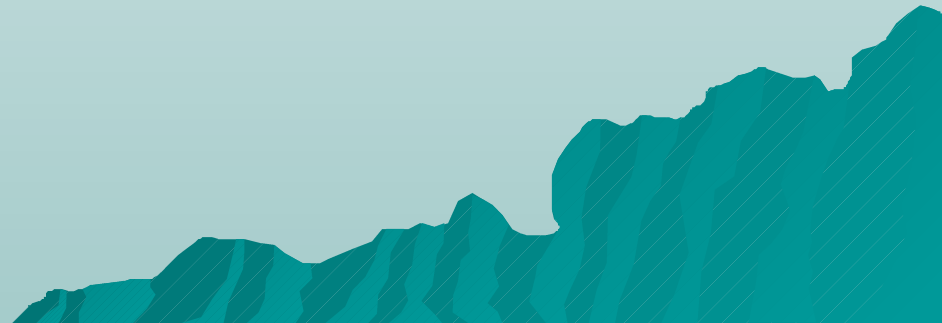


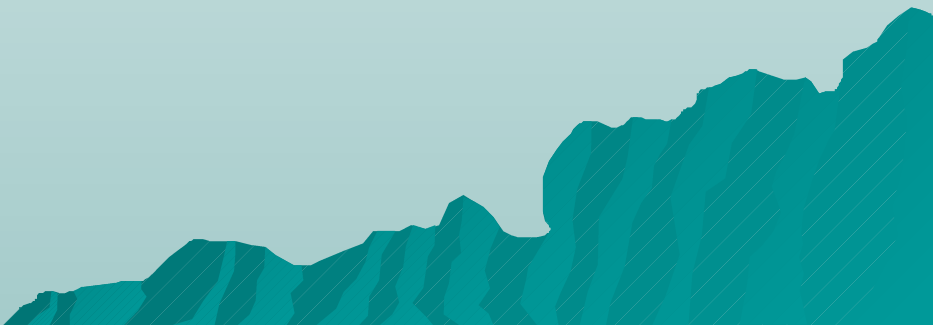
Integration of ICT in Education



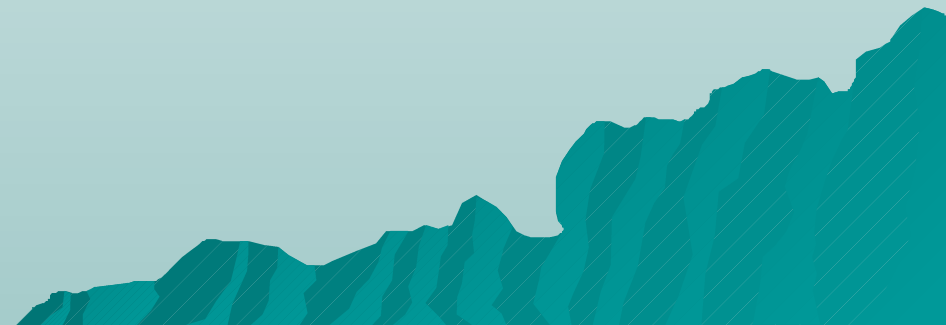
By
Temtım Assefa, Ethiopia
Clint Rogers, University of
Joensuu

- ◆ **“Every way of seeing is also a way of not seeing.”**



- ◆ **What assumptions are you making in your work/research?**
 - ◆ **What questions are you asking?**
 - ◆ **What is your starting point? Why?**
- 
- A decorative graphic at the bottom of the slide consisting of a silhouette of a mountain range in a teal color, set against a light blue gradient background.

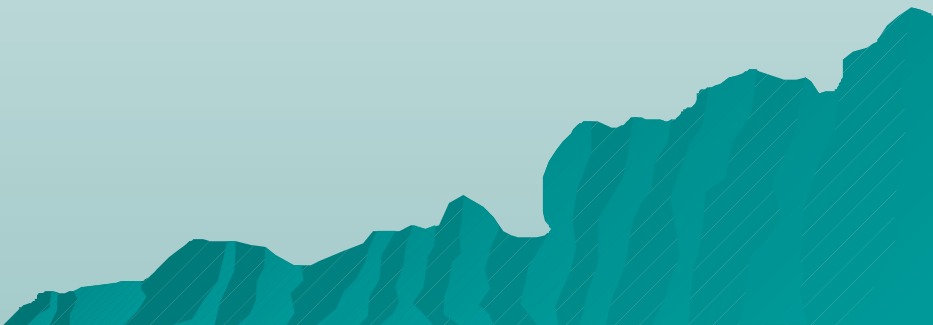
- ◆ Is there some inherent good/benefit in the ICT?
- ◆ **No** – the technology is neutral – there is nothing inherently good about ICT!!!



- ◆ In the context of limited resources (time, money, brainpower), does the enhanced benefit of _____ justify the cost?

$(2X)(1Y)(26Z)(1.5P) = \text{“Development”}$



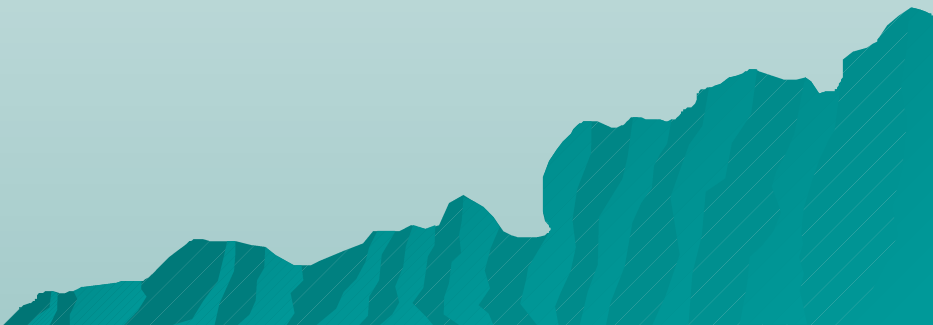
- ◆ **What questions are you asking?**
 - ◆ **What assumptions are you making in these questions?**
 - ◆ **What does it help us to see and what does it conceal?**
 - ◆ **“If I have a hammer – everything look like a nail.”**
- 
- A stylized teal silhouette of a mountain range is located in the bottom right corner of the slide, extending from the right edge towards the center.

Think more about...

- ◆ What other needs do people have which might be more important variables (in development)?

$(2X)(1Y)(26Z)(1.5P) = \text{“Development”}$

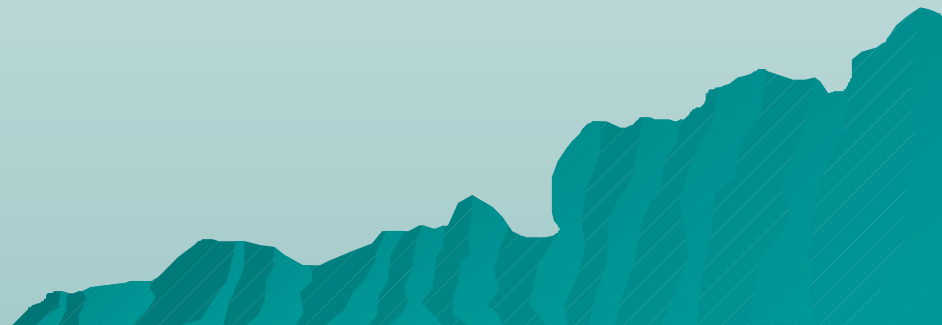
Arguments for ICT4D

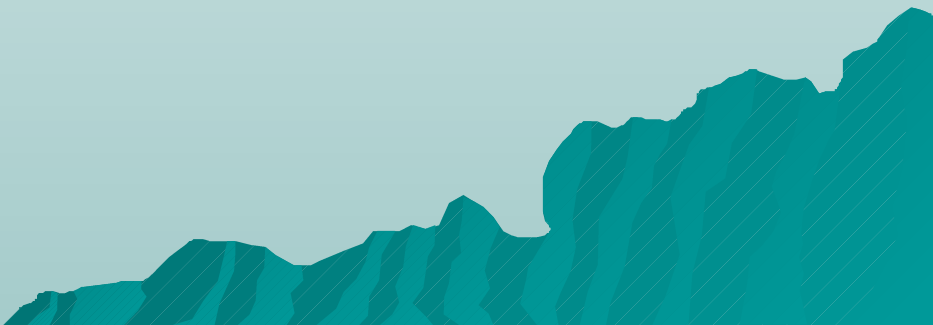
- ◆ “But tech is coming anyway”
 - ◆ “This is what I was assigned (and get paid) to research”
 - ◆ “This is my field”
 - ◆ Etc...
- 
- A decorative graphic at the bottom of the slide consisting of a silhouette of a mountain range in a teal color, extending from the right side towards the center.


You should be concerned

Reasons...

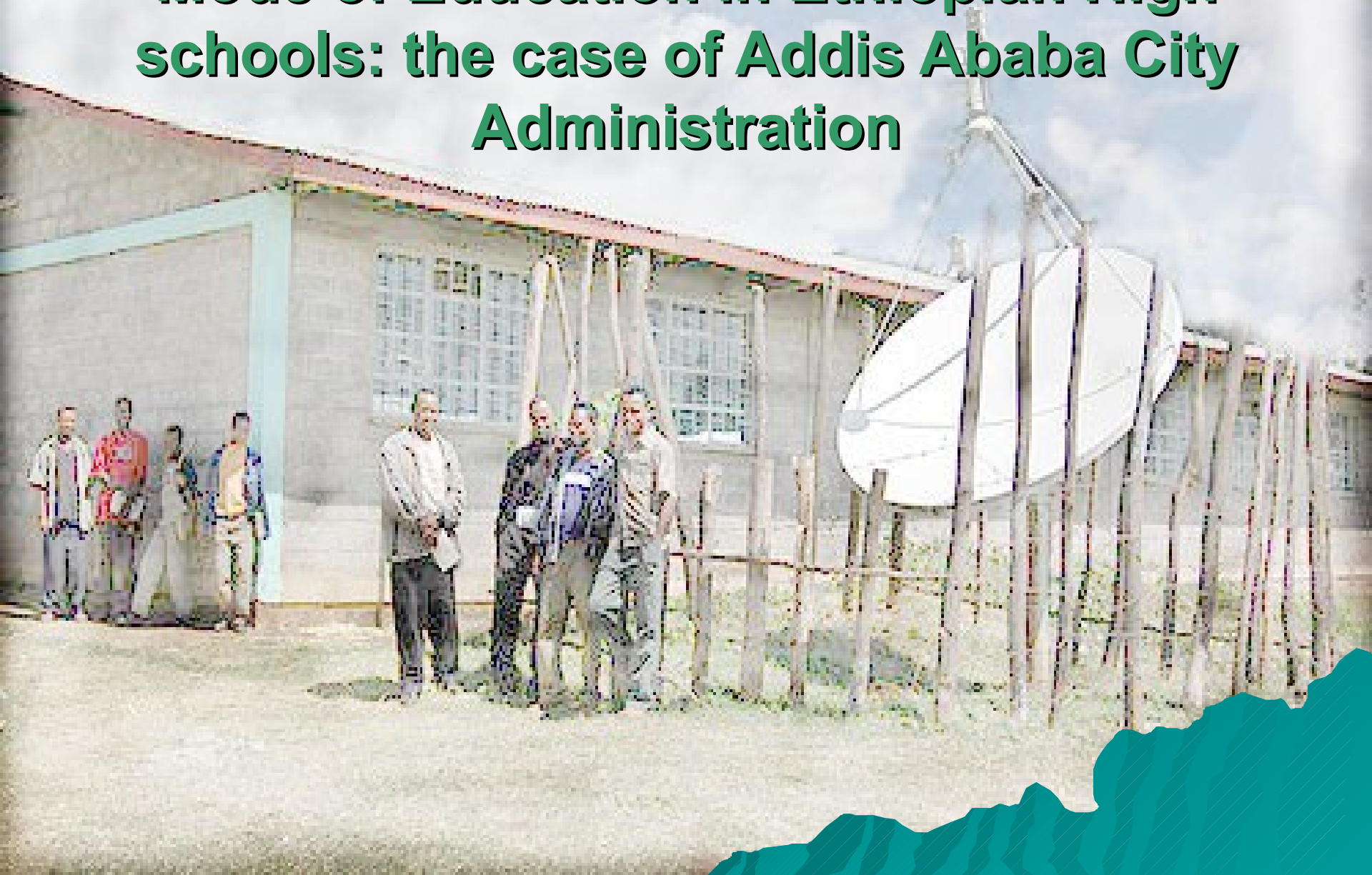
- ◆ Academic
- ◆ Practical
- ◆ Ethical



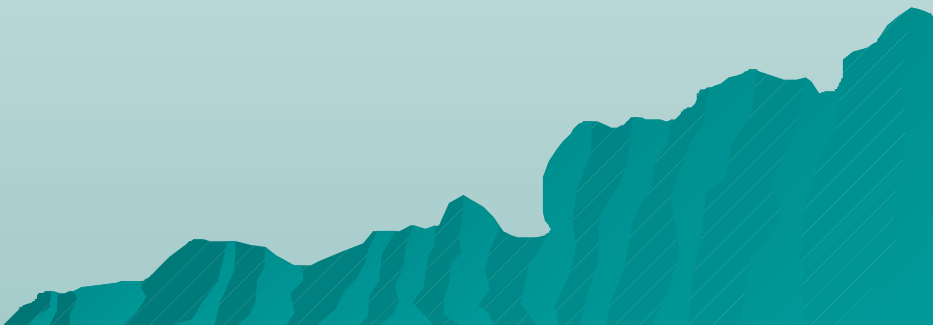
- ◆ **What specific non-technological thing do you enhance with the technology?**
 - ◆ **Is it worth the cost?**
 - ◆ **Is it really sustainable?**
- 
- A stylized teal silhouette of a mountain range is located in the bottom right corner of the slide, extending from the right edge towards the center.

- ◆ **Do local people feel ownership over it?**
 - ◆ **Would they complain if it was gone?**
 - ◆ **Would they be willing to pay money for it?**
 - ◆ **Does it really empower, or does it simply create more dependency?**
- 
- A decorative graphic of a teal mountain range is located in the bottom right corner of the slide.

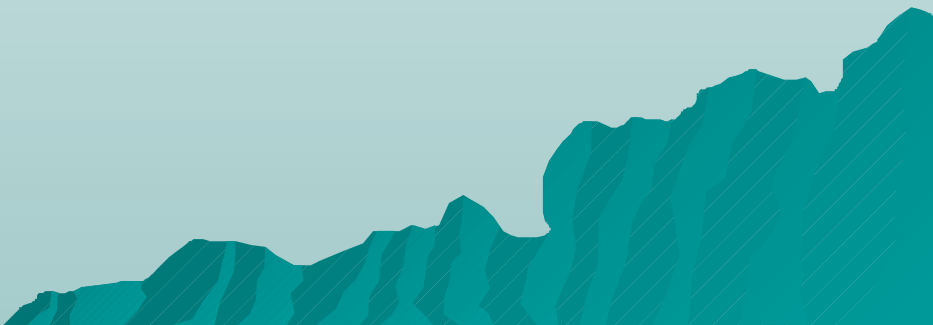
The Rational and Practice of Plasma Mode of Education in Ethiopian High schools: the case of Addis Ababa City Administration



Educational problems

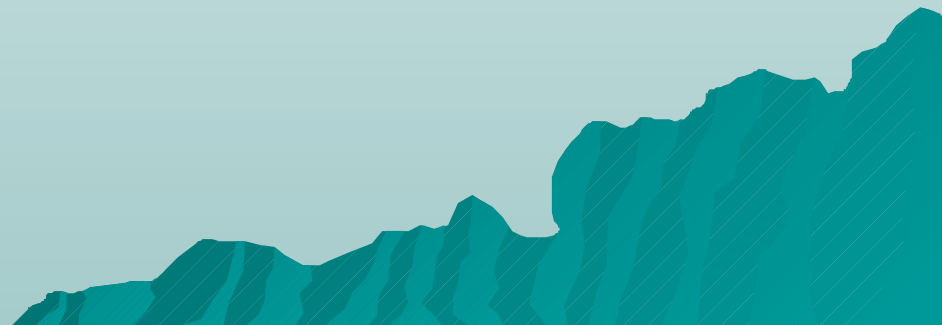
- ◆ overcrowding of students per classroom
 - ◆ shortage of additional reference materials,
 - ◆ shortage of time to give tutorials (students have 10 periods per day)
 - ◆ poor performance during exam and
 - ◆ language problem
- 

Educational problems...

- ◆ lack of attention in the classroom,
 - ◆ lack of participation during question answer session,
 - ◆ absenteeism and
 - ◆ lack of classroom discipline.
- 

Solution?

- ◆ **ICT4D, of course!**



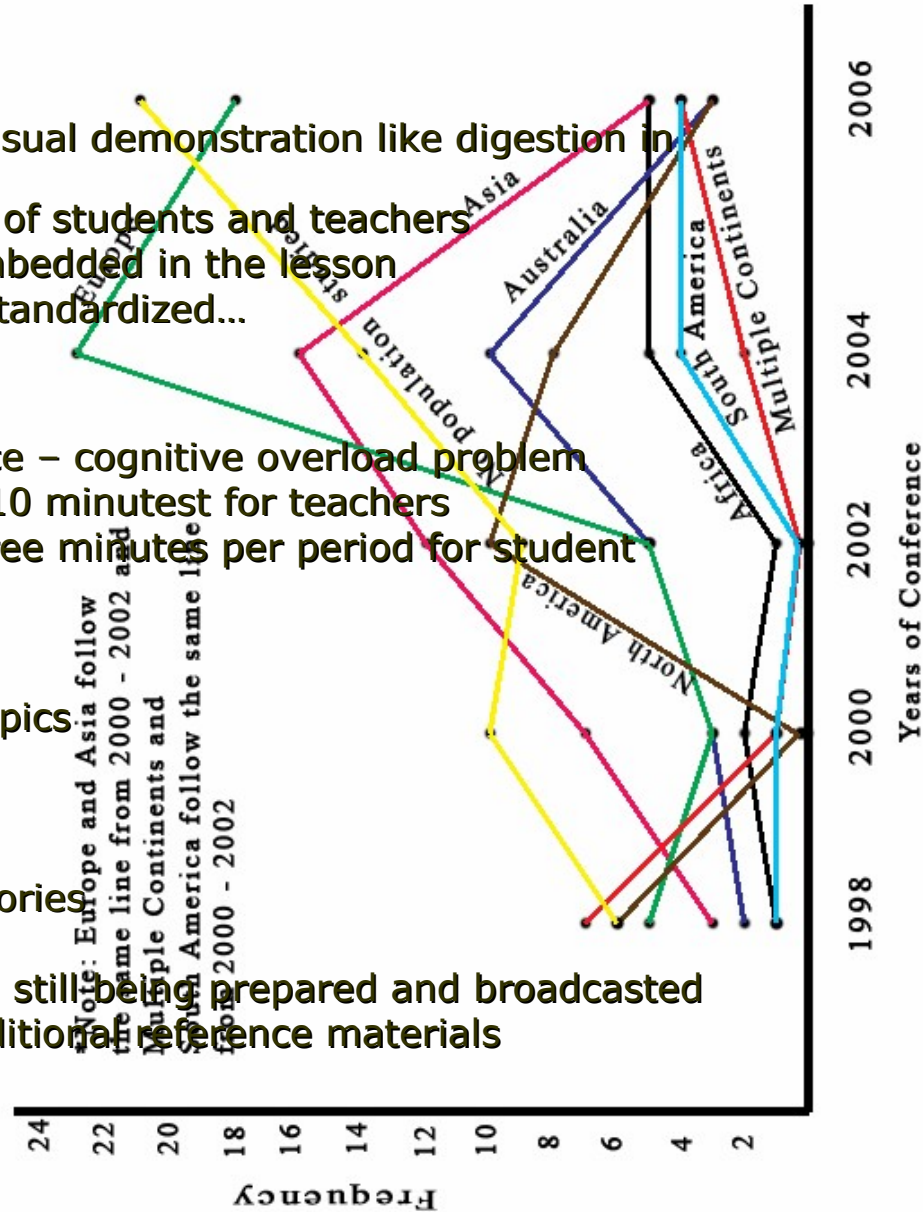
Plasma Mode of education

BENEFITS


- ◆ Good to support the abstract lessons by visual demonstration like digestion in biology class
- ◆ Help to develop the English language skill of students and teachers
- ◆ Supports interactivity due to questions embedded in the lesson
- ◆ Better coverage of the curriculum, more standardized...

DRAWBACKS

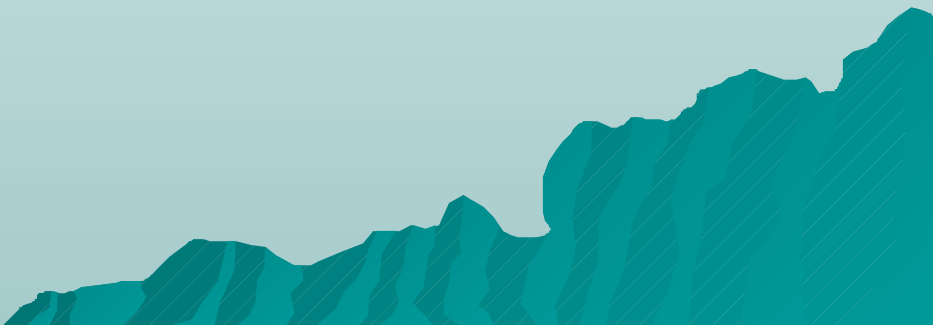
- ◆ transmission is fast for most students' pace – cognitive overload problem
- ◆ Techno-centric (Plasma-centered) – only 10 minutes for teachers
- ◆ Not interactive – not more than two or three minutes per period for student participation
- ◆ One way transmission
- ◆ Language problem
- ◆ Unbalanced time allocation for different topics
- ◆ Lack of coordination
- ◆ It is a one way transmission.
- ◆ Interruption due to power failure
- ◆ No budget to maintain malfunction accessories
- ◆ No monitoring and evaluation activities
- ◆ Despite the drawbacks, new programs are still being prepared and broadcasted
- ◆ Shortage of time and resource to read additional reference materials
- ◆ Failure to consider student diversity



Recommendations

- ◆ **Implementation should be participatory both from top and bottom**
 - ◆ **Solutions should be prioritized – upgrading school infrastructure and teacher capacity should get priority**
 - ◆ **Monitoring and evaluation should be an integral part of any project**
- 
- A decorative graphic at the bottom right of the slide, consisting of a stylized mountain range silhouette in a teal color against a light blue background.

Recommendations

- ◆ **Projects should be implemented through piloting – to identify implementation challenges and minimize project failures**
 - ◆ **We have to change attitudes that believe ICT is a panacea for all educational problems.**
- 
- A decorative graphic at the bottom right of the slide, consisting of a stylized mountain range in shades of teal and blue, with a diagonal line pattern.

Thank You

clint.rogers2008@gmail.com


temtim@yahoo.com

A stylized teal silhouette of a mountain range is located in the bottom right corner of the slide.


Drawbacks ...



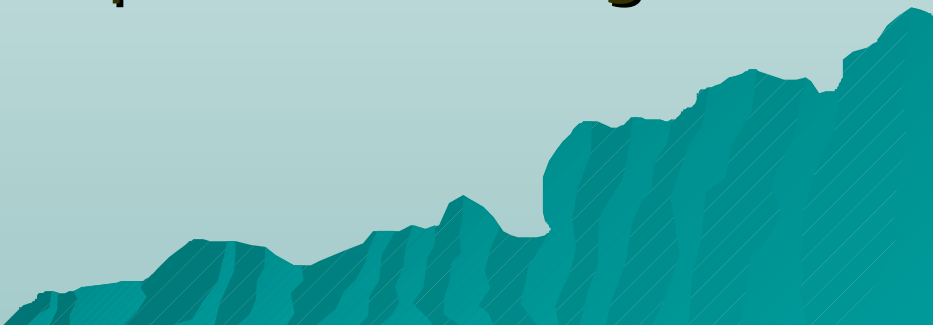
ICT in Education

- ◆ **ICT is any technology that is used to manage information and knowledge**
 - ◆ **ICT facilitates the teaching–learning process:**
 - **improving access to broader sources of learning materials,**
 - **facilitating collaborative and group work**
 - **Supports student-centered learning.**
 - **enhances teacher’s professional knowledge**
 - **enables more efficient planning and management**
- 

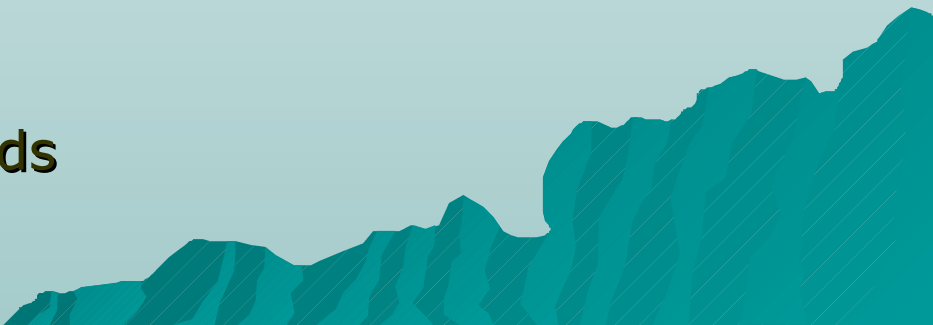
National Effort to use ICT in education

- ◆ **Development of national ICT policy**
 - ◆ **Introduction of plasma mode of education in selected subjects in all high schools**
 - ◆ **Introduction of Schoolnet projects to interconnect all high schools through internet**
 - ◆ **Short term training to build the capacity of high school teachers**
- 


Research Questions

- ◆ **What are the main educational problems?**
 - ◆ **What educational problems addressed through current Plasma mode of education?**
 - ◆ **What benefits obtained so far from implemented Plasma Mode of education?**
 - ◆ **Is there any other way can we use Plasma Mode of education to improve learning in the high schools**
- 

Methodology

- ◆ **Qualitative case study research methods**
 - a general shift in IS research away from technological to managerial and organizational issues,
 - successful integration of ICT is the result of the interaction of many variables and those variables should be seen in their social and cultural contexts
 - ◆ **Data Collection**
 - Interview, observation and document surveys
 - Target population – projects designers, teachers, students and administrators
 - ◆ **Data Analysis**
 - Qualitative analysis methods
- 


Literature Review

- ◆ Radio education started in the 950's
 - ◆ Later TV education also broadcasted on subjects like English
 - ◆ These media were not appropriate to improve leaning as they simply transfer stored knowledge from broadcasting station
 - ◆ Computers became popular starting in the 1980's because of its interactive support
- 
- A decorative graphic at the bottom right of the slide, consisting of a stylized mountain range in shades of teal and blue.

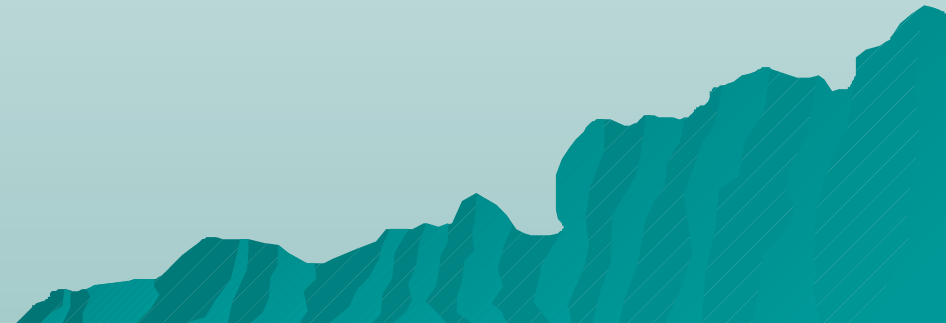
Model of ICT integration

- ◆ UNESCO (2003) proposed the following four stages model for ICT integration
 - **Emerging** – availing basic HW & SW
 - **Applying** – using computers to solve educational problems such as preparing handout using computer
 - **Infusion** – further application of computer such as using computer simulation in classroom for some complex topics
 - **Transforming** – using ICT as the only delivery media


Challenges of ICT's application in education

- ◆ No breakthrough achievement in learning
 - ◆ Wrong conception of techno-centric approach
 - ◆ Every school has unique feature and requires unique ICT intervention
 - ◆ Lack of capacity in developing countries – human and financial
- 

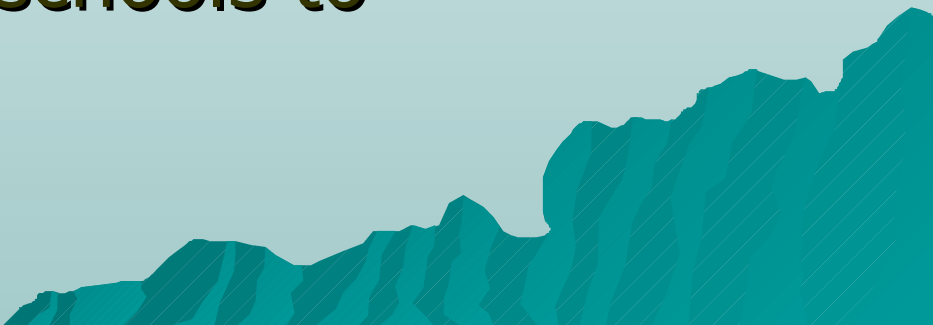
Discussions and Findings



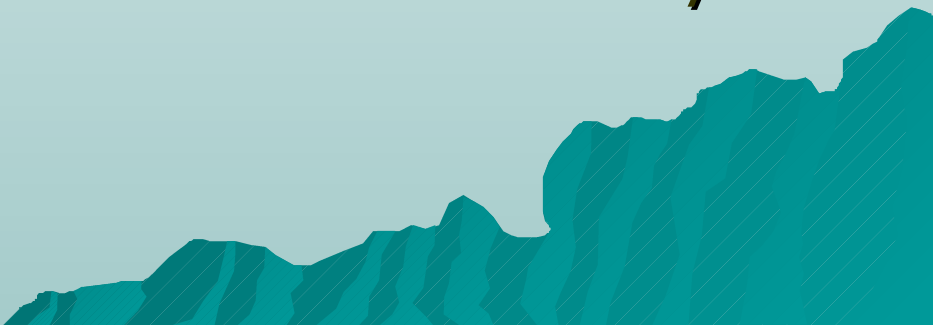
Addis Ababa City Administration

- ◆ The nation's capital
 - ◆ seat of many international and regional and diplomatic Embassies
 - ◆ City with more than 3.5 million population.
 - ◆ Multicultural center of the nation
 - ◆ At a better position by all infrastructures such as skilled human resource, internet access, etc
- 

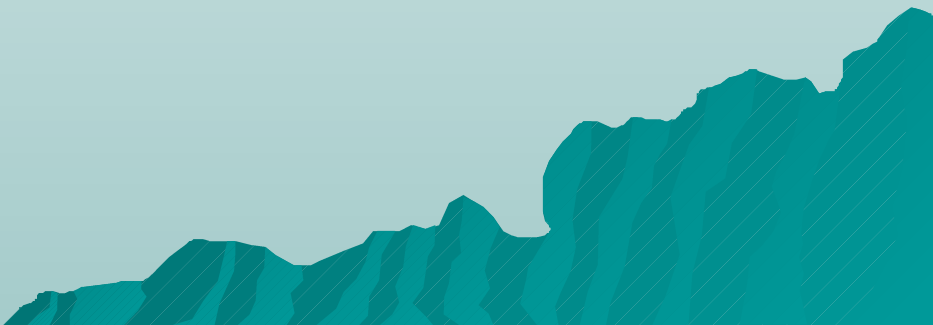
Plasma Project implementation

- ◆ Initiated by the Prime Minister Office
 - ◆ Ministry of Capacity Building and Ministry of Education Supervises overall project design, development and implementation
 - ◆ Ethiopian Media Agency coordinating all project activities
 - ◆ Different institutions work as project team members: EICTDA, MOA, MOH, etc
 - ◆ Targeted to cover all educational institutions (primary schools to universities)
- 


Project Rational

- ◆ shortage of qualified teachers
 - ◆ shortage of textbooks
 - ◆ inefficiency of teaching materials distribution,
 - ◆ Changing the traditional method of teaching that focuses on rote knowledge memorization,
 - ◆ To train students with high problem solving capability as stated in the new educational policy
 - ◆ to standardize delivery of education nation wide and create international student competent nation wide
 - ◆ to train students equipped for the 21st century knowledge economy,
- 


Project Solutions

- ◆ Selected Plasma TV for its flat screen, two way communication support and port to connect to computers or CD Players
 - ◆ Programs broadcasted live
 - for the difficulty of distributing CDs and CD Player on remote areas
 - ◆ Installed to work only one way > 120,000 students
 - ◆ Delivered 35 minutes of the 45 minute period
 - ◆ Deliver science subjects, English and civics education
- 

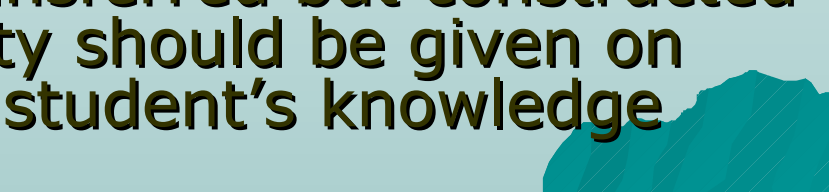
Benefits ...

- ◆ A study made by EMA (2007) identified the following additional benefits
 - ◆ Standardized education (quality and content) nation wide
 - ◆ Possibility to teach students in the absence of teachers in some remote schools
 - ◆ Upgrading the knowledge of teachers,
 - ◆ motivating teachers for his profession,
 - ◆ attracting students' attention in the classroom, and
 - ◆ Improving time management,
- 

Project Risks

- ◆ **Piloting – rejected as it is a successful technology**
 - ◆ **Interactivity – questions are added in the lesson to create interactivity**
 - ◆ **Pronunciation problem – foreigners recommended to develop students language skill**
 - ◆ **Transmission speed on student attendance
- Improve students English listening pace**
 - ◆ **Limited teacher role – only 10 minutes**
- 

Findings

- ◆ **Lack of knowledge to select and apply appropriate technology to the local situation**
 - ◆ **ICT solutions are not usually generalizable- one size fits all**
 - ◆ **implementation should be participatory both from top and bottom**
 - ◆ **Solutions should be prioritized – upgrading school infrastructure and teacher capacity should get priority**
 - ◆ **Monitoring and evaluation should be an integral part of any project**
 - ◆ **Knowledge cannot be transferred but constructed by the individual – priority should be given on technologies that assist student's knowledge construction**
- 

We recognize that ideas for using and promoting ICT are plentiful but funding and resources are limited and achieving new projects that are sustainable in the long term can be difficult

Andy Williamson, 2004.

A stylized silhouette of a mountain range in a teal color, located at the bottom right of the slide.