

# Language Labs Demystified



Revision 5 2011-01-13

Whitepaper\_Language Labs Demystified\_2011-01-13.doc

## Introduction

In a world where “globalization” and “cultural diversity” are becoming part of our daily lives, it is easy to see why learning a second language has become critically important.

Students, however, often do not appreciate the long-term benefits of learning a new language, and may just view their “language 101” course as a credit to be completed, checked off, and then forgotten.

So, how are educators to meet the dual challenge of equipping students with the language skills that they will need and instilling the desire to continue using those skills?

Learning a second language is very much like learning to play a musical instrument. There is certainly merit in studying the theory, but the major way to improve virtuosity is through hands-on practice. The more a student practices, the more proficient he or she becomes.

Modern day language labs and language learning centers empower teachers to orchestrate activities where all students are able to practice their listening, speaking, reading, and writing skills in an interactive, personalized fashion.

Students can run repeat-after-me drills to internalize the basics of grammar and vocabulary, but perhaps more importantly, students are also exposed to authentic communications scenarios that help illustrate how their new language skills can be used in a practical fashion.

Modern language labs with their powerful multimedia and interactivity capabilities also provide an ideal way for teachers to connect with their technology-savvy, Nintendo-generation students.

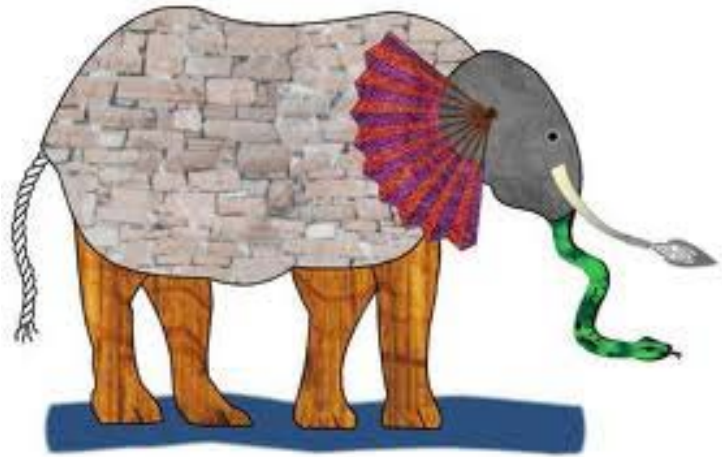
Students using a lab tend to associate learning a new language with the delivery medium, (computers, networks, and multimedia content), that they know to be extremely relevant to their future. As Marshall McLuhan suggested in his book *The Medium is the Message*, this helps reinforce that learning and using the target language is both relevant and important.



## What is a Language Lab?

Asking six teachers to describe a language lab is very much like asking the proverbial six blind men to describe an elephant. The description will vary according to the individual's unique experiences.

Most would probably envision a dedicated room with desktop computers at each student station, with some type of control console at the teacher's desk.



Those without a dedicated room might describe a portable system with laptop PCs that can be wheeled to room, often referred to as a COW (computers on wheels).

Teachers with younger students might envision a system where students don't even have individual computers. The teacher simply plays audio-visual materials on a single station connected to a projector or large screen TV.

In universities and colleges, there might not even be a room at all. Perhaps students work on a self-study basis and communicate with their instructor via e-mail, or perhaps students do work synchronously with their instructor but using a virtual classroom, where everyone connects from home or dorm rooms via the Internet.

But no matter what the physical format of the lab, the common bond that separates the *lab* from the *classroom* is that students are equipped for hands-on practice of their language skills. What does *hands-on practice* mean for language learning? In a language lab, students do not play a passive role.

- Students interact with multimedia materials in which native speakers of the target language are talking in an authentic context.
- Students record themselves and listen to themselves speaking the target language – comparing their responses to a model speaker.
- Students converse in the target language with their fellow students in pairs or in groups – giving every student sufficient time to practice their listening and speaking skills.

## Do Language Labs need Teachers?

There will always be some students who are able to work individually and master any subject – including the learning of a foreign language. That being said, most students will benefit immeasurably when they have someone to help guide them through the learning process.

*“Soft skills like language learning can be practiced to a certain extent using technology delivery, but final mastery cannot be assured without some instructor interaction.”*

**Effectiveness of Learning Technologies**  
**Tom Carey, Carole Farber, & Lynn Davie; OISE (et al)**

So, contrary to what some might expect, the modern digital language lab, with its powerful interactive, multimedia capabilities, has not been designed to replace teachers, but rather to provide teachers with a powerful set of tools for orchestrating progressive language learning activities with their students.



As teaching methodologies have evolved, so too has the teacher’s role in the lab, and the type of activities that teachers orchestrate for their students. The table reproduced below has been taken from a paper by the International Society for Technology in Education (ISTE) describing their NETS project (National Educational Technology Standards). “Multimedia”, “Collaborative work”, and “Authentic, real-world context” are in fact the key capabilities that we use to describe a modern digital language lab.

<b>Guidelines for Effective Learning</b>	
<b><i>Traditional Learning Environments</i></b>	<b><i>Progressive Learning Environments</i></b>
Teacher centered instruction	Student centered instruction
Single sense stimulation	Multi-sensory stimulation
Single path progression	Multi-path progression
Single media	Multimedia
Isolated work	Collaborative work
Information delivery	Information exchange
Passive learning	Active/exploratory/inquiry based learning
Factual knowledge-based learning	Critical thinking & informed decision making
Reactive response	Proactive/planned response
Isolated, artificial context	Authentic, real-world context

## Do Language Labs need Computers?

One of the more popular equipment configurations for language labs, (especially for younger students), provides students with headsets and a desktop appliance for managing the recording and playback of audio materials. This type of lab often includes a single computer connected to a projector or large-screen television, so that teachers are able to play multimedia materials.



With this type of system, students can still be exposed to multimedia content and authentic speaking scenarios, they are still able to record themselves and compare their responses to those of a model speaker, and students are still able to work in pairs and small groups for practicing their listening and speaking skills.

Without question, however, equipping students with individual computers adds another dimension to the range of possible activities that teachers are able to orchestrate in their lab. The most powerful lesson materials are those that employ multimedia content, (both audio and video), and empower students to retain individual control over their playback of the multimedia exercises.



So, language labs without computers are good, but language labs with computers are better.

The definition of what constitutes *computer* is at least somewhat flexible. This can be a traditional desktop computer, a laptop, a tablet PC, or even a cellular phone.

## Must Language Labs use a Dedicated Room?

Despite the tremendous advances in technology that we are experiencing, having a dedicated room for a language lab is still the easiest and most foolproof way of managing the students' learning experience.

With a dedicated room, schools can deploy almost any type of computer, and are able to use wired networks for interconnecting those computers.

This makes it easy for the school IT department to configure, manage, and update the lab. Language

labs using dedicated rooms are by far the most popular and most common configuration.



That being said, there are still a large number of schools that are unable to dedicate a specific room exclusively as a language lab, and so there are a growing number of labs that either share a fixed room with other departments, or else are able to move from room to room in a portable fashion.

With university students and adult students, it is not always practical for everyone to assemble at a fixed location at a fixed time. In such cases, virtual labs can be used to support a campus-based network of students, or even students working from their homes.

Please note however, that when not using a dedicated room, there are often some restrictions on the functionality of the underlying language lab that would not otherwise apply.

### Multi-Discipline Labs

Multi-discipline labs are most often implemented as general computer labs, capable of being used to facilitate hands-on activities in several different subject areas. The same lab might be used for Math at 08:00, for Spanish at 09:00, and for Computer Science at 10:00.

Usually, the needs of language teachers are a little more sophisticated than those of teachers of other subjects, so it is important that language-teaching faculty participate in shaping the requirements for such a facility.

In some cases, the headsets and interfaces that students require for language activities are mounted in motorized trays that can be raised to the ceiling when non-language classes are in session, or lowered to desk height for language classes.

The major advantage of this approach is that the language department gets all the flexibility of a dedicated room without the need to fund the entire budget for the lab.

## Portable Language Lab Systems

There are several different types of system that all fall under the heading of portable language labs.

- **COWs (Computers On Wheels):** Typically, a COW is a large lockable box on wheels capable of holding a teacher workstation and console, plus having up to 30 shelves for storing student laptop computers and student headsets.



There are a couple of potential issues with COWs, the first being that it takes a finite amount of time to hand-out and collect the laptops at the beginning and end of class, so there is some lost productivity. Also, students and teachers must be diligent about plugging in laptop power supplies, or one will discover the occasional dead laptop at the beginning of class.

There is also a technical limitation, and this has to do with interconnecting the stations via a wireless network rather than a wired network. Wireless networks – even those compliant with the latest “wireless-n” standards support considerably less bandwidth (as much as 80 times less bandwidth) as their wired counterparts. From a language lab perspective, this severely limits the number of students that can participate in an activity at any given time.

In some cases, the expectation is that students will carry their own laptops, but even when all students are required to purchase a standardized laptop, this increases the potential problems for the school IT department to manage software revisions and avoid conflicts with 3<sup>rd</sup> party software.

- **LLIAB (Language-Lab-in-a-Box):** The language-lab-in-a-box differs from the COW in that students are not normally equipped with individual computers. Instead, student terminals comprise a small box that serves as a connection point for their headset and in some cases includes some interactive controls.

LLIAB systems are supplied in both wired and wireless variations. The wired versions include greater functionality, but the student terminals are tethered to the teacher’s console with cables that are typically stored on large spools in the box. The wireless systems offer greater freedom, but are usually quite limited in functionality – often even lacking a basic recording capability.

## Virtual Language Labs

For older students in universities, colleges, and even senior high schools, it is not always practical to conduct language lab activities in a fixed room at a fixed time. Instead, educators are often adopting a *virtual* language lab model, whereby students can connect remotely.

With virtual labs, students can be given responsibility for their own computers and their own headsets, or the school can provide a number of smaller self-study labs or even self-study kiosks in a library or any other suitable location.

There are two main variations of the virtual language lab, *synchronous* (or teacher-led) and *asynchronous* (or self-study):

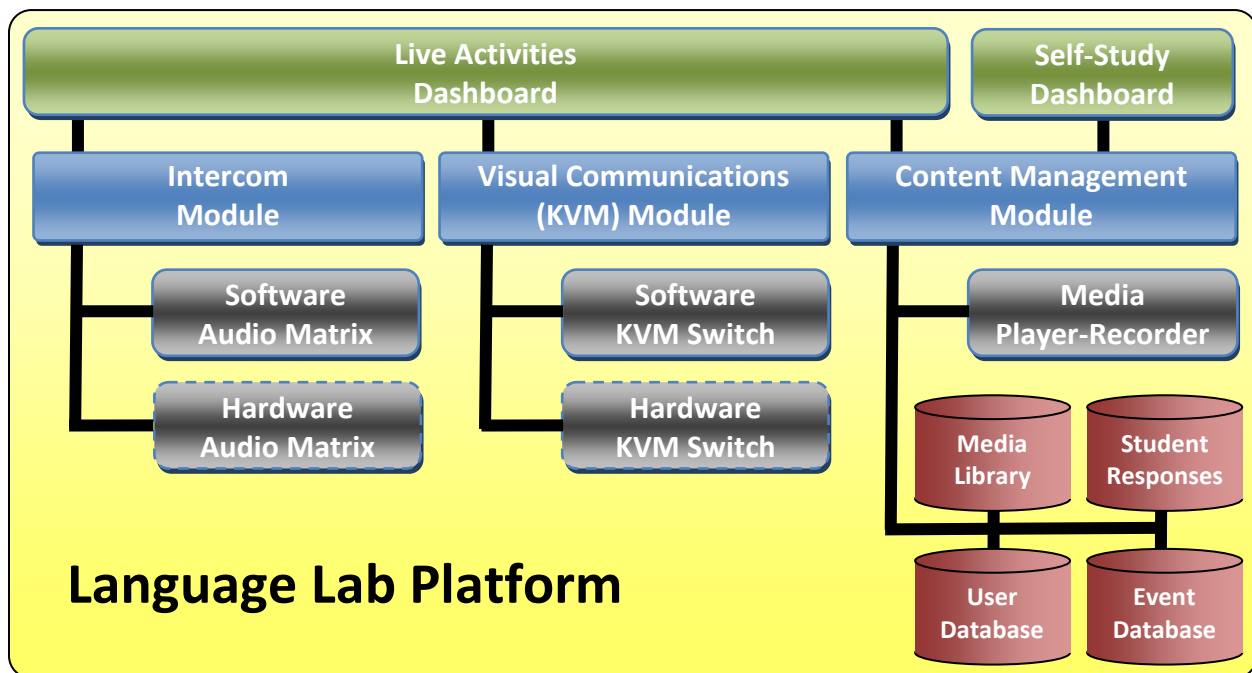
- **Synchronous:** In a teacher-led virtual language lab environment, students do not need to all be in the same room, but they must connect at a predetermined time. The format is similar to that of a fixed lab, except the students connect remotely using the school network or even the Internet.
- **Asynchronous:** In a self-study virtual language lab environment, students do not need to be in the same room nor do they need to connect at the same time. With this model, teachers generally prepare self-contained assignments in advance and post these to a server. Students can connect from any station on the school network (or in some cases even over the Internet) and can work on the assignments when they have time. Student responses are saved back to the server so that the instructor can access and grade them at their convenience from their office or even from home.



## What is a Language Lab Platform?

A *language lab platform* is a system that enables teachers to orchestrate and/or create activities for their students, and allows students to execute those activities. Most platforms comprise some combination of specialized software and hardware (including headsets).

In the system block diagram shown below, note that there are three main system modules (shown in blue); the Intercom Module, the Visual Communications Module, and the Content Management Module:



**Intercom Module** – Most language lab systems include an Intercom Module that lets teachers remotely listen to students, talk with students, and organize students into pairs or small groups for collaborative projects. Communications can be configured as one-on-one, one-to-many, or one-to-all.

**Visual Communications Module** – If a lab is equipped with individual student computers, teachers use the Visual Communications Module to share screen information among stations, to remotely monitor student screens and even take remote control of student computers.

**Content Management Module** – Decades ago, when the audiocassette recorder was the cornerstone of almost every language lab system, “content” was a physical library of audiocassette tapes. Today, teachers use the Content Management Module to build a media library of electronic assignments and to manage student responses. Students access their assignments using a computer program called a *media player-recorder*, which enables them to listen and watch multimedia program materials and record their own oral or written responses.

## Example Language Lab Activities

Language labs support a very broad range of activities, but let us highlight just a few key examples:

### Role Play with Recording

For this activity, students are connected in pairs, with one student assuming the role of a prospective landlord with an apartment for rent. The second student is a potential tenant looking to rent an apartment. The scenario is that the landlord and tenant are meeting to view the apartment, and each must evaluate the other's suitability within a 10-minute window.

The teacher will orchestrate this activity by putting the students into pairs. Pairs can be assigned on a random basis, can be hand-picked by the teacher, or partners can be chosen by the students.

The teacher will have students open their media-player recorders and set them on standby. When the students have had a few minutes to plan their questions, the recorders are enabled. Note that this can be done locally by the students or remotely by the teacher.

After completing the 10-minute interview, the teacher will halt the pairing activity; students can then stop their recorders and review their dialogue with their partner. If desired, the recordings can be saved to a server so that the teacher can later listen to them.



## Media File with Recording

For this activity, the teacher has preselected a 2-minute long audio-visual clip of a young couple ordering breakfast in a sidewalk café. The students will be running a repeat-after-me activity and recording themselves.

In this case, the teacher has preloaded the exercise (called “Restaurant”) on the server and made it available to her students. The teacher had the option of pre-setting break-points in the video clip where she wants the students to repeat what they have just heard, but because of time constraints, elected instead to have students choose their own break-points on-the-fly.

The teacher explains that she wants the students to run the Restaurant exercise. The students then launch their media player-recorders and select Restaurant. The repeat-after-me activity, (sometimes called an audio-active-comparative activity), begins when each student clicks on his *play* button. When a student is ready to repeat the first phrase, he clicks on the *record* button. The students continue to the end of the 2-minute restaurant video in this fashion.

When recording is completed, students can listen to their own track, or they can alternate between the master track and their recording to compare their version to the original. When the students close the exercise, their response is automatically saved on the server. The teacher can then access the student recordings for review from her office.

## What about Lesson Materials (Content)?

Language Lab Systems typically do not include any lesson materials. Lesson materials may be created by teachers (using authoring tools provided with the language lab system), may be re-purposed from existing materials, or may be sourced from content providers.

### Re-purposing Existing Lesson Materials

When a school acquires a new digital language lab, there are usually obvious benefits in updating many of the lessons materials with which students will be working. However, there is invariably a transition period where teachers must become familiar with the new technology. In the interim, teachers need to be able to continue using their existing lesson materials.

Most language lab systems includes provision for digitizing materials like audio tapes and video tapes, and for capturing segments of CD-Audio and DVD materials. Both paper documents and transparencies can also be digitized and imported into the system media library.

## Content Providers

Most traditional textbook providers now include CD-ROM based lesson materials as a supplement to their textbooks. These materials can often be imported into the language lab system and used as the basis of recording activities.

There are also a number of new electronic publishers that offer language-learning materials only in CD-ROM or DVD-ROM format. Two of the better known providers are Rosetta Stone and Tell-Me-More.

## The World Wide Web

Over the past few years, a wealth of audio-visual materials in multiple languages has been uploaded to the World Wide Web. Sites like YouTube ([www.youtube.com](http://www.youtube.com)) and TeacherTube ([www.teachertube.com](http://www.teachertube.com)) contain huge libraries of diverse content that can be easily searched to find specific clips relevant to almost any topic.

Additionally, there are some specialized sites like the BBC ([www.bbc.co.uk](http://www.bbc.co.uk)) and Activities for ESL students (<http://a4est.org>) that include specialized materials for language learning.

Sample Language Learning Web Sites	
Site Name	URL/Description
You Tube	<a href="http://www.youtube.com">www.youtube.com</a>
	▶ Repository of video clips covering a wide array of topics
Teacher Tube	<a href="http://www.teachertube.com">www.teachertube.com</a>
	▶ Repository of educational video clips, generally with full usage rights for teachers
British Broadcasting Corporation (BBC)	<a href="http://www.bbc.co.uk">www.bbc.co.uk</a>
	▶ News stories in 32 different languages ▶ Special section for language learning & teaching ▶ Several autonomous language lessons
Activities 4 ESL Students	<a href="http://a4est.org">http://a4est.org</a>
	▶ Activities for ESL students (dual language activities for 36 different languages)

## Acquiring a Language Lab Platform

### Project Team

If your school is considering the acquisition of a new digital language lab platform, the first step is to assemble a team of project personnel who will research and evaluate the various options.

Successful language lab project teams generally include representation from the language teachers group, from the IT group, and from the school administration group. If a project encompasses more than one school, then some representation from the school board is also prudent. And if the project is expected to involve a multi-disciplinary lab, then representation from other teaching faculties is also a good idea.

### Critical VS Nice-to-have Requirements

When identifying requirements, it is best to avoid a simple “checklist” approach. This is because checklists are very poor at differentiating individual requirements with the proper weighting. For example, good audio quality and ease of use are absolutely critical, whereas being able to pair students in three different ways may be desirable, but does not carry the same relative importance. It is recommended that as a minimum, you identify *critical* capabilities (being very specific) and *nice-to-have* capabilities.

### Key Points to Consider

Language Lab Platform Needs Assessment	
1	Will the system be fixed, portable, or virtual?
2	If virtual, will students be in the school, on campus, or at home?
3	Will students be equipped with individual computers?
4	If yes, will the computers be desktops or laptops or something else?
5	Will the system be dedicated to language learning or will it be multi-disciplinary?
6	Will all activities be teacher-led, self-study, or a mix of both?
7	What is your budget for the system?
8	What is your schedule for installation, training, and commissioning?
9	Is there any 3 <sup>rd</sup> party equipment (e.g. projector, document camera) with which the system will need to interface?
10	Are there any specific 3 <sup>rd</sup> party software packages (e.g. Tell-Me-More) with which the system will need to co-exist?

## Demonstration

Narrow down your platform choices to a couple of candidates, and then organize an on-site demonstration at your school with the potential supplier and all of your stakeholders. Use this as an opportunity to have everyone ask questions and identify potential issues.

If an on-site demonstration is not practical, you might consider using a local trade show as a means to organize a demonstration – but make sure your entire project team is there.



## Educational Grants

There is usually federal and/or state educational grant money available for the acquisition of technology by schools. Make sure that you research potential sources for grant money before finalizing your budget for the acquisition of a language lab system.

In many cases, available grant money can fund the entire project.

## Managing Expectations

At the beginning of a project, everyone is enthusiastic. There is often an unspoken expectation that a new digital language lab will be installed at the beginning of a term, and all teachers will be fully versed in using the system within a couple of weeks.

That may be true for the system's basic capabilities, but you need to anticipate that it will take at least one year, and maybe as much as two years, before the majority of teachers are fully proficient with all system capabilities.

Very much like learning a new language, mastery of a language lab system comes with practice, practice, and more practice.

**Notes**



[www.robotel.com](http://www.robotel.com)

3185 rue Delaunay  
Laval, Quebec  
CANADA H7L 5A4

Toll Free (USA & Canada) (800) 680-1448  
Telephone +1 (450) 680-1448  
Facsimile +1 (450) 680-1928  
Email [sales@robotel.com](mailto:sales@robotel.com)

2010-12-06

Printed in Canada

SmartClass and Robotel are registered trademarks of Robotel Inc