Teachers’ Professional Development

Teacher Professional Development

- Teacher and Teaching
  - Teacher as Change Agent
    - Admin
    - Facilitator - Role of Implementing CLIx
    - Resource Generator
  - Teacher as a Member of a Professional Community
    - CoP
  - Teacher as Learner
    - F2F
    - Online Engagement
      - Webinars

- Courses

  - Teacher as Prosumer in a Continuum of Practice

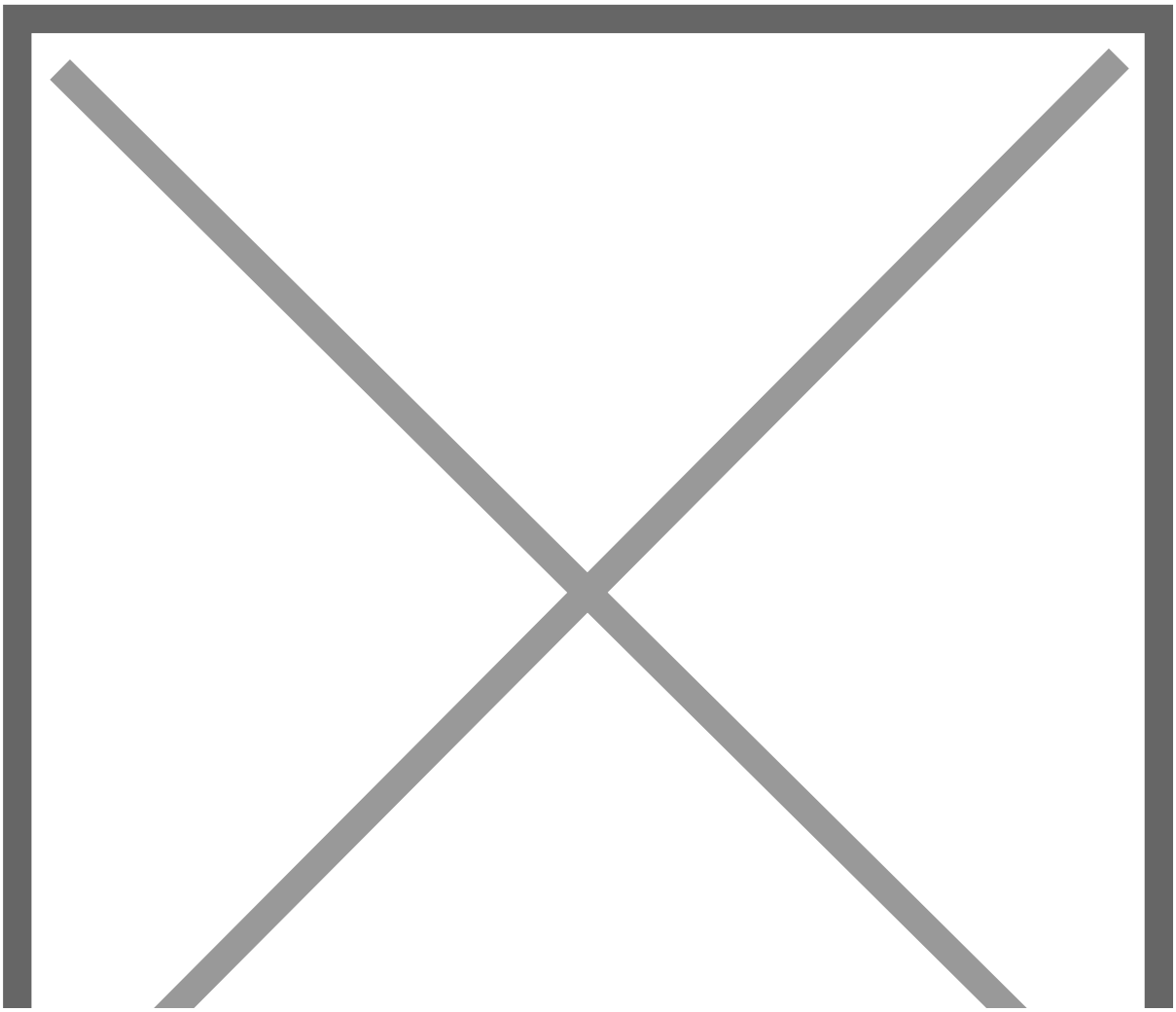
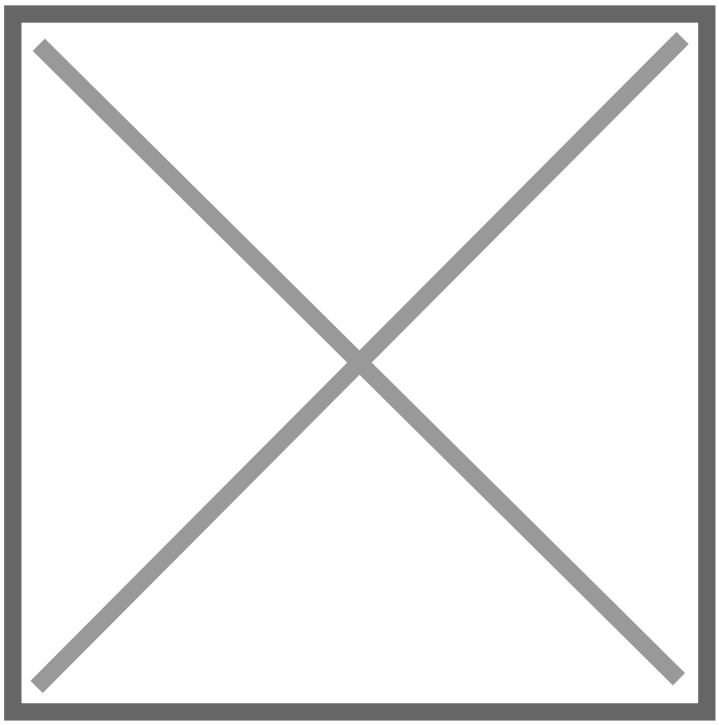
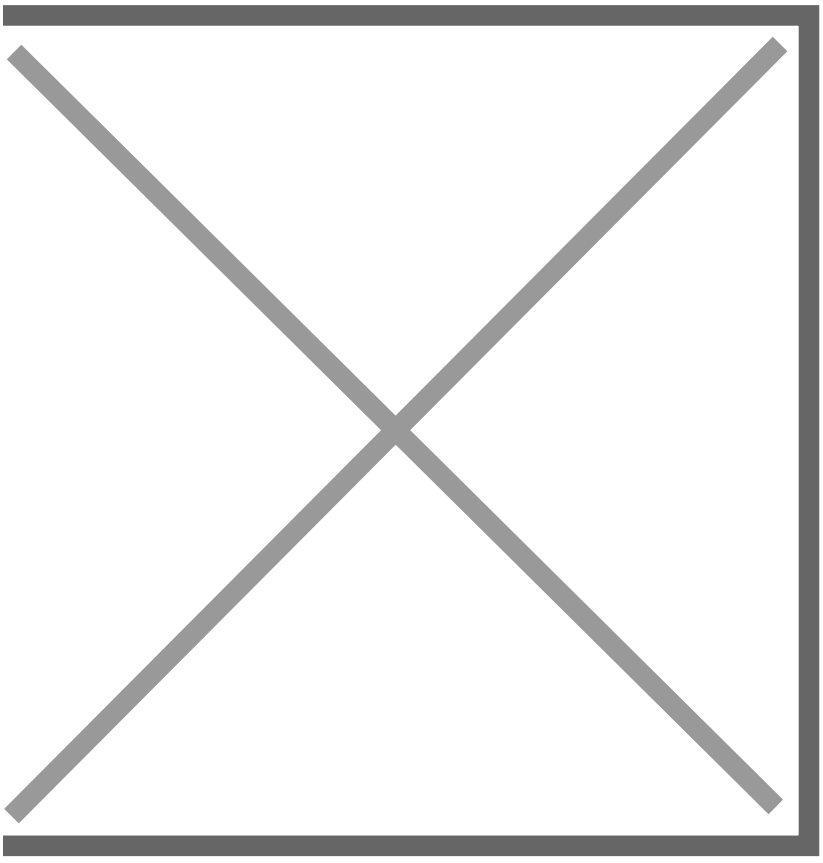


Figure to explain TPD





Alternate view to hand-drawn

- Who is a CLIx Teacher?

- Roles and Responsibilities
  - RP - Selection
  - Teacher - Selection
- Why TPD?
  - What does TPD involve?
- Why F2F?
  - What is F2F?
    - Annexures - Session Plans
      - Detailed plans
      - Presentations
      - Reading Materials
      - Handouts
    - How to organise?
      - TPD Readiness Checklist

        - Observation Checklist (Given below)
        - RPs (Implementation Checklist?)
        - Feedback Forms (Given below)

- Why Online Engagement?
    - What is the Course?
        - RTICT Website
    - What is the webinar?
        - Example of Zoom

- Why CoP?
    - How to set up a CoP?
    - What is a CoP?
    - What are some examples of management of CoPs? - Annexures

- Are there more Questions? FAQs
    - Whom do I reach out to for more information?

- Can I do courses without being a CLIx School?
- Can I deploy CLIx in my school without being trained in person?
- Can I get some help if I want to implement CLIx?

Objectives

The professional development of teachers is a core concern in CLIx. The program rests on the belief that true learning happens through on-going interaction between students, teachers and curricular materials. The CLIx program looks at alternative modes of delivery through a sustained engagement with the teacher. Through this continuous engagement, teachers are supported to implement the CLIx modules in their classrooms and bring about changes in classroom practices by adopting active and interactive teaching and learning pedagogies. The TPD objectives are

- To develop understanding and skills to nurture an interactive, active and inclusive classroom.
- To develop a critical perspective, understanding and skills of ICT use for professional development and teaching-learning.
- To become an active member and participant of a community of professional practice.

Attend Workshops	Teachers will interact with experts in 5 days of Face-to-Face workshops and gain hands-on experience with CLIx Student Module (i2C and Subject Modules)
Implementation of CLIx Student Modules	Teachers will implement the CLIx student modules in their *classroom and school ICT lab* and record and reflect on their practise/teaching
Participate actively in Community of Practice	Teachers will share their experiences of implementing the CLIx student module and participate in discussions with their peers and TISS faculty in their subject Community of Practice (CoP) via Telegram.
Optional - Online Course	Teachers will engage with each course curriculum and course assignments for 12 weeks Online via the TISSx Platform to complete the course. If teachers are interested in pursuing certification, please contact TISS.

Roles and Responsibilities

CLIx believes in a nested model in developing the teachers' innate capabilities to be effective change agents. This is best achieved through local resource persons (RPs) who initially act as a conduit for the experts but gradually develop their own capacities and are experts in their own right contributing to the development of the programme. Mentoring these local resource persons to be the leaders of ripples of change that spread wide and deep is a core aspect of the TPD programme of CLIx.

The state has generally aided CLIx in selecting the RPs, though they could also be selected on the basis of other criteria such as volunteering to be RPs nominated by colleagues and so on. All that is required is that the RPs possess a good understanding of their subject, demonstrate an ability to train and mentor peers and be reasonably adept in using technology, at least the basic tools of social media, mobile phones and word processing tools on the computer. The teachers would be subject teachers that CLIx modules cater to. The workshops, implementing the CLIx modules in school and managing and participating in the communities of practice are the responsibilities of the designated CLIx Resource Persons (facilitators) as well as the teachers participating in the CLIx professional development. Both resource persons and participating teachers need to be aware of their responsibilities prior to committing to the programme.

Roles of Resource Persons (RPs)

1. RPs need to have undergone training on CLIx modules by TISS faculty or designated CLIx RPs of the state.
2. RPs need to facilitate at least 2 workshops for teachers based on their domain expertise (English Language, Mathematics and Science)
3. RPs are required to write reflective reports of their experiences of facilitating the workshops and sharing on the RPs community of practice groups.
4. RPs are required to ensure that the participating teachers are made members of the respective subject domain communities of Practice on the WhatsApp/Telegram group.
5. RPs and teachers who are interested in pursuing the RTICT certificate programme offered by TISS may write to <add email> for more details.
6. RPs need to provide continuous academic and pedagogical support to teachers by managing the teacher communities of practice throughout the academic year, encouraging teachers to share their issues, classroom work and pedagogical ideas.

Role of teachers

Teachers are required to

1. engage actively in the workshops.
2. become members of the WhatsApp/Telegram community of practice groups and engage actively by reflecting on their teaching and sharing their thoughts and ideas.
3. implement the CLIx student modules in their schools and classrooms and share their experiences on the community of practice
4. engage on an ongoing basis with their peers on the community of practice sharing classroom experiences and issues related to the subject they are teaching.

Teachers who are interested in pursuing the online RTICT certificate courses offered TISS may write to <add email> for more details.

Workshops & Facilitation approach

(participative, hands-on, discussions, computer + hands-on, group work)

CLIx believes that learning best occurs when a constructivist methodology is employed. Thus, the training to follow this strategy. The teachers are exposed to student's modules in a model replicating what they would be using with their students. Hence, there is a lot of hands-on learning at the computer terminal. The pedagogical theory is interwoven in the discussions on the pedagogical designs and technological affordances of CLIx modules and other ICT tools. The teachers are asked to engage through a focus on task completion. To ensure that the teachers realize the importance of their training there is a reflective discussion that is participant-led on the pedagogy of the CLIx modules, its uses in their educational practice and the methods to be employed. The teachers demonstrate their learning and creativity by presenting to their batch their lesson plans and implementation strategies.

Thus the training is highly participative with both hands-on and digital activities given time. The teachers learn in pairs at each terminal to simulate the classroom lab experience. The role of the trainer is akin to the facilitator that the teacher would have to be in the classroom. The teachers are encouraged to explore the CLIx modules and tools and create their own artifacts and lesson plans in small groups and then present their lesson plans or such to the larger group. In order to ensure that the teachers understand the pedagogy of such a constructivist approach whole group discussions also take place.

It is advisable to club i2c (Introduction to CLIx using Digital Literacy tools) training with subject training (2/3+3 days) to ensure that the teachers can consistently connect the tools to their subject and thereby teachers are able to construct the use of the i2C tools with their subject teaching and get a feel of integrating ICT into their teaching-learning before diving into the subject & ICT based CLIx modules that are exemplars. The exemplar CLIx modules expose teachers to interactive and pedagogically effective ways of leveraging technology for their specific subject teaching and learning.

Online Engagement

RTICT Courses

Online courses are gaining popularity as they can reach out to a large number of participants at the same time and provide opportunities for collaborative learning. They also provide continuous onsite support and learning opportunities to the teachers throughout the school year. Reflective Teaching with ICT (RTICT) is a post-graduate certificate program that offers blended and online courses aimed at enhancing the teaching practice of in-service teachers and practitioners. The RTICT program is offered on the TISSx platform.

During the training, the role of the facilitator is to introduce the TISSx platform to the participants and help them register, if they are interested in taking up the course. The facilitators should then enroll them in the respective course. During the training, it should be ensured that the participants are given enough time to navigate the platform and explore the modalities of TISSx.

Webinars

The Online Learning Environment requires constant engagement with the course learners as the learners and the facilitators have less or no face to face interactions. It can be done in various ways like having a discussion forum in the courses (*RTICT courses have a discussion forum for its course learners),* digital communities of practice, which will be discussed in detail in the next section and webinars. Webinars are live online seminars, wherein the course facilitator can connect with the course learners synchronously to deliver course content or solve doubts/queries. In this way, you can reach out to many learners at the same time and also record the webinars which can be shared later with the learners who were not able to attend the same.

Zoom is a free forum useful for connecting up to 100 people, replete with audio, video, chat, screen sharing, and recording features. The only disadvantage is that the time limit per call is restricted to 40 minutes. Though, this may help focus the discussion as well.

Skype allows only up to 10 users at a time. WhatsApp audio and video group calls have increasingly gained popularity. Google Hangouts is still used by many for group calls, though it is getting phased out.

It would be worthwhile to maintain a YouTube channel dedicated to holding video recordings of these calls for wider dissemination of knowledge construction, if the channel is made public, and to allow asynchronous interactions within the group if the YouTube channel is made private.

Community of Practice

What is CoP

Evidence from research across the globe suggests that in-service professional development is effective when it is contextual, based on teachers' practice and learned through collaborative and critical engagement with other practitioners, teacher educators, domain experts, and other stakeholders. Based on a social theory of learning, Etienne and Beverly Wenger-Trayner provide a framework for professional learning that is linked to practice.

In this framework, teachers learn by participating in discussions about their practice, sharing and producing different types of artifacts derived from their practice in a collaborative space termed as a community of practice. Participation essentially includes sharing resources, practices, and issues, reflecting on teachers own practice, discussing and commenting on each other's work, connecting evidence from research and theory to their practice, essentially activities that make the teachers practice explicit within the community so that they can share their experiences and engage in critical discussions and learn from each other, building their pedagogical and subject domain knowledge.

Why CoP

The CLIx CoP recognizes the complex task of teaching and the active, evolving and dynamic nature of professional knowledge. As the community develops, a repository of best practices and resources that teachers themselves legitimize and use and reuse in their practice is created. This, in turn, contributes to the discipline of teacher education through rich interconnections between theory and practice, interactions between academicians and practitioners to inform practice, theory, and policy.

Participation in CoPs

- Active participation of the TEs (including university faculty) /RPs, subject experts includes, but is not limited to

    - Reflecting and sharing experiences of implementing CLIx modules.
        - Sharing photos of students' working on CLIx modules.
        - Sharing students' work.

    - Triggering discussions on CLIx Modules Implementation
    - Providing pedagogical (and minor technical) solutions for teachers to be able to implement CLIx modules in their schools.
    - Triggering discussions regarding the larger context of subject pedagogy and education.
    - Motivating teachers to participate

- Active participation of the teachers includes, but is not limited to
    - Reflecting and sharing experiences of implementing CLIx modules.
    - Sharing photos of students' working on CLIx modules.
    - Sharing students' work.
    - Engaging in discussions regarding the larger context of subject pedagogy and education.

How to initiate or setup CoPs

A community of practice requires a medium in which the community interacts. This is traditionally a physical space that is increasingly becoming unviable due to travel costs, space constraints and the lack of time claimed by many participants. Technology can be leveraged to ensure active participation and wider dissemination of ideas. Two popular social media applications - WhatsApp and Telegram - have been leveraged by CLIx Communities of Practice. While WhatsApp is more popular in the Indian context, there are constraints with respect to this technology vis-a-vis Telegram. A summary table of the two applications is presented below to aid the decision on which technology to use. It must be noted that both technologies are constantly evolving and many new players enter the market regularly as well.

	WhatsApp	**Telegram**
Cost	Free	Free
Compatibility	Mobile-based app (for OS) Web-version available	Mobile and PCs (all OS)
Access	Single Device And PC access if the phone is close by	Simultaneous access to multiple devices • Useful for those without smartphones.

Types of Communication	One-to-one One-to-many (Broadcast) Many-to-Many (Group)	One-to-one One-to-many (Channel) Many-to-Many (Group)
Reach	256 maximum in a group	Up to 2,00,000 in a group.
Privacy	The number is visible to all in group	The number is hidden from those who do not already have a number.
Membership	Admin can add members. Link to group chat enables members to join. Only admin has access to the link.	Admin and other members can add newcomers. Link to group chat can allow others to join. Admin can make changes to membership rights.
Editing	Allows message deletion for self and others in the group.	• Allows editing of messages (with time stamp) • Allows deleting of messages. • In Groups with Admin, admin can restrict the rights of members to delete messages for all. •
Storage	Automatically stores in the phone memory. • Pictures and videos clutter the gallery. • FIles and documents are downloaded in a separate folder.	It does not clutter up the phone's memory. • Images and videos are NOT stored in galleries unless one consciously does so. • Files and documents are stored in a cache that can be cleaned regularly.

Strategies to keep CoP active

Darling-Hammond, Wei, Andree, Richardson, & Orphanos (2009) revealed that 50 hours or more of professional development is needed to effectively change teacher practice. School, district and state leaders will need to ensure that modalities and processes are in place for teachers to consistently be able to transfer learning into practice. CoP posts are a way of documenting and sharing this transfer into practice.

Adult learning is social in nature, adult learners benefit most when they are learning through collaboration in a safe collegial environment, willing to take risks by testing new ideas, starting small while they incorporate new techniques, and getting feedback and validation of their work from their peers. It is in this context that the posts from the CoP facilitators and participants could include one or more of the following:

Activity	**Example**
Problem Solving	“The way I am teaching a concept does not seem to be working, can we brainstorm some ideas”
Seeking Information	“I need to know how to login to the CLIx platform”
Seeking Experience	“Has anyone worked with blind children, I need some help”
Reusing Assets	“Ï have an experiment to understand *the force* that has worked well, would anyone like to try it and share experiences”
Coordination and Synergy	“Can all the schools in the block discuss where we can buy good material for the science lab and get some discounts ”
Building an argument	“How do schools maintain ICT labs in other states? Can we get some best practices to recommend to the department?“
Growing Confidence	“ Before I implement this new classroom strategy I’ll discuss with the other teachers in the community“
Discussing developments	“What do you think the new programme CLIx is all about, how will it really help improve learning“
Documenting projects	“We have faced this problem of uploading files for English module, let us document this problem”
Visits	“Can we visit your learning Lab in HBCSE we want to establish such labs in our schools“
Mapping knowledge & Identifying gaps	“Does anyone know what kind of laptop a teacher should buy, what information is missing, how do we get it“

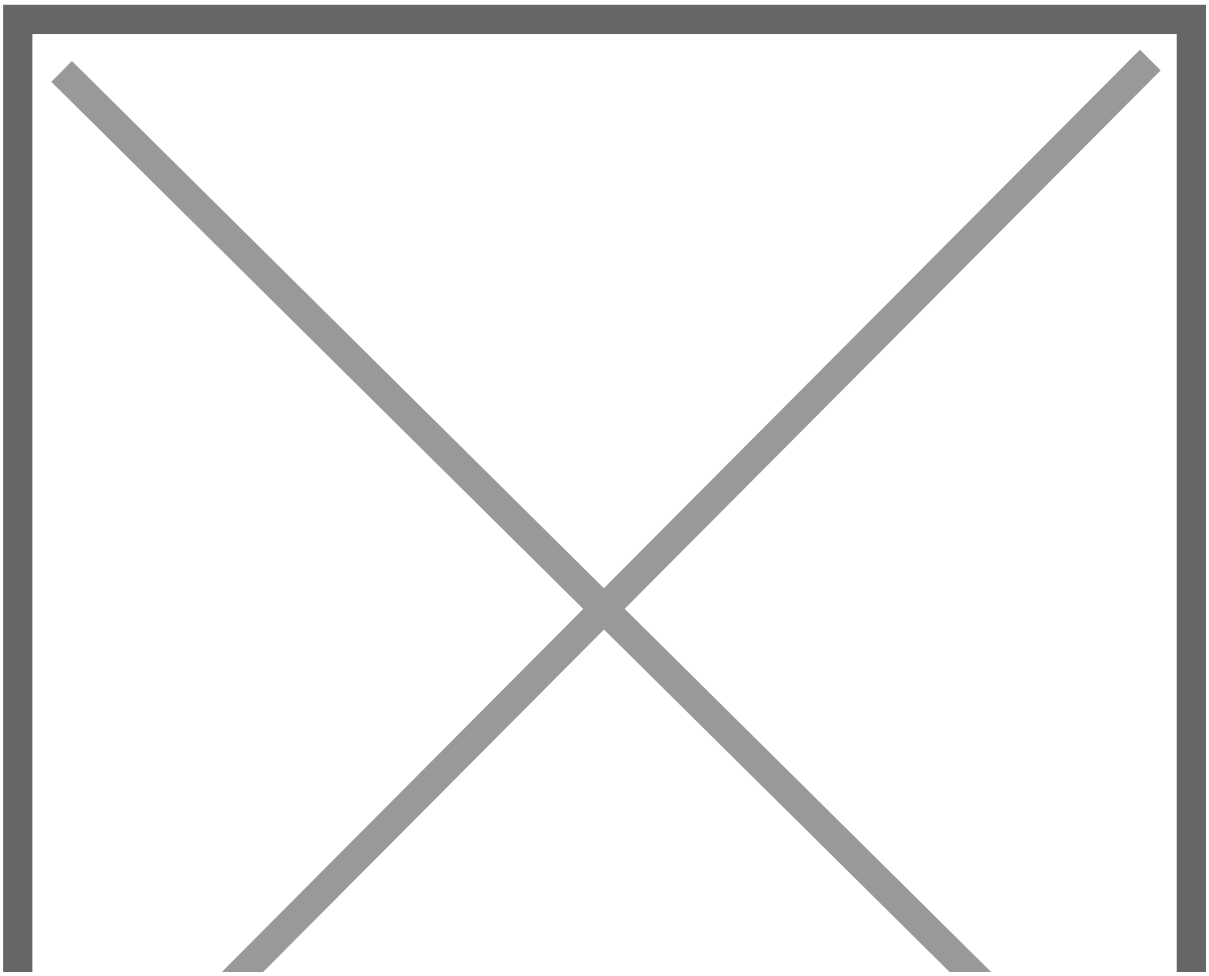
Content Adapted from the Following Source: Wenger, E., (2006). Communities of practice: A brief introduction. www.ewenger.com/theory/

The key to sustaining CoP is to ensure there is chatter on the group. The local leaders identified in the state could lead the discussions.

CEIAR, TISS, 2020

Training outline

There are three types of training as explained in the diagram below-



Based on the diagram given above, it can be observed that all the three forms of training are different in their objectives and structure. The training for teacher educators or resource persons is different from the teacher training conducted for teachers. The former has detailed sessions about the CLIx program but also introduces the blended online courses- *RTICT* for professional development. These extra components intend to prepare teacher educators to lead teacher training in their respective states. The four day teacher training model is largely subject-specific orientation with focus on CLIx module exploration and domain-specific pedagogy. The refresher training condenses this even further since it is aimed at teachers who have already undergone the training but need to brush up their concepts and understanding. It also provides space for revisiting the modules and pedagogy through their CLIx classroom/lab experiences.

The CLIx Modules' Training Objectives

The CLIx digital literacy curriculum called Invitation to CLIx (I2C) has been modeled on the idea of microworlds to develop a constructionist digital literacy learning environment to not just enhance digital literacy skills of learners, in isolation, but to develop fluent digital users in a context that would motivate and connect the digital world for both students and teachers with their reality and school worlds. Digital fluency is not only about learning to use a tool but developing the skills to construct meaningful artifacts with the tools (Resnick,2002). In I2C, the microworlds have been designed to provide multiple representations, open-ended activities to explore, manipulate and create artifacts in order to practice the skills, develop ways of thinking, strategizing and forming ideas and concepts that enable students to focus and connect on the important relationships of the skills being studied within the regular school curriculum.

Seymour Papert (Papert,1980) developed a new concept of microworld intended to revolutionize the use of computers in education. The idea of a microworld combines the use of computers in education with the learning theories of constructivism and constructionism. Constructivism is a theory of learning where the basic premise is that learners construct structures of knowledge in their minds while engaging in an activity. Constructionism is a learning and pedagogy theory where learners construct or build knowledge structures in their mind by building external artifacts, physical or virtual that can be shared, edited and reflected upon. A microworld is a constructionist learning environment that enables students to explore, manipulate and learn from feedback in a virtual world (that depicts a slice of a real-world scenario with strict boundaries); design and construct physical or virtual artifacts and through this process enable learners to develop ways of thinking, strategizing and building or constructing concepts and ideas (Noss & Hoyles, 2017).

This constructivist pedagogy was extended to the subject modules: English (Listening and Speaking Skills), Mathematics (Geometric Reasoning, Proportional Reasoning, and Linear Equations) and Science (Atomic Structure, Basic Astronomy, Ecosystem, Health and Disease, Motion and Sound).

Objectives of i2C training session

At the end of 1.5 days, the teachers will

- Understand the use of ICT in education with reference to TPACK
- Appreciate the need for a constructivist classroom and the affordances of technology to enable this.
- Know to navigate CLIx Platform
- Learn to use at least 02 i2c tools related to their subject pedagogy
- Create a rudimentary ICT-based lesson plan related to their teaching.

Objectives of English Training Sessions

At the end of three days, the teachers will

- Articulate the need for a constructivist classroom with technology affordances made available to students for their subject teaching.

- Know to navigate CLIx English Modules
- Map the CLIx English learning objectives to their textbook concepts
- Demonstrate the use of CLIx English Modules as they would use with their students.

Objectives of Maths Training Session

At the end of three days, the teachers will

- Articulate the need for a constructivist classroom with technology affordances made available to students for their subject teaching.
- Know to navigate CLIx Mathematics Modules
- Map the CLIx Mathematics learning objectives to their textbook concepts
- Demonstrate the use of CLIx Mathematics Modules as they would use with their students.

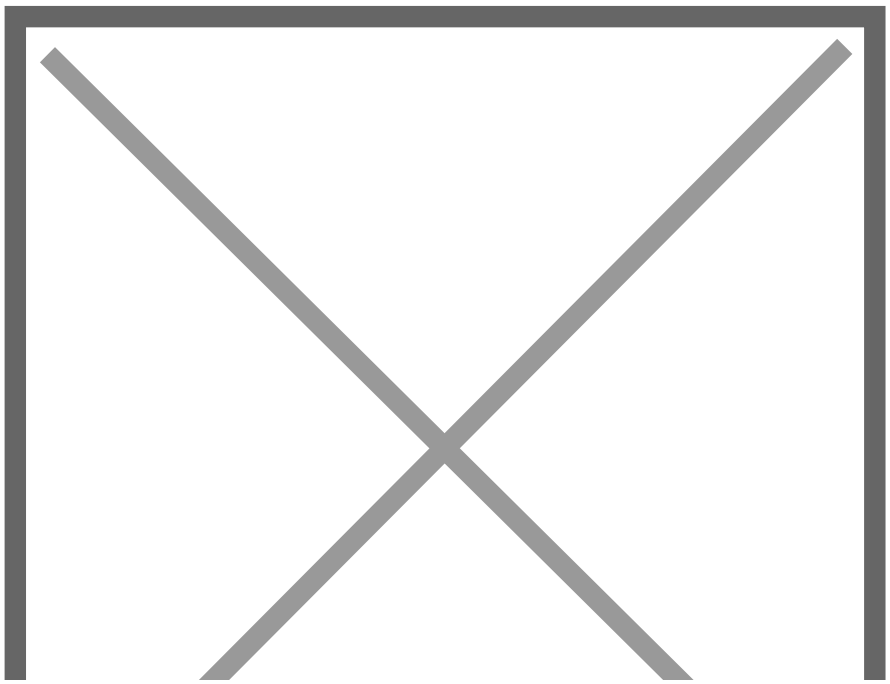
Objectives of Science Training Session

At the end of three days, the teachers will

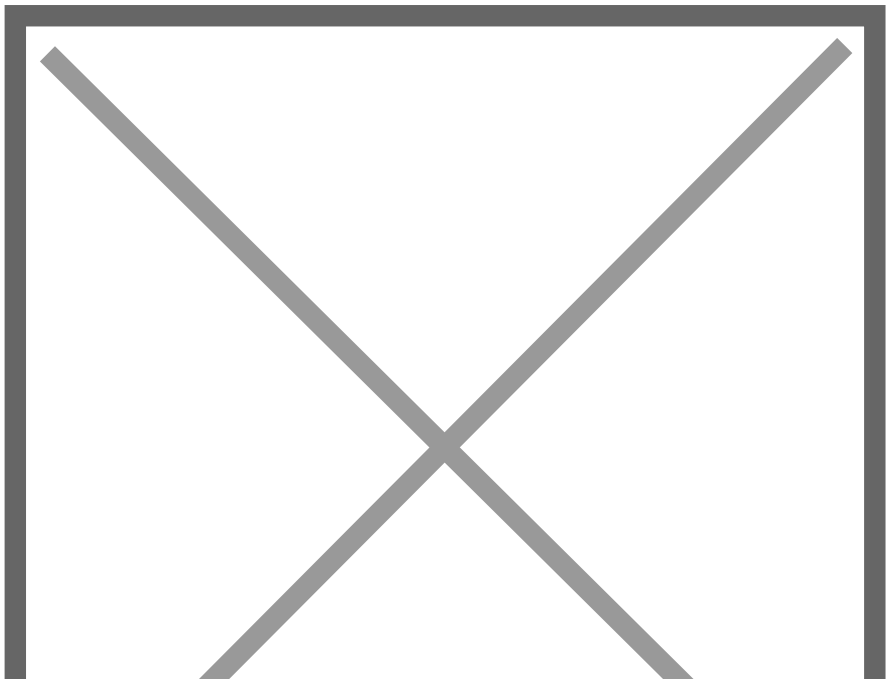
- Articulate the need for a constructivist classroom with technology affordances made available to students for their subject teaching.
- Know to navigate CLIx Science Modules
- Map the CLIx Science learning objectives to their textbook concepts
- Demonstrate the use of CLIx Science Modules as they would use with their students.

Training Requirements

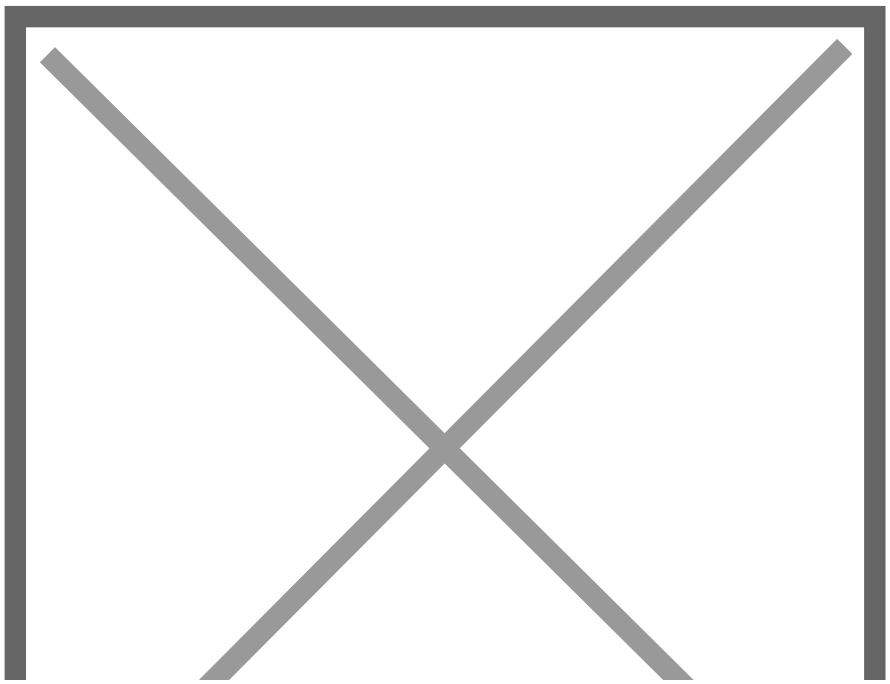
Any training requires immense preparation to be a successful program. A work well begun is, indeed, half the work done. A core idea of this lies in understanding lab requirements. The CLIx TPD Modules needed two kinds of workspaces: one a computer lab set-up and space to dialogue, perform experiments, do activities and so on. While having a lab with a lot of open space and movable chairs works, having a classroom to the side and access to open space for especially Science experiments is best.



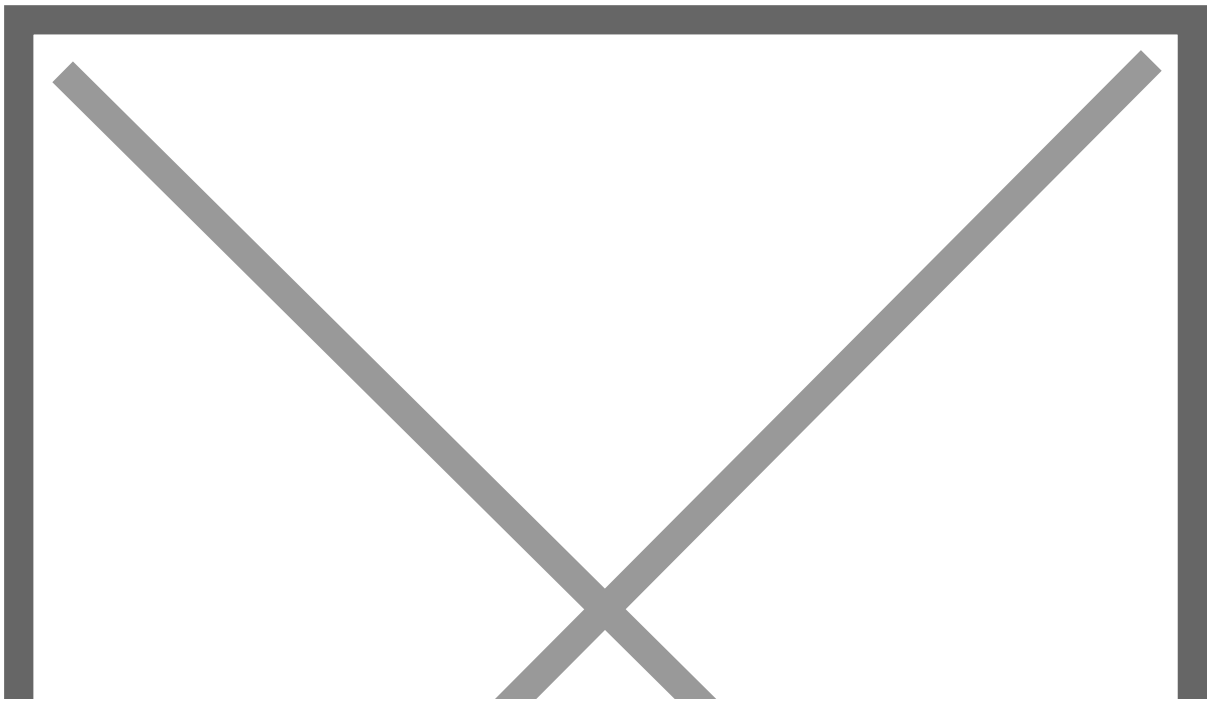
Space for Facilitator to walk to help.



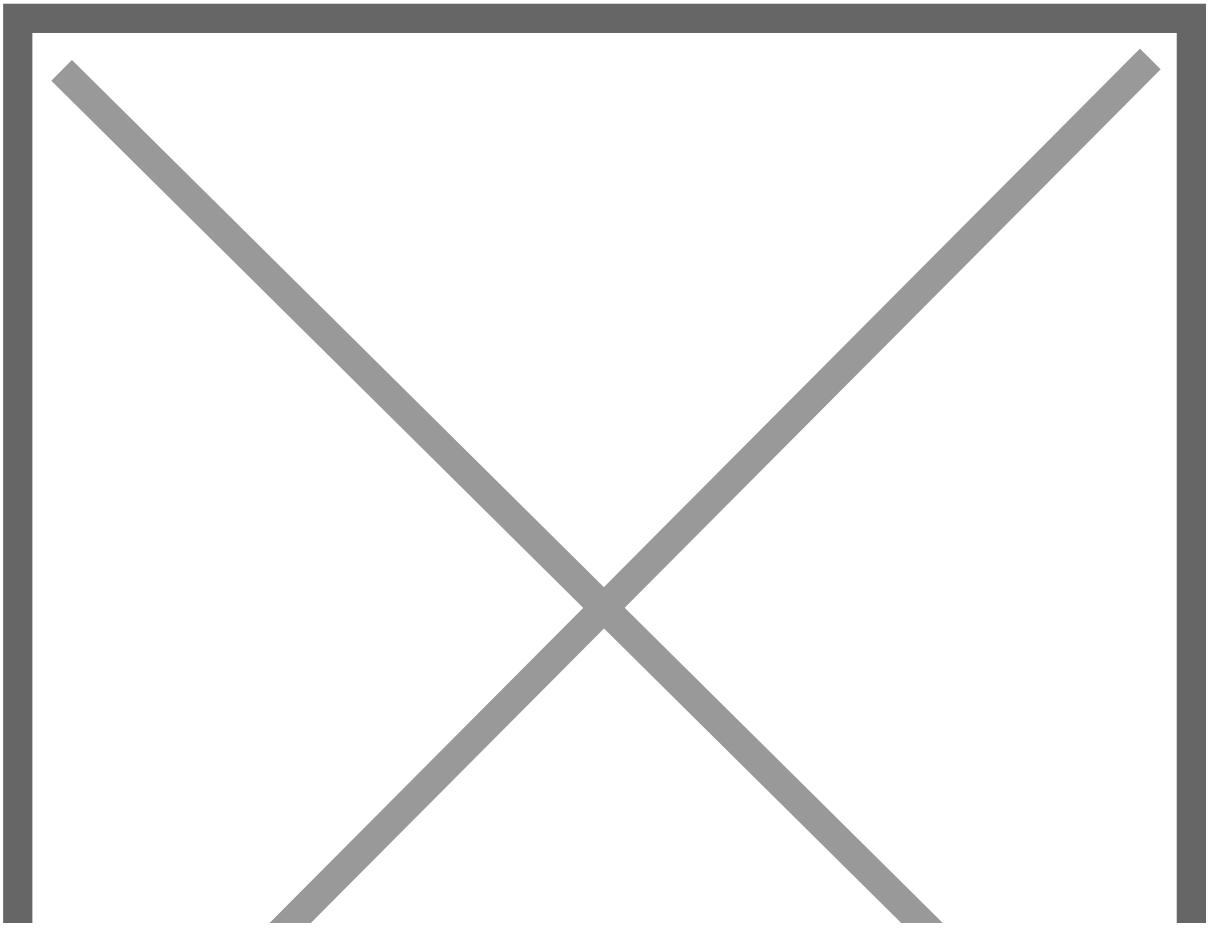
Movable chairs for collaborative learning in pairs or groups of 3-4.



Projector, Screen and Speakers to make Show and Tell easy. And if the screen cannot be set up in the proper space, use the wall :)



A whiteboard (or chalkboard or a flipchart) to draw, jot down whole group discussion points, etc.



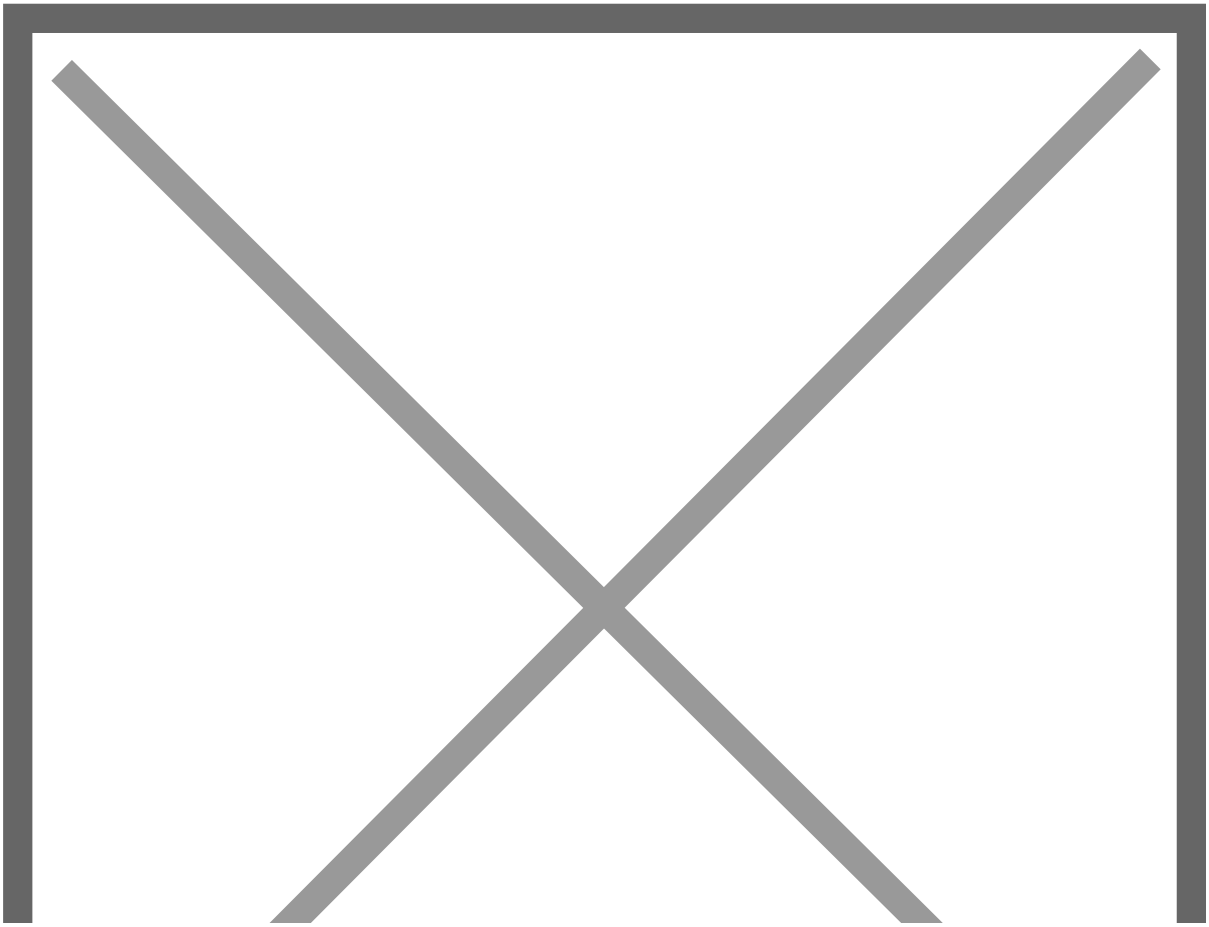
Using school labs for training is also possible.

https://drive.google.com/a/clixindia.org/file/d/1wdfgTw6HXCtsEFTgnWgZsZpujxbkiKQu/view?usp=drivesdk

A video sample of the projected screen, a blackboard, the facilitator and the participants.

https://drive.google.com/a/clixindia.org/file/d/1K57KUY8M-E36qNOG2GUIyzrPjugQRIIQ/view?usp=drivesdk

Video Sample: A Space for Small Group Discussion. Notice the resources: Textbook, the CLIx Module, the RTICT handbook, the student workbook and teacher guide, A4 sheets, but most of all the discussion among the participants :)



A Space to Dance even :) Dance based Icebreakers are fun.

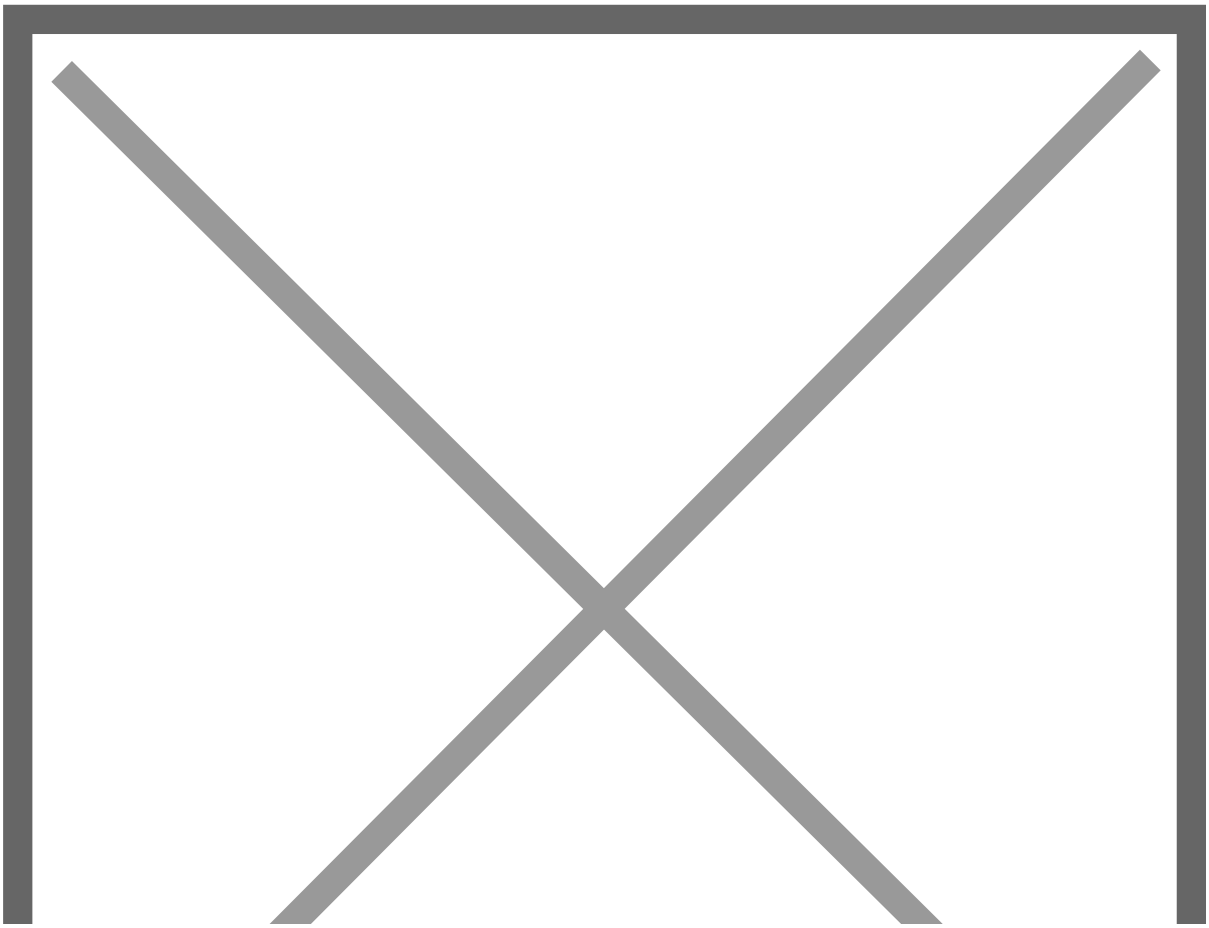
See here a sample video of one in a constrained space:
https://drive.google.com/a/clixindia.org/file/d/1igBCOSVdNsoVtfYHgtkiBkJZiatxMmEB/view?usp=drivesdk
Video Sample: The Dance Icebreaker :) Have fun in training.

https://drive.google.com/a/clixindia.org/file/d/1jAJyBrbEkA6VkcuvFqKPp7AmAYDGjy87/view?usp=drivesdk
Video Sample: Using the local language in training is always good. If you cannot speak it, get a local to translate for you. Inclusive learning: inclusion of languages.

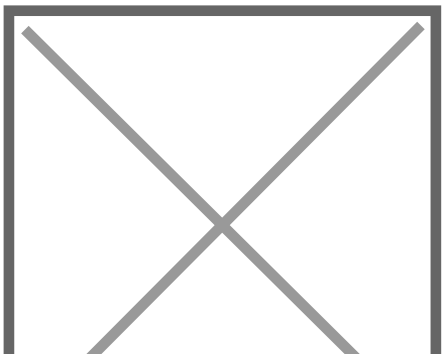
https://drive.google.com/a/clixindia.org/file/d/1F01loHAHPw4c6-2cxenBt7OtbgBdyHxW/view?usp=drivesdk
Video Sample: Using local resources - This school had a guitar, so the Sound module of Science training was adapted to exploit this resource.

https://drive.google.com/a/clixindia.org/file/d/1Rso2C7UgQD5l1SpEQAKbBGsvkIZlR8F7/view?usp=drivesdk

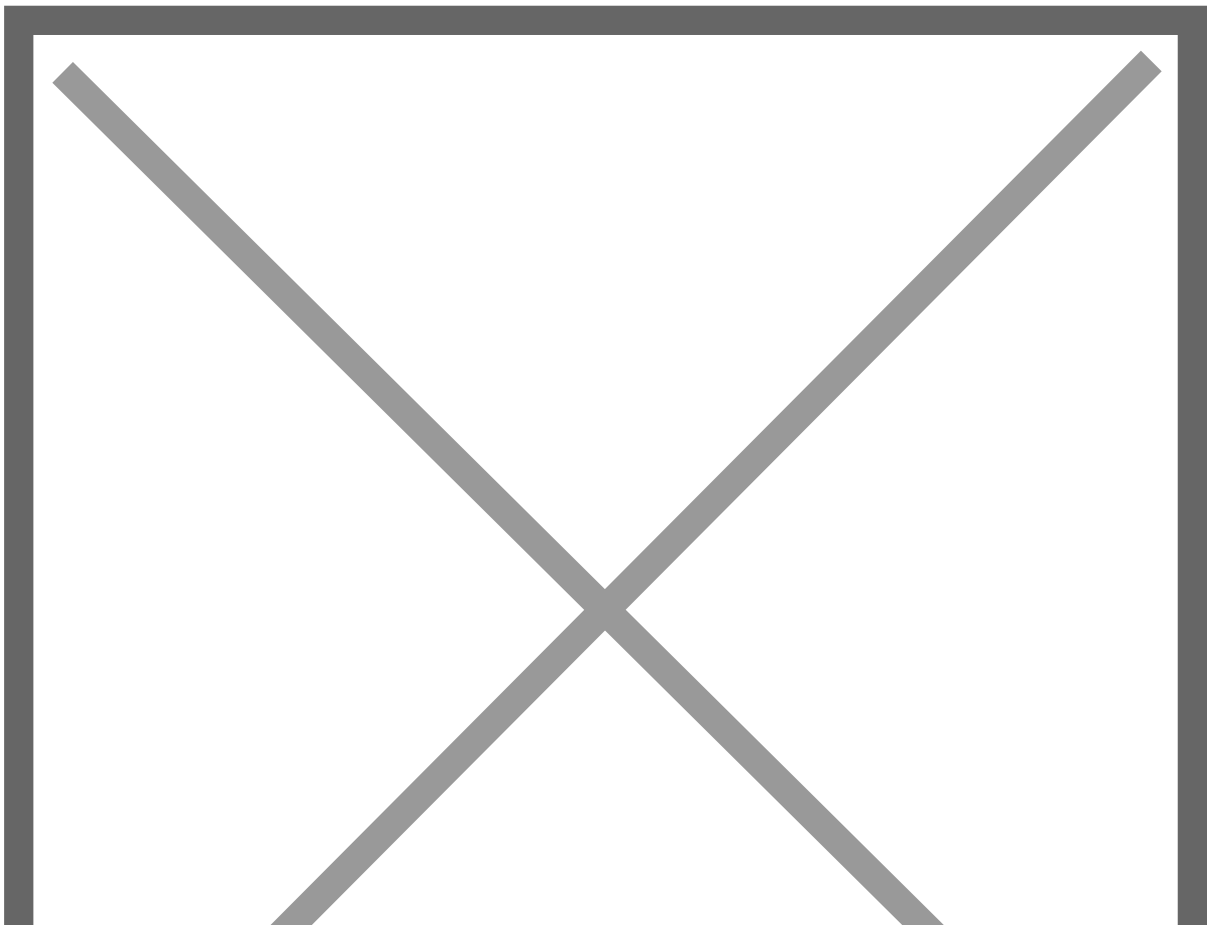
Video Sample: Most of all have fun in your training. Learning will occur.



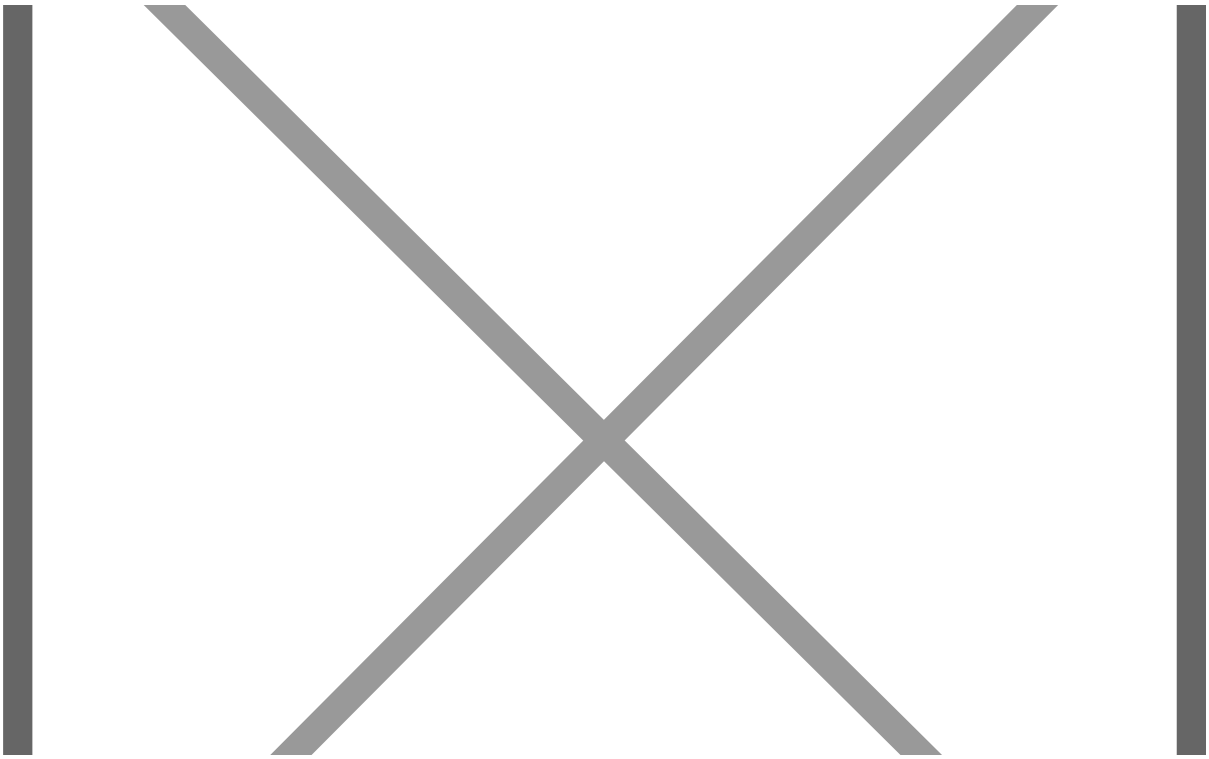
A Space to Experiment: Open Corridors will do. A willingness to be flexible is more important than the parameters of physical space.



Open Spaces are so much fun to do experiments in (CLIx Science Module: Motion)



Enabling Small Group Discussions. Provide the space and instructions and leave them be.

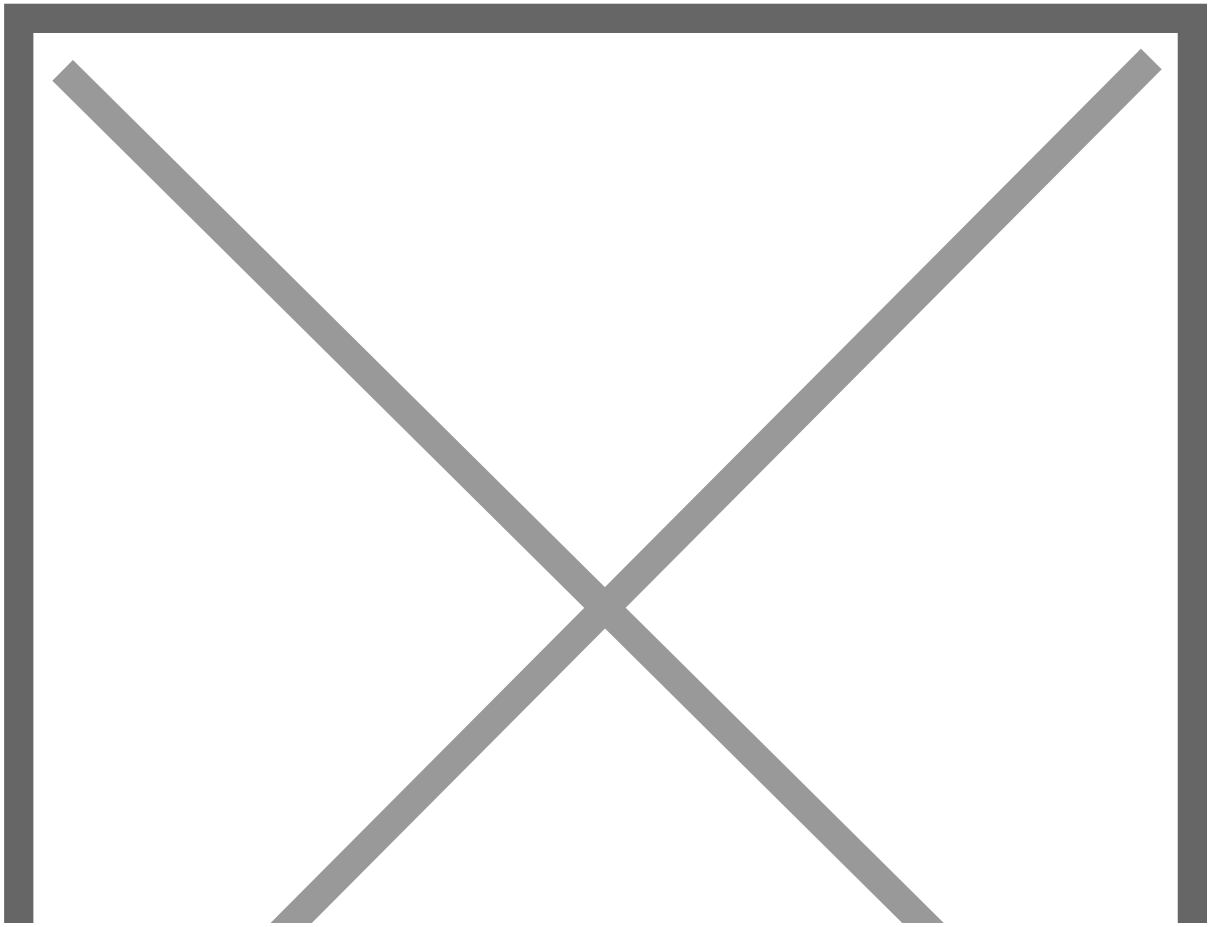


Room for

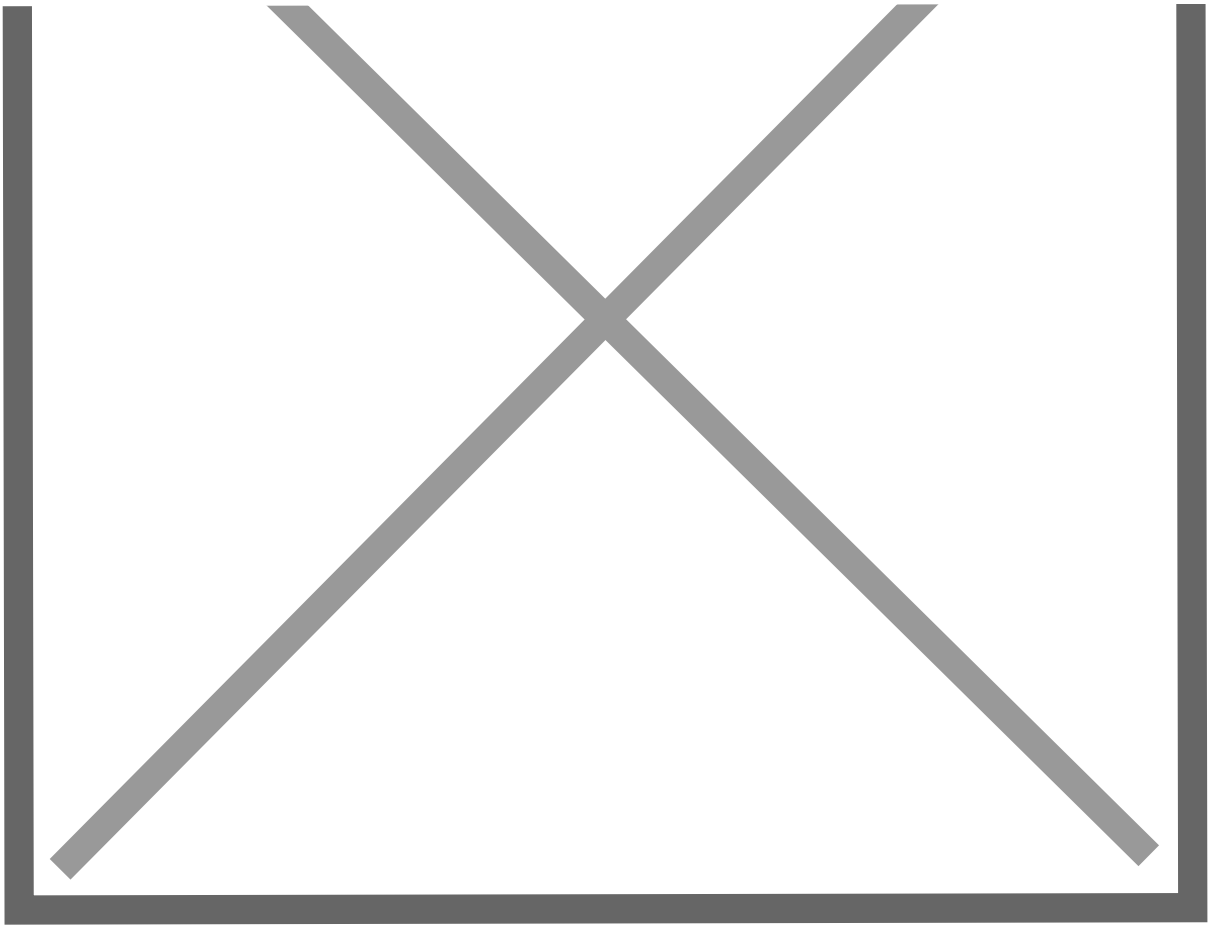
Experiments: Some Science Experiments are best performed in a non-digital space. Electric circuits and chemicals are best kept apart.

https://drive.google.com/a/clixindia.org/file/d/0By2idi_NH215b2RfM05abnVScmc/view?usp=drivesdk

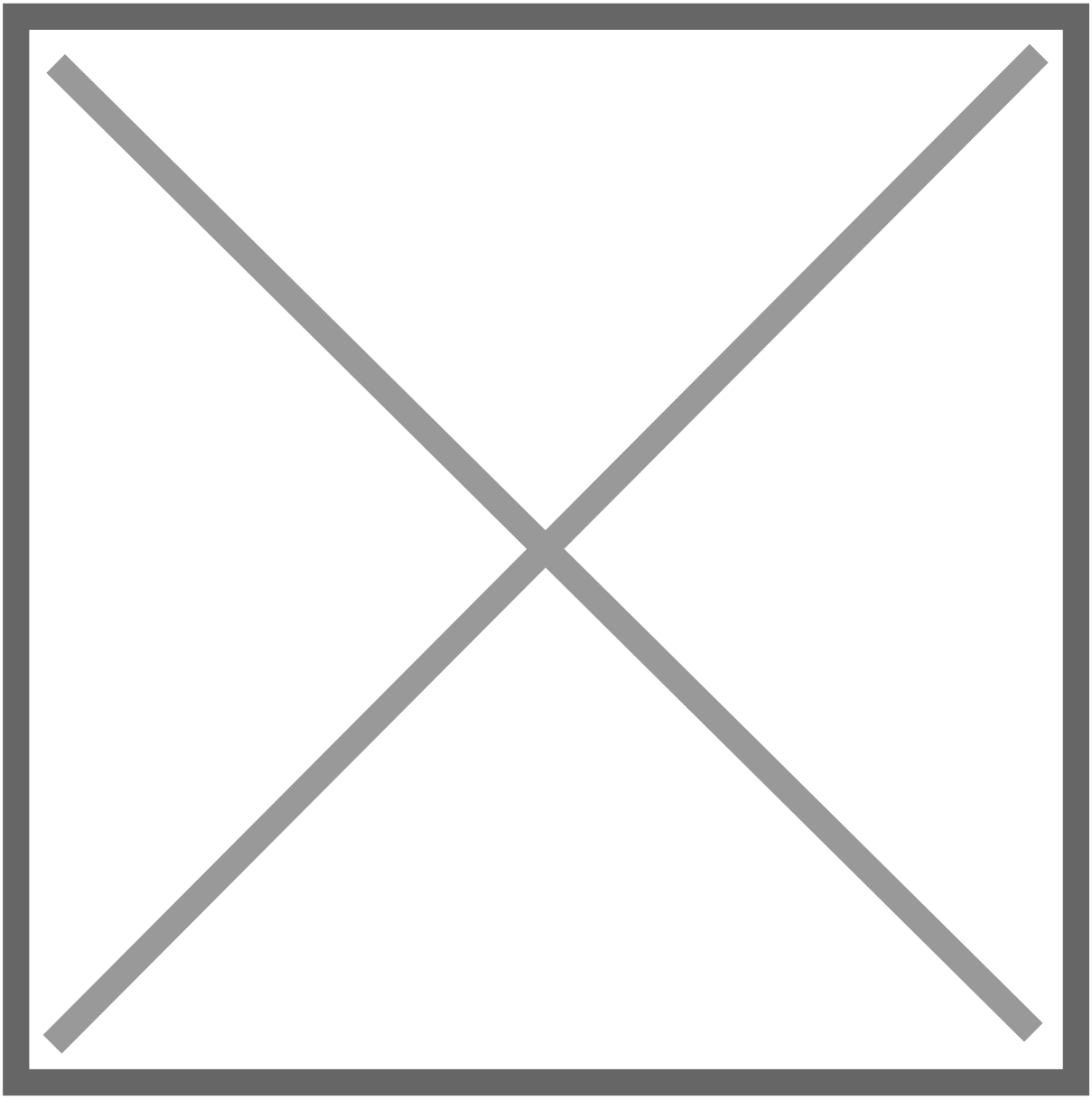
Video Sample: Science Experiment (Ecosystem)



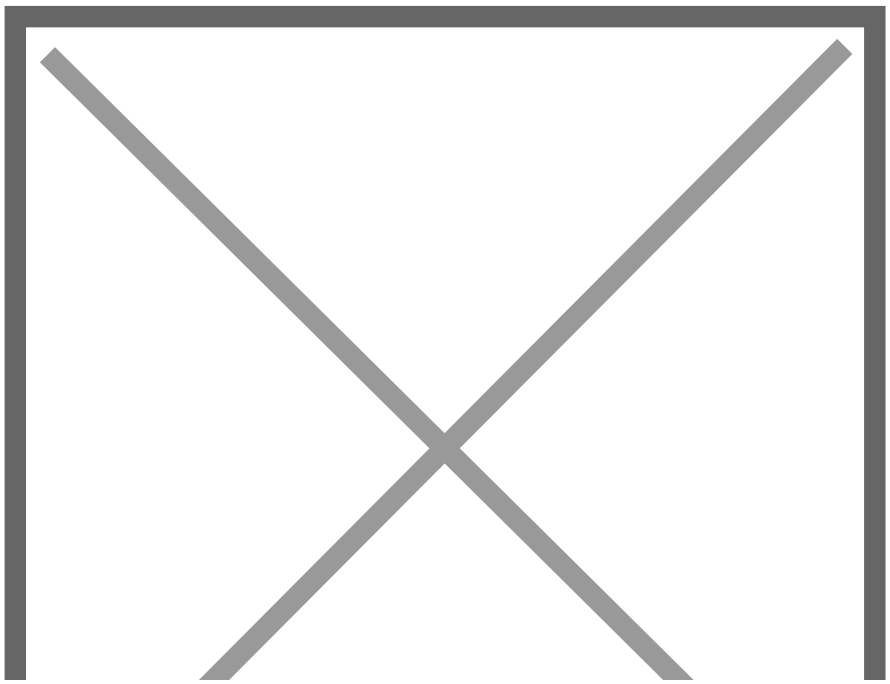
Check the lab the day before training. Check every computer and software work as they should.



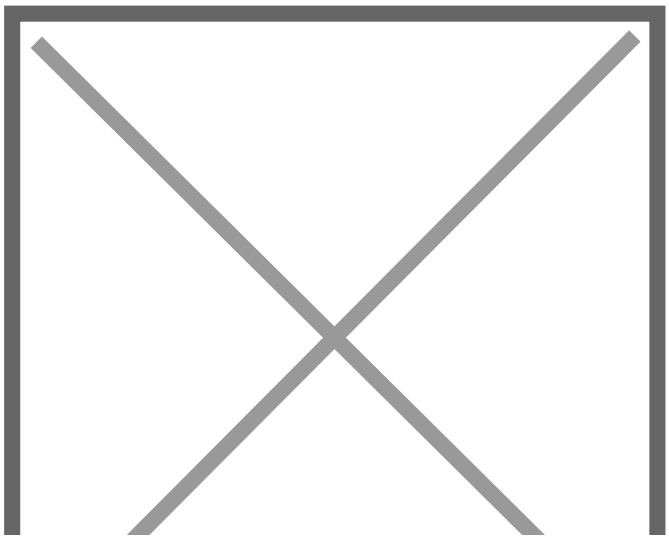
Have the buddy logins ready for teachers to take one and write their names and details in the first couple of columns. It also models how they could distribute the login IDs in their school.



Participants bringing storage devices always helps. You could suggest that they bring Pen Drives to take away tools and/or the artifacts they have created.



Group Photo: A Requisite: A Memento to Cherish :)



Media coverage is always motivating :), but this is not essential.