

TL Module 4: Organisation and Administration

Unit 1: Learning Activities for a Computer Laboratory Environment



Objectives:

Teachers should be able to integrate the use of a computer laboratory into ongoing teaching activities. (UNESCO ICT-CFT, TL.5.a)



Duration:

Total of 3.5 notional hours – 30 minute lecture, 1 hour computer practical session, 1 hour tutorial, and 1 hour self-study, preferably at a computer.



A] Lecture Content (30 minutes)

Notes to the Facilitator

Introduce the idea that the location or positioning of computers impacts on the way we utilise the technology for teaching and learning as it will impact on the lesson methodology. So what issues need to be considered? You can use the introductory passage below to set the scene, but you should introduce the following arrangements: Laboratory (20 or more computers), Clusters (small venues with approx. 10 machines) or Classroom (1 or 2 computers, often with a data projector). Then for this lecture, focus specifically on issues around setting up and teaching in a laboratory environment.

Background Reading: (Internet access required)

1. Computer Room/Lab Planning: <http://www.kieducation.com/issues.aspx?ar=104>
2. The Four Best Computer Laboratory Layouts for Schools: <http://www.brighthub.com/computing/hardware/articles/52714.aspx>
3. Computer Lab Setup: <http://www.webjunction.org/training-delivery/-/articles/content/432941>

Introduction

When properly used, a networked computer lab can provide an effective foundation for developing Information and Communication Technology (ICT) capabilities. It is cost effective and offers learning opportunities that cannot be mirrored by a less well-equipped space. But is a computer lab the best environment? Do we really need a computer lab to impart ICT knowledge? Should we rather not question as to where available computers would be put to *best* use – in individual classrooms or in a computer lab?

This issue has become a source of controversy given equipment limitations, the need for schools to maximise computer effectiveness in promoting academic achievement, and accommodation of varied skills among teachers and students. As schools obtain more technology, the question about how to use computers effectively rarely precedes the question of where to locate them: in the classroom or in the computer lab. The two questions are essential to each other.

In this lecture we will focus specifically on the advantages and disadvantages of using a laboratory. This table identifies the pros and cons of this setting.

Use of Computers in a Computer Lab Setting

Advantages	Disadvantages
<ul style="list-style-type: none"> • A computer lab provides a good environment for developing e-confidence in the initial stage. • It is the most economical solution for providing ICT access through a computer network. • As equipment is concentrated in one location, technical support and management is easier than if the equipment is dispersed. • A computer lab provides a robust network infrastructure. • Learners can simultaneously access their own workstations. • Large groups can be trained and/or assessed simultaneously. 	<ul style="list-style-type: none"> • In a lab, it is difficult to integrate ICT into everyday learning, teaching and thinking. • The layout of most computer labs makes group work and collaboration difficult. • The focus can end up being on learning by rote and performing practical tasks rather than developing higher order skills. • ICT resources are concentrated in a single location, when they would be better used if widely deployed. • The need to book the lab can result in poor or unequal use.

(Taken from Microsoft Educator Learning Journeys)



B] Computer Practical (1 hour)

Notes to the Facilitator

In this practical the participants will familiarise themselves with the different computer access models. Create several groups and initiate a debate on the use of computers in a lab setting versus the use of computers in clusters or a classroom setting. Each group should be randomly allocated a topic of a particular focus, i.e. “A computers in a lab setting is best for imparting knowledge” or “A computer in a classroom or cluster setting is the ideal approach to imparting knowledge”. Each group should be given the opportunity to come forward and debate with another group that has been allocated an opposing viewpoint. They can draw on the resources and information below. If internet access is available, participants may conduct research to help inform them further. As facilitator, you will be required to summarise the main points of the discussion.

In this session you will read more about the different computer access models that are available. In groups, you will debate an allocated topic focus against an opposing team.

Focus topics:

1. A computer in a lab setting is best for imparting knowledge.
2. A computer in a classroom or cluster setting is the ideal approach to imparting knowledge.

Activity:

1. In light of the topic focus your specific group has been allocated, review the resources provided below and then develop an argument for your allocated focus based on the knowledge you have gained in reviewing and researching the topic.

- [Computer Labs versus Classroom Integration of Computers](#)
- [Uses of Labs and Learning Spaces](#)
- [Miracle or Menace: Teaching and Learning with Laptop Computers in the Classroom](#)
- [Ed Tech: Computer Labs versus Classroom Computers](#)

2. As a group, present your findings on the advantages of your approach. Remember that your opposing team will be armed with disadvantages to your allocated focus topic, so make sure you are prepared to enter a lively debate.
3. The facilitator will summarise the main points of the discussion and conclude.

Notes to Facilitator:

Facilitator's concluding remarks: "Most educators seem to think that technology must be deployed in one or the other model. In most cases, the logistics and financial resources available to a school will dictate which model the school will follow. Some schools might only be able to afford a small number of computers and so choose to concentrate them in a single room to ensure fair access to all students. Other schools might have more finances available and can afford to set up two or three laboratories and several classrooms with computer access."

Perhaps it would be best to iterate that the classroom computer model AND the lab model are instructionally sound ways to deploy computer equipment. Having both models is clearly the desired option. The real question is not should you have both, but does your school have the available funds (and space) to deploy both options?



C] Tutorial (1 hour)

Notes to the Facilitator

Introduce the session. "Despite having some limitations, a computer lab can be an effective interim solution until computers become an integral part of classrooms. But how could ICT lab activities be integrated into lesson plans?" The purpose of the tutorial is to get participants to brainstorm some lesson plan ideas that would effectively exploit the laboratory setting.

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Activity:

1. Working in pairs, review the lecture resource supplied below.

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<ul style="list-style-type: none">• A computer lab provides a good environment for developing e-confidence in the initial stage.• It is the most economical solution for providing ICT access through a computer network.• As equipment is concentrated in one location, technical support and management is easier than if the equipment is dispersed.• A computer lab provides a robust network infrastructure.• Learners can simultaneously access their own workstations.• Large groups can be simultaneously trained and/or assessed.	<ul style="list-style-type: none">• In a lab, it is difficult to integrate ICT into everyday learning, teaching and thinking.• The layout of most computer labs makes group work and collaboration difficult.• The focus can end up being on learning by rote and performing practical tasks rather than developing higher order skills.• ICT resources are concentrated in a single location, when they would be better used if widely deployed.• The need to book the lab can result in poor or unequal use.

(Taken from Microsoft Educator Learning Journeys)

2. Integrating computer lab use into learning requires thought and planning. In pairs, brainstorm ideas of which sections of the curricula would benefit from an ICT lab environment and develop a lesson plan that illustrates this good practice. Use the table above to spark ideas.
3. Now do the counter activity for identifying sections of the curricula that would NOT be suited to working in an ICT lab. As a pair, remember to explain your answer.
4. The tutor will summarise the main points of the discussion and conclude.



D] Self-Study (1 hour)

Assignment 1 (30 minutes)

Complete the follow online tutorial at Educator Learning Journeys.

Organise and Manage the Use of ICT in Your Classroom

Unit 1: Topic 2: Learning Activities for a Computer Lab Environment – *Adapting Activities for a Computer Environment*

“Time spent in the computer lab needs to be planned carefully to ensure that it is a productive and valuable experience for all learners. This topic explores how lesson planning and collaborative working can help ensure that lessons in the computer lab meet these requirements.”

Access at <https://elijamicrosoft.intuition.com>

Assignment 2 (30 minutes)

“What do you do when things go wrong in the lab? Do you plan for disruptions or problems in advance?”

From your experience reflect how you would respond, what alternate plans you would have, if the following occurred when going to the school’s computer lab.

1. Power failure
2. Timetable clash with another teacher and class
3. Computers working but no Internet connectivity
4. Some computers are working but not enough for the whole class
5. The program you want to use is not installed on all the machines
6. Students become distracted when looking at sites not related to your lesson
7. Some students don’t have the skills to operate the computer



Resources Used in this Lesson Unit

Computer Room/Lab Planning. Available online from KI Education at: <http://www.kieducation.com/issues.aspx?ar=104> (Accessed 6/10/2011) (All Rights Reserved).

The Four Best Computer Laboratory Layouts for Schools. Available online at : <http://www.brighthub.com/computing/hardware/articles/52714.aspx> (Accessed 6/10/2011) (All Rights Reserved).

Computer Lab Setup. Available online at <http://www.webjunction.org/training-delivery/-/articles/content/432941> (Accessed 6/10/2011) (All Rights Reserved).

Culbertson, Diane. (n.d.). *Computer Labs versus Classroom Integration of Computers*. Available online at <http://distributedresearch.net/ultrastudents/andyroberts/term2/actionresearch/Files/labvsclass.pdf> (All Rights Reserved).

van den Blink, Clare (2009). *Uses of Labs and Learning Spaces*. Available online at <http://www.educause.edu/EDUCAUSE+Quarterly/EDUCAUSEQuarterlyMagazineVolum/UsesofLabandLearningSpaces/163858> (CC: BY: NC: SA)

Efaw, Hampton et al. *Miracle or Menace: Teaching and Learning with Laptop Computers in the Classroom*. Available online at: <http://www.educause.edu/EDUCAUSE+Quarterly/EDUCAUSEQuarterlyMagazineVolum/MiracleorMenaceTeachingandLear/157299> (CC: BY: NC: SA)

Bustillos, J. *Ed Tech: Computer Labs versus Classroom Computers* (2005). Available online at: <http://joebustillos.com/2005/05/11/ed-tech-computer-labs-versus-classroom-computers/> (CC: BY: NC: SA)

Microsoft. (2011). *Educator Learning Journeys: Technology Literacy Curriculum – Organise and Manage the Use of Technology in your Classroom*. Available online at <https://eljmicrosoft.intuition.com/Rubicon.aspx>. Accessed 25/07/2011 (All Rights Reserved).