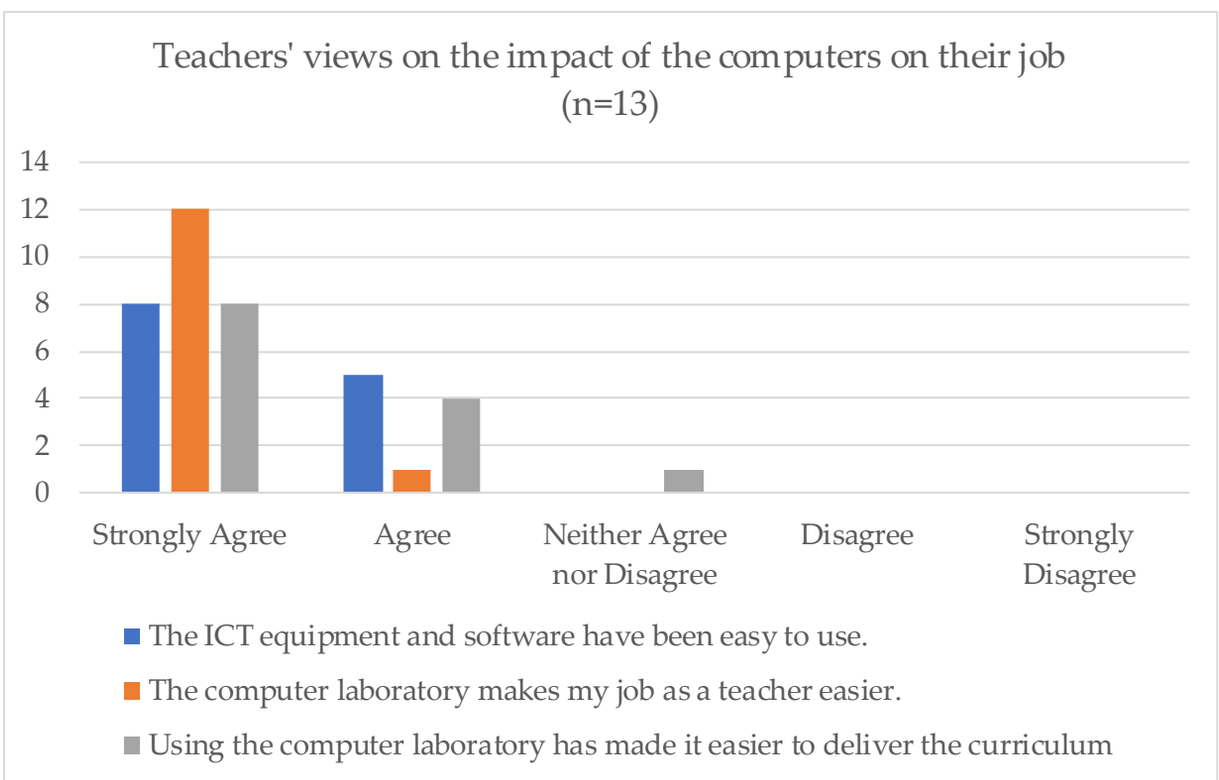


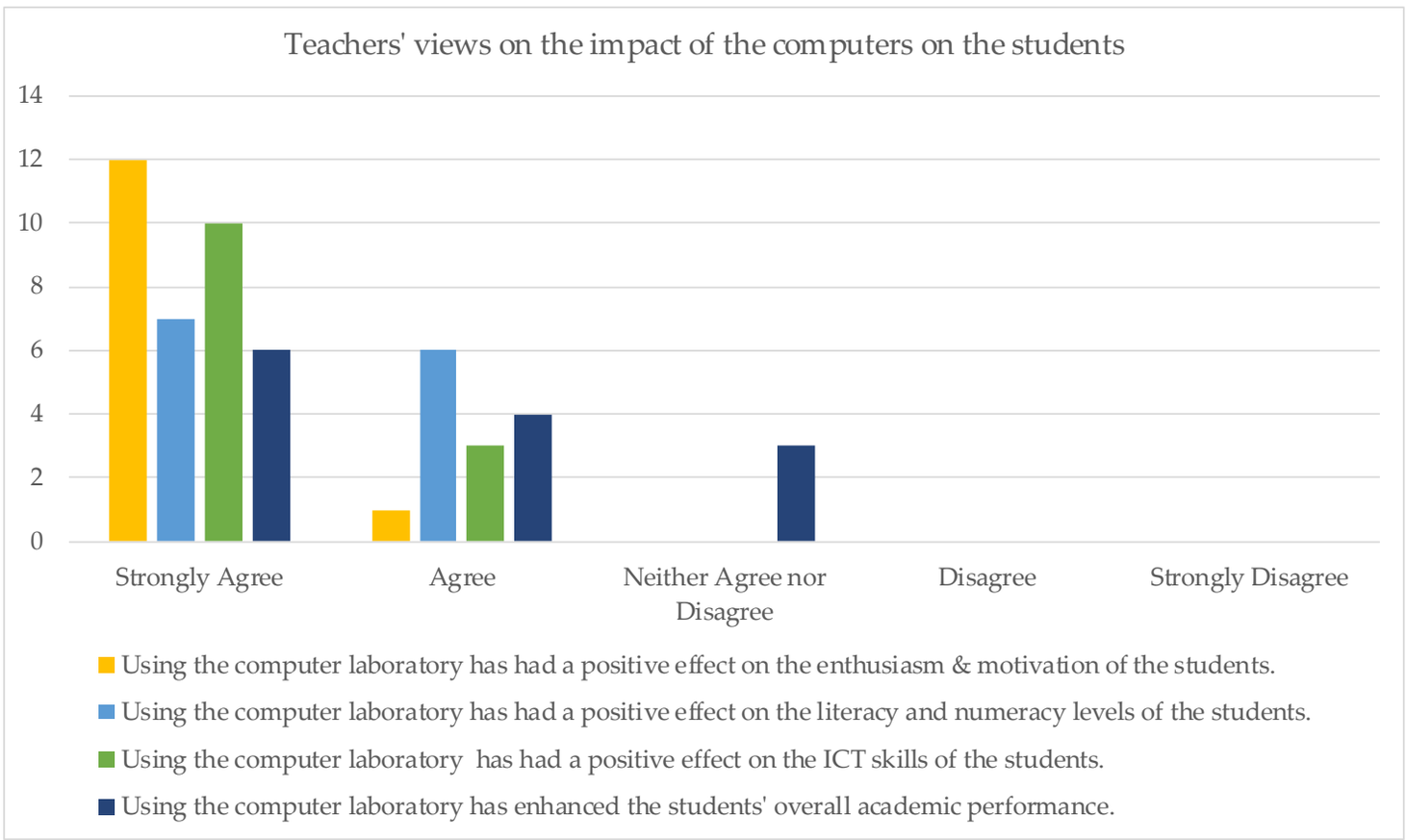
Student at Nyungwe Community Day Secondary School, Karonga District, accessing Khan Academy

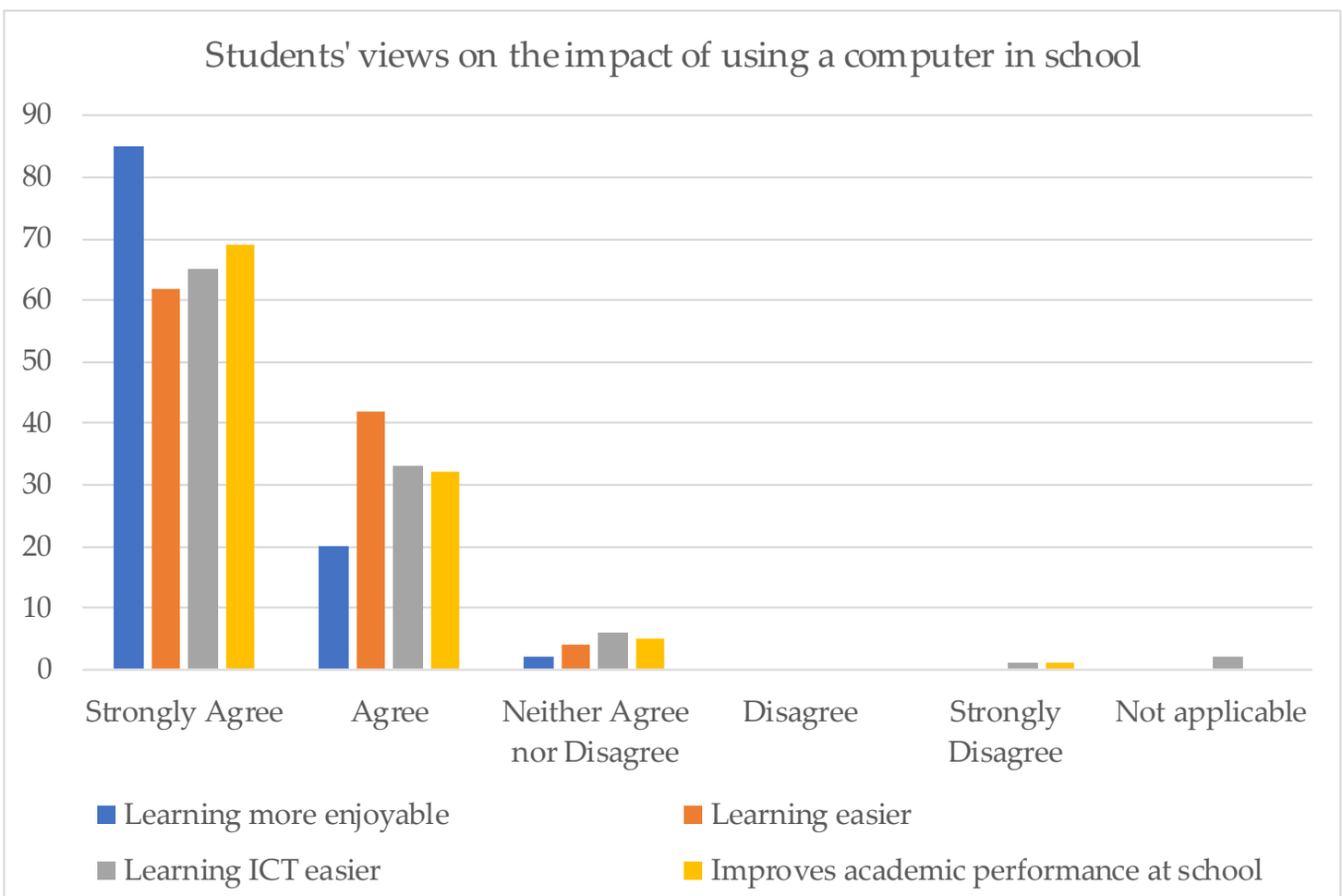
Impact of computers in the school

All questionnaires included questions about the impact of the computers in the school. The responses to these questions are summarised below, followed by an aggregate of the data from this year compared with that from 2018.

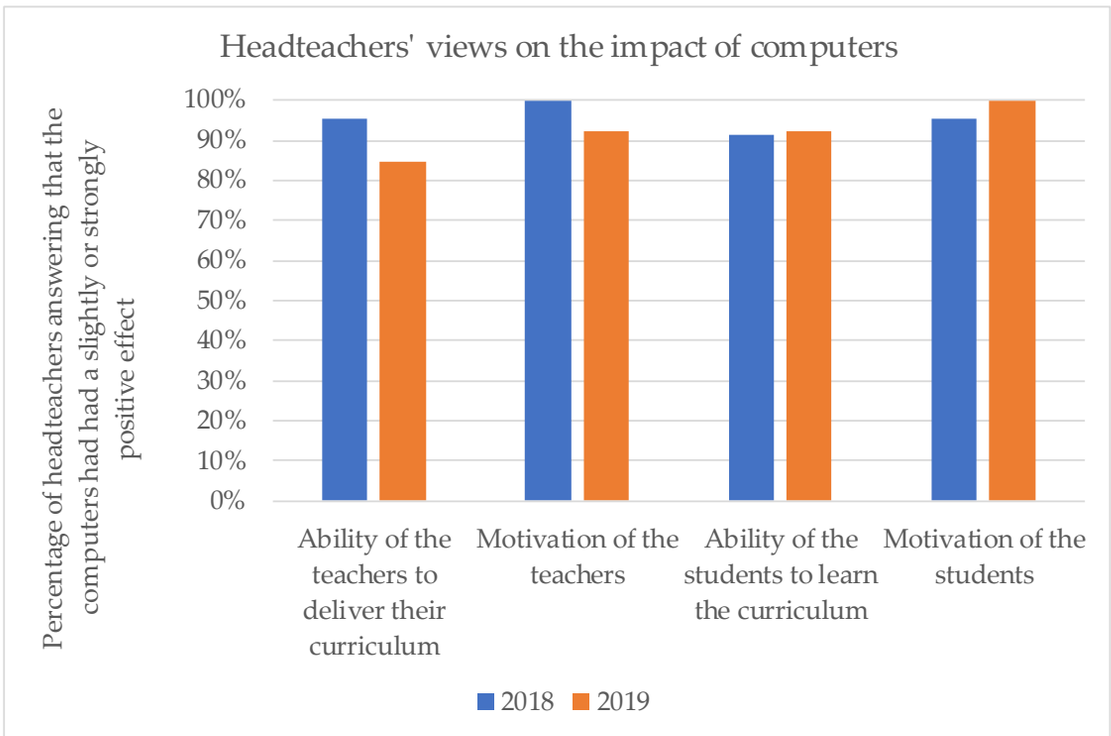


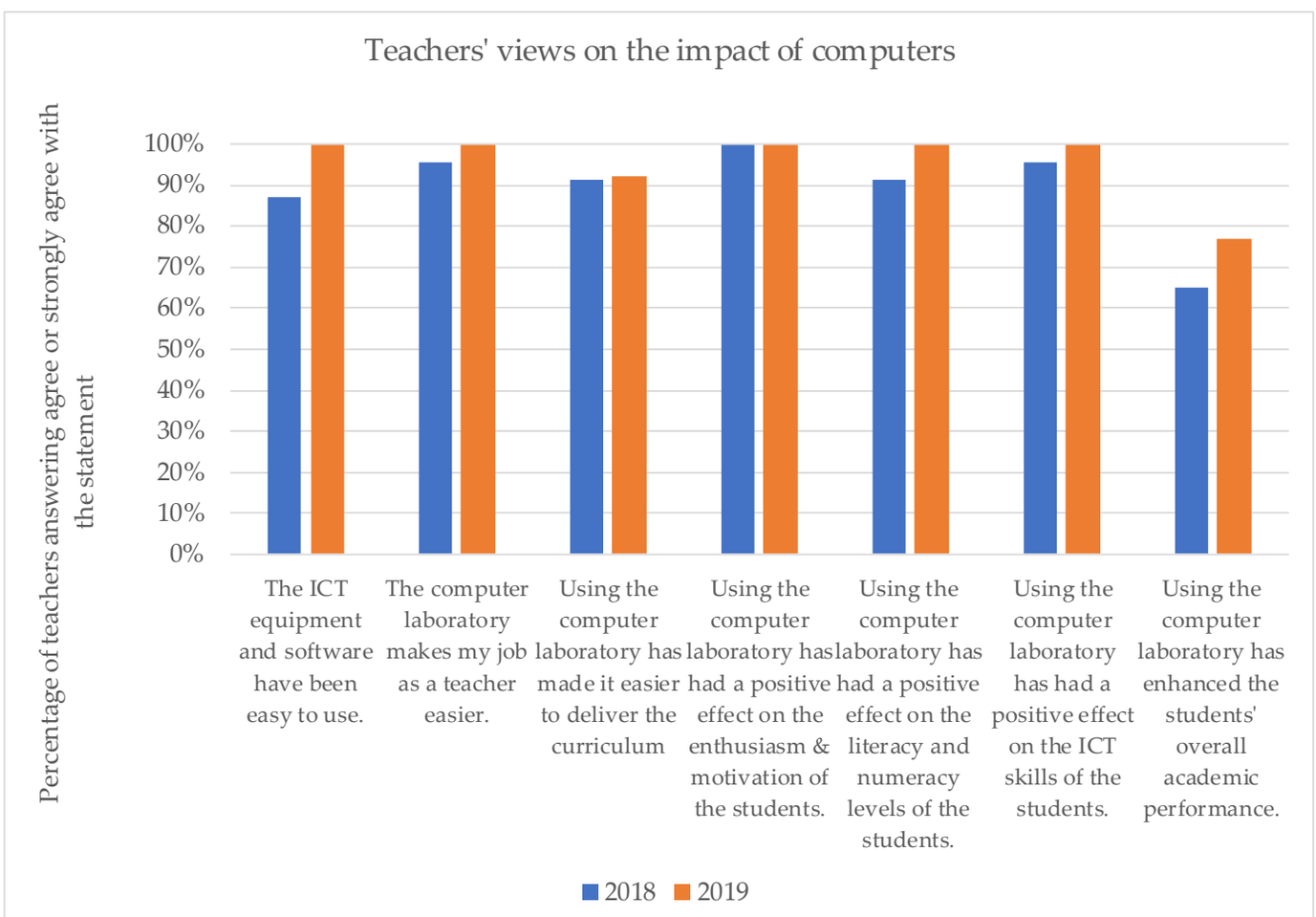


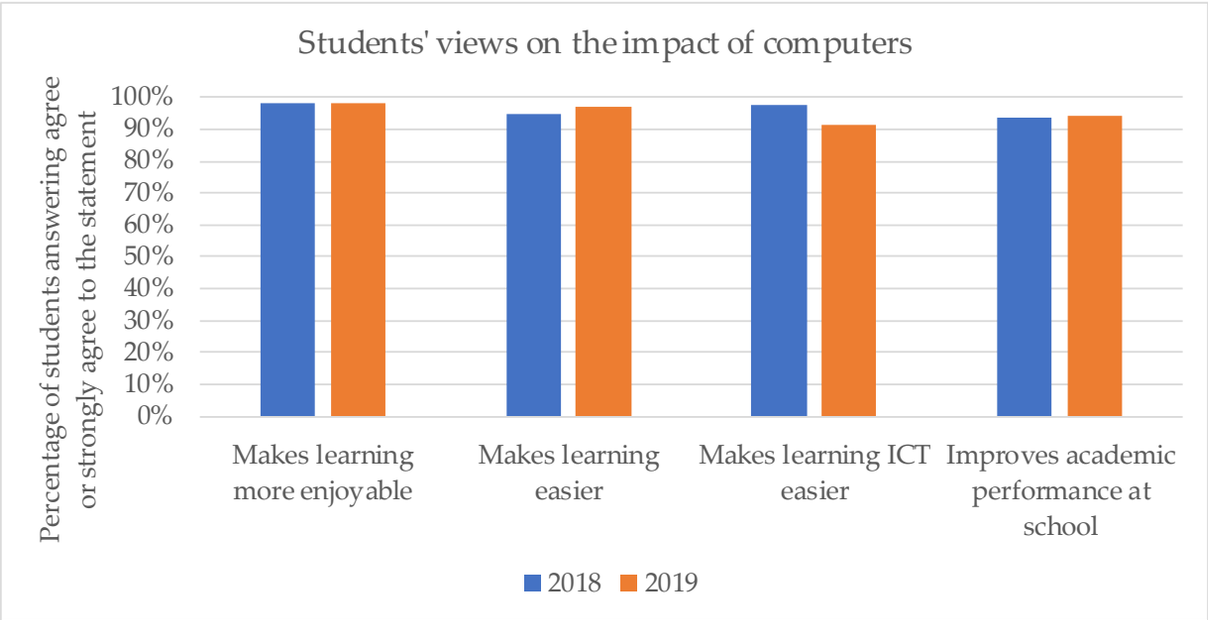

Teachers' views on the impact of the computers on the students
14
12
10
8
6
4
2
0
Strongly Agree
Agree
Neither Agree nor Disagree
Disagree
Strongly Disagree
Using the computer laboratory has had a positive effect on the enthusiasm & motivation of the students.
Using the computer laboratory has had a positive effect on the literacy and numeracy levels of the students.
Using the computer laboratory has had a positive effect on the ICT skills of the students.
Using the computer laboratory has enhanced the students' overall academic performance.


Students' views on the impact of using a computer in school
90
80
70
60
50
40
30
20
10
0
Strongly Agree
Agree
Neither Agree nor Disagree
Disagree
Strongly Disagree
Not applicable
Learning more enjoyable
Learning easier
Learning ICT easier
Improves academic performance at school

We also compared the responses to this survey with those obtained from schools who had been equipped with computers by CYD / TT in 2018. In both years headteachers, teachers and students were very positive about the impact of computers in the school.







Students were also asked about their future intentions in terms of going to university and career plans. Their answers for this survey were compared with those from schools who had TT / CYD computers in the survey in 2018. It is worth bearing in mind that in the survey of schools with TT / CYD computers in 2018 on 28% of the schools were private (compared to 38% in 2019) which may influence students' plans and aspirations. In addition, the schools in this survey had had computers for an average of 23 months (range 5-30 months) compared to the previous survey when the schools had had computers for an average of 9.8 months (range 1 -15 months) and so they are less of a novelty for students.

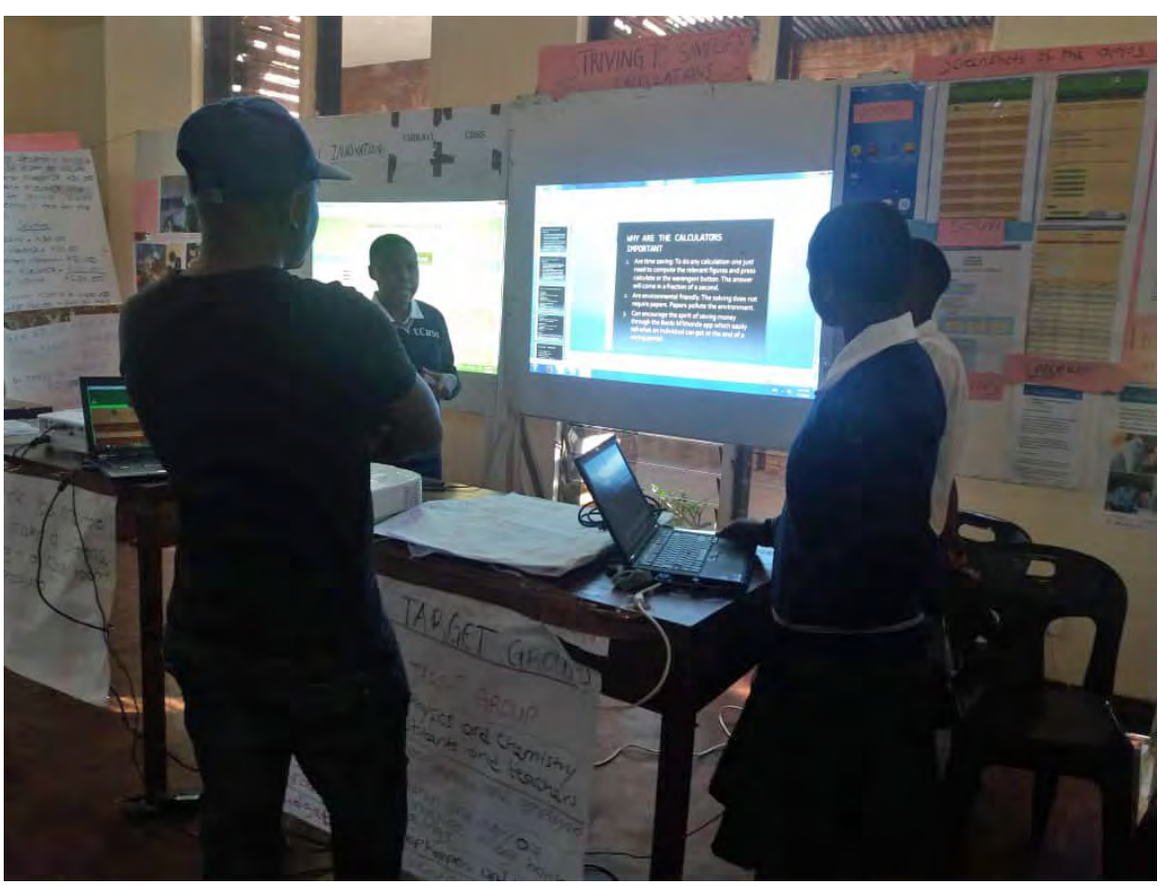
All except one of the students was planning to go to university. The subjects they were planning to study are given in the table.

Subjects students are planning to study	% of subjects 2019	% of subjects 2018
Accounting	4%	2%
Agriculture	0%	2%
Biology	**2%**	**15%**
Business	2%	0%
Chemistry	4%	4%
Engineering	3%	1%
English	**4%**	**12%**
Geography	1%	7%
History	2%	5%
Hospitality	0%	1%
HR	1%	0%
Humanities	1%	3%
ICT/ Computer studies	**27%**	**11%**
Journalism	6%	0%
Law	2%	1%
Life Skills	0%	2%
Mathematics	**9%**	**16%**
Medicine	**10%**	**1%**
Nursing	6%	2%
Physics	**4%**	**10%**
Science	4%	0%
Security	1%	0%
Social sciences	2%	3%
Teaching / education	5%	0%

The largest changes from 2018 have been highlighted. It is encouraging that the percentage of students wishing to take their studies in ICT has increased in 2019.

Students were also asked about their career intentions and these were also compared with the responses obtained from students in schools with TT / CYD computers in 2018. As with the subjects students are planning to study at university, there has been in increase in students wishing to pursue a career in ICT.

Career intentions	% of responses 2019	% of responses 2018
Accountancy	6%	6%
Banking / finance	3%	3%
Business / management	7%	0%
Engineering	7%	3%
ICT	**21%**	**10%**
Journalism	7%	5%
Lawyer	7%	7%
Medicine	16%	17%
Nursing	13%	18%
Other	4%	9%
Police / Army	1%	7%
Scientist	1%	0%
Teaching / education	10%	15%



Students from Chibavi Community Day Secondary School presenting their work on the development of Apps at the Malawi National Science Fair that was held at Kamuzu Academy in Kasungu District.

Comments given as free text answers at the end of the survey

At the end of the questionnaire all interviewees were asked open questions that allowed free text responses that were recorded verbatim by the enumerators.

Additional questions for headteachers:

- What has been the most significant change in the school as a result of the ICT equipment?
- What further improvements in the ICT equipment, resources or training would you like to see?
- Do you have any other comments?

Additional questions for teachers:

- Has anything changed in the way that you teach the students since the set-up of the computer laboratory? If yes, what has changed.
- What are the main challenges you have encountered to integrating ICT into the classroom?
- What further improvements in the ICT equipment, resources or training would you like to see?
- Do you have any other comments?

Additional question for students:

- Do you have any other comments about the use of computers or about this survey?

"I like spending my time in the lab for the girls computer club "

"This has built an interest in student to learn computer as at first they were almost high percentage of computer drop outs but now almost every one take the subject on MSCE"

"Yes its now easy for me to deliver class lessons and now am very happy when am in class teaching the computer subject "

"Its enjoyable. And the lab is open to everyone to use"

The comments from all 3 questionnaires were similar and so have been collated and summarised below (17 students didn't have any additional comments):

	Headteacher (n=13)	Teacher (n=13)	Students (n=90)
General approval / thanks	4	6	11
Additional requirements			
ICT teacher	1	0	3
Teacher training	7	5	3
More computers	9	6	13
More laptops	1	3	1
Tablets	0	0	1
Network	0	1	0
Internet	3	1	1
Surge protectors	1	0	0
Projectors	6	5	3
Printer	4	5	3
Issues with power supply	0	2	2
Maintenance & repair	1	4	6
Need e-library	1	1	1
Need upgrades of OS & more software (including anti-virus & VBA)	0	0	3
German language keyboard	0	1	1
Linux not user friendly	1	0	0
Malawi syllabus on computers	0	2	0
Align Malawi curriculum with Kolibri	0	2	0
Share information amongst schools	0	1	0
Better communication between school & project team	0	1	0
Better room for computer lab	1	1	2
Impact of computers			
Help students learn	5	6	20
Help teachers teach	4	5	0
Better student motivation	4	4	1
Improved computer literacy	9	2	7
Enjoy using computers	0	0	7
Want more time for computer lessons	0	0	8
Free access to lab	0	0	3
Want more access to the lab out of hours	0	0	4

Discussion

KoboCollect again proved an efficient way of collecting the data in the field and we didn't encounter any of the issues experienced in 2018. There were several comments from staff and students that they appreciated the opportunity to give feedback and to contribute in improving the service. The views of the project were overwhelmingly positive, but the survey again identified several areas where more work is needed. These will be discussed according to the issues identified and recommendations from the 2018 survey.

Teacher training
This remains an ongoing requirement – both in terms of computer maintenance and basic repair, but also in incorporating computers into teaching in all subjects. This a partly a reflection of the scarcity of qualified ICT teachers in schools in Malawi, but it is also one of the staff turnover. Ideally, we need to improve the training that currently happens alongside the installation of the computers so that students and teachers can benefit from their use as soon as they have been installed. There is also a need for regular refresher training each academic year to address the problems that arise from staff turnover. It is promising that newer teachers seem to have had more ICT training as part of their teachers' training in the last few years.

This year we have introduced Kolibri as a learning management system in 4 schools. Whilst this gives teachers the opportunity to tailor content specifically for their lessons, any new approach is time consuming to learn and to set up. There is also a need to ensure that good quality content aligned to the Malawi curriculum is available for teachers to use. As identified in one of the comments, the hope is that as we gain experience with this, we will be able to share the learning across schools.

Improved systems for responding to maintenance and repair issues
Although there were still problems with faulty computers in several schools and a desire for more training in basic maintenance and repair, there were also numerous very positive comments about the support received from our CYD technician. We have identified that one of the problems is an issue with a fragile motherboard capacitor which is not something that can be repaired by the ICT teachers in the schools. We have also made sure that all schools are aware that we will replace any PC returned to base. However, this can be more challenging in terms of transport costs in schools geographically distant from Mzuzu.

In the longer-term work towards more computers per school
Staff and students all identified the need for more computers per school so that students do not have to share a computer during lessons. We initially set up laboratories with 20 computers, but in several schools this has meant students having to share during lessons. The survey also identified a need or projectors. Our initial plan was to install these when setting up the local network. However, this is now being reviewed in light of the feedback as this suggests that a projector would still be useful for teaching even without a network. There were also comments about teachers being supplied with laptops to help them with lesson preparation.

"If there was a way for different secondary school to share information so that they can know what other schools are teaching"

Electricity problems
There were fewer comments about lessons and out of hours use being interrupted because of problems with the electricity supply. However, this may have been related to the fact that 9/13 schools were located in Mzuzu.

Ensuring there is a qualified ICT teacher for each school
CYD Executive Director James Gondwe has been working with the Education division, discussing how the government can deploy computer teachers to secondary school that already have computers .

Neil Gilchrist and James Gondwe visit the Northern Education Division to met the Education Division Manager, Mr Mzondi Moyo and the Desk Officer for Secondary Schools, Mr.Victor Lungu

Using the computer laboratory for teaching other subjects apart from ICT
Only 5 schools were using the computer laboratory to teach subjects other than ICT, although only 1 of the ICT teachers interviewed didn't teach other subjects in addition to ICT. It seems that there is still a view that a computer laboratory is just for teaching ICT and that other subjects already have other classrooms where they are taught. This relates back to the question of teacher training for all teachers and supporting this with ongoing refresher training.

Improving access for students out of hours
77% of schools are now providing access to the computer laboratory for their students and staff out of school hours compared with 54% in the 2018 survey. However, the number of days the computer laboratory is available out of hours and the number of hours per day that the computer laboratory is available have not changed significantly since the survey in 2018. Similarly, there has been an improvement in the number of students who say they are able to use the computers as often as they would like from 56% to 62% (note this also includes access during lessons).

From the students' responses to the question about how they are using the computer laboratory out of hours it is evident that they are keen to practise basic computer skills with a significant number practising typing / word processing. We therefore need to ensure that all schools have access to a basic typing tutor on all machines.

Improving the use of the e-library
Use of the e-library has improved since the previous survey, although there were still some schools that said that they didn't have the e-library installed. Where it is being used, several of the students' comments referred to being able to access information and learn more than has been available in their textbooks. There is still a challenge to supporting teachers to include the resources available on their computers in their lessons. We also need to ensure that students are teachers are aware of the channels available through Kolibri as these include many of the same resources available in RACHEL (the resource used to provide the e-library in those schools who do not yet have Kolibri).

Additional information gained in 2019

This was the first year that we asked schools for information on the numbers of students going to university. This was based on the information from 2018 suggesting that nearly all students aspired to go to university which was not consistent with the statistics suggesting that only 8% of all secondary school students went on to study at university (Government of Malawi, 2017). The information that the schools were able to give were the numbers of their students going on to study at government universities, which is likely to be an underestimate of the total numbers going to university as in Malawi about 40% of students go to private universities. It is also not surprising that there was a low university admission rate for students from community schools as these are relatively under-resourced and so fewer students are able to achieve the grades required to meet the government university requirement. Our enumerators also found that the students in rural areas were less clear in their plans after leaving school and needed more information to enable them to make choices in terms of their future careers.

We were also interested to find out whether having a computer laboratory has any impact on the numbers of students going to university. Only 8 schools had had computers for a full academic year prior to university entrance in 2018 and of these 3 showed a two to three-fold increase in the percentage of students from form 4 going to university. The data is obviously preliminary, but questions will be included in future M&E exercises to build on this and understand the impact of computers in more detail.

Some of the highlights identified from this survey

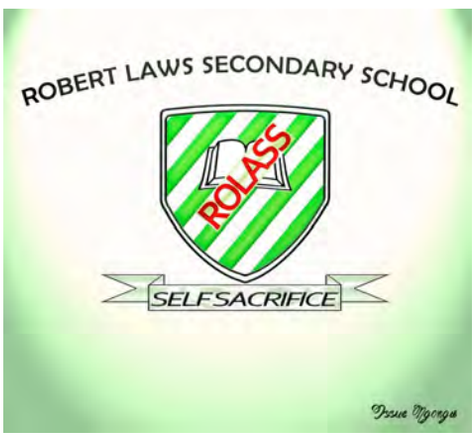
- Students using their computer skills to make presentations at and participate in the National Science Fair
- Students in 2 schools learning to code out of hours
- Increases in students wanting to study ICT at university and pursue ICT as a career
- Students are now able to sit for the MCSE examinations in computer studies for the first time
- Reports of increased passed rates for students taking computer studies at MCSE

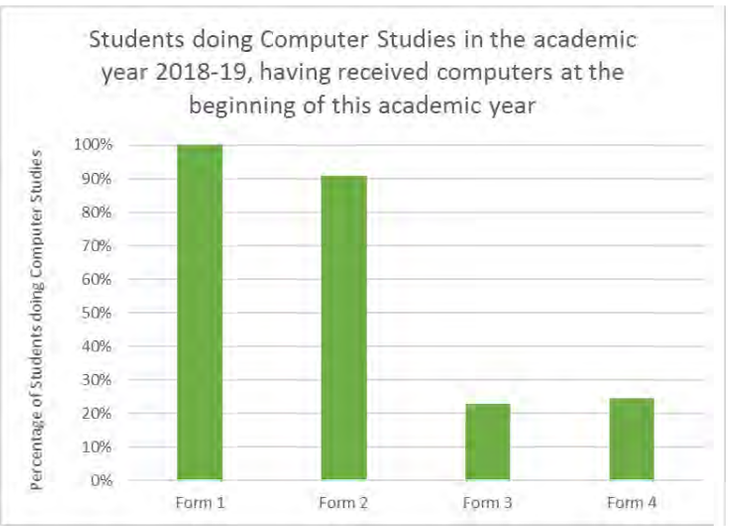
" Now we have high passing rate in computer studies as compared to the past years before computers. "
Head Teacher, Marymount Catholic Secondary School

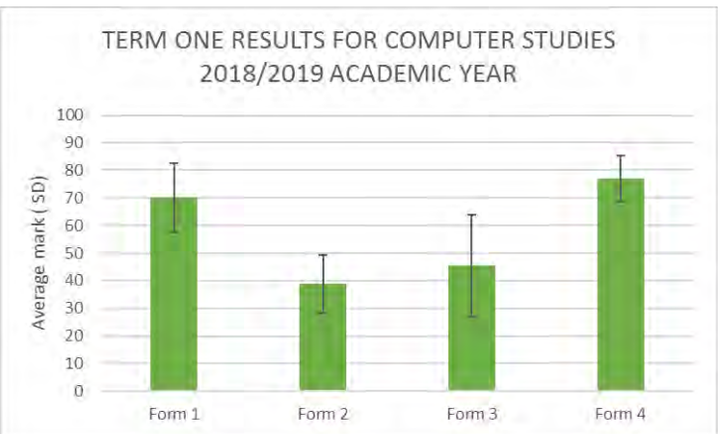
"Students have an interest in learning now and are able to achieve what they want and also we have an increase in pass rate "
Teacher, Robert Laws Secondary School

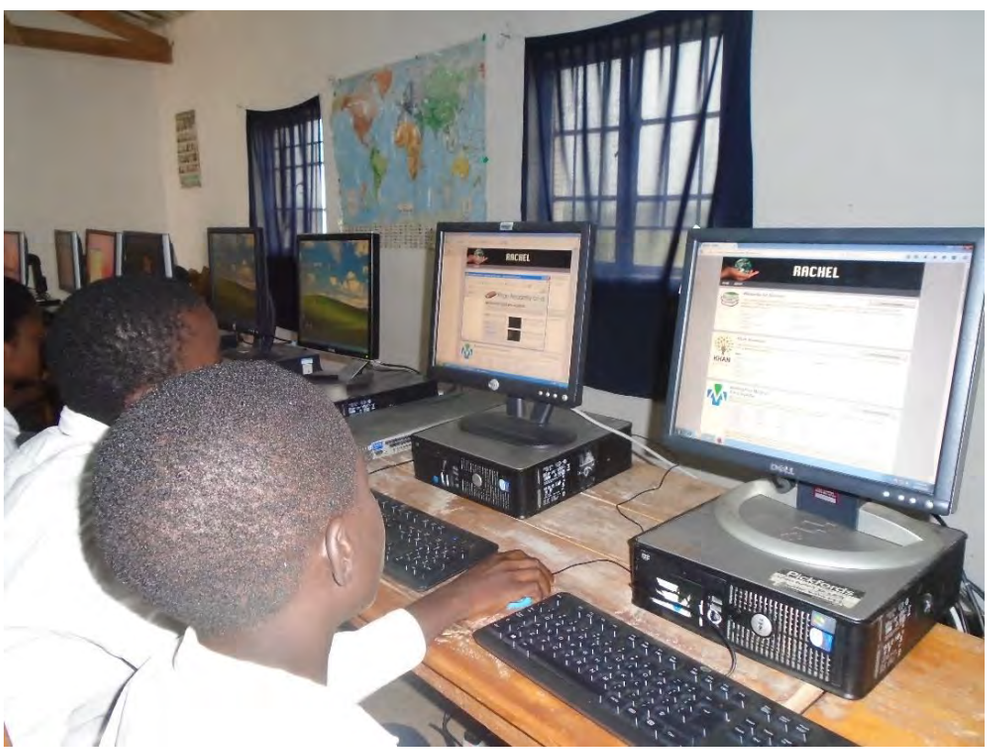
Computer Laboratory, Robert Laws Secondary School

At Robert Laws Secondary School, the number of students studying computer science in forms 1 and 2 and their results for the first term of the academic year speak for themselves. Very few students in forms 3 and 4 are taking computer studies as they were not able to access computers previously.









Students at Faith Private Secondary School, Chitipa, accessing RACHEL

Recommendations

Once again, the overall feedback was positive, but it has also helped us to identify the ongoing challenges. Following this round of Monitoring and Evaluation we have updated the recommendations from last year.

Recommendations for the Turing Trust and CYD

- Improved teacher training and support, including annual refresher training days
- Work to develop networks of ICT teachers and set up mentoring schemes for inexperienced and unqualified ICT teachers
- Work to maximise the sharing of ICT teaching resources
- Extend the use of Kolibri as a Learning Management System, and focus on developing a specific channel tailored to the Malawi ICT curriculum that can be used to support schools without a qualified ICT teacher
- Continue to raise awareness of and encourage the use of the e-library in all schools (either as a standalone resource or via Kolibri)
- Continue to focus on primary objective of ensuring students' access to computers to be able to learn basic skills
- Ensure that all schools have access to typing tutorials on their computers
- Continue to work to provide schools with more computers to improve access for students
- Continue to improve awareness of the systems in place for responding to maintenance and repair issues

Recommendations for TT and CYD to work with schools to address

- Electricity problems
- Work with schools with more experienced ICT teachers to develop systems and resources to support other schools in their area with unqualified ICT teachers
- Supporting unqualified ICT teachers to undertake basic maintenance of PCs
- Using the computer laboratory for teaching other subjects apart from ICT
- Improving access for students out of hours
- Improving the use of the e-library
- Developing systems for recording the use of the computer laboratory at each school

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Computer Laboratory at Malo Private Secondary School

Appendices

Appendix 1 - Headteacher questionnaire used

NB: questions in lighter type are those dependent on skip logic, and so only appear if relevant according to previous responses. The names of interviewers have been removed.

Malawi Head Teacher Questionnaire 2019

Name of interviewer

- ◯
- ◯
- ◯
- ◯
- ◯
- ◯ Other

If other, please give your name

_____

School code

Please pick the school code from the drop down list below

- ◯ K-4
- ◯ K-5
- ◯ K-20
- ◯ K-59
- ◯ S-6
- ◯ S-8
- ◯ S-10
- ◯ S-12
- ◯ S-13
- ◯ S-15
- ◯ S-18
- ◯ S-25
- ◯ S-36
- ◯ Other

If other, please enter the school code here

Please give the school code from the tracker or other details to identify the school

_____

Headteacher questionnaire (2)

Please add your location

Press record location, wait for your location to load and then press record location again

latitude (x.y °)

_____

longitude (x.y °)

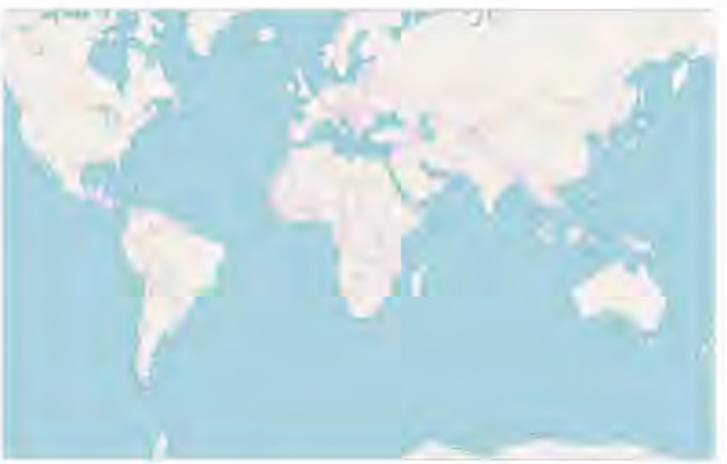
_____

altitude (m)

_____

accuracy (m)

_____



Please take a photo of the school buildings, with school sign if possible

Click here to upload file. (< 5MB)

Please explain to the interviewee that this is a short questionnaire we are conducting in order to assess the impact of CYD / The Turing Trust's work. This is very important for us to be able to continue and improve on the work we have already done. It will take less than 15 minutes of their time. All of the information they provide will be used only for the stated purpose by the team, will be stored anonymously and securely. Once all the data has been collected and analysed, we will share our findings with all schools who have participated in the survey and publish them in our annual report.

Please confirm that the interviewee understands the explanation above and consents to participating in this survey

◯ OK

Signature of interviewee

Interviewee can sign on the phone / tablet

School Information

Headteacher questionnaire (3)

What district is the school in?

- ◯ Mzimba
- ◯ Mzimba North
- ◯ Mzuzu
- ◯ Other

If other, please give district here

_____

How would you describe the location of the school?

- ◯ Urban
- ◯ Semi / peri-urban
- ◯ Rural

What type of school is this?

- ◯ Community
- ◯ Government
- ◯ Grant-aided
- ◯ Private

How many male students attend this school?

_____

How many female students attend this school?

_____

How many male students with a disability are in the school?

_____

How many female students with a disability are in the school?

_____

How many male teachers are in the school?

_____

How many female teachers are in the school?

_____

Do you have statistics on the number of students going to university from you school each year?

- ◯ Yes
- ◯ No

Headteacher questionnaire (4)

How many students from this school went to university in 2014-15?
Please leave blank if not known

How many of the students who went to university in 2014-15 were girls?
Please leave blank if not known

How many students from this school went to university in 2015-16?
Please leave blank if not known

How many of the students who went to university in 2015-16 were girls?
Please leave blank if not known

How many students from this school went to university in 2016-17?
Please leave blank if not known

How many of the students who went to university in 2016-17 were girls?
Please leave blank if not known

How many students from this school went to university in 2017-18?
Please leave blank if not known

How many of the students who went to university in 2017-18 were girls?
Please leave blank if not known

How many students from this school went to university in 2018-19?
Please leave blank if not known

How many of the students who went to university in 2018-19 were girls?
Please leave blank if not known

Interviewee information

Please give the first 2 letters of your first name and the first 2 letters of your surname
If interviewee does not wish to give their initials, please leave as default

XXXX

Headteacher questionnaire (5)

Are you male or female?

- ◯ Male
- ◯ Female

What is your age range? (Leave blank if he / she would prefer not to say)

- ◯ 25 or below
- ◯ 26-35
- ◯ 36-45
- ◯ 46 or more

How many years have you been teaching?
Please give the nearest whole number of years

_____

What is your role in the school?

- ◯ Head teacher
- ◯ Other

If other, please give your role in the school here

_____

How many years have you been working in your current role?
Please give nearest whole number of years in their current role

_____

Computer lab information

Does this school have a working computer lab?

- ◯ Yes
- ◯ No

If the school does not have a working computer lab, why not?

_____

Is the computer lab used for teaching other subjects as well as ICT?

- ◯ Yes
- ◯ No

Why isn't the computer lab used for teaching other subjects as well as ICT?

_____

Headteacher questionnaire (6)

On average how many hours per week is the computer lab used IN TOTAL by ANYONE during term time?

Please give approximate number of hours per week. This question is asking for the sum of all useage by teachers, students and community members, both inside and outside of formal lessons.

- ◯ 0-5 hours
- ◯ 6-10 hours
- ◯ 11-15 hours
- ◯ 16-20 hours
- ◯ 21-30 hours
- ◯ 31-40 hours
- ◯ 41-50 hours
- ◯ More than 50 hours

Why isn't the computer lab used more during term time?

Please explain any difficulties encountered in using the computer lab for more hours per week

Is the computer lab used by students / teachers after school?

This question is interested in any use of the computer lab in any context outside of formal MCSE lessons.

- ◯ Yes
- ◯ No

Are girls / women included in these sessions?

- ◯ Yes
- ◯ No

What percentage are girls / women?

Why don't girls / women use the computer lab out of hours?

Headteacher questionnaire (7)

What is the computer lab used for out of hours? Tick as many as apply.

- [ ] Doing assignments / homework
- [ ] Finding / searching for information using e-library
- [ ] Learning other subjects (ie not computer studies / ICT)
- [ ] Learning to code / programming
- [ ] Listening to music
- [ ] Playing games
- [ ] Practising computer skills
- [ ] Preparing lessons
- [ ] Printing documents
- [ ] Reading books / course notes
- [ ] Typing / word processing
- [ ] Watching movies
- [ ] Other

If other, please give details

_____

Is the computer lab used by any community members who are NOT students / teachers?

- ◯ Yes
- ◯ No

Please give details of who in the community are using the computer lab

_____

How many hours per week on average does the community use the computer lab?
Please give approximate number of hours per week

- ◯ 0-5 hours
- ◯ 6-10 hours
- ◯ 11-15 hours
- ◯ 16-20 hours
- ◯ 21-30 hours
- ◯ 31-40 hours
- ◯ 41-50 hours
- ◯ More than 50 hours

Headteacher questionnaire (8)

What is the computer lab used for by community members? Tick as many as apply.

- [ ] Doing assignments / homework
- [ ] Finding / searching for information using e-library
- [ ] Learning other subjects (ie not computer studies / ICT)
- [ ] Learning to code / programming
- [ ] Listening to music
- [ ] Playing games
- [ ] Practising computer skills
- [ ] Preparing lessons
- [ ] Printing documents
- [ ] Reading books / course notes
- [ ] Typing / word processing
- [ ] Watching movies
- [ ] Other

If other, please give details

Effect of ICT equipment in school

Please explain that the following section contains questions about the effect that the ICT equipment has had on the attitudes and performance of the teachers and students. The options for each are: significantly positive effect, slightly positive effect, no effect, slightly negative effect and significantly negative effect.

Has the ICT equipment affected the ability of teachers to deliver their curriculum?

- ◯ Significantly positive effect
- ◯ Slightly positive effect
- ◯ No effect
- ◯ Sightly negative effect
- ◯ Significantly negative effect

Has the ICT equipment affected the motivation of the teachers?

- ◯ Significantly positive effect
- ◯ Slightly positive effect
- ◯ No effect
- ◯ Sightly negative effect
- ◯ Significantly negative effect

Has the ICT equipment affected the ability of the students to learn the curriculum?

- ◯ Significantly positive effect
- ◯ Slightly positive effect
- ◯ No effect
- ◯ Sightly negative effect
- ◯ Significantly negative effect

Headteacher questionnaire (9)

Has the ICT equipment affected the motivation of the students?

- ◯ Significantly positive effect
- ◯ Slightly positive effect
- ◯ No effect
- ◯ Sightly negative effect
- ◯ Significantly negative effect

If any of the answers to the questions above were negative, please ask for more details to explain why the effect has been negative

Leave blank if not applicable

_____

What has been the most significant change in the school as a result of the ICT equipment?

_____

What further improvements in the ICT equipment, resources or training would you like to see?

_____

Do you have any other comments?

_____

Thank the interviewee for their time and explain that the results of the survey will help us to develop the IT resources we deliver to schools in Africa.

Appendix 2 - Teacher questionnaire used

NB: questions in lighter type are those dependent on skip logic, and so only appear if relevant according to previous responses. The names of interviewers have been removed.

Malawi Teacher Questionnaire 2019

Name of interviewer

- ◯
- ◯
- ◯
- ◯
- ◯
- ◯ Other

If other, please give your name

_____

School Information

What is the school code?

Please give the school code from the tracker

- ◯ K-4
- ◯ K-5
- ◯ K-20
- ◯ K-59
- ◯ S-6
- ◯ S-8
- ◯ S-10
- ◯ S-12
- ◯ S-13
- ◯ S-15
- ◯ S-18
- ◯ S-25
- ◯ S-36
- ◯ Other

If other, please give the school code

Please give the school code from the tracker, or other details to identify the school

_____

Teacher questionnaire (2)

Please add your location

Press record location, wait for your location to load and then press record location again

latitude (x.y °)

_____

longitude (x.y °)

_____

altitude (m)

_____

accuracy (m)

_____

Please take a photo of the school buildings, with school sign if possible

Click here to upload file. (< 5MB)

What district is the school in?

- ◯ Mzimba
- ◯ Mzimba North
- ◯ Mzuzu
- ◯ Other

If other, please give district here

_____

How would you describe the location of the school?

- ◯ Urban
- ◯ Rural
- ◯ Semi / peri-urban

What type of school is this?

- ◯ Community
- ◯ Government
- ◯ Grant-aided
- ◯ Private

Does this school have a working computer laboratory?

- ◯ Yes
- ◯ No

Why doesn't this school have a working computer laboratory?

_____

Teacher questionnaire (3)

Please explain to the interviewee that this is a short questionnaire we are conducting in order to assess the impact of CYD / The Turing Trust's work. This is very important for us to be able to continue and improve on the work we have already done. It will take less than 15 minutes of their time. All of the information they provide will be used only for the stated purpose by the team, will be stored anonymously and securely. Once all the data has been collected and analysed, we will share our findings with all schools who have participated in the survey and publish them in our annual report.

Please confirm that the interviewee understands the explanation above and consents to participating in this survey

- ◯ OK

Signature of interviewee

Interviewee can sign on the phone / tablet

Interviewee information

Please give the first 2 letters of your first name and the first 2 letters of your surname

If interviewee does not wish to give their initials, please leave as default

XXXX

Are you male or female?

- ◯ Male
- ◯ Female

What is your age range? (Leave blank if he / she would prefer not to say)

- ◯ 25 or below
- ◯ 26-35
- ◯ 36-45
- ◯ 46 or more

How many years have you been teaching?

Please give nearest whole number of years the interviewee has been teaching

Do you teach ICT?

- ◯ Yes
- ◯ No

Teacher questionnaire (4)

If you are not an ICT teacher, what is your role in the school?

_____

Do you hold any ICT qualifications?

- ◯ Yes
- ◯ No

What ICT qualifications do you hold?

_____

What subjects do you teach?

Please tick all that apply. Note there is a difference fo teaching computer studies for MCSE curriculum and exams or just teaching for general learning / computer literacy (not examined)

- ☐ Agriculture
- ☐ Bible Knowledge
- ☐ Biology
- ☐ Business studies
- ☐ Chemistry
- ☐ Chichewa
- ☐ Computer studies for MCSE exams
- ☐ Computer studies as an extra-curricular activity
- ☐ Craft, Design and Technology
- ☐ Creative Arts
- ☐ English
- ☐ Geography
- ☐ History
- ☐ Home Economics
- ☐ Life Skills Education
- ☐ Mathematics
- ☐ Performing Arts / Music and Dance
- ☐ Physical Education
- ☐ Physics
- ☐ Religious and Moral Education
- ☐ Social Studies

What is your average class size?

Please give the average number of students in the classes you teach

_____

Use of the computers for teaching

Do you sometimes teach lessons in the computer laboratory?

- ◯ Yes
- ◯ No

Teacher questionnaire (5)

Why don't you use the computer laboratory for teaching?

On average, how many lessons do you teach in the computer laboratory each week?

Why don't you teach more lessons in the computer laboratory?

On average, how long (in minutes) does a lesson in the computer laboratory last?

- Less than 30 minutes
- 30-45 minutes
- 46-60 minutes
- 61-75 minutes
- 76-90 minutes
- More than 90 minutes

What ICT equipment do you use to help you teach?

Please tick all that apply

- [ ] PCs
- [ ] Laptops
- [ ] Tablets
- [ ] Projector
- [ ] Printer
- [ ] None

Teacher questionnaire (6)

What subjects do you teach in the computer laboratory?

Please tick all that apply. Please note that this question is specifically about subjects that are being taught in the computer lab.

- [ ] Agriculture
- [ ] Bible Knowledge
- [ ] Biology
- [ ] Business studies
- [ ] Chemistry
- [ ] Chichewa
- [ ] Computer studies for MCSE exams
- [ ] Computer studies as an extra-curricular activity
- [ ] Craft, Design and Technology
- [ ] Creative Arts
- [ ] English
- [ ] Geography
- [ ] History
- [ ] Home Economics
- [ ] Life Skills Education
- [ ] Mathematics
- [ ] Performing Arts / Music and Dance
- [ ] Physical Education
- [ ] Physics
- [ ] Religious and Moral Education
- [ ] Social Studies

Have you used the e-library / educational software on the computers?

- ◯ Yes
- ◯ No

Why haven't you used the e-library / educational software on the computers?

_____

How often do you use the e-library?

Please give the closest answer (daily would be most days, weekly would be 1-2x per week, monthly would be 1-2x per month)

- ◯ Daily
- ◯ Weekly
- ◯ Monthly
- ◯ Less than once a month

What resource in the e-library do you use the most?

_____

On average, how many students share a computer?

_____

Teacher questionnaire (7)

On average how many hours per week is the computer lab used IN TOTAL by ANYONE during term time?

Please give approximate number of hours per week. This question is asking for the sum of all usage by teachers, students and community members, both inside and outside of formal lessons.

- ◯ 0-5 hours
- ◯ 6-10 hours
- ◯ 11-15 hours
- ◯ 16-20 hours
- ◯ 21-30 hours
- ◯ 31-40 hours
- ◯ 41-50 hours
- ◯ More than 50 hours

Why isn't the computer lab used more during term time?

_____

Use of computers out of school hours

Is the computer lab used by students / teachers after school?

This question is interested in any use of the computer lab in any context outside of formal MCSE lessons.

- ◯ Yes
- ◯ No
- ◯ Don't know

On average, how many days per week do the students / teachers have access to the computers out of school hours?

_____

On average, how many hours per day do the students / teachers have access to the computers out of school hours?

_____

Are girls / women included in these sessions?

- ◯ Yes
- ◯ No

What percentage are girls / women?

_____

Why don't girls / women use the computer lab out of hours?

_____

Teacher questionnaire (8)

What is the computer lab used for out of hours? Tick as many as apply.

- [ ] Doing assignments / homework
- [ ] Finding / searching for information using e-library
- [ ] Learning other subjects (ie not computer studies / ICT)
- [ ] Learning to code / programming
- [ ] Listening to music
- [ ] Playing games
- [ ] Practising computer skills
- [ ] Preparing lessons
- [ ] Printing documents
- [ ] Reading books / course notes
- [ ] Typing / word processing
- [ ] Watching movies
- [ ] Other

If other, please give details

_____

Is the computer lab used by any community members who are NOT students / teachers?

- ◯ Yes
- ◯ No

Please give details of who in the community uses the computer lab

This question is not asking for names, but is interested in what types of people in the community are making use of the computers, and in particular whether this includes women

_____

On average how many hours per week is the computer lab used by members of the community?

Please give approximate number of hours per week. This question is asking about usage by community members who are NOT students or teachers at the school.

- ◯ 0-5 hours
- ◯ 6-10 hours
- ◯ 11-15 hours
- ◯ 16-20 hours
- ◯ 21-30 hours
- ◯ 31-40 hours
- ◯ 41-50 hours
- ◯ More than 50 hours

Teacher questionnaire (9)

What is the computer lab used for by members of the community out of hours? Tick as many as apply.

- [ ] Doing assignments / homework
- [ ] Finding / searching for information using e-library
- [ ] Learning other subjects (ie not computer studies / ICT)
- [ ] Learning to code / programming
- [ ] Listening to music
- [ ] Playing games
- [ ] Practising computer skills
- [ ] Preparing lessons
- [ ] Printing documents
- [ ] Reading books / course notes
- [ ] Typing / word processing
- [ ] Watching movies
- [ ] Other

If other, please give details

Training and experience

Have you had any training in the maintenance and repair of computers?
Please tick as many as apply

- [ ] Yes, when the computers were installed
- [ ] Yes, I attended a CYD training course
- [ ] Yes, I attended another training course
- [ ] Yes, during my education / teacher training
- [ ] No

Have you had any training in networking computers?
Please tick as many as apply

- [ ] Yes, when the computers were installed
- [ ] Yes, I attended a CYD training course
- [ ] Yes, I attended another training course
- [ ] Yes, during my education / teacher training
- [ ] No

Which operating systems do you have experience of using?
Please tick as many as apply

- [ ] Windows
- [ ] Mac OS
- [ ] Linux
- [ ] Ubuntu

Teacher questionnaire (10)

Have you had any training in using computers to help teach your lessons?

Please tick as many as apply

- ☐ Yes, when the computers were installed
- ☐ Yes, I attended a CYD training course
- ☐ Yes, I attended another training course
- ☐ Yes, internal training in this school
- ☐ Yes, during my education / teacher training
- ☐ No

Satisfaction

Please explain to the interviewee that the following section contains statements that they will either strongly agree, agree, agree nor disagree, disagree, or strongly disagree with. If a teacher does not have any experience of using the ICT equipment in the school, use not applicable.

The ICT equipment and software have been easy to use.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neither Agree nor Disagree
- ◯ Disagree
- ◯ Strongly disagree
- ◯ Not applicable

The computer laboratory makes my job as a teacher easier.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neither Agree nor Disagree
- ◯ Disagree
- ◯ Strongly disagree
- ◯ Not applicable

Using the computer laboratory has made it easier to deliver the curriculum

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neither Agree nor Disagree
- ◯ Disagree
- ◯ Strongly disagree
- ◯ Not applicable

Teacher questionnaire (11)

Using the computer laboratory has had a positive effect on the enthusiasm and motivation of the students.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neither Agree nor Disagree
- ◯ Disagree
- ◯ Strongly disagree
- ◯ Not applicable

Using the computer laboratory has had a positive effect on the literacy and numeracy levels of the students.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neither Agree nor Disagree
- ◯ Disagree
- ◯ Strongly disagree
- ◯ Not applicable

Using the computer laboratory has had a positive effect on the ICT skills of the students.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neither Agree nor Disagree
- ◯ Disagree
- ◯ Strongly disagree
- ◯ Not applicable

Using the computer laboratory has enhanced the students' overall academic performance.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neither Agree nor Disagree
- ◯ Disagree
- ◯ Strongly disagree
- ◯ Not applicable

If the interviewee disagreed with any of the statements above, please ask for more details about their answer to explain why they said that.

If the interviewee did not disagree with any of the statements, please leave this question blank.

_____

Maintenance

Teacher questionnaire (12)

The PCs have been reliable.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neither Agree nor Disagree
- ◯ Disagree
- ◯ Strongly disagree
- ◯ Not applicable

The PCs are easy to maintain.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neither Agree nor Disagree
- ◯ Disagree
- ◯ Strongly disagree
- ◯ Not applicable

If the interviewee disagreed with any of the statements above, please ask for more details about their answer to explain why they said that.

If the interviewee did not disagree with any of the statements, please leave this question blank.

Comments

Has anything changed in the way that you teach the students since the set up of the computer laboratory?

- ◯ Yes
- ◯ No

What has changed?

What are the main challenges you have encountered to integrating ICT into the classroom?

What further improvements in the ICT equipment, resources or training would you like to see?

Do you have any other comments?

Thank the interviewee for their time and explain that the results of the survey will help us to develop the IT resources we deliver to schools in Africa.

Appendix 3 - Student questionnaire used

NB: questions in lighter type are those dependent on skip logic, and so only appear if relevant according to previous responses. The names of interviewers have been removed.

Malawi Student Questionnaire 2019

Interviewer

- ◯
- ◯
- ◯
- ◯
- ◯
- ◯ Other

If other, please give your name

_____

School information

What is the school code?

- ◯ K-4
- ◯ K-5
- ◯ K-20
- ◯ K-59
- ◯ S-6
- ◯ S-8
- ◯ S-10
- ◯ S-12
- ◯ S-13
- ◯ S-15
- ◯ S-18
- ◯ S-25
- ◯ S-36
- ◯ Other

If other, please give the school code

Please give the school code from the tracker, or other details to identify the school

_____

What district is the school in?

- ◯ Mzimba
- ◯ Mzimba North
- ◯ Mzuzu
- ◯ Other

If other, please give district here

_____

Student questionnaire (2)

Describe the location of the school

- ◯ Urban
- ◯ Rural
- ◯ Semi / peri-urban

Is this a day school or a boarding school?

- ◯ Day school
- ◯ Boarding school

Does this school have a working computer laboratory?

If computer lab being set up on this visit, please answer no

- ◯ Yes
- ◯ No

Please explain to the interviewee that this is a short questionnaire we are conducting in order to assess the impact of CYD / The Turing Trust's work. This is very important for us to be able to continue and improve on the work we have already done. It will take less than 15 minutes of their time. All of the information they provide will be used only for the stated purpose by the team and will be stored anonymously and securely. Once all the data has been collected and analysed, we will share our findings with all schools who have participated in the survey and publish them in our annual report.

Please confirm that the interviewee understands the explanation above and consents to participating in this survey

- ◯ OK

Signature of interviewee

Interviewee can sign on the phone / tablet

Student information

Student code - please give the first 2 letters of the student's first name and then the first 2 letters of the student's surname

If student does not want to give their initials, please leave default

XXXX

What is your age?

Please record the student's current age in years

Student questionnaire (3)

Are you male or female?

- ◯ Male
- ◯ Female

What form are you in?

- ◯ Form 1
- ◯ Form 2
- ◯ Form 3
- ◯ Form 4

Are you a day pupil or a boarder?

- ◯ Day pupil
- ◯ Boarder

ICT information

Have you used a computer in any of the places listed below in the last month? (please tick all that apply)

- ☐ Home
- ☐ School
- ☐ Internet cafe
- ☐ Other

If other, please give details of where you access a computer

_____

Is computer studies one of your chosen subjects in your MCSE exams?

- ◯ Yes
- ◯ No

Do you have an Information and Communications Technology (ICT) / Computer Studies class?

- ◯ Yes
- ◯ No

Why aren't you doing computer studies as one of your MCSE exams?

_____

Do you use computers during the ICT / Computer Studies class?

- ◯ Always
- ◯ Often
- ◯ Occasionally
- ◯ Rarely
- ◯ Never

Student questionnaire (4)

How many times per week do you have ICT / Computer Studies class?

- ◯ Once per week
- ◯ 2-3 times per week
- ◯ 4-5 times per week
- ◯ More than 5 times per week

On average, how long in minutes does the ICT / Computer Studies class last?

- ◯ Less than 30 minutes
- ◯ 30-45 minutes
- ◯ 46-60 minutes
- ◯ 61-75 minutes
- ◯ 76-90 minutes
- ◯ More than 90 minutes

Do you use the computers during classes other than the ICT / Computer Studies class?

- ◯ Yes
- ◯ No

How many times per week do you use computers in other classes?

- ◯ Once
- ◯ 2-3 times per week
- ◯ 4-5 times per week
- ◯ More than 5 times per week

Student questionnaire (5)

What subjects do you use the computers for apart from ICT / Computer Studies?

Please tick all that apply

- [ ] Agriculture
- [ ] Bible Knowledge
- [ ] Biology
- [ ] Business studies
- [ ] Chemistry
- [ ] Chichewa
- [ ] Craft, Design and Technology
- [ ] Creative Arts
- [ ] English
- [ ] Geography
- [ ] History
- [ ] Home Economics
- [ ] Life Skills
- [ ] Mathematics
- [ ] Performing Arts / Music and Dance
- [ ] Physical Education
- [ ] Physics
- [ ] Religious and Moral Education
- [ ] Social Studies
- [ ] Other

On average, how many students usually share a computer?

_____

Have you used the computer laboratory out of school hours?

For example as an intranet (local access to information) cafe, or to see a movie

- ◯ Yes
- ◯ No

On average, how many days per week do you use the computer laboratory out of school hours?

_____

On average, how many hours per day do you use the computer laboratory out of school hours?

_____

Student questionnaire (6)

What have you used the computer laboratory for when out of school hours?
Tick as many as apply

- [ ] Doing assignments / homework
- [ ] Finding / searching for information using e-library
- [ ] Learning other subjects (ie not computer studies / ICT)
- [ ] Learning to code / programming
- [ ] Listening to music
- [ ] Playing games
- [ ] Practising computer skills
- [ ] Printing documents
- [ ] Reading books / course notes
- [ ] Typing / word processing
- [ ] Watching movies
- [ ] Other (please specify)

What else have you used the computer laboratory for out of school hours?

_____

Are you able to use the computers as often as you would like?

- ◯ Yes
- ◯ No

If you are not able to use the computers as often as you would like, please give reasons
Please tick all that apply

- [ ] There are not enough computers
- [ ] The computers are not always working
- [ ] There isn't always electricity
- [ ] The computer laboratory is never open out of school hours
- [ ] The computer laboratory is not open for long enough out of school hours
- [ ] I don't have free time to use the computers out of school hours
- [ ] Other (please specify)

What other reasons are there that prevent you from using the computers as often as you would like?

_____

Internet access

Do you ever access the internet?

- ◯ Yes
- ◯ No

Student questionnaire (7)

Where do you access the internet?

- [ ] At home
- [ ] At school
- [ ] At an internet café
- [ ] On a phone
- [ ] Other

Where else / how else do you access the internet?

_____

Student attitudes

Please explain to the interviewee that the following section contains statements that they will either strongly agree, agree, neither agree nor disagree, disagree or strongly disagree with. If a student doesn't have any experience of using the computer laboratory, please use not applicable.

Using a computer in school makes learning more enjoyable.

- ◯ Strongly agree
- ◯ Agree
- ◯ Neither agree nor disagree
- ◯ Disagree
- ◯ Strongly disagree
- ◯ Not applicable

Using a computer in school makes learning easier.

- ◯ Strongly agree
- ◯ Agree
- ◯ Neither agree nor disagree
- ◯ Disagree
- ◯ Strongly disagree
- ◯ Not applicable

Using a computer in school makes learning Maths easier.

- ◯ Strongly agree
- ◯ Agree
- ◯ Neither agree nor disagree
- ◯ Disagree
- ◯ Strongly disagree
- ◯ Not applicable

Student questionnaire (8)

Using a computer in school makes learning English easier.

- ○ Strongly agree
- ○ Agree
- ○ Neither agree nor disagree
- ○ Disagree
- ○ Strongly disagree
- ○ Not applicable

Using a computer in school makes learning Science easier.

- ○ Strongly agree
- ○ Agree
- ○ Disagree
- ○ Neither agree nor disagree
- ○ Strongly disagree
- ○ Not applicable

Using a computer in school makes learning ICT easier.

- ○ Strongly agree
- ○ Agree
- ○ Neither agree nor disagree
- ○ Disagree
- ○ Strongly disagree
- ○ Not applicable

Using a computer in school improves my academic performance at school.

- ○ Strongly agree
- ○ Agree
- ○ Neither agree nor disagree
- ○ Disagree
- ○ Strongly disagree
- ○ Not applicable

If the interviewee disagreed of strongly disagreed with any of the statements above, please ask for more details about their answer to explain why they said that.

_____

Student plans

Do you plan to study at university?

- ○ Yes
- ○ Maybe
- ○ No

What subject would you like to study after school?

_____

Student questionnaire (9)

What type of job / career do you plan to do?

Do you have any other comments about the use of computers or about this survey?

None

Thank the interviewee for their time and explain that the results of the survey will help us to develop the IT resources we deliver to schools in Africa.

Recent computer lab installation at Kaseye Girls' Secondary School, Chitipa District, Northern Malawi