Embedding information literacy skills in the psychology curriculum: Supporting students in their transition to independent researchers

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Here we report on a new initiative which supported first-year psychology undergraduates in developing their information literacy skills. These skills were taught in a small-group tutorial setting with tutor guidance and peer-supported activities. We measured student's Autonomous Learning and Academic Self-Efficacy before and after the teaching activities, and found a significant increase over time. Focus group responses appeared to attribute these changes directly to the learning activities. Results support the conclusion that students readily develop autonomous learning skills and increased self-efficacy that are transferable to other assignments if skills development are embedded with subject learning activities.

Introduction

THE FIRST YEAR UNIVERSITY EXPERIENCE is a time of substantial transition and adjustment which can be difficult for students who move from a supported school/college environment to HE which requires them to be independent and autonomous (Beaumont, O'Doherty & Shannon, 2008). Whilst incoming students report that they expect to work independently they are often slow to develop appropriate study skills and can find the experience disorientating (e.g. Rowley, Hartley & Larkin, 2008). Many universities rely on central services to support students in developing appropriate skills such as in information literacy. However, many students fail to see the relevancy of these courses and so uptake is relatively low. Furthermore, Wingate (2006) argues that 'bolt-on' study skill courses merely encourage shallow learning approaches. Because of this Kitching and Hulme (2013) argue that support is best embedded within the curriculum where study skills are taught along with a student's academic project.

One of the central advantages of studying psychology is not just the subject specific knowledge gained, but also the broader graduate attributes gained through study. These broader perspective help develop an individual who is a 'psychologically literate citizen'. This is an individual who can use psychological knowledge in all areas of their lives, be that personal or business. However, beyond that a degree in psychology also develops critical and numerate scientific thinkers. Central to the development of these skills is a student's information literacy skills. These are skills related to how to acquire as well as use new knowledge and may involve how to search a library catalogue, database, or selected journals, as well as how to summarise and communicate your understanding to an audience. These skills tap into a number of key graduate attributes that employers increasingly demand and value in future employers, such as being 'investigative' (research new areas), independence (evaluate sources of information), effective communicators (present ideas clearly and concisely), and when working as a group, experienced collaborators.

Here we report on a new initiative which aims to support first-year psychology undergraduates in developing their information literacy skills. These skills were taught in a

small-group tutorial setting with tutor guidance and peer-supported activities. Learning activities were explicitly linked to coursework. The project aimed to develop independence in searching for literature, being able to effectively summarise and communicate academic information to others, as well as developing group work skills.

Method

Design

We utilised a mixed-methods approach, combining questionnaires and focus groups to evaluate the introduction of a series of compulsory tutorial activities taught over six weeks which aimed to promote student independence in research skills.

Participants

Quantitative data was collected from 167 participants measuring their degree of perceived academic autonomy, self-efficacy, and overall tutorial experience. A total of four students were invited to participate in a focus group after completion of the tutorial activities.

Tutorial activities

The tutorial activities aimed to develop student's psychological literacy. Psychological literacy is a broad concept and encompasses an understanding of how psychological knowledge may be applied to real-life situations. However, it also refers to a range of graduate attribute skills that may arise from studying psychology as an academic subject, for example, skills in literature searching, summarising and communicating findings to others, and group work skills. The student's goal was to spend six weeks in a small group (four to five students) researching a psychological topic, which they would then present as a talk to their peers. This presentation was assessed and contributed five per cent to their overall grade. There were three tutorials and activities were structured so that tutors could teach skills in literature searching, practical skills in database searching, and on public speaking. The structure of the activities were:

- **Tutorial 1:** Students chose a topic to research and were asked to discuss appropriate sources of academic information. They were assigned a homework activity to research their topic and meet to discuss the validity of different sources of information (e.g. newspapers, website, journals, textbooks, etc.).
- **Tutorial 2:** Tutors demonstrated ways of searching the library catalogue, for example, books, journals, databases. Students then used computers in the psychology lab to work in their project groups to further research their chosen topic by searching the library catalogue and online data bases themselves. Tutors also provided advice and support.
- **Tutorial 3:** Student presentations – tutors assessed individual student performance based on their contribution to the research process over the previous weeks and on their assigned section of the talk.

Assignment evaluation

Quantitative data was collected at two time points, at the start of the project (tutorial 1) and after the group presentation (tutorial 3). Students were asked at both time points to complete an *Academic Autonomy* questionnaire (Macaskill & Taylor, 2010) which measures how academically independent or autonomous students perceive themselves to be. This tool employs 12 statements, such as, 'I enjoy finding information about new topics on my own' and 'I take responsibility for my learning experiences' and for each statement employs a five-point response scale ranging from 'not at all like me', to 'very like me'.

In addition participants completed an *Academic Self-Efficacy* questionnaire (adapted from Forester, Kahn & Hesson-Mclnnis, 2004) which assessed their perceived self-confidence in their academic abilities. This tool identifies 15 academic tasks such as, 'Use of the library resources (e.g. quick search, books and journals) to gather the information needed' and 'Evaluate the quality of the information collected,' and

asks participants to rate how confident they are in completing these activities (ranging from 0=not confident to 100=completely confident).

We also evaluated their perception of their overall experience of the tutorial activities and learning assignment at the end of the process. These questions included, 'How valuable do you feel the information literacy tutorial was for developing your learning skills?' and 'Do you think that what you learned in the information literacy tutorial will help you research for your other (non-psychology) studies?'

Results

We predicted that students' autonomy and self-efficacy scores would increase over time and that both measures would positively correlate with perceived experience.

Autonomy

We compared students' Autonomy scores from time 1 (i.e. at the end of tutorial 1) to their perceived autonomy after the group presentation at time 2 (i.e. at the end of tutorial 3) using a paired *t*-test. There was a significant difference in the time 1 autonomy scores (M=3.49, SD=.42) and the time 2 autonomy score (M=3.60, SD=.44); $t(166)$=–4.65, p<0.001. Student comments gathered in the focus group appears to illustrate the growing sense of autonomy in their own learning, with students commenting on their developing knowledge, 'I found out how to look for journals and now I am able to do it on my own' (student 1), that they felt independent learning was less intimidating, 'I now quite like the whole independent learning thing. I think I am learning quite well that way' (student 3), and most encouraging of all that they feel that these skills are transferable to other learning activities, 'I have definitely used the skills again' (student 2).

Self-efficacy

In addition we compared students' Self-efficacy scores from time 1 to time 2 using a paired *t*-test. Again we found a significant difference between the time 1 self-efficacy scores (M=63.98, SD=13.81) and the time 2 self-efficacy scores (M=72.76, SD=11.89); $t(165)$=–10.11, p<0.001 which illustrates that students' perception of their own ability in academic activities was growing. Student comments from the focus groups suggested that the tutorial activities were useful because they supported students in developing their research skills, for example, 'I really liked that tutorial because I was always dead intimidated by the library. Like I had no idea how anything worked. I didn't know how to look for journals and I was just going on Google Scholar. So that taught me how to login and look for things and that really helped me. It made me more confident' (Student 3).

Experience questionnaire

Students were asked to evaluate their experience of the tutorial activities at time 2. These eight questions summarised in Table 1 overleaf illustrate a largely positive student experience (responses were 1=not useful to 5=very useful). This can be clearly seen in student responses for overall satisfaction (M=3.96, SD=0.898), and that the skills learned are transferable to other assignments in psychology (M=3.78, SD=0.857) and to other subject areas (M=3.80, SD=0.906).

To analyse this data further and to explore how this related to student's developing independence in academic autonomy and self-efficacy responses were averaged across all eight questions and a Pearson's correlation was calculated with autonomy and self-efficacy measures. Both produced significant positive correlations for Autonomy and Perceived Experience, $r(165)$=0.453, p<0.001, and Self-Efficacy and Perceive Experience, $r(165)$=0.414, p<0.001.

Table 1: Averaged Experience Questions from 167 participants.

Question	Mean	SD
How satisfied were you with the experience of working on a group presentation overall?	3.96	898 .
How satisfied were you that the information literacy provided you with the correct amount of support for finding information for your project and your essay?	3.79	.768
How enjoyable did you find the experience of working on a group presentation?	3.85	1.010
How valuable was the information literacy tutorial for developing your critical thinking skills?	3.40	.858
How valuable do you feel the information literacy tutorial was for developing your learning skills?	3.44	.839
How valuable was information literacy tutorial for developing your confidence?	3.25	.892
Do you think that what you learned in your information literacy tutorial will help you research your psychology coursework in psychology1B?	3.78	.857
Do you think that what you learned in the information literacy tutorial will help you research for your other (non-psychology) studies?	3.80	.906

Discussion

The transition to first year university is a disorienting experience for many students. It requires a more independent approach that prior educational experiences often do not fully prepare them for (Beaumont, O'Doherty & Shannon, 2008). Student anxiety may arise from a lack of knowledge in how to be independent (i.e. having the skills to know how to search a library catalogue, knowing what a journal is, etc.) to having little confidence in their own skills and abilities. Students, therefore, need help in developing their information literacy skills to support successful learning in higher education.

Whilst many universities provide skills training courses for students, the uptake of these is relatively low. In fact those students who do attend these courses are often the 'better' students who attend because they recognise the importance of skills training, whereas 'weaker' students tend not to realise the advantage of developing these transferable skills (Kitching & Hulme, 2013).

Therefore, finding a way to embed skills training in the curriculum engages all students and so benefits all students. This was the approach that was adopted in the present study, with compulsory tutorial activities linked explicitly to relevant course work.

The results demonstrated a significant increase in Autonomy and Self-Efficacy over a relatively short time period. Whilst it is impossible to conclude from the data that tutorial participation resulted in the positive improvement over time, the qualitative data strongly suggests that changes in Autonomy and Self-Efficacy were attributed to the tutorial activities. This is clearly seen in the responses where students stated that participating in supported literature search activities tied to course work helped develop their understanding of the processes involved in literature searching, as well as their perceived confidence in using these skills in future. In fact, one of the most profound findings reported here is from the experience data which suggest that students

perceived that that the skills developed in these activities are transferable outside of the tutorial activity and would be of benefit to a variety of different disciplines. This suggests a tangible transferable graduate attribute. We recommend that other year one course organisers look for ways to include these types of learning activities within their curriculum, so that students are allowed to develop an understanding of an academic subject area along with clear and explicit support for transferable skills development.

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