“Can The Use Of Online Learning And Reflective Journals Improve Students’ Performance And Engage Them In Independent Learning For A Practically Taught “Timber Jointing Module”?"

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Can The Use Of Online Learning And Reflective Journals Improve Students’ Performance For A Practically Taught Timber Jointing Module?

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Can The Use Of Online Learning And Reflective Journals Improve Students’ Performance For A Practically Taught Timber Jointing Module?

- This question relates to a problem that we have with the first year students coming onto a fairly new Timber Product Technology Programme.
- Level 7 Degree Programme started in Sept. 2011.
- First Graduates in Nov. 2014.
The research question broken down.

- To establish students’ prior background knowledge on starting this module and gauge any increase throughout the duration of the module.
- To explore the use of reflective journals to find out if they can encourage the student to become a reflective practitioner and self directed in their learning.
- To determine if an increase in background knowledge can improve the students’ abilities in practical skills.
- To determine how early promotion of independent learning influences learners attitudes to their learning.
Action Research Project

- Prior knowledge testing and re-testing: 3 cycles
- Reflective Journals: 3 cycles.
- Practical coursework: 3 cycles.
- Student and staff surveys.
- Staff observations.
The Classroom

View from front of class

View from back of class

How can I use e technology to teach in this workshop environment?

J. Byrne 2015
Solution: Create a Website

- Website was used to try and engage the first year students with online learning.

- Methods of reflection and the benefits associated with it were also explained on the website.

- Students work on reflective journals both from previous year and current year as worked progressed were included on the website.
Prior knowledge testing and re-testing.

- Students were given 20 short answer questions on approximately 4 topics.
- Material in a wide range of different formats was uploaded to the website.
- Students were directed to this and were expected to engage with this resource in their own time.
- Students were re-tested on these topics after 4 weeks.
- This cycle was carried out 3 times.
- There were no marks awarded for these tests towards their module assessments.
Welcome to my site for Jointing Techniques & Furniture 1.

On each page you will find some useful information, class notes, Power Point presentations and videos relating to your practical module.

Please email me links to any other videos or information that you may think will be of interest to the rest of your class. I can also post information on shows or upcoming events if you provide me with the details.

Material related to this module will be uploaded at various stages throughout the year. You will be notified by email when new material has been added. Please view this material as part of your learning for this module as it will help build up your background knowledge.
On this page you will find a mix of PDF files, Power Point Presentations and videos on sharpening techniques.

Have a look at the Chisels notes then test your knowledge with the Power Point Presentations no cheating!! I will be adding material on a weekly bases.

Sharpening Stones : Look at the PDF file below.
Watch the three Tormek Demonstration Videos in order from top to bottom.
Chisels: Open the first file on chisels and then take the test using the Power Point Presentation.

- **Chisels.pdf**
  - Size: 346.485 Kb
  - Type: pdf

- **Test - Now I know my Chisels.pptx**
  - Size: 788.343 Kb
  - Type: pptx

- **Hammers.pdf**
  - Size: 279.988 Kb
  - Type: pdf

- **Drill Bits screwdrivers.pdf**
  - Size: 306.572 Kb
  - Type: pdf

- **Nails & screws.pdf**

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**Week 1 to 4**

J. Byrne 2015
On this page material will be uploaded on topics that were assessed in your second prior knowledge test.

These topics include:
- Furniture Joints
- Drawer Construction
- Adhesives
- Manufactured Boards

Furniture Joints is uploaded in SlideShare so you just have to click the arrows at the bottom of the screen opposite.
Week 4 to 8

a material but also a property of materials—bendable flexible but ultimately solid it has a great deal of utility potential as these furniture pieces show.

The combination of warmth and air makes the plastic contract, after which it becomes solid again as it cools and tightens around whatever it surrounds. Think of the speed and simplicity, too: no more complex joinery techniques, ugly nails or screws, at least assuming the aesthetic results.

Click the link below to bring you to this site on plastic furniture:
Read more: http://dornob.com/ingenious-joinery-plastic-shrink-wrap-furniture/#bzz2/AxUwDlZ

MDF and HDF

PureBond Plywood - How It's Made

J.Byrne 2015
On this page material will be uploaded on topics that were assessed in your third prior knowledge test.

These topics include:

- Veneers
- Timber Defects
- Knock Down Fittings
- Locks & Hinges

Knock Down Fittings

In these files you will find some information on the different types of K.D. Fittings. I have included the most popular but there are 100's of different K.D. Fittings Click on the link below to bring you to Hafele one of Ireland's main K.D. fittings stores.

http://www.hafele.ie/hircat/templates/hafele/intro.asp

Locks & Hinges

In these files you will find some
Week 8 to 12

Read through the PDF on Timber Conversion, Seasoning and Defects then test your knowledge by taking the test in the animated PowerPoint opposite.

This topic is also covered in your materials class so it can be a good aid to studying.
Exams Page

MODEL ANSWERS FOR EACH EXAM

On this page you will find the model answers to any prior knowledge tests and re-tests. These will be uploaded after you have taken each test. For material associated with your reflective journals, please go to the Reflective Journals Page.

J.Byrne 2015
What is Reflection?

“Reflection is an important human activity in which people recapture their experience, think about it, mull it over and evaluate it. It is this working with experience that is important in learning”.

(Boud, Keogh & Walker, 1985, p. 19)

- Students were shown that keeping a reflective journal can be a very effective tool in developing learning because it can deepen the learning experience.
Reflective Journals

- In the academic year 2012/13, my colleague and I introduced using “Reflective Journals” to our then cohort of first year students on the TPT programme.

- We wrote a paper on our experience (Byrne & Ryan, 2013) on using reflective journals which we presented at the International Conference on Engaging Pedagogy (ICEP) at the IT Sligo in December 2013.

<table>
<thead>
<tr>
<th>Coursework</th>
<th>Item</th>
<th>Practical</th>
<th>Journal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A frame (six joints)</td>
<td>15%</td>
<td>5%</td>
</tr>
<tr>
<td>2</td>
<td>Trinket box with veneered lid</td>
<td>30%</td>
<td>10%</td>
</tr>
<tr>
<td>3</td>
<td>Table with turned legs &amp; drawer</td>
<td>30%</td>
<td>10%</td>
</tr>
</tbody>
</table>

J.Byrne 2015
Putting it into practice.

- Scaffolding was used to instruct the students on the use of the journals in relation to their practical work.
- The students need to be shown what to do, actively engage in what they have been shown, receive constructive feedback and then reflect on all three aspects before attempting a similar task.
- Students were instructed to approach each timber joint in a planned sequenced way; this ensured that they developed their “cognitive skills” of reason, remember, relate and their essential “thinking skills” (De Bono, 1995).
Reflective Journals & Coursework.

On this page you will find material related to your coursework & reflective journals. The Power Point presentation that I showed you in class is uploaded into Slide Share so again you just have to click on the arrows at the bottom of that screen.

I will also provide you with some sample work from last years students.

Reflective Journal
Introducing new Technology
Methodology & Observations.

- Students were also instructed on the importance of creating estimated timescales and actual time scales and the planning of their work on a daily basis.
- Samples of student’s journals were displayed on the website.
- Sharing their work in this way gave these students more confidence and they seemed to engage more in peer learning in the classroom environment, by offering opinions and advice to each other.
- Students from the previous year did not show these traits.
Results from 1st Survey after Week 4 testing

- Question. How confident are you about your online skills?

![Bar chart showing confidence levels in Cycle 1]

- Not at all
- A little
- Reasonable
- Very

Cycle 1
Results from 1st Survey after Week 4 testing.

- **Question.** Which of the following devices do you most often use to connect to the internet?

- 50% on their Laptop followed by 38% on their Smart phone
Question. Where do you most prefer to be when you access the internet?

![Cycle 1](image)

- Home: 96%
- Library: 1%
- travelling bus/Luas/Dart: 0%
- Cafe/Coffee shop: 0%

96% at home with one student preferring the library.
Site Traffic for website from 24\textsuperscript{th} Oct to 23\textsuperscript{rd} Nov 2013

Site is password protected so only these students have access to it.

Students asked questions in the practical classes about material that they had viewed online.
Site Traffic for website from 24th Oct to 23rd Nov 2013

Students still accessed the site after testing was finished as material provided could be used for another Theory based Module.
Results

- These first year students had a better grasp on using the correct terminology in their journals than the previous year’s students.
- Journals were used to give formative feedback; as a result, errors were corrected in subsequent journals which resulted in students receiving higher marks at the next stage.
- Reading the journals also helped lecturers to identify problem areas that some students wrote about. We were able to revisit these areas and give further instruction as needed.
Results: Final class average results from both years 12/13 and research year 13/14.

Table shows an increase of 22% on the class average for the previous year in Journal work.

<table>
<thead>
<tr>
<th>Cohort of 12/13</th>
<th>26 students</th>
<th>Class Average</th>
<th>Possible</th>
<th>Out of 100%</th>
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</thead>
<tbody>
<tr>
<td>Reflective Journal</td>
<td>11%</td>
<td>20%</td>
<td>54%</td>
<td></td>
</tr>
<tr>
<td>Practical Work</td>
<td>49%</td>
<td>80%</td>
<td>61%</td>
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</table>

<table>
<thead>
<tr>
<th>Cohort of 13/14</th>
<th>22 students</th>
<th>Class Average</th>
<th>Possible</th>
<th>Out of 100%</th>
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</thead>
<tbody>
<tr>
<td>Reflective Journal</td>
<td>19%</td>
<td>25%</td>
<td>76%</td>
<td></td>
</tr>
<tr>
<td>Practical Work</td>
<td>49%</td>
<td>75%</td>
<td>65%</td>
<td></td>
</tr>
</tbody>
</table>


References (Cont.)

- SlideShare™ free website that allows people to display Power Point Presentations either privately or publicly Accessed 18 March 2014 [http://www.slideshare.net/](http://www.slideshare.net/)
End of Presentation

- Thank you for watching.
- Have you any questions?

- Contact Details
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