Can an information literacy teaching intervention promote self-efficacy in learners?

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What I am going to talk about

• Introduction
• Information literacy practice framework
• Self-efficacy
• Step-up to HE
• Methodology
  – Hypothesis and an exploratory research question
• Results
  – Quantitative
  – Qualitative
• Limitations
• Final words including thoughts on the next steps
Introduction

• A health warning – the statistical results reported here are not yet verified and so no claims are made

• However, the numbers and the rich data make a good story and an indication of what might be happening when pre-university students attend the course in question and receive some information literacy practise guidance
Information literacy (IL) practice framework

This framework is based on Walton & Hepworth, 2011 and 2013 and published in Walton & Cleland, 2013.

THREE SPHERES OF INFORMATION LITERACY

Becoming information literate takes place in a wider social context determined by roles, norms and tasks.

- Find/access/location
- Use/communicate/produce
- Evaluate/discern

Spheres can occur in no particular order.

Each sphere triggers its own set of behavioural, cognitive, metacognitive and affective states.
Self-efficacy

• Concerned with people’s beliefs in their capabilities to produce given attainments (Bandura, 1997 quoted in Bandura, 2006, p307)
• A differentiated set of self-beliefs linked to distinct functions (Bandura, 1977)
• Self-efficacy scales should be tailored around the particular function
• Perceived self-efficacy
  – a judgement of capability to execute a given type of performance and influence courses of action
  – Influences self-development
• Self-efficacy issue – can one take appropriate action in the face of dissuading conditions?
• E.g., it takes more cognitive effort to be sceptical and disbelieve a piece of information (especially if it contradicts your world view) than it does to accept it and move on (Lewandowsky, 2012) – can IL mitigate this?
• Research into IL and self-efficacy not new e.g., Kurbanoglu et al (2006) and recent example, Kumar & Edwards (2013) amongst others
Step-up to HE (1)

• A short, 5 week study skills course with some tailored subject content delivered at a UK university.
• Intention to give potential students the opportunity to experience studying in Higher Education, especially those who feel they may not have the right skills for this endeavour.
• Part of a ‘Widening Participation’ initiative to encourage students from non-traditional back-grounds to consider attending university. (Taylor, 2012)
• Programme contains a 3 week information literacy practise intervention...
Step-up to HE (2)

• Student centred
• We ask them what they want to learn about
• First group task, ‘tell us 10 things you wanted to know about the library but were too afraid to ask…’
• Each week has a different focus
  – Finding information
  – Information discernment
  – Communicating information – particularly around referencing (Johnston & Walton, 2014)
Methodology

• Hypothesis
  – Participants involved in Step-up to HE (n=36), and who complete both pre and post delivery questionnaires, will gain a statistically significantly higher score in the self-efficacy post information literacy intervention questionnaire than in the pre-intervention questionnaire.
  – T-test – assumptions – test difference in means between two scores from single set of sample people

• Exploratory research question – In what ways does student feedback indicate increased awareness of information discernment? (open coding)

• Consent was obtained from all students before the research commenced.

• All were informed that they could withdraw their data at any time
Results: Quantitative (1)

• Q2: (n=34) I can find information easily to complete an assignment
  – The two means differed significantly in the predicted direction (t= -3.602, df=33, one-tailed p= .0015)

• Q3: (n=36) I can make sound judgements about information and evaluate it for its quality
  – The two means differed significantly in the predicted direction (t= -4.155, df=35, one-tailed p < .0001)

• Q5: (n=36) 5. I can reference my work using a recognised standard, for example, Harvard
  – The two means differed significantly in the predicted direction (t= -7.401, df=35, one-tailed p< .0001)
Results: Quantitative (2)

• Q6: (n=36) *It is easy for me to stick to my aims and accomplish my goals*
  – The two means differed significantly in the predicted direction (*t* = -2.876, *df*=35, one-tailed *p* = .0035)

• Q7: (n=36) *I am confident that I could deal efficiently with unexpected events*
  – The two means differed significantly in the predicted direction (*t* = -3.969, *df*=35, one-tailed *p*<.0001)

• NB: Between 60 and 70% of students who attend the course go on to HE. Some cohorts have 90% progression.
Comparison of means – pre and post tests
## Results: Qualitative

Before the session: “Write what you think 'critical evaluation for webpages' means”

<table>
<thead>
<tr>
<th>Students had no concept (x4)</th>
<th>Navigation/ease of use (x3)</th>
<th>Some analysis (x5)</th>
<th>Aware of the need to analyse and judge (x3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No idea x2</td>
<td>Knowing how to navigate webpages</td>
<td>Testing to see faults</td>
<td>Assessing pros and cons</td>
</tr>
<tr>
<td>Not sure</td>
<td>A detailed summary of a webpage</td>
<td>Reflect on and document opinion</td>
<td>Analysing the website looking for good and bad points</td>
</tr>
<tr>
<td>Don't know</td>
<td>User friendly/easily accessed</td>
<td>To extract reliable and relevant information</td>
<td>Making as judgement of a web page</td>
</tr>
</tbody>
</table>

After the session: “What have you learned in today’s session?”

<table>
<thead>
<tr>
<th>Students had no concept (x0)</th>
<th>Navigation/ease of use (x0)</th>
<th>Some analysis (x14)</th>
<th>Aware of the need to analyse and judge (x3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have learnt sites are not trustworthy (x4)</td>
<td></td>
<td>It is deciding whether a webpage is reliable or not</td>
<td></td>
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<tr>
<td>Don't judge a web page purely on a Google quick search</td>
<td></td>
<td>To check: site owner, reliability, accuracy, peer evaluation, double check work before using it</td>
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</tr>
<tr>
<td>Peer review (x2)</td>
<td></td>
<td>Learnt to be open-minded as to the reliability of websites. In evaluation interpretation will go a long way</td>
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<tr>
<td>Do not be too quick to judge a website by its Google description</td>
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<td></td>
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<tr>
<td>To be very careful about the reliability of websites/search engines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It's worth checking the author/host before looking at the content to ensure accuracy</td>
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<tr>
<td>Don't trust a website who's tagline is “The truth about...”</td>
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</tr>
<tr>
<td>Not all .org websites can be trusted</td>
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</tr>
<tr>
<td>Don't believe everything you see on the net. Do your own search on subjects</td>
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<td></td>
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<tr>
<td>Provide feedback, reliability, accuracy, authors etc.</td>
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</table>
Limitations

• Small scale study
• Self-selecting participants
• Flawed questionnaire?
• Hawthorne/Observer Effect – have individuals simply improved their behaviour in response to being observed?
• ...or because they just got older and more experienced?
Final words including thoughts on the next steps

• More detailed research is required to fully establish patterns in the data.

• Furthermore, to establish the veracity of these findings, it is intended that the study will be repeated over the next two academic years.
Last word...

• Bandura (2006, p319)

“Knowing how to build a sense of efficacy [...] enables people to realise their desired personal and social changes”
References