

e-Tuition®

Interactive Whiteboards in VET

Using Interactive Whiteboards in Vocational Education and Training

WICKLOW VEC



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Introduction

For many teachers Interactive Whiteboards present an opportunity to create more colourful, energetic resources for use with their classes. They are used from the Board Room to the Classroom to the Lecture Theatre.

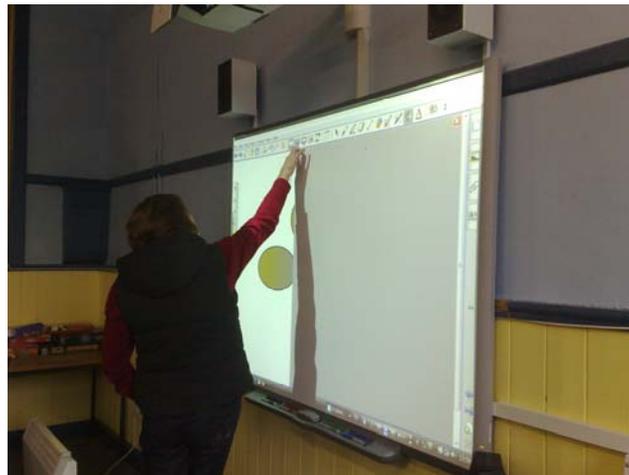
Interactive Whiteboards are ‘branded’ and supplied by a number of companies. The boards are marketed widely, and if purchased from an educational supplier, often come with packages of educational software. There are also a wide range of resources available on the internet for use with interactive whiteboards, including many readymade lesson resources.

So, what do teachers who are new to these boards need to know?

The first thing, as in The Hitchhiker’s Guide to the Galaxy is ‘DON’T PANIC!’ Like the babel fish, you will be exposed to an amazing range of possibilities for education using Interactive Whiteboards. The focus of this module is on the potential of the interactive whiteboard as a pedagogic tool. By the end of the module, you will have an insight into how to start using your board; what the advantages are; some of the pitfalls or challenges; you will be aware of the type of interactivity of the board and how this is best maximised; and you will have some insight into approaches to starting to design lessons for and use an Interactive Whiteboard.

During this module, there will be reference to additional materials by a range of theorists, bloggers and users whom you might be interested in following up at your leisure.

On completion of the module, you will be asked to write and upload a blog describing your experience of using an interactive whiteboard in Vocational Education and Training, and to create and upload a PDF of a lesson you created for an Interactive Whiteboard (IWB).



What is an Interactive Whiteboard?

An Interactive Whiteboard (IWB) is a large, touch-sensitive panel that connects to a digital projector and a computer, displaying the information on the computer screen. It resembles a traditional whiteboard and can be used similarly. The computer connected to the interactive whiteboard can be controlled by touching the board directly or by using a special pen. The pen, or your hand, or any other implement you may have has the same function as a mouse or keyboard.

The whiteboard simply shows what is on the computer screen. Control of the screen is from the Interactive Whiteboard, using touch, or from wireless peripherals such as a wireless keyboard, mouse or slate, rather than from the computer keyboard. The IWB acts as an input device.

You will find three main elements in the classroom with the Interactive Whiteboard:

- The Interactive Whiteboard (IWB), which is equipped with speakers
- The Digital Projector
- The Computer or laptop

Make sure that your board is managed and maintained well to avoid any potential problems - nothing is worse than finding that a cable is missing, the projector won't 'talk' to your laptop or computer or that a bulb is not working at the start of a class for which you have prepared wonderful resources!

Software

Interactive Whiteboards which are bought specifically for educational purposes arrive with a suite of software or software licences which can be loaded or downloaded to PCs and laptops. This allows teachers who will be using the Interactive Whiteboards to prepare classes away from the IWB.

The software allows the teacher or trainer to prepare a set of flipchart pages or a 'notebook', which is based on class content and which is designed to promote the construction of new knowledge and understanding.

Prepared lessons can be saved to a USB Key, or e-mailed to a network and used on any Personal Computer or Laptop and Interactive Whiteboard which has a software package for the IWB installed.

Using the IWB software, teachers can design and prepare lessons which include printed text, visual images, diagrams, space for recording brainstorming and annotations, interactive games and activities, video clips and internet resources. Many packages also allow teachers to refer to and use Word, PowerPoint and Excel documents.

Advantages and Challenges of Interactive Whiteboards

This section outlines some of the advantages and challenges associated with Interactive Whiteboards. At this stage of their adoption in the classroom, it is important that educators discuss and debate the strengths and weaknesses of technology, and how these can be exploited and addressed to create innovation in education (Moss et al:2007). These points are gleaned from the research and from discussions with teachers.

Advantages of IWBs

Encourage and promote interaction and communication in class.

Meet the needs of a range of learning styles (modalities), including kinaesthetic, visual and auditory.

Provide lots of resources to encourage group work and collaboration.

Bring colour to the classroom.

Encourage cross-curricular work.

Can provide positive reinforcement of learning.

Potential for use of wireless keyboard and mouse or tablet.

Saving changes and recording of classes.

Increase empowerment and motivation towards different ways of learning.

Fun.

Democratic learning - can address issues without targeting a specific learner.

Useful for learners with special needs, with functions that can be made accessible for learners with a range of special needs.

Promote participation.

Eliminate the need to transport additional equipment between classrooms, such as CD player, and streamlines the linking of music and documents.

Allow physical interaction with the board.

Learner originated material can be recognised, acknowledged and included.

Allow printing of PDF, handouts or creation of PowerPoint documents - all of which are useful for revision and recap. This can eliminate the need to focus on note taking, and allows for student full attention on the content and discussion of the topic.

The teacher compiles a portfolio of reusable materials.

Allow dynamic presentation of complex concepts (Smith, 2001).

Collective view of content for learners - all learners can see what is on the screen together as a large group.

Can encourage conceptual thinking.

By using overwriting, the teacher can support the learner in organising new concepts.

Learners report that they remember material presented using an IWB.

Challenges of IWBs

Getting used to using the boards.

Risk of using the whiteboard to continue traditional text-based methods without expanding to re-engineer the classroom space.

Lack of discussion and debate about the effectiveness of the IWB as a tool for teaching and learning.
Continuing to teach 'from the top of the class' and employ a 'chalk and talk' approach rather than expanding the use of methods based on the flexibility of the technology.
Risk of limiting use to the technical interactivity of the IWB, rather than building on its use as a promoter of interaction in the classroom.
Lack of evidence of the outcomes for learners.
Failure to recognise that not every learner wants to be brought up to the board to 'perform'.
Perceived difficulty of planning and creating quick, efficient, appropriate links.
Over use and over-reliance on the visual aspects of the IWB.
Ensuring the class is balanced.
Moving to collaborative modes of working with peers to develop materials.
Making sure that content is appropriate.
Time management and the perception of the amount of time involved in preparing materials.

Checklist

Where IWBs are available, the best strategy is to have a Personal Computer in place in the room. This eliminates potential difficulties when logging on and setting up for class. This PC can also be networked, making it possible to access prepared materials which have been e-mailed from a home computer by teachers and to the Internet for the purpose of showing links. It is worthwhile to rehearse and practise the starting sequence a number of times at a quiet time.

Here is a checklist as a prompt:

Are all the cables in place?
Do you know the sequence for connection and switching on?
Is there a clear area around the whiteboard for students to have access to the board?
Are the pens available?
Is the sound working?
Is the board calibrated or oriented? It is important to do this regularly as part of the startup sequence if the IWB is designed in this way - in a way this part can be seen as a start-up ritual which is particularly applicable where there are slamming doors, where you are using a laptop, or where the IWB is a portable one. Note too, that it is worthwhile to include this in class preparation and allocation of time if possible before students arrive.
Have you used compatible software to produce your resources?

What does the IWB do?

Acts like a regular whiteboard.
Can be used like a flipchart.
Allows you to flip backwards and forwards through flipchart pages.
You can integrate images, photographs, diagrams, games, video and text using the board.
Large visual displays involve students in activities.
You can add links to websites of interest, and browse the web.

You can add sound to images or other objects.

You can highlight, magnify and focus on specific parts of an image or page.

You can write notes over saved images, and save those images as an additional file.

You can link to word documents with some brands.

You can draw on it using special pens, including overwriting and drawing on existing notebooks and documents.

You can build diagrams using layering.

You can record your class or a section of your class and play it back to learners.

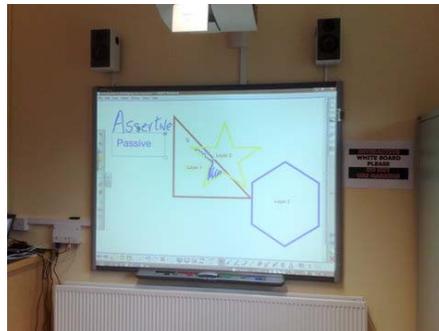
What does it not do?

Plan your lesson

Teach

Formulate questions

Make Coffee



Research on teaching and learning using Interactive Whiteboards

Most of the available research and literature on the use of IWBs in education is in relation to primary and secondary education, reflecting the dominant areas of their installation to date. The Richardson Review (2003) highlights the effect of the introduction of Interactive Whiteboards in a school in a disadvantaged area of Australia, and found that when the children were exposed to concepts about using ICT and particularly the use of the Internet, this exposure influenced the adoption of ICT in many of their homes. The authors reflect that this 'modelling' of the use of ICT in school will help in addressing the emergence and adoption of lifestyles affected by so-called 'digital convergence'. This is the combination of texts, images, information and communication among other elements which will distinctly change the nature of our use of information in the twenty first century. Interactive Whiteboards, when used properly, call on our ability to combine our knowledge of these elements in order to enhance learning - and to make them available to learners through our design of lessons using available software and their presentation in an attractive, multi-modal manner.

Moss et al (2007) found that teachers tended to favour using their own texts with IWBs, rather than using specially created resources using the potential of the software to maximise learning, and rather than using commercially available resources specifically designed for use with IWBs. The authors make the case for having teachers develop skills for designing resources that increase levels of interactivity in the classroom and maximise the outcomes for learners in terms of developing knowledge and understanding. These authors identified that

‘when use of technological tools took precedence over a clear understanding of pedagogic purpose, the technology was not exploited in a way that would or could substantially enhance subject learning’ (2007:9).

In order to achieve this, teachers need to know their pedagogic aims; write lesson plans that take into account the availability of the IWB as a resource; apply good design principles based on learner need; apply theories about learning and their understanding and knowledge of good curriculum to the design of the lesson; know how to use words, images, sound and colour to promote learning.

Different teachers will have different strengths in these areas, and many benefits can be derived from collaborating, so that exploration of the potential of IWBs, and expertise is shared. This also presents opportunities to explore how IWBs can change the pedagogies applied, and how these changes can affect learning.

The UK DfES evaluation (Moss et al: 2007) of Interactive Whiteboards and pedagogy observes three different levels of interactivity:

- Technical interactivity, where the focus is on interacting with the technological facilities of the board, such as ‘drag and drop’ and ‘cover and reveal’;
- Physical interactivity where the focus is on going up to the front of the room and manipulating elements on the board;
- Conceptual interactivity where the focus is on interacting with, exploring and constructing curriculum concepts and ideas.

The third of these is the most desirable level to be achieved, with true interactivity represented by the level of interaction in the classroom. Combined with demands of the subject; perceived student ability; availability of peripherals and time available, these categories influenced teacher pedagogy and how they chose to use the Interactive Whiteboard.

Examples of best practice identified included

- Displaying texts for annotation, analysis and discussion
- Limited use of drag and drop, hide and reveal
- Effective use of digital texts embedded in the lesson
- Using the board to encourage the construction of shared knowledge and understanding rather than with the focus on prepared correct answers
- Avoiding use of the board for copying of texts into notebooks
- Dynamic demonstration used to reinforce learning
- Creation of opportunities to talk and discuss by using technology-supported manipulation of elements on the board.

Starting off

It is advisable to choose an element of your teaching programmes or lesson plans that will lend itself well to the use of the Interactive Whiteboard. Refer to your course specification or descriptor to determine what it is you want to do. Draw on your knowledge of your learners’ preferred learning styles too when thinking about the design. Initially, you may wish

to use the Interactive Whiteboard for a short segment of your class. One fault identified is that teachers will often use the whiteboard to introduce the class, but not for any other reason during the class. This minimises opportunities for interaction and group work using the board. Try to address this by choosing a segment where you are teaching about a defined concept, but create a segment with a beginning, middle and end.

Take into account learning theories, including Constructivism, Active Learning and Whole Class Teaching, and consider how you are going to use these approaches in conjunction with the use of the IWB.

Constructivism is a theory of how knowledge is built. Learners are encouraged by teachers to select and transform information, construct hypotheses, make decisions and synthesise learning through personalising the knowledge. Theorists to refer to for more information about constructivist theories of learning include Vygotsky; Bruner and Dewey.

In Active Learning learners read, write, analyse, evaluate and synthesis material, in order to become knowledgeable. In this model, learners participate actively in learning, participating in discussion and feedback on what they have read, observed or tried. The learner is no longer a passive participant.

In Whole Class teaching, the entire class works together, with their attention focussed. The teacher provides structured, teacher-focussed group interaction.

When you have identified a section of the class you want to deliver using the IWB, write a micro-lesson plan for this segment. Clearly set out the pedagogic aims for the segment of the class in order to define how you are going to use the Interactive Whiteboard. Define these aims with the clear intent of enhancing subject learning. In the segment, it is a good idea to have a beginning, middle and an end.

It is useful to consider the potential of the IWB to appeal to a range of senses and learning styles. Think too about whether you can involve learners in exercises based on the theme using the board.

Choose appropriate images and words, and build these into an interesting class using the functions of the Interactive Whiteboard. It is a good idea to practice when starting off, particularly to check how your work looks from the back of the classroom.

When you design the presentation well, with well-chosen words and images, it guides the progress through the class, influences the pacing and serves as prompts for asking questions and prompting discussion. Integrate content that allows you to work with your students to construct new understanding and knowledge. Having an Interactive Whiteboard in the classroom is like having a library at your fingertips - you no longer need to go leafing through a book in order to find an image to illustrate a point, but can draw it up there and then either by clicking on the next page or clicking a linking button.

Multi-modality

- Combine sound, image and writing in a variety of media
- Allow for manipulation of texts in new ways
- Supplement writing with imported images such as photographs and drawings, including use of drawing tools
- Hyper-link to the internet
- Use animation software to provide animated sequences

What students appreciate

- Colour
- Animations which show things working
- Dynamic applications
- Contribution to remembering and recalling information (linked to the scale of the visual?)
- Accuracy of diagrams
- Perception that images were professional or more accurate than those drawn by teachers

Introduction to using Interactive Whiteboard functions

Here are some things you can do with an interactive whiteboard to create interesting materials.

Design

Remember to keep the design of pages clear, with plenty of space for adding annotations and diagrams. Avoid trying to use everything your software package can do on every page, as this may result in overload, either for yourself or for your students. Design text so that it is legible, clear and as accessible as is possible.

Include space for writing learner answers and thoughts when brainstorming. This adds to motivation, as learner participation is recorded and acknowledged as a viable part of the class material produced.

Colour - use colour appropriately and to suggest responses. Link the colour with themes. Colour appeals to the visual and to the emotions when used well. This grid indicates some of

the links that can be made by using colour in the design of pages. Similarly, the use of sound can support and emphasise material. The obvious example being a linkage of Van Gogh's 'Starry Night' with Don McLean's Starry Starry Night.

Color	Mental Associations	Direct Associations	Objective Expression
Red	hot, fire, heat	danger, Christmas, blood	passion, exciting, active, urgency, speed
Orange	warm, metallic, autumnal	Halloween, Thanksgiving	jovial, lively, energetic, forceful, playfulness, vibrant
Yellow	sunlight, brightness	caution, warmth, cowardice	cheerful, inspiring, vital, celestial
Green	cool, nature, health	Clear, St. Patrick's Day, environment, vegetation	quiet, refreshing, peaceful, money, abundance
Blue	cold, sky, water	service, flag, dignity	subduing, melancholy, contemplative, sober, truth, trust
Purple	cool, mist, darkness, shadow, royalty	mourning, Easter	dignified, mournful, mystic, intelligence, spirituality
White	cool, snow	cleanliness, Mother's Day	pure, clean, frank
Pink	Soft	nurture, girl	security
Black	sophistication, elegant	strength, death	mystery, seductive
Gold	Wealth	prestige	expensive
Silver	Cold	scientific	prestige

<http://www.nwlink.com/~Donclark/hrd/media.html>

Hiding words

You can 'hide and reveal' words easily. This technique can be used to promote understanding of grammar for example.

Choose the 'text' icon on the tool bar and type a piece of text.

Decide which words you would like to block, and then choose the 'shape' icon.

Use the 'properties' icon to select a white line style and white fill.

Next draw a white box over each word you want to hide.

These shapes can be moved by clicking and dragging each to reveal the word you have hidden.

Using images

You can use images to illustrate points, to promote discussions and to create visual interest in your lessons.

Choose a picture from the gallery.

Drag it onto your page.

Use the select tool to enlarge or reduce the picture; move it; rotate it, or clone it (you will find cloning in the drop-down menu which appears when you select the object).

To insert a picture from another file, choose 'insert' and look in other files for the image. This can then be copied into the file.

Save your favourite pictures to the 'My content' folder so that they are available to use again.

You can use your pen to overwrite or create focus on areas of the picture. You can also use magnifiers, blinds and screens provided to focus on a specific area of the picture - the icons for these will be found on the toolbar.

Linking objects

This function can be used to link to an illustration or video demonstrating a skill, or to take you back to a previous page from the lesson in order to reinforce a point.

It is possible to create a link from any object you place in a flipchart or notebook, so that when you click on it, it will link to a document in another place, to a website, to another page in the notebook, or to a sound.

To link the object to any other item, click on 'insert' and 'link', then type or copy in the URL or the filename of your choice. A small icon will appear in the corner of the object, which, when clicked on, takes you to the link.

Layers

This function is effective for building up diagrams and illustrations. Every object placed on the page or screen acts as a layer. Interactive whiteboards remember the layers you create.

Create Shapes

Use the 'properties' icon to select a line colour.

Choose the 'shape' icon and draw a shape.

Repeat until you have drawn three different shapes on the page.

When you move these around, you will discover that the first shape will always go to the back, and each shape is in a layer in the order in which you drew them.

Changing the order of the layers.

Choose the 'select' tool and highlight the first shape you made.

Click on the arrow in the top right hand corner

This presents you with a drop-down menu - this menu has the word 'order' on it - click on this.

This will bring up a list that says - 'bring to front' and 'send to back'- this allows you to change the order of the shapes on your page.

Containers

This exercise is effective for recall and vocabulary building.

You can use a container to hide and reveal objects or words.

First create the container

Pick a colour

Draw a 'container' using a line recognition tool or using a pre-defined shape.

Use the fill tool to colour the square

Draw the container lid using line recognition in the same colour

Click on the 'select' tool and select the whole container including the lid - you will see a number of selection boxes.

Click on the corner arrow and in one of the drop-down menu find 'group'

Click on 'group' and the three items will be grouped together.

Use the pointer to move the group to where you want it.

Now you can lock the container in place on the page so that it doesn't move:

Select the container and click on the drop-down menu again.

This time, click on 'lock' to lock it in place.

Make objects to put into the container

Now you can create text or select images to put in the container. Each piece of text or image is treated as an object which can be moved around the page using the 'drag and drop' function.

Select the 'text' function on your Interactive Whiteboard.

Select a text colour to match the container.

Write six or seven words which are linked to your curricular theme or topic separately using the text function - for example these can be new vocabulary, or vocabulary which you would like learners to recall.

Each of these words is a separate object.

Put the objects in the container.

You can move each of these objects around the screen using the pen, or you rhand if the Interactive Whiteboard is a touch sensitive one. The objects can be moved in and out of the cotainer as you wish. Because the container and the words are the same colour, you cannot see the words in the container. Try doing it with different coloured words and see what happens.

Strategies for introducing the IWB into your practice

Set up the room so that all learners can see the IWB. Expect that, as facilitator, you will be moving around the room, and that learners will also move around the room more - to approach the board and carry out work on the board.

Consider the Interactive Whiteboard as a means (medium) through which you can promote active and ongoing learner participation, involvement and active engagement (<http://www.nwlink.com/~Donclark/hrd.html>)- your design of class materials presented using an interactive whiteboard should reflect this.

What do you know about how your students learn and their preferred learning styles. How can you use the IWB to appeal to these learning styles in order to maximise students' potential to achieve in your subject area?

Have you defined the outcomes required for your students? To acquire information that will be applied to further learning? Is it to prepare for an assessment or exam? Is it for personal development or challenge?

How do you want to present material and content in the light of this knowledge?

Maintain a focus on learner interactions - this is at the core of everything you do, and the IWB is simply a tool for promoting and enhancing this interaction.

Are there spaces in your design to allow for discussion and interaction?

Develop questions on screen to promote the discussion of issues you wish to raise during the class - supply answers through discussion and interaction, rather than producing a prewritten answer on screen.

What you design should not exclude you as the teacher, but should reinforce your position - not as a button pusher, but as a resource for promoting learning - the IWB is not intended to be 'all singing, all dancing'!

When designing, design so that you as the teacher will use the markers to fill in gaps, illustrate and emphasis your points, and list student responses - the 'interactivity' also happens in the way in which you change the file as you work through the class. Fill in information provided by learners, or ask the learners to volunteer to fill in the information. This provides great opportunities for building confidence, and enhancing writing skills.

Use links and hypertexts to provide a number of options or directions in which the class can go - remember that you can link back to an earlier page, to a document in another file, or to a website, all of which allow you to illustrate a point, demonstrate a task, reiterate points made earlier, or recap on what has been achieved.

Exploit the power of images - this medium allows you to project images large (look up the Biggest Wave ever surfed on YouTube and project it on the IWB for an illustration of the power of image!). You can also support class material and content considerably through the use of well-chosen visual images. Beware of being like a child in a candy shop however, as you might get sick!

Exploit the appeal to learning styles, particularly the kinaesthetic - using 'drag and drop' and the possibilities of cause and effect to scaffold learning, and then for the purpose of discussion - involve learners in the activity of moving images and words, whether remotely or in direct contact with the IWB. Design exercises that have a range of possible outcomes and use these to promote discussion in the group. Again, avoid the overuse of 'drag and drop' - it is fun, but it does not necessarily provoke deep learning.

You can use 'hide and reveal' to scribble or place a picture over a word, then reveal the word at the appropriate time by erasing the scribble or image using the erase function. Again, it is recommended that this be used to test or check recall or to revise previously learned material.

Use stop and start when using moving images to pause and discuss elements - plan this in advance of the class and integrate it in the design.

Use the screen effectively for giving directions or instructions to the class for group work - it can act as 'mission control' - listing instructions, showing feedback, and showing work emerging from student groups, if the students have access to other computers.

During the class: Beginning, Middle and End.

Design your class or episode where you are using the IWB so that there is a beginning, middle and an end.

At the beginning of the class, use material from a previous lesson as a handout to recap and recall previous knowledge. Create handouts for printing and print these in advance of the lesson. These handouts can include student contributions and brainstorming if you saved a version of the lesson at the end of the class. You can also use the Interactive Whiteboard to record brainstorming by learners. This part of the lesson will be mostly based on recall, and on asking the sort of questions that promote recall - Lower Order Questions.

Tell the learners what you are going to cover, and give a taster using recall, words, images, sound, animation or video.

Design your own input on the topic so that it uses the available functions of the whiteboard, such as creating interesting diagrams, so that you can teach the concept in an interesting way.

Include time for learner input, and recording of processes or thoughts on the whiteboard. Appeal to a range of senses and styles - visual, audio, tactile, kinaesthetic, verbal. Ensure rich learner input by using a range of strategies, such as lower and higher order questioning and discussion. Acknowledge learner input verbally, and by recording it on the board for future reference.

Give learners an opportunity to assimilate what they have seen, heard and discussed by giving them an exercise or activity to participate in.

Use the whiteboard to recap on what the learners have seen, including using opportunities to link back to earlier documents or notes.

Check what the learners have learned by using quizzes or interactive activities.

Use additional resources, as well as the Interactive Whiteboard, for example, real objects and tasks associated with what you are teaching, in order to allow learners to practice the skills covered. For example, a class on Communications could include using the IWB to brainstorm a scenario or show a short film clip. Learners should also have an opportunity to participate in a role play to demonstrate some of the skills they have learned. If the role play is recorded on video - it can be annotated by replaying and stopping and starting the recording to highlight key points associated with the learning objectives for the lesson (a bit like the match analysis on TV!)

What are you going to do to ensure that learners' time is productive? -

Introduce the topic and content in a way which allows learners to apply their existing knowledge -

By giving them a chance to talk about their existing knowledge;

Through Q and A which draws on previous learning and knowledge (recall);

Allowing the learners to brainstorm in order to draw on their existing range of knowledge and experience.

Moss et al (2007) identified the following as innovative practice used to reinforce conceptual learning:

Display, editing and annotation of digital video clips

Real time annotation of existing texts based on class discussion and questions

Real time creation, manipulation and processing of texts based on classroom interactions.

Practising, collaborating and improving.

Build in mechanisms so that you can change and improve what you have done - observation of learner responses; reflection and discussion with learners. Anticipate that the work you design will change as a result of your observations. Saving and recording classes will also allow you to review your work, and make changes.

Work together with colleague from other disciplines to share ideas and approaches, to explore the effectiveness of the IWB in teaching and learning and to reduce the time spent discovering new elements of the whiteboard on your own - it's much more fun! Make the use of the whiteboard part of regular classroom practice. Encourage learner to use the whiteboards too.

In a situation where IWBs are a relatively recent arrival in classrooms, teachers in VET should document processes they used to design their classes, how they have used IWBs to teach their subject, and the impact of this approach on learning for their students, because documentation of the new technologies is quite limited, and this reflection will add considerably to knowledge of the impact of ICT on education.

Moss et al (2007) identified that exploration of pedagogic purposes and the role IWBs might take in these purposes (P61) as a priority for teacher development in the use of technology, and this work would contribute to the development of knowledge about how IWBs can be best used to enhance and improve learning. It is also recommended that discussion of pedagogic strategies using IWBs be introduced into discussions about teaching strategies used in colleges, education centres and schools. This is the challenge of developing the use of Interactive Whiteboards. The objective is to create new texts and methods which make the best use of vibrant technology to enhance learning.

Glossary

IWB: Interactive Whiteboard

Drag and drop: This function allows you to click on an object using a mouse, a pen or your hand, and to move it to another location on the screen and deposit it there.

Hide and reveal: This function allows you to cover an object, such as a word with a solid shape or an image, and then to reveal it gradually by erasing, or by dragging it off the original object. This is often used to reveal the answers to questions. Both this function and drag and drop are seen by the research as ‘surface level’ activities which tend to become repetitive and don’t necessarily lend themselves to in depth learning.

Instructional Design Websites

<http://www.instructionaldesign.org/models/addie.html>

<http://www.umich.edu/~ed626/define.html>

<http://www.knowledgejump.com/agile/periodic.html>

<http://www.nwlink.com/~Donclark/hrd/media.html>

Interactive Whiteboard Websites

<http://www.whiteboardblog.co.uk/>

<http://www.teachingideas.co.uk/ict/iwbtips.htm>

<http://tbarrett.edublogs.org/interesting-ways/>

www.becta.org.uk/research/ictrn

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Digital Convergence: http://www.emcp.com/intro_pc/reading7.htm

Assessment Activities for this module:

Part 1: Blog

Write a blog about how you used an interactive whiteboard to present an element of the subject you teach and post it to the e-tuition website

Here are some ideas for you to write about:

How you planned to use the IWB.

The topic you were covering.

How you designed your input - what did you consider? What visual images did you use? How did you ensure that learners participated in the class?

How did the learners respond? To what extent did they participate in the construction of knowledge? Was the class different to other classes you had presented?

How did the learners react to the class?

Was there evidence for improved learning, and how did this present itself?

Would you change anything about how you used the IWB?

What you think about the effectiveness of the IWB as a pedagogic tool.

Part 2: PDF (Optional)

If possible, convert your whiteboard flipchart to a PDF document and upload it to the e-tuition website as an example of what you did.