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Implementation and evaluation of embedded study skills support within an undergraduate degree program

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ABSTRACT

As student numbers and the diversity of the student population entering higher education are increasing worldwide, it has been observed that the number of students who possess inadequate study skills is also rising. In order to maintain continuation and achievement, higher education institutions therefore face the challenge of tackling this issue. To address this concern an independent study module was developed and introduced into an undergraduate Bachelor of Science at a UK University. This module embedded study skills in a contextualised manner into the degree programme using an experiential learning approach. The impact of this module on students' engagement with and perceived ability in study skills was assessed by the completion of pre-post module skills audits and module evaluation questionnaires. Following completion of the module students' perceived ability in a range of study skills, most notably information seeking skills, writing skills, and spoken communication was enhanced. Students engaged well with the online independent nature of the module and the experiential learning approach asking for more tasks to support their learning. Students' engagement was low in areas where they perceived they were already competent or did not see the relevance of the material. Embedding study skills development within the academic program using an experiential learning approach was therefore shown to be an effective way of enhancing students' skill levels.

1. Introduction

The number of students engaging with higher education has been increasing over the last three decades. The higher education entry rate among UK 18-year-olds increased from 24.7% in 2006 to 30.7% in 2015 and peaked at 38.2% in 2021 (Bolton, 2023). This is thought to be an almost direct consequence of the UK's widening participation agenda with an increase in the diversity of the student population and the number of students entering higher education from non-traditional backgrounds (Allan & Clarke, 2007; Coughlan & Swift, 2011). Students are now entering University courses with a much broader range of qualifications as the elitist system which used to exist in higher education prior to the early 1990's is now the exception rather than the rule (Groves et al., 2010; Wingate et al., 2011). This diversity however poses a challenge to universities as they are under pressure to ensure continuation of students who do not begin on a level playing field (Wingate, 2006). In addition, it is becoming increasingly common that students beginning their studies in higher education lack the skills required to study effectively and work independently (Groves et al., 2010). For the purpose of this paper these skills are termed "study skills". This decline in study skills has large implications for higher education institutions. Students are effectively arriving unprepared for study in higher education and so need support to enable them to achieve, continue

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their studies and progress (Wingate, 2006). This idea that universities need to help students develop their study skills is not a new one, a review in 1982 by Entwistle reported a growing interest in helping students to become more effective and autonomous learners (Entwistle, 1982). It was also highlighted in the Dearing report in 1997 that all students should be taught how to learn (Dearing, 1997). However, how universities do this has become a debated topic (Richards and Pilcher, 2020).

Support with study skills has been traditionally provided by “Study Skills Centres” within universities which provide courses and individuals support to help students study and become independent learners (Haggis & Pouget, 2002). In 2006 Wingate showed through a random search of university websites that 90% of universities offered such courses through the student union, student services, or through special skills centres. As recently as 2020 it is still being highlighted that the use of centralised study skills support is commonplace globally (Richards and Pilcher, 2020). Studies have shown that student engagement with such services is low, and it is often only the higher achieving students who engage with these learning opportunities (Durkin and Main, 2002). This lack of engagement has often been attributed to students’ perceptions of study skills and their abilities, whereby students perceive that they don’t need help in this area, and it is seen as irrelevant (Wingate, 2006). It has been shown previously that students overestimate their information literacy abilities and consequently are not likely to ask for help (Gross & Latham, 2007; Price et al., 2011). Students may perceive themselves as being technologically savvy, but this does not necessarily transfer to information literacy and academic style IT skills (Price et al., 2011). To compound this issue, competency theory would suggest that students who lack competence with study skills tend to be unaware of their low skill level and so overestimate what they can do, potentially displaying higher levels of perceived ability at these skills than highly skilled individuals (Kruger & Dunning, 1999). In other words, the students do not know what they do not know and therefore will not seek help for it. Hence, this evidence indicates that the students most in need of study skills support are least likely to recognise this and therefore engage in voluntary (bolt on) study skill courses and support.

An alternative approach is embedding/integrating study skills within a degree course itself, this has been evidenced and advocated numerously by previous authors (Appleton, 2005; Durkin and Main, 2002; Steiner et al., 2019; Wingate, 2006). Durkin and Main, 2002 showed that by embedding study skills sessions within a degree programme attendance increased from 0% at the optional bolt on sessions to 80% at the embedded sessions. Throughout the course sample answers and assignment/examination questions from the students’ subjects were used to illustrate the teaching. This is in line with the recommended approach that all skills learning should be delivered in context (Cotterell, 2001). This integration with subject content and knowledge is advocated to encourage deep rather than superficial learning (Wingate, 2006). Embedding sessions within a degree does not just have positive effects on attendance it can also improve students’ level of work as is evidenced by the work of Appleton (2005) who saw improvements in students’ written work with an enhanced range of sources being used and the work being more critical. In addition, Steiner et al. (2019) evidenced students’ enhanced motivation and learning strategies using the Motivated Strategies for Learning Questionnaire (MSLQ) following the completion of a project assignment which focused on the implementation of academic skills in a topic specific context.

Although the embedding of study skills has clear pedagogical advantages there can be many barriers to this process in higher education institutions (Chan et al., 2017; Drummond et al., 1998; Wingate, 2006) for example: the embedding process will often involve course/module changes and involve multiple staff communicating and engaging with the process and thus will require change management (Drummond et al., 1998). Many higher education institutions have systematic prioritisation of research and commercialisation to increase income generation which can potentially devalue teaching (Dandridge, 2023; Drummond et al., 1998). There is often reluctance by academics to be involved in study skills provision, they can perceive this as being outside their remit and not beneficial to their career path; also, academics may feel they lack the expertise to teach this area (Chan et al., 2017; Drummond et al., 1998). The embedding process by its nature must be led by the academics; it is therefore their engagement with the importance of study skills provision which is required to move forward (Chan et al., 2017). Without this the bolt on approach would be the best option.

Whether the bolt on approach or the embedded approach is utilised, to enhance students’ engagement and learning, student centred approaches to study skills have been advocated (Groves et al., 2010; Wingate, 2006). One such approach, which has been adopted for study skills teaching, is that students are given academic tasks so that they can experience the use of these skills. Following which students are provided with feedback to aid reflection so that they can apply these skills more effectively next time they are required (Groves et al., 2010; Wingate, 2006). This strategy is based on Kolb’s model of experiential learning which involves a cycle of concrete experience, reflective observation, abstract conceptualisation, and active experimentation (Kolb, 1984). Experiential learning has been shown to enhance both student engagement and motivation in higher education (Kong, 2021).

The aims of this project were therefore to develop, implement and evaluate a module which embeds study skills in a contextualised manner using an experiential learning approach.

2. Methods

2.1. Background

Robert Gordon University is a ‘Modern University’ situated in Aberdeen in the Northeast of Scotland. The University has over 15,000 students and runs over 300 courses. One of its courses is the BSc (Hons) in Applied Sport and Exercise Science (ASES) which sits within the School of Health Sciences. Students within the university are traditionally provided with study skills support from the ‘Study Skills Service’ and the library. The Study Skills Service provides support with academic writing, critical thinking, critical reading, academic style, revision and exam techniques, maths and statistics and IT skills. The library provide support with using the library, finding information, organising and using information, evaluating information and referencing. Online packs are available on all these topics through the Universities’ virtual learning environment (Moodle), the library and Study Skills Service are also open for drop-in

sessions and appointments with students as well as answering queries by email and phone. In addition, on the ASES degree staff from the library and Study Skills Service led timetabled sessions. However, although these sessions appeared on the students' timetable they did not sit within a module, instead they appeared as additional "non-modular events". Attendance at these sessions has historically been very poor and even though widely advertised students failed to seek help from either the library or Study Skills Service. Consequently, although the help and support were available, students were not getting the help and support they required. To try and address this problem a new module 'Independent Study in Sports and Exercise Science' has been introduced to the curriculum which embeds study skills into an academic and assessed module.

2.2. Methodology

This project takes the form of a piece of action research (Cousin, 2009). A problem has been identified; 'students lack of ability and engagement with study skills', a plan has been formed in order to address this problem (introduction of a module which embeds study skills in a contextualised manner into the degree programme), ethical approval has been sought (this project gained ethical approval from the School of Health Sciences Ethics Committee at Robert Gordon University) the plan has been implemented (the module has been run), data has been collected (study skills audits, module evaluation questionnaires and registers of tutorial attendance/online study completion), this data has subsequently been analysed and reflected upon in order to inform future practice. Action research puts the making and watching of change at its centre and offers an inclusive method of researching 'with' rather than 'on' others (Cousin, 2009).

2.3. Module design

Independent Study in Sports and Exercise Science runs in semester one of year two of the 4-year BSc (Hons) Applied Sport and Exercise Science degree. The basis of this module design is Kolb's model of experiential learning (Kolb, 1984) and its application to study skills by Wingate (2006). During the first element of Kolb's cycle 'concrete experience' Wingate proposes that students should be given the experience of dealing with academic tasks, in this module students participated in tasks through both online study packs and within face-to-face tutorials. Wingate argues that to fulfil the second part of Kolb's cycle (reflective observation) students should receive feedback on these tasks to encourage reflection; in this module students received feedback from both the tutor and their peers during the tutorial sessions and on online tasks through discussion forums and drop boxes. Stage three 'abstract conceptualisation' (Kolb, 1984) is achieved by students using the feedback they receive to develop new strategies (Wingate, 2006), in this module students can then do this when completing their summative assessments (online tests and written coursework). The fourth element of this cycle 'active experimentation' (Kolb, 1984) is where students use the skills developed to complete similar tasks more expertly (Wingate, 2006), students can do this by using their skills when completing other modules. Using this framework in relation to study skills teaching it has previously been shown that students experience learning in all stages of the cycle (Groves et al., 2010).

The module was delivered via a blended learning approach. Each week students were required to access an online study pack through the module's Moodle site. These online study packs contained information on that week's topic along with tasks to complete, in addition they included links to the online materials provided by the Study Skills Service and the library. Students were also required to attend weekly face-to-face tutorials, during these tutorials feedback was given on the study packs and tasks as well as additional information being covered. Students were also allocated time for directed study. The topics covered in the module were 1) A module introduction 2) Referencing and avoiding plagiarism 3) Searching for information 4) Research design and terminology 5) Microsoft office and IT skills, 6) Writing Skills, 7) Basic statistics and analysis, 8) Reading journal articles, 9) Reviewing literature.

The idea of the study packs is to integrate study skills into a subject specific context. The study packs also allowed students to work at their own pace when using the material. The tutorials were designed to be interactive and involve exercises such as individual tasks, group work, peer-to-peer presentation and role play. By creating study packs for the students which contained clear instructions and deadlines the aim was to provide guided independent study as a stepping stone for students to work autonomously.

The module was assessed by two components, the first component was four online tests which were completed at staged times throughout the module ensuring continuous assessment. Each online test was available to complete during a 2-h period and consisted of a series of short answer questions, the tests were open book assessments. The second component was a written coursework in the form of an annotated bibliography and integration statement requiring the use of skills and knowledge gained throughout the module.

2.4. Evaluating students' perceptions of study skill ability

All 34 students enrolled on the Independent Study in Sports and Exercise Science were invited to take part in this study, 32 students gave their written informed consent to do so. During the first tutorial session students were asked to complete a study skills audit to determine their perception of their own study skills abilities. The audit contained 10 sections (organisation of learning, information seeking skills, reading and note making, writing skills, spoken communication, Information Technology (IT), working with numbers, revision and exam techniques, stress management and Personal Development Planning (PDP)). Each section contained 3–7 tasks and students were asked to select whether they 1) thought they could do that skill well, 2) were ok at the skill but they need more practice or 3) they couldn't do it at all. A full breakdown of these tasks can be seen in Table 1 in the results section. They were then asked to rank the priority of this skill development as either not important, quite important, or very important. During the penultimate tutorial session of the module students were asked to complete the skills audit again but instead of ranking the priority of skill development they were asked to select whether the module had helped with this skill, had no impact on it or hindered it. In addition, students were

also asked if they thought their ability to judge their skill level had altered, either indicating yes they thought it had or no they didn't think it had, there was an open text box for students to explain this yes/no response. A total of 23 students completed both the pre and post skills audits therefore reports of this data are based on $n = 23$. Of these 23 students nine identified as female and 13 as male, their mean age was 19 years ± 1.3 range 18–25 years, four students were registered with the university inclusion service as requiring additional educational support, 21 students had progressed from the Scottish secondary school system to higher education with the remaining two attending a further education college prior to progressing to higher education. Of the nine students who were omitted from the analysis seven did not attend the tutorial in which the post skills audit was completed and two chose not to submit their post audit for analysis.

2.5. Student module evaluation

During the final tutorial session students were asked to complete a module evaluation questionnaire which consisted of a mixture of open questions and ranking questions using a 1–5 Likert scale. The open-ended questions asked students to identify 1) What were the main things you learnt from this module? 2) What did you like about this module and why? 3) What did you dislike about this module and why? 4) What changes would you suggest making to this module? The ranking questions asked students to report their level of agreement with statements regarding knowledge and skill enhancement following the module. There was also an open-ended question after the ranking question asking students to explain the reasoning behind any reported areas where they felt the module hadn't helped. Out of the 32 students who gave informed consent 27 completed the evaluation questionnaire, the five students omitted did not attend the tutorial during which the evaluation took place.

2.6. Attendance

Students' attendance was recorded through paper-based registers at the tutorial classes and a review of the access logs for the online study packs, if a student had accessed the study pack they were deemed to have 'attended'. Student's overall attendance was calculated as a percentage of all available opportunities (face-to-face tutorials and accessing of online study packs).

2.7. Analysis of data

For the open-ended questions in the questionnaire conceptual content analysis was performed to identify the frequency of concepts within the responses. The researcher familiarised themselves with the data to determine the concepts for coding, the responses were then coded in terms of the frequency of the concepts (Krippendorff, 2019). For the closed ranking questions a frequency analysis was conducted and the answers from the skills audit were coded to enable comparisons of pre and post data to be performed. Chi square tests of association were performed to compare the pre-post audit responses, with the significance level set to $p < 0.05$.

3. Results

3.1. Evaluating students' perceptions of study skill ability

The post module study skills audit revealed a trend towards improved perceived ability in all included areas (organisation of learning, information seeking skills, reading and note making, writing skills, spoken communication, IT, working with numbers, revision and exam techniques, stress management and PDP) see Table 1. Chi square tests revealed a significant association between testing time (beginning vs end of the module) and the response category for the combined results of the information seeking area only ($p = 0.048$) with the other nine areas reporting no significant association ($p > 0.05$). Where individual tasks within the audit showed significant associations with testing time this is indicated in Table 1. Associations were found within the information seeking skills, writing skills and spoken communication areas.

Students reported that the module had helped to develop skills across all areas, however it was more effective for certain skills than others. The percentage of positive responses ranged from 9% for skills associated with stress management to 100% for skills related to information seeking and were reflective of the module content. Eighty one percent (81%) of respondents said that their ability to judge how well they could do the skills had altered when they completed the post skills audit. The common theme in the explanations behind the responses related to the fact that they had previously overestimated their capabilities. Example statements given were:

'I thought some of the things would be easy to do but when doing some of them they were actually very hard'.

'The module has put into perspective the depth of knowledge I require in the skills listed'.

3.2. Student module evaluation

When asked what they learned from the module the most common responses related to referencing and finding resources (see Fig. 1 for a summary of responses).

The student's liked the flexibility and independency of the module because the work could be done in their own time and at home and thus could be done at their own pace.

'You could do it in your own time and also the study packs are always on Moodle so you can always have access to them'.

They also liked the online study packs and tests to facilitate this.

Table 1

Overview of skills audit responses as the beginning and end of the module including an indication of change.

SKILLS AREA & Specific question	Start of module percentage of responses			End of module percentage of responses			Change in percentage		
	I can do this well	OK, but I need more practice	I can't do this	I can do this well	OK, but I need more practice	I can't do this	I can do this well	OK, but I need more practice	I can't do this
ORGANISATION OF LEARNING									
I have strategies to help me to plan and manage my time	21	64	15	48	52	0	27	–11	–15
I am able to effectively prioritise my tasks and activities	39	55	6	43	52	4	4	–2	–2
I am able to work to deadlines	64	33	3	52	43	4	–11	10	1
I am aware of what makes my learning more effective (e.g. place to study, time to study etc)	48	45	6	61	17	0	12	–28	–6
INFORMATION SEEKING SKILLS									
I am able to find a specific book or journal in the library using the on-line catalogue	27	52	21	65	35	0	38 ^a	–17	–21
I am able to use a variety of different sources to find information	21	64	15	65	35	0	44 ^a	–29	–15
I am able to access and search electronic resources (on-line databases, electronic journals)	12	55	33	65	35	0	53 ^a	–20	–33
I am able to use search gateways on the Internet to find information	55	45	0	70	30	0	15	–15	0
I am able to evaluate the information I find	30	61	9	26	74	0	–4	13	–9
READING AND NOTEMAKING									
I can decide which parts of a book I need to read	27	70	3	43	48	9	16	–22	6
I have a system for recording where I find information (e.g. book, author, date)	33	42	24	30	57	13	–3	14	–11
I can select and use different reading strategies (e.g. skim, scan, in-depth)	33	42	24	57	26	17	23	–16	–7
I can make effective notes when reading	39	48	12	43	48	9	4	–1	–3
I can make effective notes when listening (e.g. during lectures)	33	64	3	52	48	0	19	–16	–3
I have a system for recording and storing my notes	52	30	18	57	30	13	5	0	–5
WRITING SKILLS									
I can analyse assignment (essay, report etc) questions to determine what is expected	27	64	9	48	52	0	21	–11	–9
I understand the difference between an essay and report	9	58	33	61	30	9	52 ^a	–27	–25
I can produce a written plan to answer an assignment question	27	45	27	61	30	9	34 ^a	–15	–19
I can punctuate, use grammar and spelling correctly	45	52	3	65	30	4	20	–21	1
I am confident I can express my ideas clearly in written form	33	48	18	52	43	4	19	–5	–14
I am able to adapt my writing styles to suit the appropriate media/ audience	24	61	15	30	57	13	6	–4	–2
I understand the need to reference my work to avoid plagiarism	48	48	3	74	26	0	25	–22	–3
SPOKEN COMMUNICATION									
I am able to express my views verbally	45	52	3	74	26	0	28	–25	–3
I am confident speaking in front of a group of people	30	58	12	52	48	0	22	–10	–12
I can prepare, plan and deliver a presentation	30	70	0	48	52	0	18	–18	0
I can use visual aids to support a presentation	45	55	0	83	17	0	37 ^a	–37	0
I work well as a member of a group or team	70	30	0	96	4	0	26 ^a	–26	0

(continued on next page)

Table 1 (continued)

SKILLS AREA & Specific question	Start of module percentage of responses			End of module percentage of responses			Change in percentage		
	I can do this well	OK, but I need more practice	I can't do this	I can do this well	OK, but I need more practice	I can't do this	I can do this well	OK, but I need more practice	I can't do this
I am able to listen to and appreciate the views of others	82	18	0	87	13	0	5	−5	0
INFORMATION TECHNOLOGY									
I am able to use a word processing software package to produce my assignments	88	12	0	87	13	0	−1	1	0
I am proficient in using Microsoft Excel	33	42	24	52	43	4	19	1	−20
I am proficient in using Microsoft PowerPoint	73	27	0	83	17	0	10	−10	0
WORKING WITH NUMBERS									
I am competent in making simple calculations	76	24	0	91	9	0	16	−16	0
I can present numerical information accurately	58	42	0	74	26	0	16	−16	0
I can competently use a variety of numerical techniques (e.g. percentages, fractions, decimals)	70	21	9	74	26	0	4	5	−9
I can interpret and present information in graphs and illustrations	39	55	6	61	39	0	21	−15	−6
REVISION AND EXAM TECHNIQUES									
I am able to plan my revision time	27	52	21	43	48	9	16	−4	−13
I am able to set myself goals	45	42	12	70	26	4	24	−16	−8
I am able to use a variety of different revision techniques (e.g. practising questions, mind mapping etc)	39	55	6	61	35	4	21	−20	−2
I can select and use techniques to help me retain and recall information	33	48	18	57	30	13	23	−18	−5
I use strategies to help me in the exam room (e.g. planning time, coping with anxiety)	24	58	18	52	30	17	28	−27	−1
STRESS MANAGEMENT									
I know what causes myself to become stressed	64	27	9	74	26	0	10	−1	−9
I am aware of my personal symptoms of stress	55	39	6	74	26	0	19	−13	−6
I can use strategies to help me cope with my stress	39	45	15	52	43	4	13	−2	−11
PERSONAL DEVELOPMENT PLANNING									
I am able to identify my personal goals	64	30	6	70	26	4	6	−4	−2
I am a good judge of what my strengths and areas for development are	55	36	9	83	13	4	28	−23	−5
I am able to identify opportunities for learning outside my course, e.g. clubs, societies, employment	64	30	6	78	22	0	15	−9	−6
I am able to plan for my personal development	27	70	3	57	43	0	29	−26	−3

^a Indicates significant association between time of audit completion and audit response.

'I liked the online tasks after the reading so instead of skimming over it we had to take it in and I felt I learned more'.

Fig. 2 illustrates the concepts mentioned by more than one student.

The student's disliked the tutorial sessions which were short in length and where they felt they already knew the information (n = 5).

'The classes that took 30 min i.e., library task and Microsoft word classes were almost pointless.'

'Coming in for pointless or short classes in which I could have spent the time doing something more constructive'.

There were a variety of other dislikes but in each case, these were only raised by one individual and so are not commented on here. The student's main recommendations for the module were to include more tasks (n = 6) and to make tutorials optional if you felt confident with the material (n = 4).

'Making the study packs more interactive and involving more tasks would ensure a better understanding'.

'Making the classes optional if you knew the material, or including ECDL in place of the word and PowerPoint classes to ensure more depth in knowledge'.

These were the only two concepts mentioned by more than one student.

Most students agreed that completing the module had enhanced the areas and skills the module was intended to improve (see

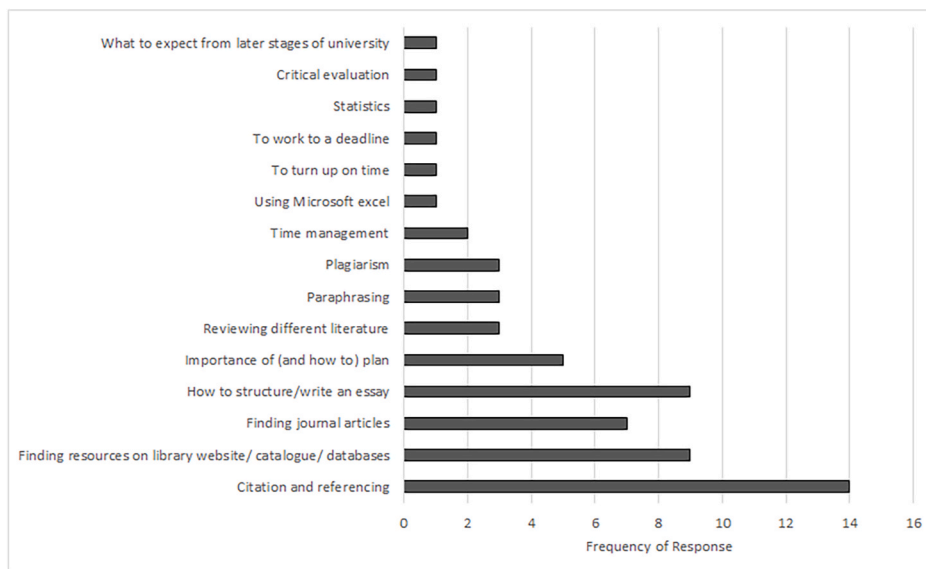


Fig. 1. Aspects which students felt they had learned through the completion of the module.

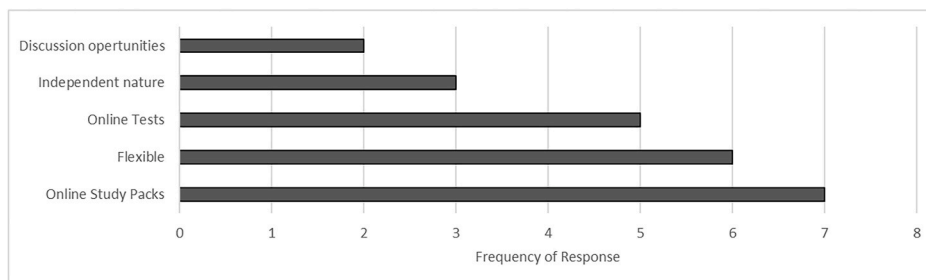


Fig. 2. Aspects which students liked about the module.

Table 2

Students' perception of the impact of an independent study module on a range of knowledge and skills when measured on a 5 component Likert scale. Data pertains to percentage of respondents.

Question	Percentage of responses				
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
a) enhanced my abilities to search for relevant literature.	0	0	0	52	48
b) enhanced my ability to recognise types of research design and understand simple research terminology.	0	0	15	52	33
c) enhanced my ability in identifying basic descriptive statistics.	0	4	30	48	19
d) enabled me to be able to produce an annotated bibliography in a style which conforms to the School style manual.	4	7	11	44	33
e) made me more aware of what is required for academic writing.	0	4	11	30	56
f) improved my academic writing style.	0	11	26	52	11
g) helped me integrate academic sources into my work.	0	4	11	63	22
h) improved my ability to cite references in the style of the RGU Harvard referencing guide.	0	4	0	56	41
i) improved my abilities in formatting documents appropriately using Microsoft word.	0	11	22	37	30
j) increased my knowledge of the functionality of Microsoft PowerPoint and Excel.	7	4	26	44	19
k) encouraged me to read more peer reviewed journal articles.	0	22	19	37	22
l) made me more aware of the skills I need to develop for studying in Higher Education.	0	0	11	56	33
m) enhanced my ability to work independently.	0	4	37	33	26

Table 2).

Reasons given for why they felt the module did not help with certain skills were that they were competent at that skill already and so the module did not add more to this (this was particularly common with reference to the Microsoft IT skills). Also, that they felt the module had not covered this or that they had not had time to practice. Although some students did admit that the work was there, they just did not do it:

'I have not pushed myself to do the work so therefore I feel as though I haven't learnt much'.

3.3. Attendance

The mean student attendance (including both face-to-face tutorials and accessing of online study packs) was $82 \pm 10\%$ ranging from 65 to 100%. Attendance remained at a similar level throughout the first nine weeks of the module but dropped off during the final two teaching weeks.

4. Discussion

The aims of this project were to develop, implement and evaluate a module which embeds study skills in a contextualised manner using an experiential learning approach. Following completion of the module students had improved perceived ability in skills associated with information seeking, writing and spoken communication. Students also reported that their ability to judge their skill competence had improved, reflecting that they likely initially overestimated their abilities. The following discussion will look at the findings of each method of data collection in turn (attendance monitoring, module evaluation and skills audits) before discussing recommendations for the future and the study's limitations.

Attendance was much improved from the bolt on approach where one or two students attended sporadically to an average of 82% for the independent study module, this is similar to the findings of [Durkin and Main, 2002](#) who found attendance to increase to 80% when study skills were embedded. Attendance, however, is only a minor component of engagement ([Büchle, 2020](#)). Students may well attend the sessions when they are part of a module (because it is a requirement of the course) but not engage with the material itself. Students' evaluation of the module can therefore provide a deeper understanding of their engagement.

Overall, most comments provided by the students on the module evaluation questionnaire were positive and when asked to assess the impact of the module on a range of knowledge and skills 77% agreed that the module had enhanced their abilities (see [Table 2](#) for a breakdown of the knowledge and skills). The students commented positively about aspects of the module, most commonly the online tests, online study packs and flexibility of the module with most students taking well to the blended approach. The students also asked for more online tasks reflecting engagement with these resources. Although in the minority, a few students did however indicate that they would like more contact time or to be made to do the online study packs and tasks in class so that they 'had' to do them. These students ($n = 2$) struggled with the self-discipline and motivation required to study independently which consequently impacted negatively on their engagement. In addition, there were other areas where the students did not engage (the IT tutorial sessions) as the students commented that these were 'pointless' with a lot of students indicating that they already knew the material and did not see the relevance. The students engaged with the material they perceived as relevant (concerning both content and their existing competencies). This is in line with previous studies with regards to motivational drivers for engagement ([Lizzio & Wilson, 2004](#)). However, it is important to note here that only 5/27 students commented negatively about this, and all other 'negative' comments were raised by one student only.

On completion of the module the cohort's perceived ability across the range of skills assessed by the study skills audit had improved. Improvements in confidence and perceived skill level following the completion of modules embedding study skills have been reported previously ([Allan & Clarke, 2007](#)). [Allan and Clarke \(2007\)](#) used a phenomenological approach to explore the impact of a 'learning for success' module in the first year of a degree programme and found that two of the key themes related to growth in confidence and growth in expertise. The most notable improvements in this current study were in the students' information seeking skills. This ties in with the students' reports in the module evaluations that during the module they had learnt how to use the library catalogue/databases and were now able to find journal articles. In addition, all students agreed with the statement that the module had enhanced their ability to search for relevant literature (52% agree, 48% strongly agree). Similar findings have been reported following the embedding of library-based sessions in a midwifery degree where students reported that prior to the training they just looked at books on library shelves but now they use databases to search for articles ([Appleton, 2005](#)).

There were also improvements in the students' perceptions of their writing skills which are supported by the students' evaluations indicating the module had improved their academic writing and ability to reference (see [Table 2](#) items e-h). The students only showed small improvements in the information technology section which is supported by the reports by some students that they were already competent in this area. However, it is important to note that 44% of students agreed and 19% strongly agreed that the module had increased their knowledge of the functionality of Microsoft PowerPoint and Excel, hence support with these skills was still required in this area. All of these areas where students reported perceived improvements were aligned with the topics covered in the module, whereas areas of the audit where improvements were minimal such as stress management and working with numbers were not as overtly included in the module.

Following completion of the module 81% of respondents said their ability to judge their study skill capabilities had altered and in line with previous literature students reported that they had previously overestimated their abilities ([Gross & Latham, 2007](#)). Therefore, it is possible that the improvement in students' perceptions of their study skill ability are underestimated in this present study as the students have affectively readjusted their baseline for the second audit. This change in perception may itself be a useful

skill the students have developed as they now have a better ability to judge their capabilities, this phenomenon has been shown previously whereby as students' experience increases, they adjust their perceptions of their capabilities (Messineo & DeOllas, 2005).

Through the module evaluation questionnaire there were two main suggested changes put forward by the students; these were: to include more tasks in the online study packs and to make sessions optional if they knew the material. The request for more tasks highlights the fact that students responded positively to the experiential way of learning and found that putting the skills into practice enhanced the learning process, this addition of more tasks can be included in the module in the future. With regards to task completion, the tasks set for this run of the module were voluntary (i.e., students did not have to do them). Students were advised to complete them to aid their studies and those who submitted tasks received individual feedback and all the rest received the generic group feedback and in class discussions. On reflection this meant that a lot of students did not necessarily complete the tasks because they did not 'have' to. Some of the students are not yet mature enough to take responsibility and complete these for themselves (Soldatchenko et al., 2020). Although the module is based on 'Independent Study' it is clear that some students needed more rigid guidance. In relation to this although 59% of students either agreed or strongly agreed that the module had helped them to work independently the largest single item response to this question was 37% of students who responded neutrally. It is possible that although the study packs helped the students know what to do it didn't help them with a fundamental requirement of independent learning, that of motivation (Rutkiene & Tandzegolskiene, 2013). Kinsella et al. (2022) suggest three motivation enhancement strategies, namely: 1 Fostering students' competency by working to establish realistic expectations. 2 Fostering students' relatedness by providing resources for holistic engagement. 3 Fostering students' autonomy by empowering them to make their own decisions. In line with these strategies specific recommendations for future development include: making module task submission compulsory with submission drop boxes for each of the tasks with deadlines that appear in the students calendars, this will assist in clarifying expectations. Ensuring there is progression in these tasks allowing students to clearly see their own learning achievement to enhance self-efficacy. Utilising more group work and enhancing social elements during the face-to-face tutorials to enhance relatedness and adding in a gamification approach to increase student satisfaction. Providing choice in the online study packs to allow students different options for their learning such as either watching video clips or reading information to give them the opportunity to make their own decisions.

In relation to making sessions optional if they knew the material, the students are referring to the IT sessions where they were given tasks to complete (for example format a word document appropriately) and coached through them by the study skills tutors. Students are therefore requesting that they be given the tasks to do prior to the session and if they can do it all they do not need to attend but if they cannot, they can come and get help. This appears to be a fair suggestion although to ensure the tasks are completed at the appropriate standard, staff will have to review all students' tasks prior to the tutorial which will increase their workload. Interventions which involve this level of individual feedback have been favoured by students in the past but can often lack feasibility due to the time constraints of lecturing staff (Wingate et al., 2011); this time implication will therefore have to be monitored during the next run of the module. Price et al. (2011) utilised this approach of pre teaching 'quizzes' when teaching information literacy to first year undergraduate business students and reported increased levels of both engagement and skill improvement in those which completed the tests. In this study the quizzes were optional so it's difficult to determine whether it was the completion of the quizzes that increased the students' engagement or if it was the more motivated and engaged students which completed the quizzes in the first place. However, students also completed a questionnaire which asked them about their perceptions of their information literacy skills which revealed that the pretests reduced their perceived ability. Consequently, the authors advocated that students should be pre-tested prior to tuition to stimulate increased engagement.

This suggestion by the students may partly address one of the main issues they highlighted which was their dislike of the IT sessions. On reflection although these sessions had been planned through meetings between the module leader and the study skills staff so that the tasks were subject specific (used subject related content and conformed to the courses presentation guidelines for assessment) students did not perceive this as being fully relevant (potentially due to the fact it was delivered by study skills staff). This is something which will need to be addressed for the future perhaps by co-teaching of these sessions between study skills and lecturing staff. In essence although these sessions were within the module timetable and so engagement in terms of attendance was enhanced, however engagement within the sessions was low with students reporting that they were there because they 'had to be'. Although this was a step towards embedding these study skills in effect it may have been more of a bolt on session within the module. To enhance the levels of integration of these skills additional tasks could be set which directly related to other modules the students are concurrently sitting. For example, to create a template of a formatted document for an essay they have to write, this structured process will also assist the students with the last step of Kolb's experiential learning cycle 'active experimentation' (Kolb, 1984).

When looking at the results of the current study it is important to acknowledge the potential limitations of the design. This study was completed using a single cohort of students and hence it may be inappropriate to generalise to a wider population; however, it does produce findings which will be of interest to Higher Education Institutions. Due to the nature of the introduction of this module for all students there is the lack of opportunity for a comparative control group and due to the heterogeneity of studies it is not possible to compare methods across studies. This means the module can only be evaluated in isolation rather than its impact compared to alternative study skills provision. This study's research design focused on the student's perceived ability rather than their actual ability, as has previously been stated it is possible that the students' perceptions do not match actuality (Gross & Latham, 2007; Price et al., 2011) further work would therefore be required to assess the impact of this module on students' actual abilities. By its nature this study has only evaluated the short-term impact of this module, future work would be required to assess the long-term effect of this instruction on students' abilities. For example, a follow up study could investigate the lecturing staffs' opinion of the students' standard of work (perhaps their final year research project) compared to previous cohorts.

5. Conclusions

The introduction of an independent study module which integrated study skills within the curriculum enhanced students perceived ability in a range of study skills, most notably information seeking skills, writing skills, and spoken communication. On the whole students engaged well with the online independent nature of the module and the experiential learning approach asking for more tasks to support their learning. Engagement was low in areas where they perceived they were already competent or did not see the relevance of the material. To enhance student engagement further clearer links and integration is required between sessions lead by the lecturing staff and study skills tutors including direct signposting to the use of these skills in other modules. Pre session tasks should be included which test the students' abilities, this will enable students to understand the levels of competence required and therefore additional support can be provided to those who need it. Those who do not need the additional support can use the time more productively to prevent them from becoming disengaged. It is recommended that academics embed study skills within their courses to enhance student engagement and consequently their skills. Study skills teaching should be applied in nature and delivered with the context of their course topic, student engagement will be enhanced if the teaching is adapted to each students starting skill level which can be achieved using quizzes and tasks with signposting to relevant resources.

Declarations of competing interest

The authors report there are no competing interests to declare.

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References

- Allan, J., & Clarke, K. (2007). Nurturing supportive learning environments in higher education through the teaching of study skills: To embed or not to embed? *Int. J. Teach. Learn. Higher Edu.*, 19(1), 64–76.
- Appleton, L. (2005). Examination of the impact of information-skills training on the academic work of health-studies students: A single case study. *Health Information and Libraries Journal*, 22, 164–172.
- Bolton, P. (2023). *Higher education student numbers*. House of Commons Library Research Briefing. Number 7857.
- Büchele, S. (2020). Evaluating the link between attendance and performance in higher education: The role of classroom engagement dimensions. *Assessment & Evaluation in Higher Education*, 46(1), 132–150.
- Chan, C. K. Y., Fong, E. T. Y., Luk, L. Y. Y., & Ho, R. (2017). A review of literature on challenges in the development and implementation of generic competencies in higher education curriculum. *International Journal of Educational Development*, 5, 1–10.
- Cotterell, S. (2001). *Teaching study skills and supporting learning*. Basingstoke, UK: Palgrave.
- Coughlan, J., & Swift, S. (2011). Student and tutor perceptions of learning and teaching on a first-year study skills module in a university computing department. *Educational Studies*, 37(5), 529–539.
- Cousin, G. (2009). *Researching learning in higher education: An introduction to contemporary methods and approaches*. London, UK: Routledge.
- Dandridge, N. (2023). The relationship between teaching and research in UK universities – what is it and does it matter? *Higher Edu. Policy Institute Rep.*, 162.
- Dearing, R. (1997). *Higher education in the learning society (report of the national committee of inquiry into higher education)*. London, UK: Her Majesty's Stationery Office.
- Drummond, I., Nixon, I., & Wiltshire, J. (1998). Personal transferable skills in higher education: The problems of implementing good practice. *Quality Assurance in Education*, 6(1), 19–27.
- Durkin, K., & Main, A. (2002). Discipline-based study skills support for first-year undergraduate students. *Active Learning in Higher Education*, 3(1), 24–39.
- Entwistle, N. J. (1982). Study skills and independent learning. *Studies in Higher Education*, 7(1), 65–73.
- Gross, M., & Latham, D. (2007). Attaining information literacy: An investigation of the relationship between skill level, self-estimates of skill, and library anxiety. *Library & Information Science Research*, 29, 332–353.
- Groves, M., Bowd, B., & Smith, J. (2010). Facilitating experiential learning of study skills in sports students. *Journal of Further and Higher Education*, 34(1), 11–22.
- Haggis, T., & Pouget, M. (2002). Trying to be motivated: Perspectives on learning from younger students accessing higher education. *Teaching in Higher Education*, 7(3), 323–336.
- Kinsella, M., Wyatt, J., Nestor, N., Rackard, S., & Last, J. (2022). Supporting students' transition into higher education: Motivation enhancement strategies. *ACCESS Contemporary Issu. Edu.*, 42(1), 3–20.
- Kolb, D. (1984). *Experiential learning: Experience as a source of learning*. Englewood Cliffs: Prentice Hall.
- Kong, Y. (2021). The role of experiential learning on students' motivation and classroom engagement. *Frontiers in Psychology*, 12, 1–4.
- Krippendorff, K. (2019). *Content analysis: An introduction to its methodology*. London, UK: Sage Publications.
- Kruger, J., & Dunning, D. (1999). Unskilled and unaware of it: How difficulties in recognizing one's own incompetence lead to inflated self-assessments. *Journal of Personality and Social Psychology*, 77, 1121–1134.
- Lizzio, A., & Wilson, K. (2004). First-year students' perceptions of capability. *Studies in Higher Education*, 29(1), 109–128.
- Messineo, M., & DeOllas, I. Y. (2005). Are we assuming too much? Exploring students' perceptions of their computer competence. *College Teaching*, 53(2), 50–55.
- Price, R., Becker, K., Clark, L., & Collins, S. (2011). Embedding information literacy in a first-year business undergraduate course. *Studies in Higher Education*, 1(1), 1–14.
- Richards, K., & Pilcher, N. (2020). Study skills: neoliberalism's perfect tinkerbelle. *Teaching in Higher Education*, 28(3), 580–596.
- Rutkiene, A., & Tandzogskeiene, I. (2013). Students' ability to act independently in university studies. *Int. J. Cross-Disciplinary Sub. Education, Spec.*, 3(2), 1477–1483.
- Soldatchenko, A. L., Rabina, E. I., Igoshina, N. V., & Prokofieva, A. V. (2020). Theoretical-methodological approaches to the problem of social maturity development in university undergraduates. *Revista Turismo Estudos e Práticas-RTEP/UERN*, (1), 1–13.
- Steiner, H. H., Trivedi, N. H., & Brown, J. (2019). Bringing a learning strategies project to scale in a first-year seminar. *J. Eff. Teach. High. Edu.*, 2(1), 27–44.
- Wingate, U. (2006). Doing away with 'study skills'. *Teaching in Higher Education*, 11(4), 457–469.
- Wingate, U., Andon, N., & Cogo, A. (2011). Embedding academic writing instruction into subject teaching: A case study. *Active Learning in Higher Education*, 12(1), 69–81.

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