African Digital Schools Initiative (ADSI) - Tanzania
Monitoring Evaluation Research and Learning (MERL)

Learning Note #1 2019

Cycle 1: Technology Literacy Teacher Feedback - Tanzania

1.0 Background

The Global e-Schools and Communities Initiative (GESCI) has worked since 2005 to provide capacity building, technical and strategic advice to countries seeking to harness the potential of ICTs in order to increase access to and improve the quality and effectiveness of education. GESCI in partnership with the MasterCard Foundation and the Ministries of Education of Kenya, Tanzania and Côtè d'Ivoire embarked on a five-year African Digital Schools Initiative (ADSI) (2016-2020) - a comprehensive multi-country multi-year programme to implement an effective, sustainable and replicable model of digital whole-school development in secondary education that will lead to improved student 21st century skills development, learning outcomes and readiness for the knowledge economy workplace.

The ADSI model represents a portfolio system wide ICT innovation elements that can address policy – coherence needs for ICT integration in teaching and learning inclusive of: a blended learning teacher development approach, whole school involvement, School leadership capacity building, converging technologies of e and m learning, development of open resources, an online repository of materials, digital school awards, accreditation and certification to incentivize ICT integration and progression, policy dialogues to raise awareness and to influence new policy formulation and institutionalization of new/good practice.

In Tanzania, ADSI covers 40 schools (20 in each of the two regions of Pwani and Morogoro) 40 secondary school principals, 400 teachers, 40 Boards of Management chairpersons and 40 Parents' Association chairpersons.

1.1 Teacher ICT Competency Framework

There are three phases of this Framework – the Technology Literacy (TL) Cycle, the Knowledge Creation (KC) Cycle and the Knowledge Deepening (KD) Cycle, each of which has two modules. The original framework had three modules but as result of the customization of the modules, it was agreed with government that only two would be sufficient.

Each module is blended learning intervention which has a 40:60 ratio of online to face to face for a teacher. This includes 17 hours face to face and 24 hours online per teacher plus 2 hours per lesson preparation.It is a standard practice that at the end of each module, teachers provide feedback through a teacher survey. The feedback is used to support internal learning and improvement.

Teachers from one of the schools in Morogoro , Tanzania after award of Technology Literacy Cycle Certificates.

2.0 Content of Modules

Module 1 of the TL Cycle focused on the following aspects;

- Introduction to ICT integration
- Use of OERs
- TPACK and didactive methods
- How to incorporate technology in teaching.
- How to access and chat in the online platform.
- Lesson design, lesson plan, use of power point presentation
- Use of students' worksheet.

Module 2 of the TL Cycle covered on the following aspects;

- Use of simulation
- Teaching and collaboration techniques
- Technology and content knowledge in stem T/L
- Organization and management of the classroom
- Questioning Techniques
- Usefulness of content on the module

2.1 Methodology

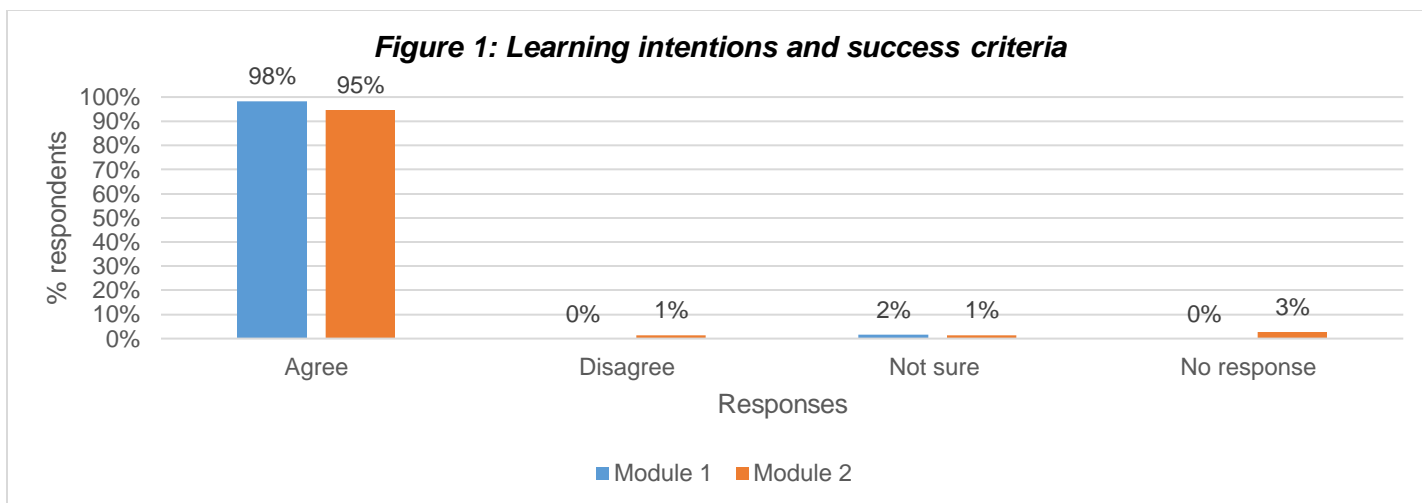Teachers were asked to provide their feedback on the modules on the following aspects:

- The level of ease of undetrstanding and comprehension of the modules.
- The usefulness of the modules
- Challenges encountered in the modules
- Suggestions for improvement of the project and future trainings

In this learning note, we look at the feedback from teachers two modules of the Technology Literacy cycle and where possible, we try to compare the feedback for similar aspects relating to module 1 and 2.
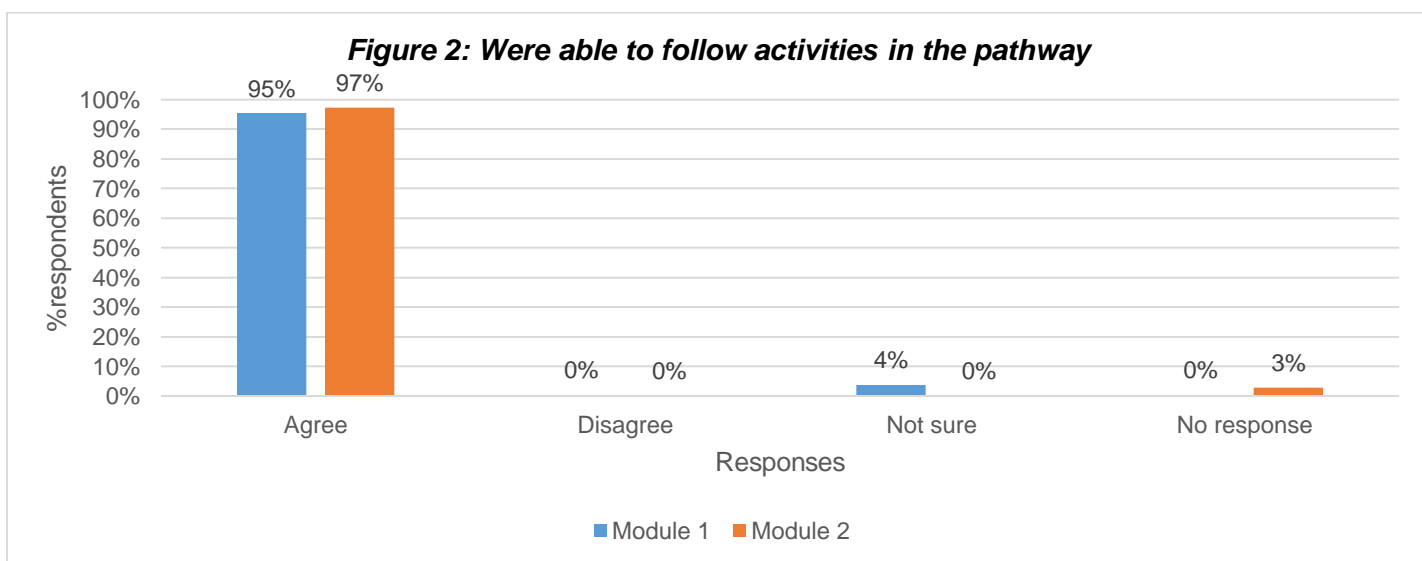
3.0 Summary of the findings

Finding 1: Almost all the teachers felt the learning intentions and success criteria gave them a good introduction of the module.

First, the teachers were asked to state whether or not the learning intentions and success criteria in the modules introduction gave them a good idea of what to expect on the modules. Across the two modules, almost all the teachers (98% in module 1 and 95% in module 2) responded in the affirmative. However, there were 5% in modlule 2 who either disagreed, were not sure or refused to respond.

Figure 1: Learning intentions and success criteria

Figure 1: Learning intentions and success criteria (bar chart showing % respondents by Responses — Agree, Disagree, Not sure, No response — for Module 1 and Module 2)

- Agree: Module 1 98%, Module 2 95%
- Disagree: Module 1 0%, Module 2 1%
- Not sure: Module 1 2%, Module 2 1%
- No response: Module 1 0%, Module 2 3%

Finding 2: The modules learning pathways were easy to follow.

The survey then checked the teachers perceptions on how easy it was to follow the learning pathways of the modules. Majority of the teachers said they were able to follow the activities in the learning pathway as suggested in the modules with module 2 (97%) having a higher number compared to module 1(95%).

Figure 2: Were able to follow activities in the pathway

Figure 2: Were able to follow activities in the pathway (bar chart showing % respondents by Responses — Agree, Disagree, Not sure, No response — for Module 1 and Module 2)

- Agree: Module 1 95%, Module 2 97%
- Disagree: Module 1 0%, Module 2 0%
- Not sure: Module 1 4%, Module 2 0%
- No response: Module 1 0%, Module 2 3%

Finding 3: The modules activities and portfolio task were easy to follow

Similarly, the teachers were also asked to comment on whether they were able to follow the activities and portfolio tasks in the modules. Majority of the teachers (95% in module 1 and 92% in module 2) said they were able to follow the activities and portfolio tasks in the modules. However, in both modules 4% and 5% for module 1 and module 2 respectively of teachers said they were not sure if they are able to follow the activities and portfolio.

Figure 3: Were able to follow activities and portfolio tasks
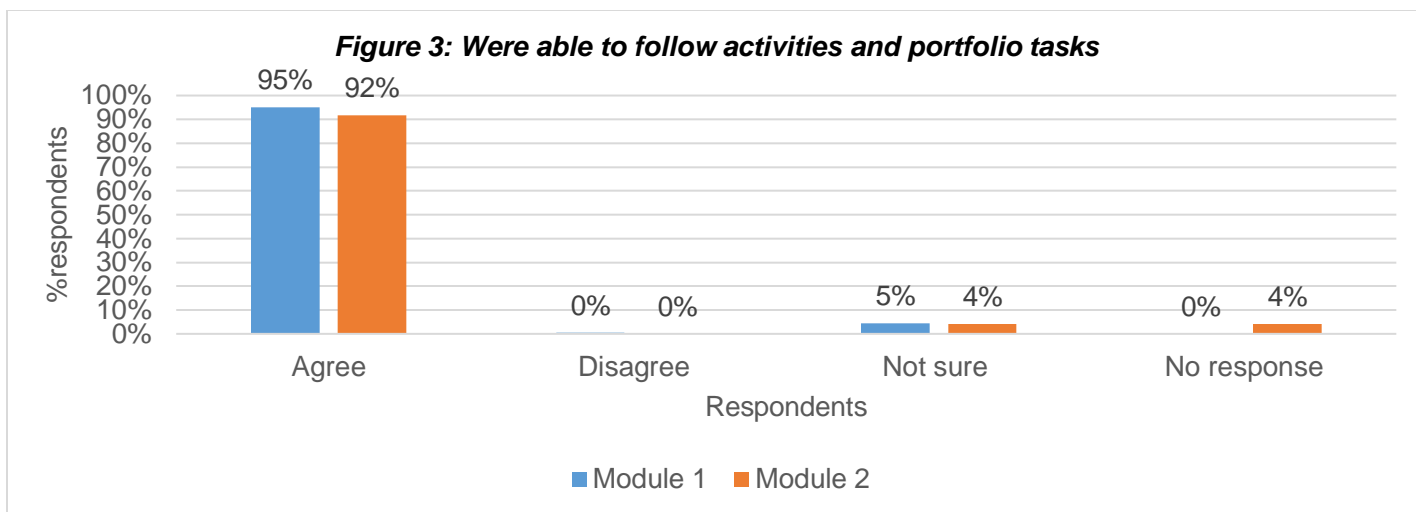
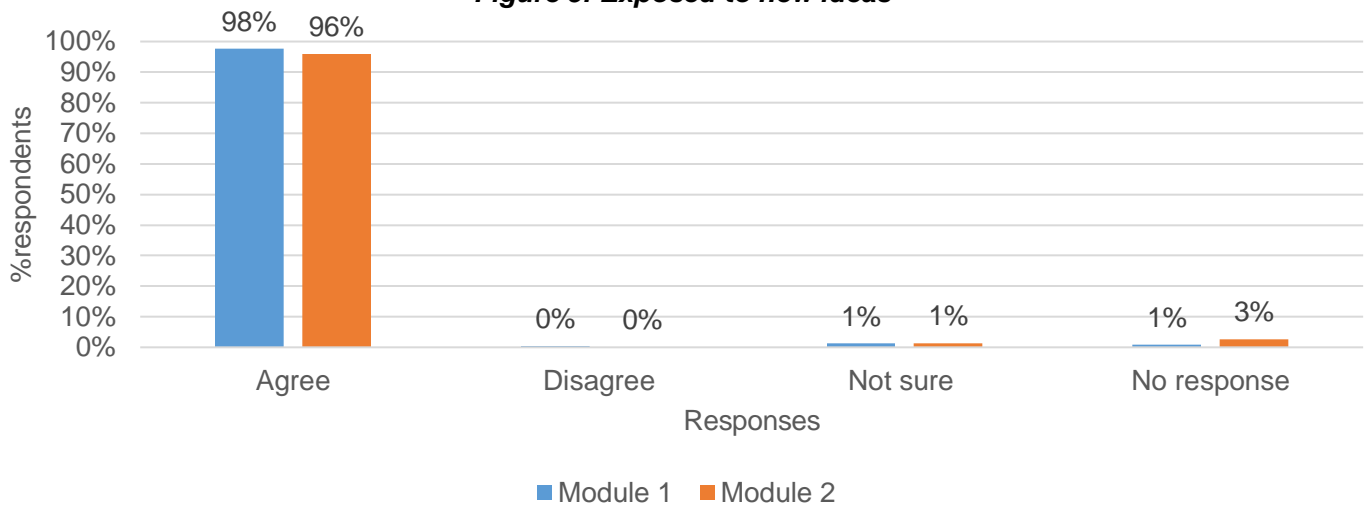**Finding 4: Most of the resources in the modules were usefull**

The survey also checked techers' perceptions on the usefulness of the resources and examples used in the modules and how usefull they were for lesson planning and teaching. Across the two modules, majority of the teachers (99% in module 1 and 97% in module 2) said they found the examples and resources usefull for their lesson planning and teaching. In module 1, the teachers particularly found lesson plans examples and teacher PowerPoint resources to be helpful in developing their own lesson plans and teacher resources. In module 2, the teachers particularly found examples of lesson plans and teacher simulation resources to be helpful in developing their own lesson plans and simulation resources.

Figure 4: Usefullness of resources and examples
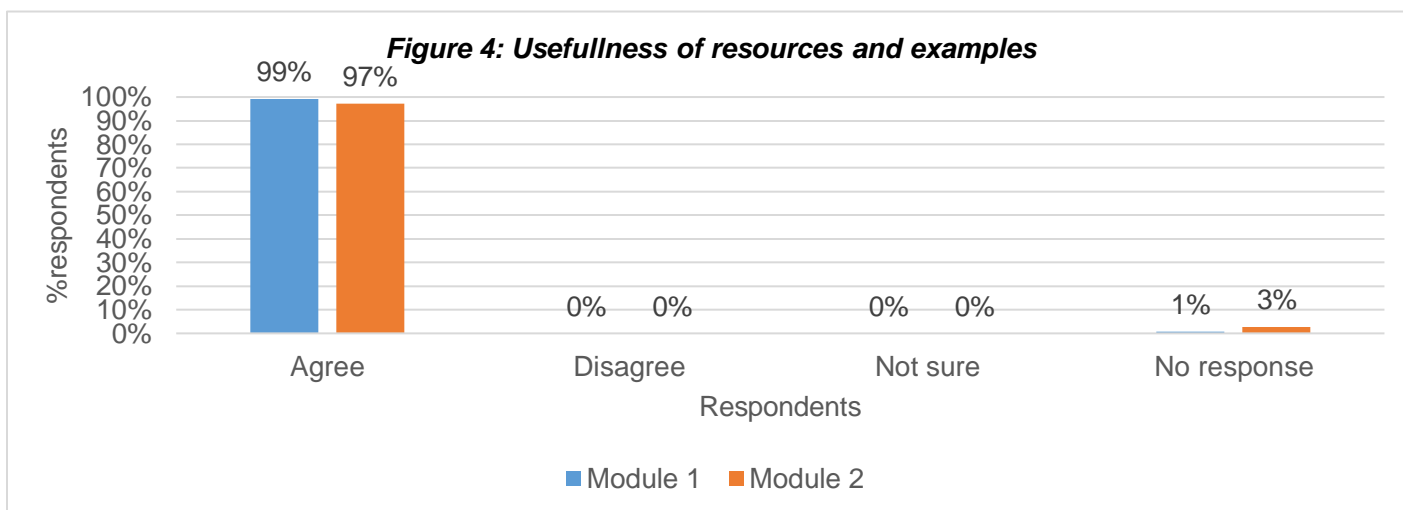
Finding 5: Majority of the teachers felt they gained new ideas through the interactions in the modules.

Teachers were also asked whether or not they felt they were exposed to new ideas in the course of the modules. Almost all the teachers (98% in module 1 and 96% in module 2) were positive that they had been exposed to some new ideas through their participation in the discussion forums and chats. In particular, during module 2 the teachers said they had been exposed to some new ideas about 'simulation' and 'collaboration' through participation in the discussion forum and chats.
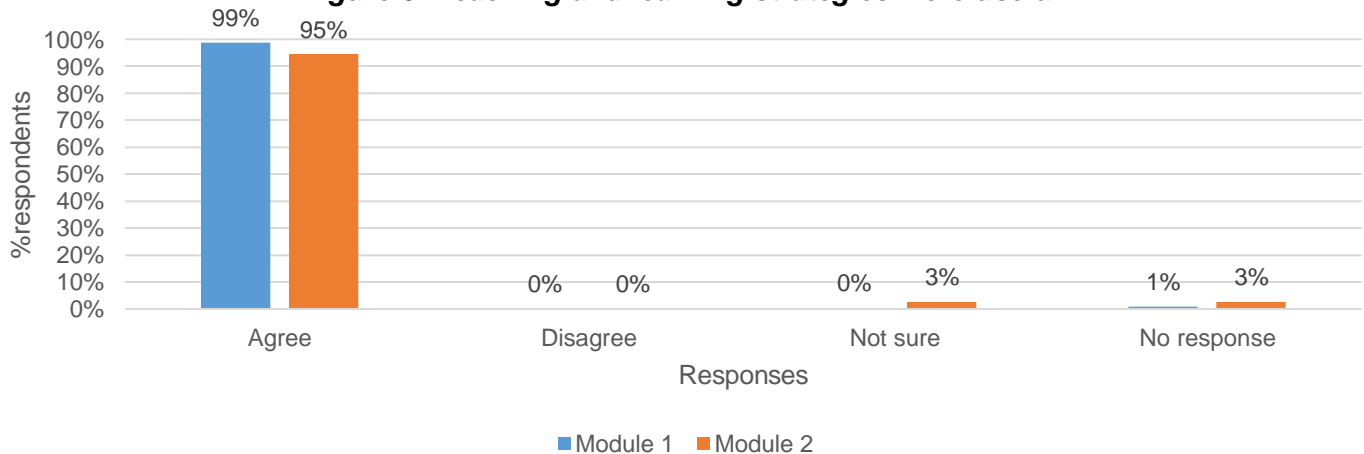
Figure 5: Exposed to new ideas

Responses	Module 1	Module 2
Agree	98%	96%
Disagree	0%	0%
Not sure	1%	1%
No response	1%	3%

%respondents

■ Module 1 ■ Module 2

Finding 6: The teaching and learing strategies presented were usefull.

Teachers views on the usefulness of the teaching strategies covered in the modules were also gathered. Across the two modules, most teachers (99% in module 1 and 95% in module 2) reported that they found the teaching and learning strategies presented in the modules usefull. For module 1, the strategies on interactive learning, questioning techniques and differentiating tasks for different learning styles were found to be useful for applying in the classroom lessons. For module 2, the teaching and learning strategies presented in the module on 'simulation' software tool, on 'poll vote' for the best simulation lesson, on 'collaborative' learning and group work, on 'creating student worksheets for simulation activities', on doing a 'quiz' on simulation to be useful for applying in the classroom lessons.

Figure 6: Teaching and learning strategies were useful

Responses	Module 1	Module 2
Agree	99%	95%
Disagree	0%	0%
Not sure	0%	3%
No response	1%	3%

%respondents

■ Module 1 ■ Module 2

Finding 7: The technology tools were considered highly relevant

The survey also gathered teachers views on whether they think the technology tools namely; presentation (Module 1) and simulations (Module 2) were relevant. Most of the teachers affirmed that they found the technology tools relevant for their work. For module 1, the teachers particularly found the technology tools introduced in the module (on 'voting for the best presentation lesson', 'finding open education resources', 'creating presentations', doing a 'quiz') to be relevant for supporting the teaching of concepts in their subject. For module 2, teachers found the technology tools introduced in the module ('poll vote', 'simulations', 'creating student worksheets', doing a 'quiz') to be relevant for supporting the teaching of concepts in their subject area.

Figure 7: Technology tools relevant
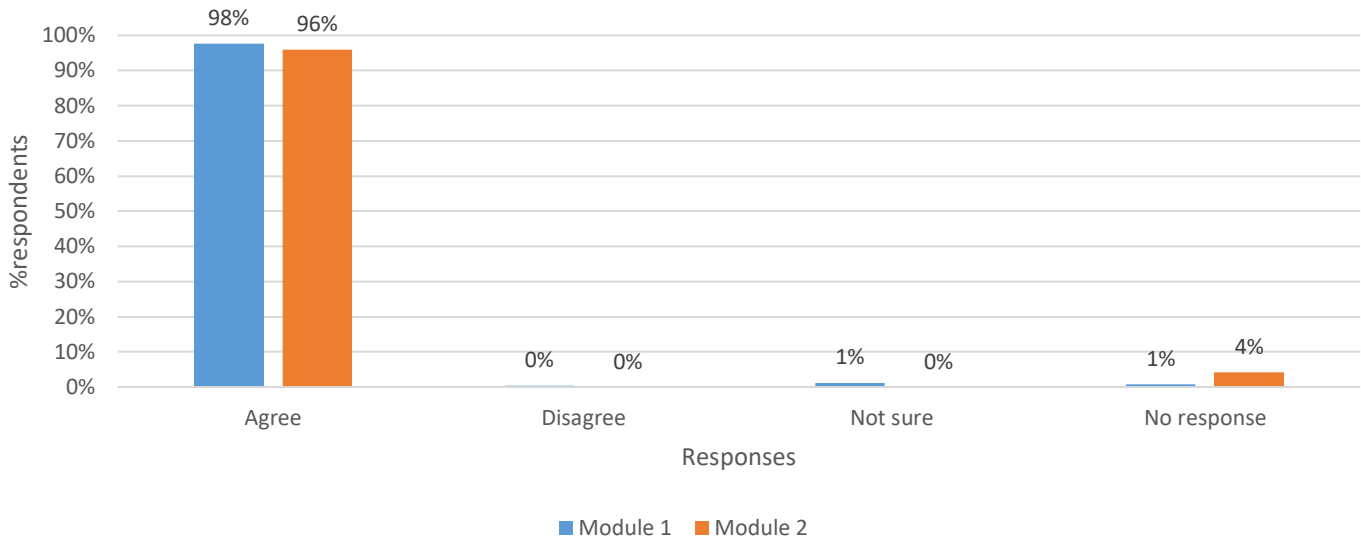
Finding 8: About 60% of the teachers felt the materials were of the right quantity

The survey also asked the teachers what they thought about the quantity of the materials covered in the two modules. 28% and 23% for module 1 and 2 respectvely felt that the materilas were too much, 62% and 61% for module 1 and 2 respoectively said they don't think the materials were overwhelming,too much, or too long and difficult to integrate into my classroom practice.


Figure 8: Materials were overwhelming
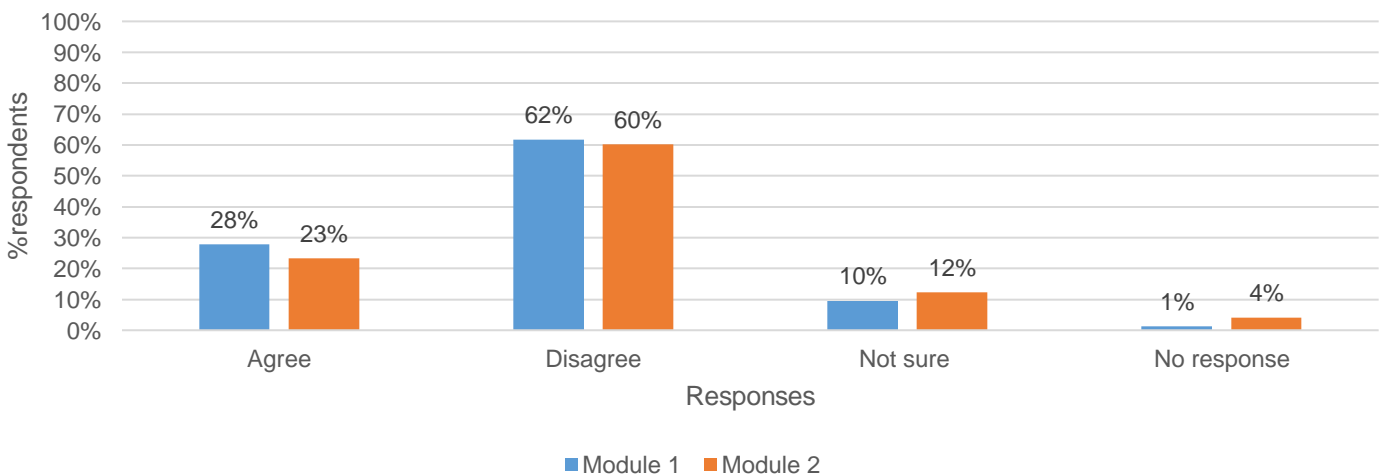
Finding 9: Teachers were well supported dutring the two modules.

The teachers were then asked to gauge the level of support they had received during the modules. Most of the teachers (91% in module 1 and 95% in module 2) indicated that they they had felt sufficiently supported across the two modules especially by the school-based coordinator and their colleague teachers on the ADSI course in their schools.

Figure 9: Those who felt well supported
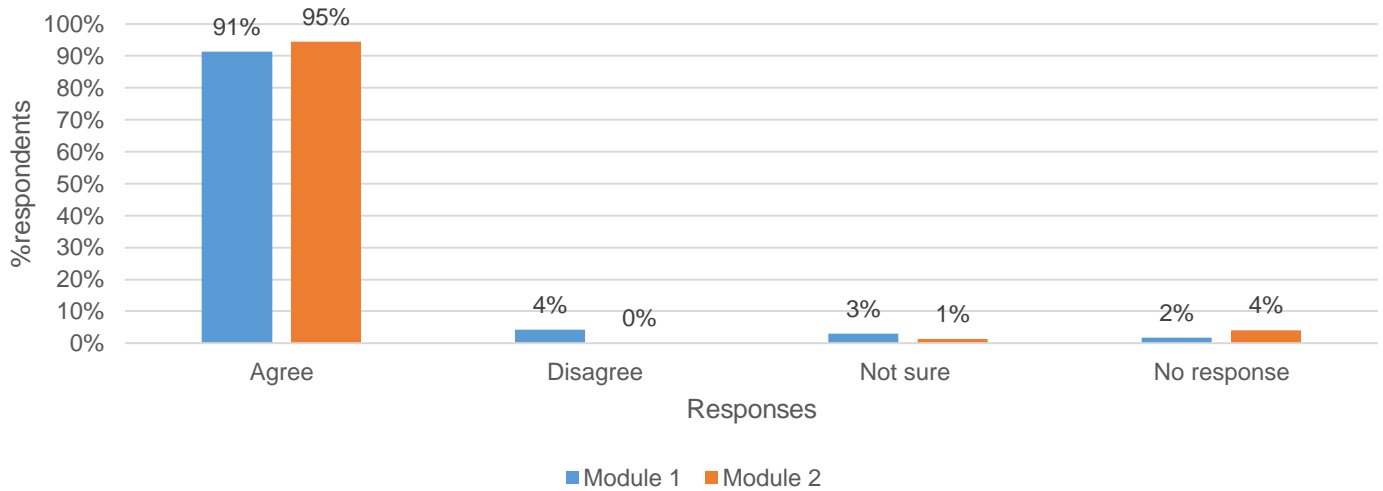
Finding 10: Most teachers were well supported by online tutor.

Similarly, the teachers were asked to gauge the level of support they had received from the online tutors. On this aspect again, their was high level of approval with most of the teachers (85% in moduel 1 and 81% in module 2) felt that the online tutor for their groups had supported them well throughout the duration of the modules.
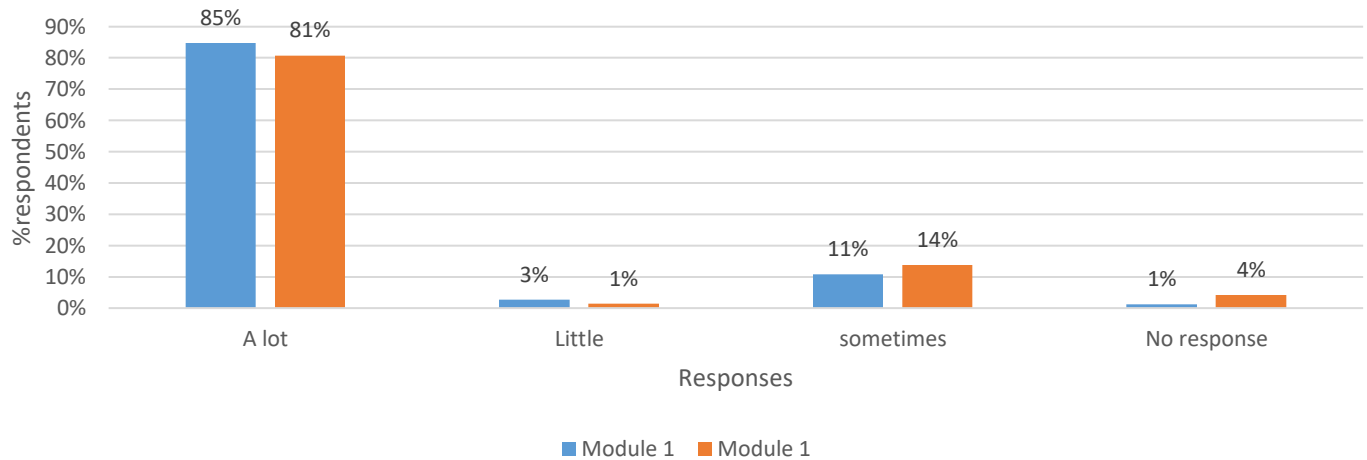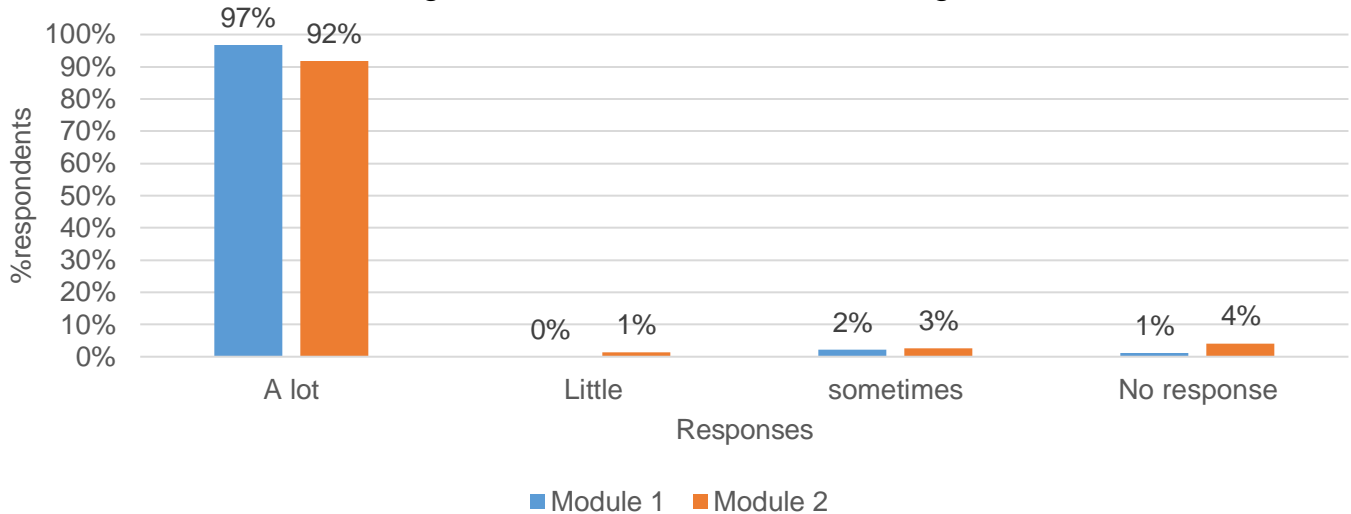

Figure 10: Well supported by online tutor

Figure 11: The TPACK of the modules considered usefull in teachers

The teachers were also asked to state whether they found the Technology Pedagogy and Content Knowledge (TPACK) elements covered in the modules usefull. Most of the teachers responded in the affirmative and said they believed that the TPACK elements in module 1 and 2 was useful for supporting the teaching of content in their subject areas.
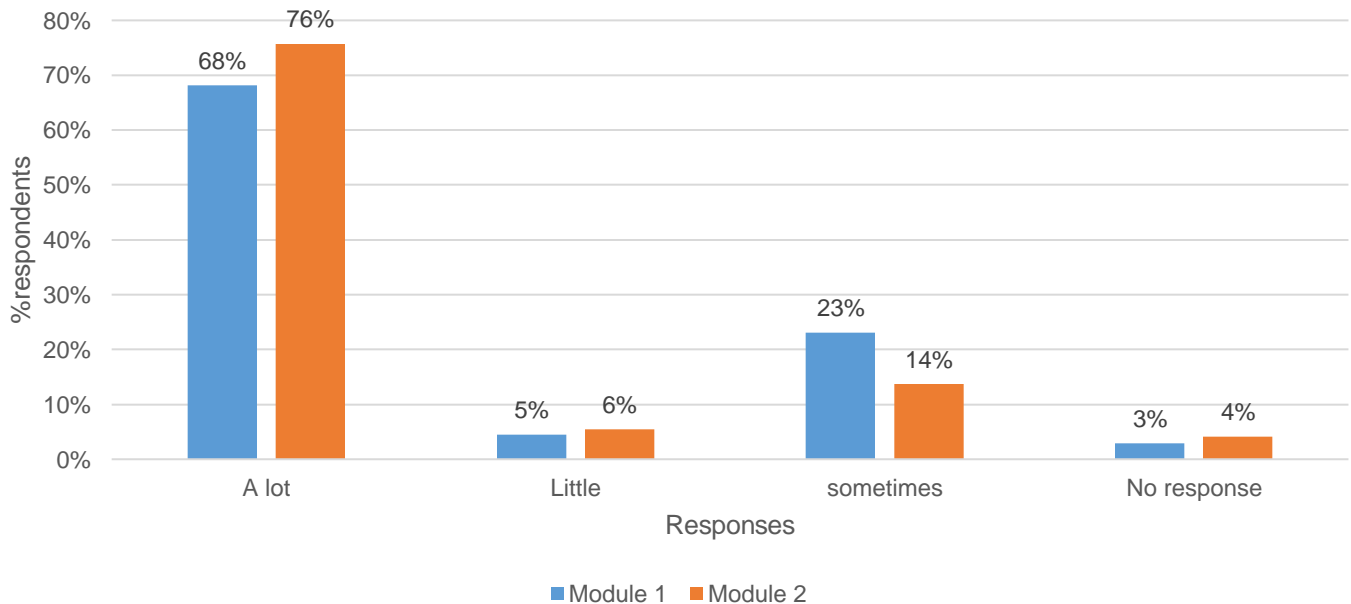
Figure 11: TPACK was usefull in teaching

Chart showing %respondents for Module 1 and Module 2 across responses:
- A lot: Module 1 97%, Module 2 92%
- Little: Module 1 0%, Module 2 1%
- sometimes: Module 1 2%, Module 2 3%
- No response: Module 1 1%, Module 2 4%

X-axis: Responses
Y-axis: %respondents
Legend: Module 1, Module 2

Finding 12: ADSI helpdesk considered usefull

The survey then checked the level of support and usefulness of the ADSI help desk to the ADSI teachers. Majority of the teachers said, they had received a lot of support from the ADSI helpdesk and that the assistance was timely whenever requitred. However, on average abou 4% and 5% of the teachers in moduel one and two respectively either said the help was not usefull or refused to answer.

Figure 12: Usefullness of ADSI help desk

Chart showing %respondents for Module 1 and Module 2 across responses:
- A lot: Module 1 68%, Module 2 76%
- Little: Module 1 5%, Module 2 6%
- sometimes: Module 1 23%, Module 2 14%
- No response: Module 1 3%, Module 2 4%

X-axis: Responses
Y-axis: %respondents
Legend: Module 1, Module 2

Findings 13: There was sufficient technical support with regards to the moodle platforms

Teachers were also asked to state the level of support they had revevied in as far as accessing the moodle patform was concerned. Majority (89% in module 1 and 2) returned a positive response with about 11% saying they we either disagreeing, saying they were not sure or refusing to answer.

Figure 13: Able to access materials on moodle
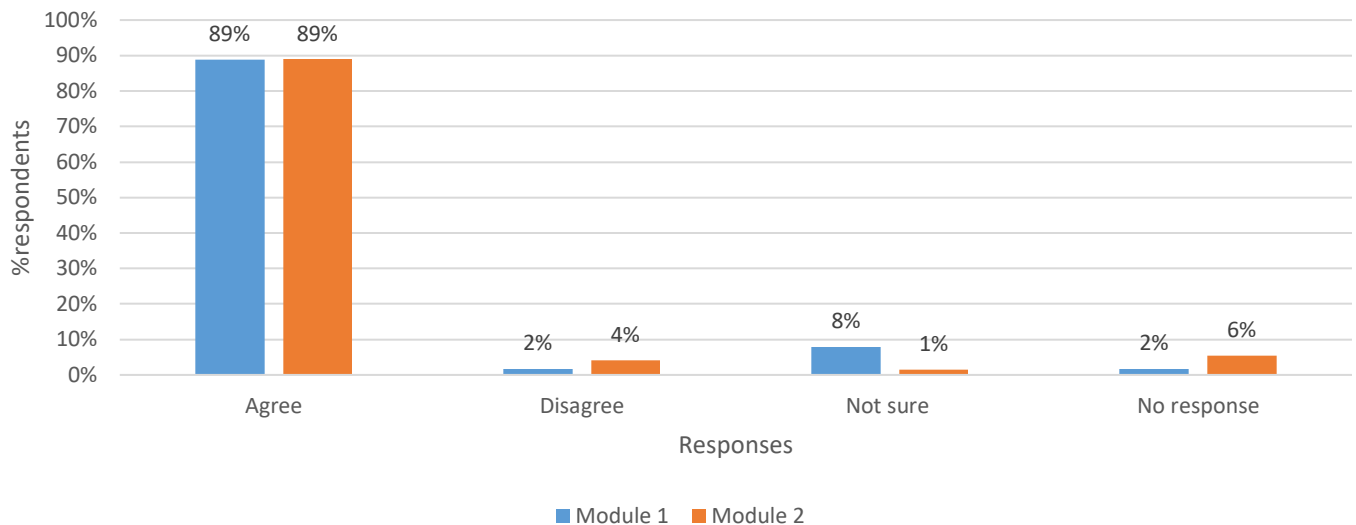
Finding 14: Majority of the teacher received support timely

Teachers were also asked to state whether the support they received whenever they had technological issues was timely enough. As can be seen in figure 13 bellow, majority of the teachers agreed that they had received support on time with approval levels being higher for module 1.

Figure 13:Received timely technological support
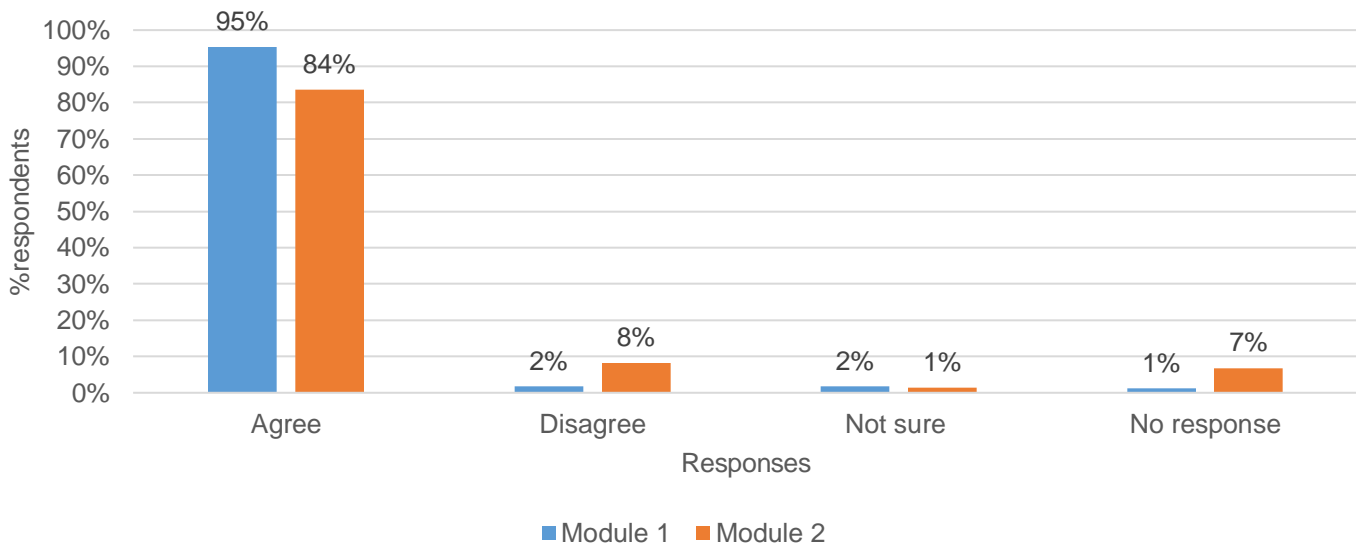
Finding 15: Most teachers had a positive experience e-learning platform

Teachers were also asked to say their experience with regards to access to the content on the mooodle platforms. As can be seen bellow, majority of the teachers said they had been able to easily access, explore and print materials on the Moodle e-learning platform using a computer/ laptop/ mobile phone.

Figure 15: Able to print module pdf coppies
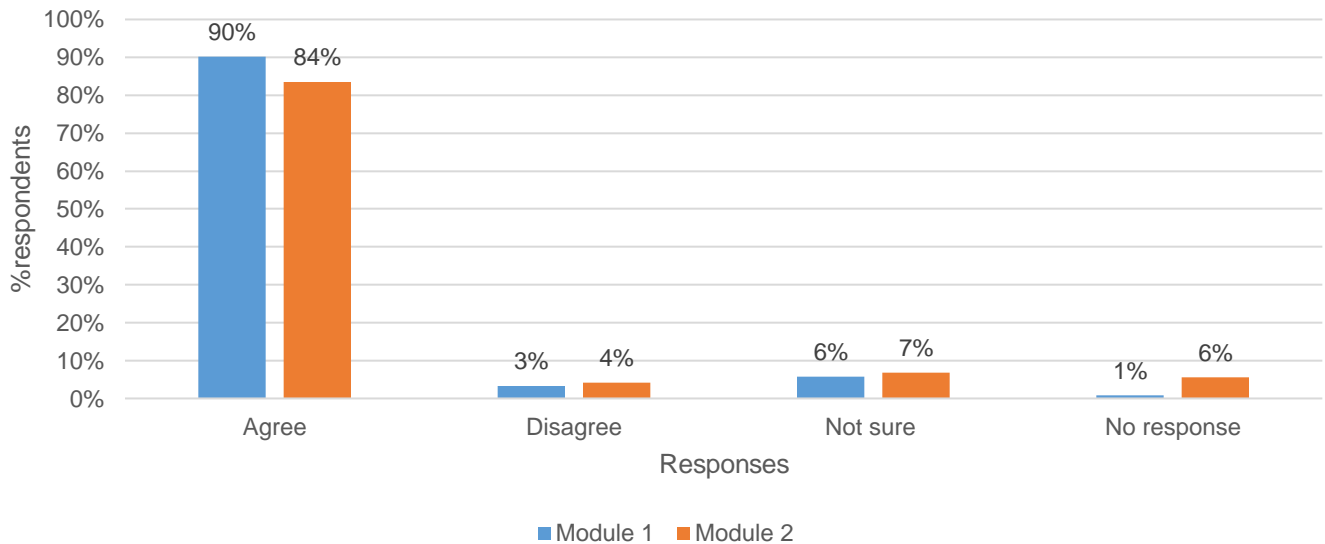
Finding 16: Key learnings

Teachers were also asked to list any key learnings. The learning were varied amongst the teachers. However most mentioned the use of of ICT in teaching and the use of tools such as presentation and simulations in teaching as their major areas of learning.

"The most important learning in the module is how ICTcan be used in facilitating interactive teaching and learning which assists leaner to be active and increase thinking ability"

"Using of technology in enhancing participatory techniques to bring High performance in learning"

"The way of teaching by video and simulation ,also teacher to have sketch map of presentation and leson plan was very best to me"

"The important learning was on making presentation of high quality, use of OER, and the importance of following TPACK in the process of teaching"

"The Module provided Theoretical and practical knowledge about curriculum standards, use of computer laboratory, the use of interactive"simulation" software and ICT activities"

"The most important learning in module 2 is to use ICT materials to access different material relevant to my subject which help to bring good collaboration in class during teaching and learning"

Finding 17: Suggestions for improvement

Sevral suggestions were also given on how to improve teachers experience in the remaining time of the project. Most of the comments were related to the time allocated for different activities as well as the need to increase the number of equipement.

"ICT tools such as computers, projectors are fewer compared to the number of teachers in school.So if possible increase the number of these tools"

"I'm suggesting that next time teachers should be given enough time in order to be able to use ICT I mean lengthening time for trainings"

"Chart time should be extended,Alternative source of energy if supplied will be a very important thing"

"The school visit should be more frequently to make teachers competently 2. The module should introduce new knowledge for the new teachers whom replaced others so as they engage in the process"

Finding 18: Challenges encountered

The teachers also listed the following as the challenges they faced in the course of the Technology Literacy cycle. Time, connectivity to internet and access to equipement were the major issues across the two modules. Other challenges are as listed in the table bellow.

Challenge	Module 1	Module 2
Time	57%	22%
Connectivity/internet	46%	48%
Access to equipement (computers/laptop/projector)	28%	42%
Access t chats	27%	30%
Access to discussion forums	20%	29%
Access to e-learning platform/moodle	18%	28%
Acess to online materials/OERs	16%	22%
Simulation for my subject area		48%
Access to mlearning platforms on phone		34%

4.0 Conclusion and recommendations

Based on the feedback from 400 participants it can be concluded that their was high satisfaction levels with the training on the two modules of Technology Literacy among the teachers[1]. The perception was that the training was well planned, the intentions and expectations well articulated, the content was relevant and is applicable in the classrooms emerged strongly. Most of the teachers also felt sufficiently supported by the ADSI Team in both in continous training, online mentoring as well as classroom support.

Areas for improvement of the teachers' experiences and applications in the successive modules include the need to address insufficient training time which affects the levels of training comprehension and application. There are also challenges related to internet connectivity and access to OERs. There is also need for the Project Coordinators to intensify the support and coaching in the use of simulation models in ICT integration into lesson plans as this was an rae of difficulty for some teachers.

Teachers suggested the following improvements/adjustments;

- The online chat time should be adjusted to suit all the teachers.
- Numbers of days for the face-to-face training should be increased.
- Schools should acquire more laptops and projectors.
- The need to hold mini-workshops by SBCs at the school level after every module.

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[1] The questions in the questionnaire were uniformly stated to ensure easy comparison between the modules and well split to enhance appropriate rating.

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