

REACT

Remote Education And Conferencing Tool©

Introductory Guide

Version 4.28



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Background

REACT is an interactive and collaborative software program designed to permit the delivery of distance education lessons to students of all ages. It is however, just as suitable for lesson delivery between suburban and regional schools or for use in video-conferencing between clients or departments.

Lessons are usually delivered from the Presentation Server. The Presentation Server provides numerous capabilities accessible at the click of a button. Both the teacher and the student's Presentation screens look almost identical. However, one or two buttons are not found on the student screen (teacher controlled) and the students have a 'Talk' button to indicate to the teacher that they wish to speak.

There are more capabilities available to the teacher accessed from a drop-down menu on their screen.

REACT software provides for a number of venues for participants to work in. Lessons are generally done from a studio venue however, alternative venues used for chat and video-conferencing are also available.

A school will generally set aside a room (studio) for the lesson delivery. This will include 1 or 2 computers set up for the actual lesson delivery and 1 -3 to facilitate teacher/student access via logins to the 'classroom' and for the satellite/terrestrial communications network. The configurations will vary depending on Client requirements and existing network infrastructure. In addition, the studio set up will require 1 or more microphones, 1 or more cameras and possibly additional lighting, again depending on Client requirements and/or budget.

However, REACT also provides a portable studio option. The full functionality of the software comes contained in a laptop computer which when combined with a webcam and microphone provides a portable and cost-effective solution for small schools or video conferencing from a desk.

REACT Components

REACT has a number of hardware components, the configuration of which will vary depending on network configuration. REACT software is installed at both the Studio and Student sites.

REACT Studio Hardware Components

- ➡ Venue Manager - 1 only required per network
- ➡ Gateway - 1 only required per network
- ➡ Reflector - 1 only per network (network configuration determines need)
- ➡ Presentation Server - 1 per studio
- ➡ Shared Application Server - 1 per studio (optional but recommended)

Each of these components is explained under their respective headings on pages 9 and 10 of this guide.

Network Configuration

Depending on Client requirements there are varying options available for the design of the network configuration. Two networks are illustrated here, a single-studio model and a three-studio model.

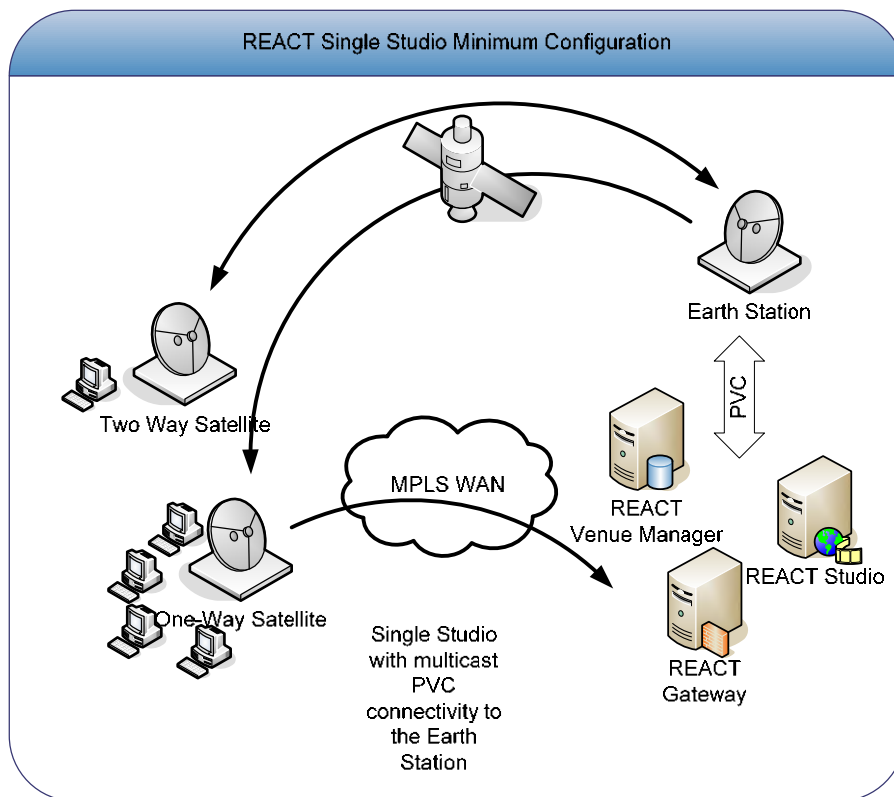


Figure 1 - Single Studio Model

The single studio model requires:

- 1 x Venue Manager
- 1 x Gateway and
- 1 x Presentation Server

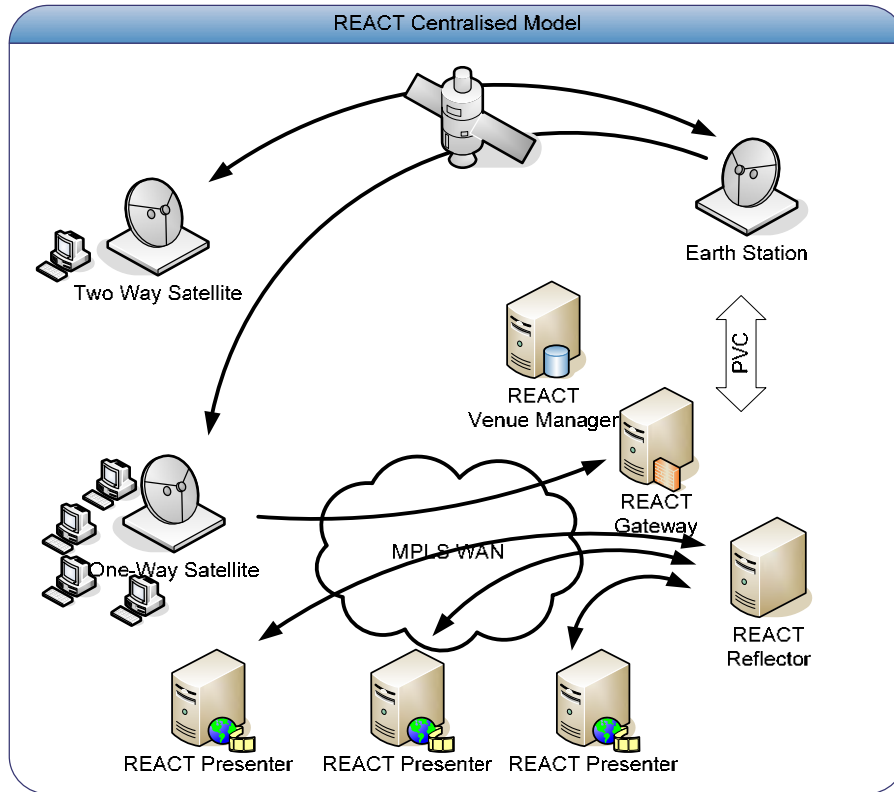


Figure 2 - Three Studio Model

The three-studio model requires:

- 1 x Venue Manager
- 1 x Gateway
- 1 x Reflector (dependent on network configuration)
- 3 x Presentation Servers

REACT Venue Server

The REACT Venue Server has several functions:

- Publishes details of the Venues
- Maintains a database of users
- Filters Venues based on logon
- Activates Capabilities
- Uses XML (web service)

REACT Gateway

The REACT Gateway has several functions:

- Converts Unicast IP packets to Multicast packets
- Bridges Networks
- One Gateway can process at least 80 Mbps of data
- Can serve as a firewall

REACT Reflector

The REACT Reflector connects users who have no satellite access to the network such as with a remote studio or when using a portable studio. It allows Presentations to be conducted without the need for satellite bandwidth and can process at least 80 Mbps of data.

REACT Presentation Server

The REACT Presentation Server is the computer that the teacher uses to deliver a lesson and runs on the Windows XP operating system and has Dot Net Framework 2.0 and Media Player 11 installed. The Presentation Server provides the Teacher with a variety of Capabilities to enhance the interaction with Students and allows for greater flexibility in the choice of teaching aids.

These Capabilities include:

- Collaborative Storyboard
- PowerPoint
- Audio
- Audio/Video
- Chat
- Whiteboard & Inking
- Sharing of Browser
- Sharing of Desktop
- Playing of Windows Media files
- Screenshots
- File transfers
- Record and replay sessions

REACT Shared Application Server

The REACT Shared Application Server (SAS) optimises Desktop Sharing activities and may be used for playback of media files and the sharing of an internet browser.

REACT Student Hardware Components

Student Hardware

REACT requires the student PC to run Windows XP operating system, have Dot Net Framework 2.0 and Media Player 10 or 11 (preferred) installed. REACT is 'thread safe' and suitable for operation on multi threading processors.

Due to the processors limited instruction set, REACT will not run on AMD Sempron processors.

REACT Studio and Student Software

REACT Studio Software

The REACT Studio Software is installed to manage all functions of a REACT Presentation permitting interactive communication between the Teacher and Students.

REACT Student Software

The REACT Student Software is installed on the Student's personal computer to permit participation in interactive communication with the Teacher and other students.

Lesson Components & Capabilities

Venues

There are a number of Venues available into which teachers and students can login. Venues may be classrooms, chat rooms or video-conferencing venues. The Venues are programmed into the Venue Server as required by the Client.

An example of Venues available is shown below.



Figure 3 - Venues Example

Designing Your Profile

The first time a user logs into REACT, a Profile of that user may be created. The Profile provides the user with the opportunity to personalise their identity. This Profile will be shown on the Teacher and the Student's computer screens when the user logs into a REACT Presentation venue. The user can subsequently change their Profile whenever they want to.

The Profile includes a 'friendly name' of the participant and an icon or image to represent them.



Figure 4 - User Profile

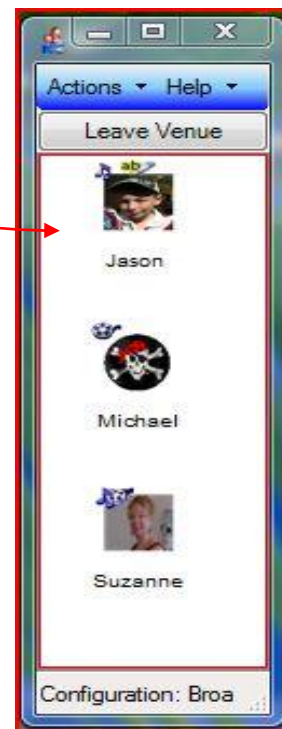


Figure 5 - Profiles in Venue Window

Presentation Window Components

The Presentation window (from which lessons are delivered) is divided into three Display areas:

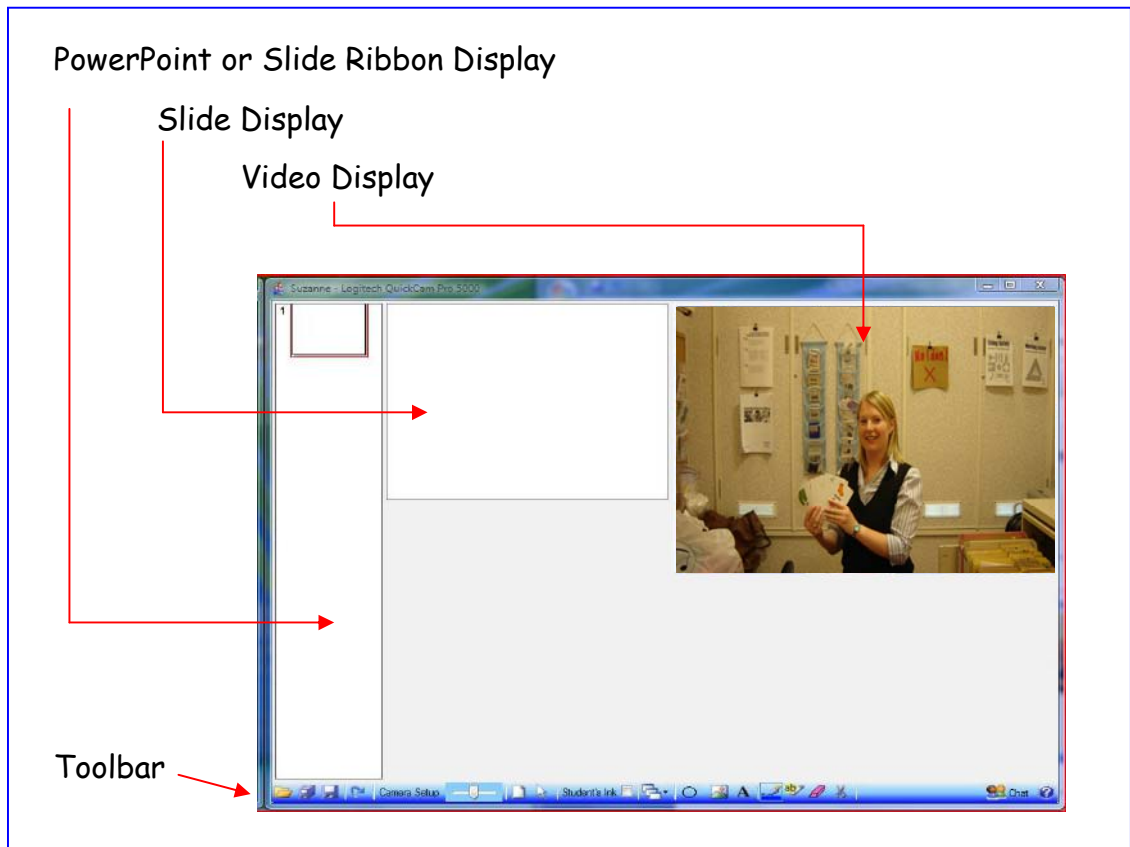


Figure 6 - Presentation Window Displays

PowerPoint or Slide Ribbon Display

PowerPoint Presentations or Slide Ribbons will be displayed in this frame. All other capabilities that use a Slide will also have a copy of that Slide inserted into the PowerPoint Display.

- PowerPoint Presentations
- Collaborative Storyboard
- Whiteboard & Inking
- Inserted Screen Shots

Slide Display

Slide Display provides a blank slide for use with other capabilities including:

- Collaborative Storyboard
- Whiteboard & Inking
- Inserted Screenshots

Video Display

When using a camera, the Teacher will be shown in this frame. Also displayed in this frame are:

- Video outputs from DVD/video player

Presentation Controls Toolbar

The Presentation Controls Toolbar is located at the bottom of the Presentation window. From here the Teacher can:

- Upload a PowerPoint or Slides
- Resend the Current Slide
- Insert a blank slide
- Insert a Screenshot
- Use Collaborative Storyboard (shape, image & text)
- Use the Whiteboard
- Use Inking
- Use a Pointer
- Use the Chat facility
- Re-size Screen Layout
- Save the PowerPoint Presentation
- Save a Slide
- Save the Chat

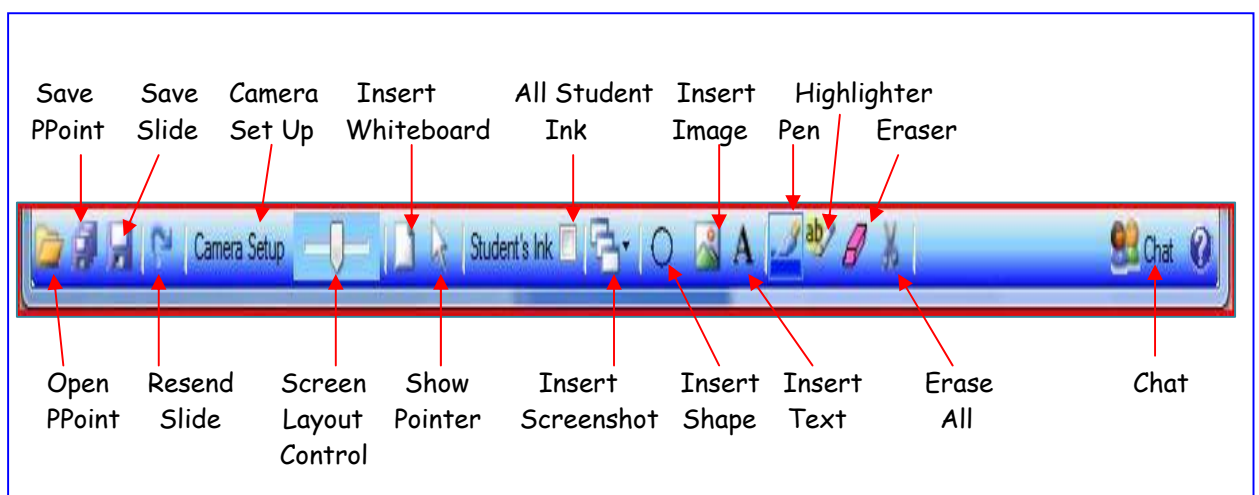


Figure 7 - Controls Toolbar Detail

PowerPoint Slides

Teachers can upload PowerPoint Slides or Slide Ribbons from file by clicking on the 'Open PowerPoint' button on the Controls Toolbar. The slides will be displayed in the PowerPoint Display as shown below. These are automatically then sent to the Students.

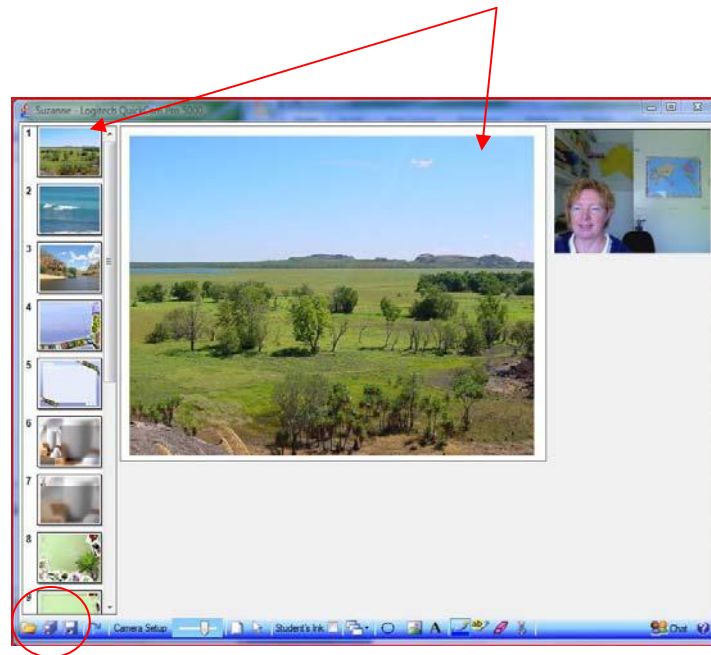


Figure 8 - Uploading PowerPoint Slides

All work done during a lesson that appears in the PowerPoint Display can be saved and used at a later date as an assessment tool

Inserting a Slide

A blank slide can be inserted into a Presentation at any time during the Presentation by clicking on the 'Insert Slide' button on the Controls Toolbar.

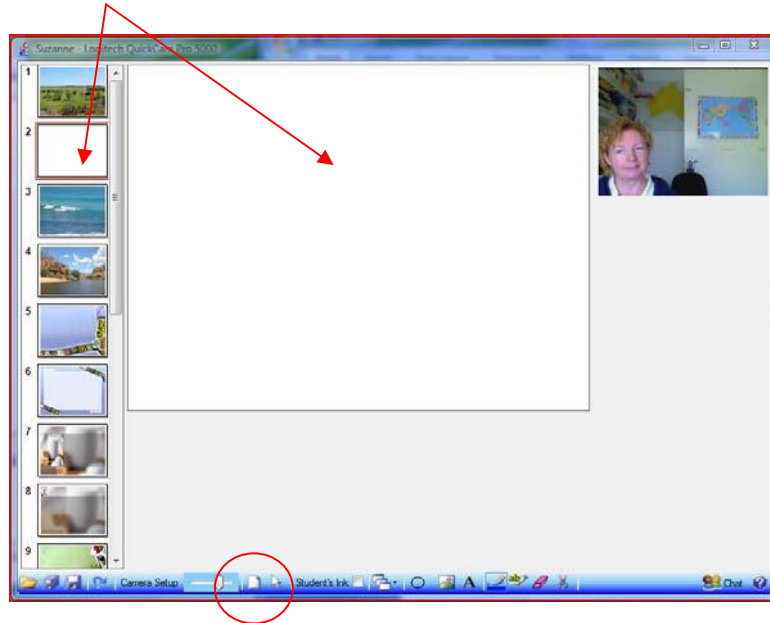


Figure 9 - Inserted Blank Slide

The new slide provides a blank slide onto which Collaborative Storyboard, Whiteboard and Inking work can be done or inserted Screen Shots can be viewed.

Screen Shots

Screen Shots can be inserted into the Presentation from file by clicking on the 'Inset Screenshot' button on the Controls Toolbar and selecting the file from the drop-down menu that opens as shown.

Screenshots can be any document, photograph, chart etc that is stored on file in the computer.



Figure 10 - Inserted Screenshot

Screenshots can be saved and used at a later date as an assessment tool.

Collaborative Storyboard

Collaborative Storyboard allows Teacher and Students to engage in collaborative work using text, ink and shape tools and are also able to drag and drop in images from file (in a similar manner as Visio is used in the office).

This is especially beneficial for younger children who work well with images but not yet words and for students who have limited language skills.

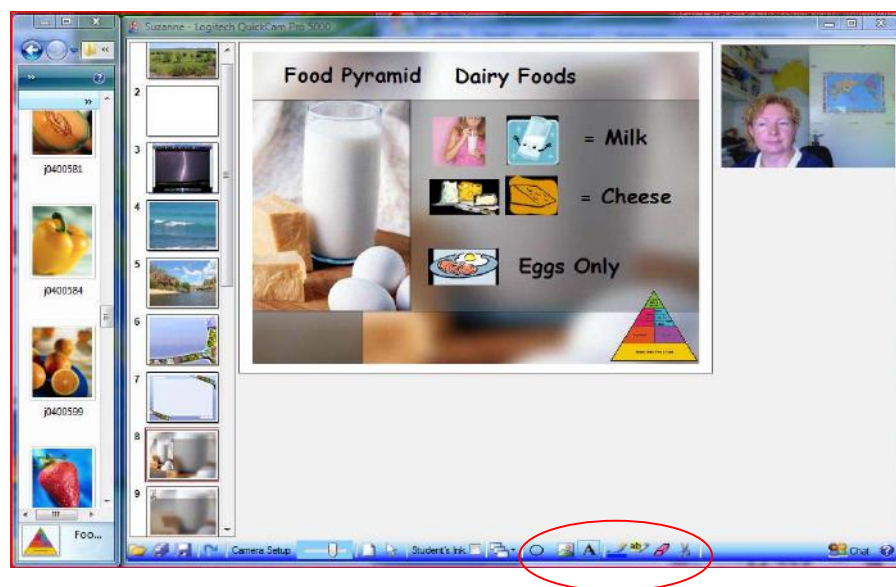


Figure 11 - Collaborative Storyboard Work

Shapes, images and text are inserted by clicking on the appropriate buttons on the Controls Toolbar. They can be moved around the slide, enlarged, reduced, rotated and cloned as desired.

The Inking Tools can also be used as explained in the next section.

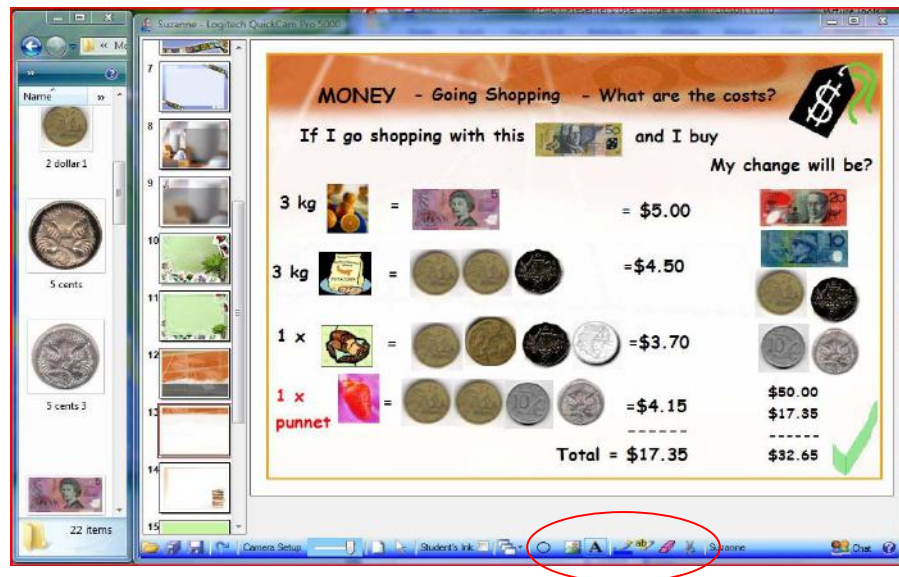


Figure 12 - Collaborative Storyboard Work

Collaborative Storyboard work can be saved and used at a later date as an assessment tool.

Whiteboard and Inking

The Whiteboard and associated Inking (drawing and writing tool) can be used to interact with Students. Inking can also be used with other capabilities independently of the Whiteboard such as where the Teacher wants a Student to identify and highlight items shown in a Slide.

Clicking on the 'Insert Slide' button on the Controls Toolbar inserts a blank slide into the Presentation.

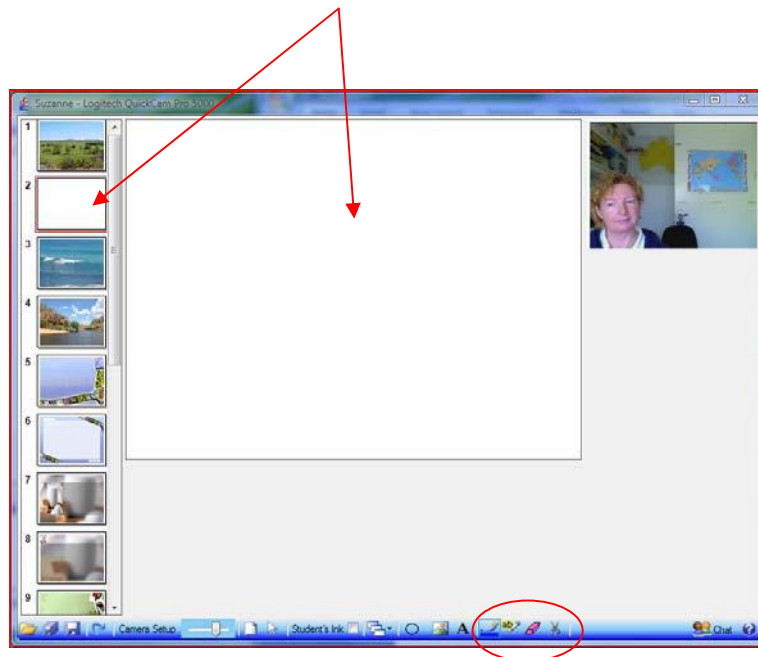


Figure 13 - Inserted Blank Slide

The Teacher or Students can write on the Whiteboard or other slides by selecting and clicking on the desired Inking tools on the Controls Toolbar

The Inking tools comprise a pen and highlighter with an extensive colour range and eraser buttons.

Whiteboard work can be saved and used at a later date as an assessment tool.

Screen Layout Control

The Screen Layout Control allows the Teacher to reduce and enlarge the various Displays in the Presentation window by *sliding* the control to the left or right as shown below. The Screen Layout Control is located on the right-hand side of the Controls Toolbar.

Two of the Display options are:



100% PowerPoint/Slide Ribbon & Slide/Whiteboard Display

Figure 14 - 100% PowerPoint



50% PowerPoint/Slide Ribbon & Slide/Whiteboard Display and 50% Video Display

Figure 15 - 50% PowerPoint & Video Display

Chat

The Teacher and Students are able to Chat to each other at any time during the Presentation. This enables participants to type messages and provides a quick and easy tool for communication between Teacher/Students and between Students.

A Chat Box is opened by clicking on the 'Chat' button on the Controls Toolbar and is superimposed on the Presentation Screen.



Figure 16 - Chatter Box Window

Comments can be written in the small 'Chatter Box' window and sent with the responses being shown in the large 'Chatter Box' window prefixed by the author's name as shown overleaf.

Fonts can be personalised by clicking on the 'A^a' button and selecting desired font and font colour.

Chat can be saved to the computer and used at a later date for assessment.

Student Hand Up and Talk

Students do not have to wait to be given permission to use their Audio and can use the 'Talk' button on the Controls Toolbar to talk to the Presenter. Students can also put their 'Hand Up' to get the Presenter's attention.



Figure 17 - Student Hand Up & Talk Buttons



Figure 18 - Audio On

The Student's red call button turns to green when they are 'on air'

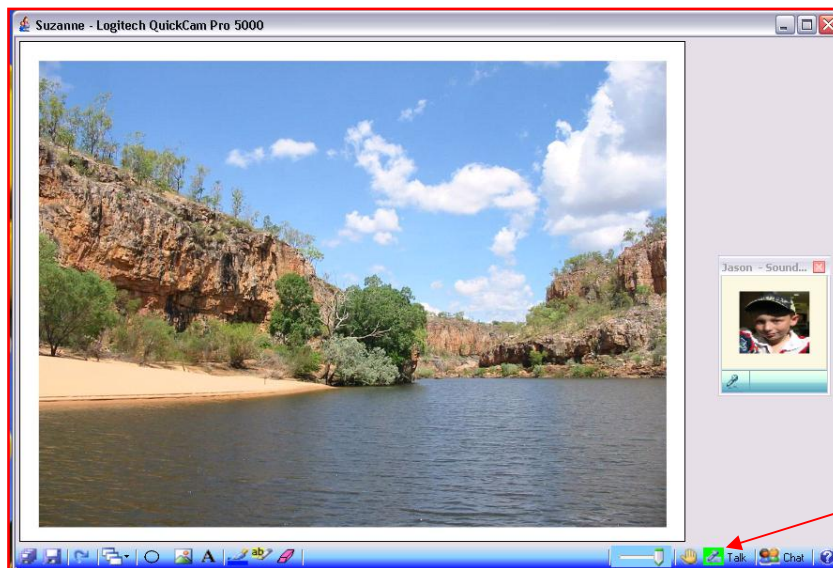


Figure 19 - Student View Call Button (Green)

Venue Capabilities

In addition to the Capabilities available from the Controls Toolbar there are additional Capabilities available from a drop-down menu. These can be used in conjunction with a Presentation or used independently (stand-alone) of a Presentation. Clicking on the desired Capability will start that Capability.

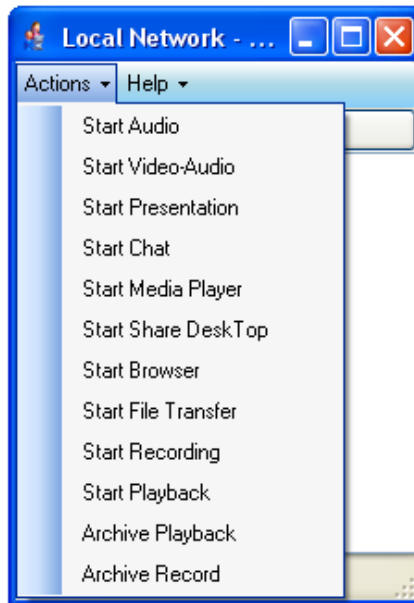


Figure 20 - Capabilities Drop-down Menu

Start Presentation

This is used to start a Presentation and opens the main Presentation screen as shown previously

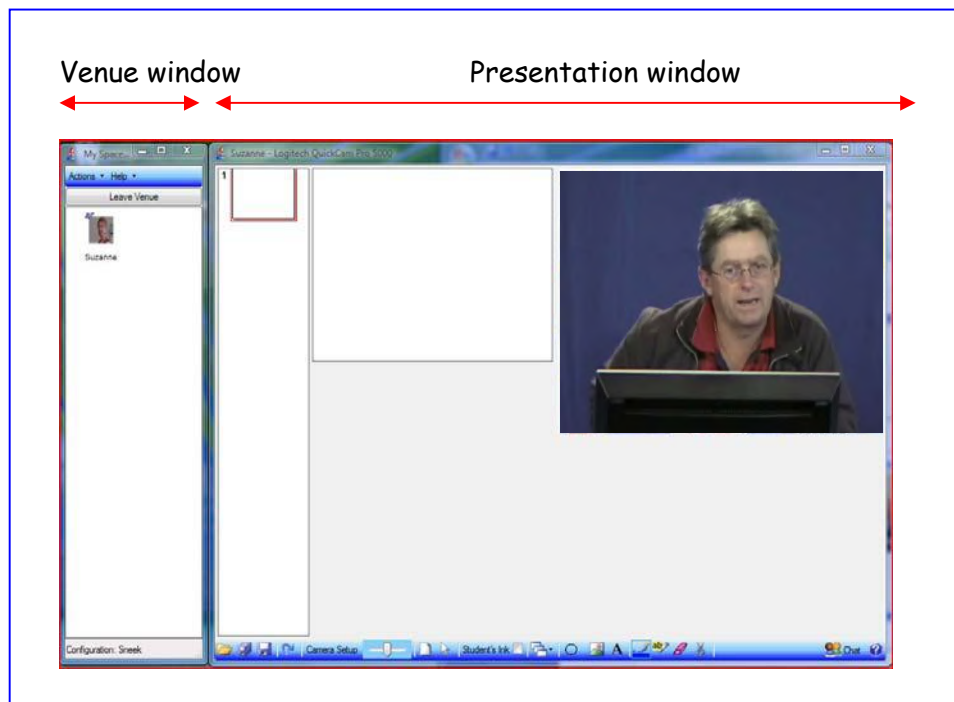


Figure 21 - Presentation Screen

Start Browser

This Action is used for the Teacher to start sharing their Internet Browser with the Students. The Teacher can lead the Students to web sites of interest and guide them through the various pages.

The Teacher retains control of the Shared Browser. The Students have the ability to manoeuvre their viewing of the web pages. However, any action the Teacher makes with their Internet Browser automatically resets the Student's Internet Browser to that of the Teacher.

The full functionality of the Internet Browser can be used in the usual manner to search reference sites and view sites of topical interest such as those shown in the examples below.

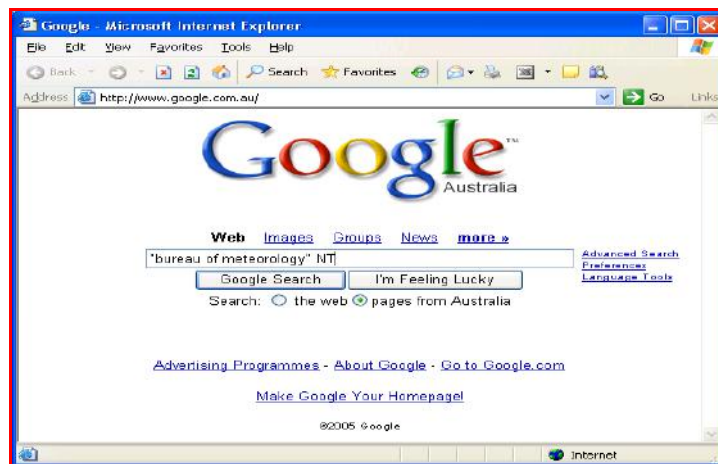


Figure 22 - Search Engine - Google



Figure 23 - Bureau of Meteorology Web Site

Start Windows Media Player

This permits the playback of Windows Media files from file or portable storage device. The playback can be started, stopped and paused at any time.

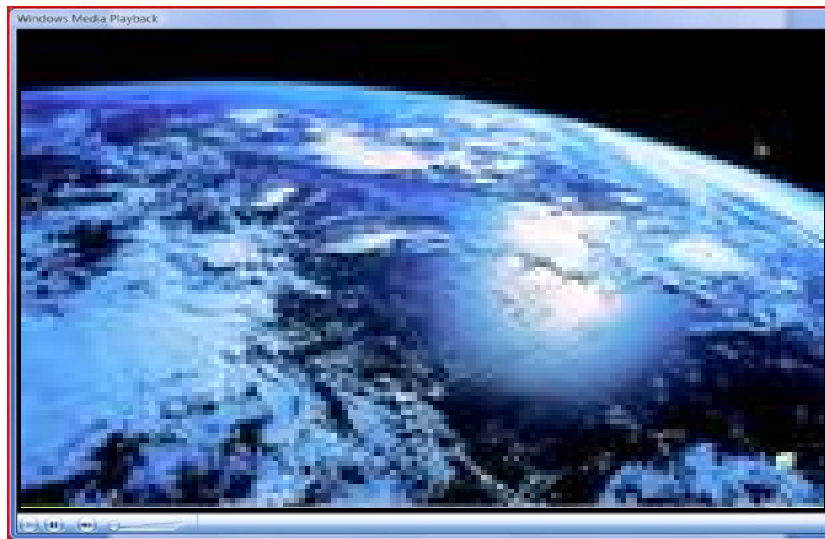


Figure 24 - Windows Media Playback Window

Start Shared Desktop

This permits the Teacher to share their Desktop with the Students which is useful for demonstrating processes such as how to work in Excel. The Shared Desktop is streamed continuously with frames updated once per second. Students may also share their Desktop to allow other participants to see work open on their Desktop. This is also streamed continuously.

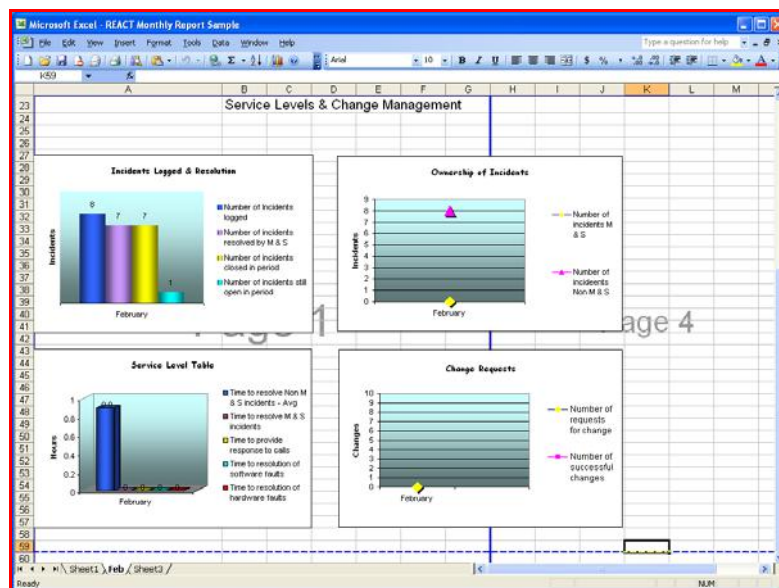


Figure 25 - Shared Desktop Showing Excel Work

Start File Transfer

This enables files to be transferred to Students which can be saved to file on their computer for use at a later time such as for homework. The Student can also Transfer Files to the Teacher. Multiple files can be sent at the same time to multiple Students.

Clicking on 'Start File Transfer' opens a window into which multiple files can be added and then sent to Students.

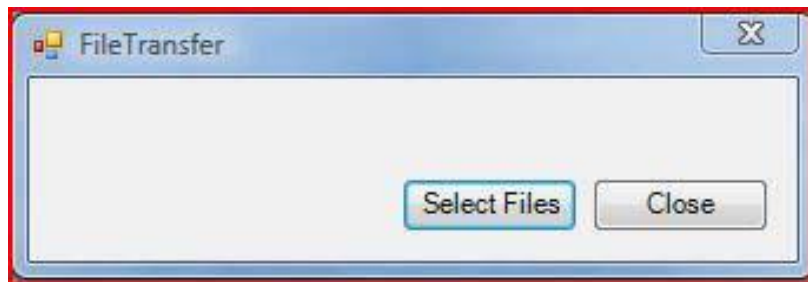


Figure 26 - File Transfer Window

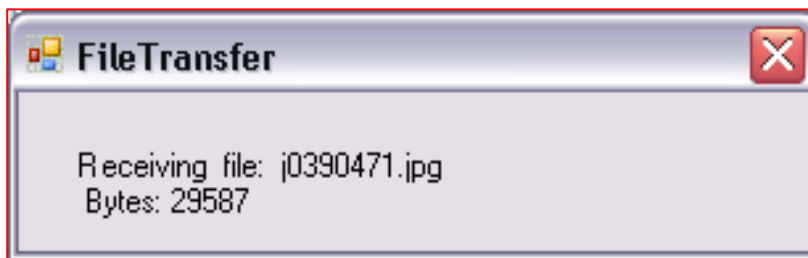


Figure 27 - File Being Received

A 'File Transfer' opens a window on the Student Desktop advising that a file is being sent. It will automatically be stored on the Desktop and can be filed appropriately.

The following capabilities may be used when in a Chat or Conferencing Venue.

Start Chat

This is used to start a Chat session and provides a large window superimposed on the Desktop to view messages or discussions.

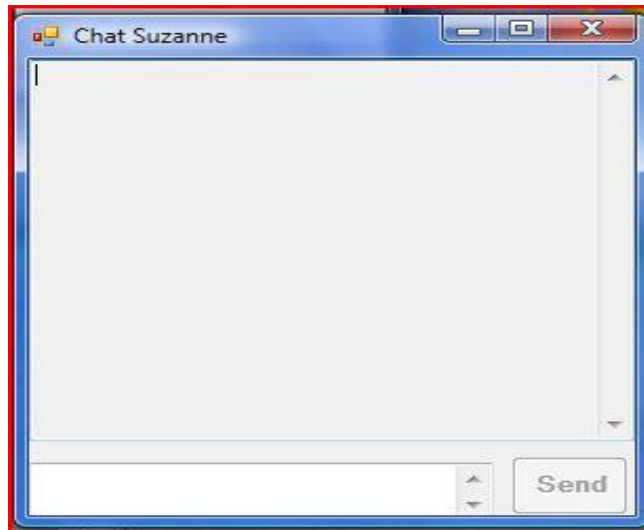


Figure 28 - Chat Window

Start Audio

This is used to start (and stop) the participant's Audio.

A small Profile of the participant is displayed on all the participants' Desktops.



Start Audio/Video

This is used to start streaming the combined Audio and Video from the Participant's camera.



Figure 29 - Teacher's Audio/Video

Start Recording

This is used to start recording a presentation.

A directory window opens permitting the recording to be named and stored on file in a desired location for playback later.

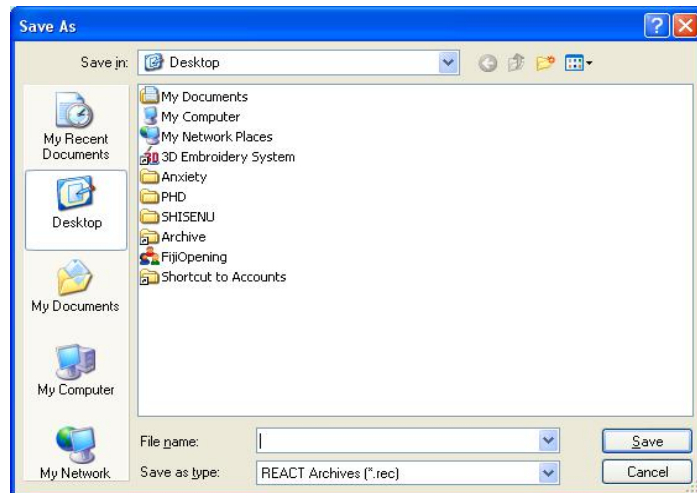


Figure 30 - Directory Window - Recording

Start Playback

This is used to start recording a presentation.

A directory window opens permitting the recording to be opened for playback of recorded presentation.

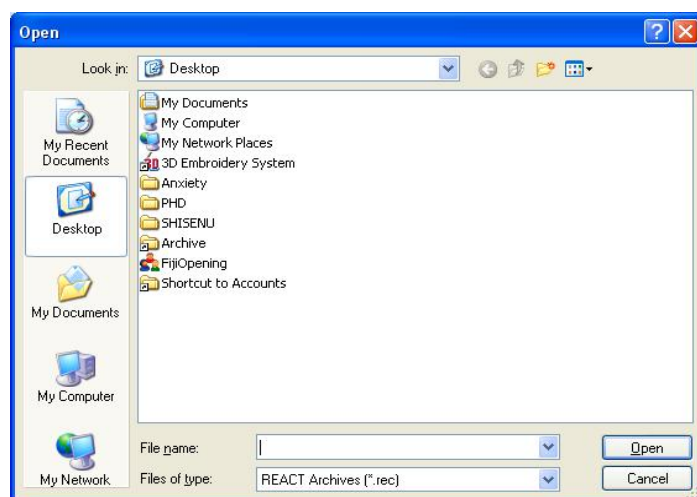


Figure 31 - Directory Window - Playback

Archive Recording

This is used to start recording a presentation to an Archive Server (if applicable).

A recording window opens permitting the recording to be named and stored on file on the Archive Server for playback later.

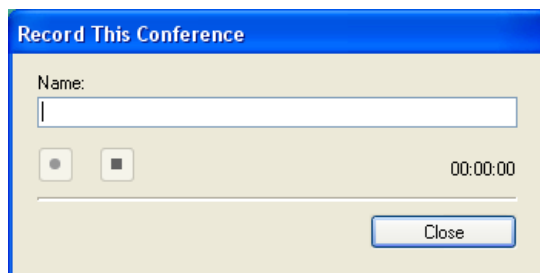


Figure 32 - Archiver Recording Window

Archive Playback

This is used to start playback of a presentation stored on the Archiver Server (where applicable).

A menu window opens permitting the selection of a recorded presentation for playback.

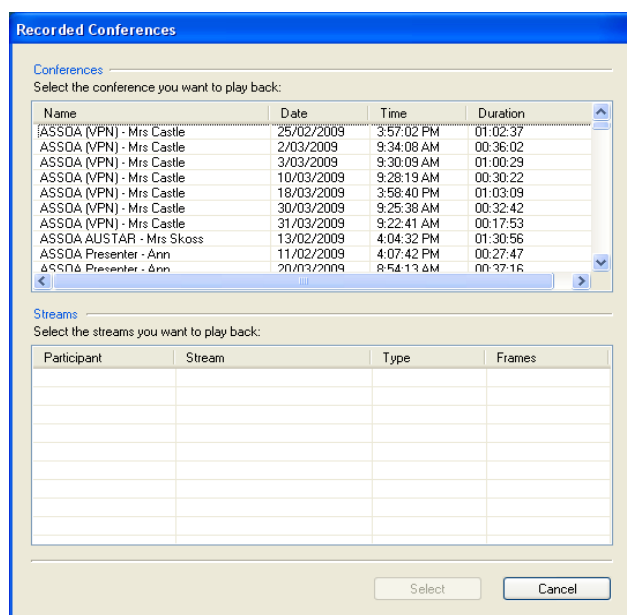


Figure 33 - Archiver Playback Window