Skills support for STEM students at the OU

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Open University
Library
Information about the OU

• Distance learning HE Institution
• Over 150,000 students studying with the OU
• Over 20,000 disabled students
• Currently have 64,000 STEM students
• Majority of our students are in paid work and study part time.
OU qualifications

- Qualifications range from access modules, undergraduate and postgraduate qualifications.
- Modules? Our qualifications are made up of 30 or 60 credit modules for example an UG degree would be made up of 360 credits.
- Levels? Level is the year, level 1 = 1\textsuperscript{st} year, level 2 = 2\textsuperscript{nd} year, level 3 = 3\textsuperscript{rd} year.
Digital & Information Literacy (DIL) Framework

• Has been designed to support a consistent and structured approach to DIL skills development through qualifications across all the faculties.
The DIL Framework

- **Understand Engage**: Know what sources are available, where to look online and how to search efficiently.
- **Manage Communicate**: Communicate well online, avoid plagiarism, reference correctly and manage information.
- **Evaluate**: Judge who and what to trust online and select appropriate digital tools for the task in hand.
- **Find**: Know what sources are available, where to look online and how to search efficiently.
- **Collaborate Share**: Work with others online to create and share content.
- **Select, access and exploit online tools and networks for study and work purposes**.

- **Communicate well online, avoid plagiarism, reference correctly and manage information**.
- **Judge who and what to trust online and select appropriate digital tools for the task in hand**.
- **Know what sources are available, where to look online and how to search efficiently**.
- **Work with others online to create and share content**.
Example of DIL skill

Digital and information literacy framework

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
</tr>
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<tbody>
<tr>
<td><strong>Critically evaluate information, online interactions and online tools</strong></td>
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<tr>
<td>Identify and apply appropriate quality criteria to evaluate pre-defined information, including personal contacts.</td>
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<tr>
<td>Identify and apply appropriate quality criteria in a broad sense to carry out initial filtering of material from searches.</td>
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<tr>
<td>Contribute a comment to an online discussion (e.g. forum, blog, wiki).</td>
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<tr>
<td>Distinguish between instances of online tools on the basis of their relevance to the study context.</td>
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<td>Apply appropriate quality criteria to evaluate a range of resources (e.g. books, articles, websites, personal contacts) effectively.</td>
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<td>Apply appropriate quality criteria to filter results.</td>
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<td>Contribute useful feedback on others' contributions to an online interaction.</td>
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<td>Apply appropriate criteria to evaluating instances of online tools for their relevance to the study context.</td>
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<td>Use appropriate quality criteria to critically evaluate information from any source to determine authority, bias, etc.</td>
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<td>Use appropriate quality criteria to filter results from a given search output, and to focus on the most relevant information within documents.</td>
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<tr>
<td>Engage in critical appraisal of others’ contributions in an online interaction.</td>
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<tr>
<td>Demonstrate the ability to evaluate online tools in any context.</td>
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Faculty policy

- The Faculty embedded DIL into their employability strategy
- Top level agreement that we would work to incorporate these skills into module material
Academic Liaison

• Help faculties shape module material to include DIL skills.
• How? Start at the beginning - Learning Design Workshops that are attended by faculty, academics, authors and module production teams.
Academic Liaison

- Attend module team progress meetings.
- Keep in contact and make sure we are included at the relevant stages.
- Read drafts and make suggestions as to how learning outcomes can be met by incorporating DIL activities.
## 2. COGNITIVE SKILLS:

<table>
<thead>
<tr>
<th>Description of learning outcome(s)</th>
<th>Assessment method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. apply knowledge and understanding to address familiar and unfamiliar problems; summarise, analyse and synthesize scientific information and/or data</td>
<td>TMA 02, TMA 03, EMA</td>
</tr>
<tr>
<td>2. critically evaluate statements, different viewpoints and data to informed judgements based on scientific evidence</td>
<td>EMA</td>
</tr>
<tr>
<td>3. make informed judgements based on available evidence.</td>
<td>TMA 03, EMA</td>
</tr>
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</table>

Mapping learning outcomes-S350
## Mapping DIL

### Digital and information literacy framework

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- Engage in critical appraisal of others' contributions in an online interaction.  
- Demonstrate the ability to evaluate online tools in any context. |
In S350 students use a framework developed by the Library called PROMPT to evaluate a UNEP report and a Wikipedia article as part of studying plastics in the ocean.

Activity 8.2 Using PROMPT in evaluation

Approx. 2 hours

This activity provides you with an opportunity to address the following learning outcomes:

- an appreciation of the current thinking as well as uncertainty, ambiguities and limits of scientific knowledge
More examples....
What are standards?

Standards are guidelines developed to ensure that products and services adhere to characteristics such as quality and efficiency.

They are not mandatory but the BSI says:

If you comply with a British Standard then it’s pretty clear that you take your responsibilities seriously as an organization, and indeed compliance is often taken as evidence of due diligence. It certainly speaks volumes about your attitudes to doing things properly.

However, standards aren’t the same as regulations and following a standard doesn’t guarantee that you’re within the relevant laws. In fact standards rarely cite the law as legislation could change within the lifetime of the standard. (BSI, 2013)

In T176
Students examine a particular standard after completing the Library activity
In S111 where students study DNA they are given a Library activity called ‘Where does scientific information come from?’ following the path of the research supply chain of Watson & Cricks original article.
STEM Library training for distance learners

Fiona Durham
Open University Library
Library live engagement

• Blackboard Collaborate
  – Generic Library programme
  – Targeted module sessions
• Livestream
• Facebook
• F2F (very occasionally!)
Marketing

- Link in module
- Group tuition
- News items on module
- Tutor recommendations
Welcome to this Library training session for S111 Questions in science

1. Please do the Audio Setup Wizard

   (Tools > Audio > Audio Setup Wizard…)

2. Indicate whether you have a working microphone using the Yes/No options
Using the Library…

1. Please use the polling buttons:
   - A) Used it a lot
   - B) Occasionally
   - C) Once
   - D) This is the first time!
S111 science foundation – Learning Outcomes:

By the end of this session you should:

- Understand why it is important to acknowledge the sources you use in your assignments
- Start to learn to cite and reference books module materials, journal articles and websites
T452 Engineering project – learning outcomes

By the end of this session you will be able to:

• Develop a search strategy for your project
• Identify appropriate sources including specific databases
• Conduct searches and evaluate content using a variety of resources
S350 Evaluating contemporary science - Citation Searching

- Why do citation searching?
- Citation databases
  - Web of Science
  - Scopus
- Google Scholar
Evaluation

Please fill in the evaluation form – click on the URL in the chat window
http://www.open.ac.uk/libraryservices/elluminate

• How did I do?
• What else do you need?
Start a new discussion

Discussion

- OU Live session on Referencing for S390
- Finding and accessing journal articles
- Hello from the Library!
- Open University Library Services closed on August Bank Holiday – Monday 29/08/16
- Thanks to Library staff
- Library Advice
- Pre-print papers
- Press Release
- Referencing authors with a hyphen in their name
- Referenced material was freely available, now not
- Referencing for tables?
- Referencing an online dictionary
- PDF from Researchgate
- Referencing rows in a table
Online training numbers by Faculty

Attendance at OU Live targeted sessions by faculty (2015-16)
Facebook events

The Christmas presence you've always wanted
Preserving your digital identity over the festive season

Tuesday, 15 December 2015 at 19:00–20:00
about 9 months ago

The Open University Library
The Open University, Walton Hall, MK7 6AA Milton Keynes

EVENT TIPS
Create new event
Have another event by The Open University Library coming up? Create an event to let people know about it.
Our librarians will be running a 30 minute Q&A session via Facebook Live on Thursday 1st December at 7pm. We’ve booked the room and tested the technology, now all we need is your questions! If you are unable to attend on the night then please do still send us your questions (via the comments on this post). We are planning to make a recording available. Looking forward to seeing some of you there!

https://www.facebook.com/events/555851397950787/

https://www.youtube.com/watch?v=z0DSR9vDKPs
Links mentioned

- Live engagement and Library Services


- Student Hub Live referencing session
  [https://www.youtube.com/watch?v=OGwU0Hc4JkY](https://www.youtube.com/watch?v=OGwU0Hc4JkY)

- Facebook events page [https://www.facebook.com/OULibrary/events/](https://www.facebook.com/OULibrary/events/)

- Images from Pixabay [https://pixabay.com/](https://pixabay.com/)