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# Evaluating confidence in information literacy: A red/amber/green approach

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## Abstract

This paper reports an approach to addressing library anxiety by evaluating user confidence in information literacy using a red/amber/green 'traffic light' tool. It discusses the development of the tool, which takes elements of a more complex toolkit, adapting those elements for library use. It then outlines the learning from use of the tool, discusses potential pitfalls with its use and considers the benefits of adopting this innovation.

## Keywords

Academic libraries; information literacy; information needs; library anxiety

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## 1. Introduction

The term 'library anxiety' describes feelings of fear or anxiety experienced by users as they attempt to deal with library services, facilities and resources, and may be compounded by the assumption that their colleagues are able to navigate the world of the library with little difficulty (Mellon, 1986). If these feelings interfere with students' willingness or ability to make effective use of the library, this may negatively impact on their studies and experience at university. When the term was coined, library anxiety would have referred almost entirely to anxieties relating to use of a physical environment, but for current library users, the library is as much an online presence as a physical one. For students of the health professions, library anxiety is a particular concern. The study patterns of these students often mean that they must engage with multiple library services in different settings (Still, 2015). Figures from the University and Colleges Admission Service (UCAS, 2018) also indicate that the proportion of mature students (aged 21 or over) on health-related courses is significantly higher than for any other subject area. This is noteworthy because there is evidence suggesting that mature learners experience library anxiety in particular ways, possibly more extensively than younger students (Cooke, 2010, p.210).

Use of a red/amber/green tool was developed in large part to tackle library anxiety in undergraduate health and social care students, used thoughtfully as part of taught sessions. Through use with different groups over several years, the tool was adapted for practicality and usefulness. It was initially used as part of a teaching approach with one-year foundation and certificate programmes which are intended to offer an entry route to full-length professional programmes of study. It has subsequently been adopted for use with a small number of undergraduate programmes, still within the health professions.

## 2. The Traffic Lights Toolkit

The Traffic Lights Toolkit, a flexible set of resources developed at Canterbury Christ Church University (2018a), aims to 'allow students to self-assess against competency criteria', encouraging reflection and development of skills. Initially developed to assist health and social care students to reflect on the skills needed for clinical placements, it has since been used across a number of different disciplines and applied to a range of different skills.

The Toolkit has three parts: the Perception of Challenge Tool, the Quadrant Tool and the Rating Scale Tool. The library adaptation of the Traffic Lights Toolkit focuses on the Perception of Challenge Tool. This involves giving each student a set of statements relating to skills or actions which they will need for a particular module or placement. They then self-assess against the skills, using a colour to express how they feel:

- Red, indicating concern or anxiety.
- Amber, indicating challenge or uncertainty.
- Green, indicating comfort or confidence.

Optionally, students can also give a numerical rating of their confidence or write a reflective statement expanding on the reasons for the rating. Students are encouraged to begin with the skills they are most confident about, and where possible they discuss their ratings and the feelings behind them with their tutors. Students are encouraged to revisit the Tool at the mid or end point of the placement or module, in order to evaluate changes in their confidence and, where relevant, formulate an action plan to address areas of concern or anxiety (those skills which they have rated 'red').

The Tool does not come with a pre-determined set of statements, as these should be developed situationally, adapted to the specific skill requirements of a particular group of students. It has been used with general skills for transition to higher education, research skills and placement skills as well as by the library. The development of the Toolkit was part of the former Higher Education Funding Council for England's Higher Education Innovation Fund Catalyst Project, and case studies are available for a number of these implementations (Canterbury Christ Church University, 2018b).

Due to its reflective, developmental philosophy, the Toolkit is a natural fit for library professionals, particularly for use with student cohorts known to express their anxieties around information literacy. However, due to the unique context of library work, the Perception of Challenge Tool was adapted in a simplified form.

### 2.1 Adapting the Toolkit for library use

The library adaptation of the Perception of Challenge Tool can be used when there are two or more taught sessions led by the librarian. It is used at the beginning of the first taught session and the end of the last session.

Before it can be used in the classroom setting, the first step required is to create a list of 8-12 statements relevant for the programme or module which the students are taking. As different taught programmes have different requirements, the statements are finalised in consultation with academic staff. Statements relating to information literacy have included:

- I can find the books I need in the library.
- I can identify key words to help locate information.
- I can judge the quality of the information I use.
- I can reference a range of different types of information correctly.

See Appendix for two examples of complete sets of statements.

The statements are printed and laminated, and a set is prepared for each student, each statement on a separate laminated strip. In the classroom, at the start of a taught session, these sets of strips are distributed and students are encouraged to reflect on their level of confidence regarding each statement. Once they have done this, the responses from the class members are brought together. Initially, this was achieved by students sticking their statements to large pieces of paper using reusable adhesive. However, this proved impractical for a number of reasons. Firstly, some students felt self-conscious if they were stood by the 'red' (concern or anxiety) poster for any length of time. Secondly, the posters themselves were cumbersome for librarians to transport around the campus. Thirdly, volume of students sometimes led to crowding by the posters. And finally, on one occasion when the posters were used, there were too many 'green' (comfort or confidence) statements to fit on the relevant poster.

For subsequent use of the Tool, small boxes have been used for each colour, with several sets of boxes in strategic locations around the classroom, which has proved to be more practical. As well as featuring the relevant colour, the box is labelled with the word for the colour and a short description of what it signifies (e.g. one box is coloured red and labelled Red: Concern) to ensure that it is clear for all students which box is which.

The pooled ratings from the class can be used immediately as a source of discussion regarding levels of confidence without obliging any individual to speak specifically about their own feelings. They can also be used by the librarian to adjust planned teaching in order to put more emphasis on those areas where a larger proportion of the class have expressed concern or anxiety through a red rating. Such adjustments can be made during or between taught sessions.

Students self-assess again at the end of a subsequent taught session, using the same statements and same distribution methods. This affords them an opportunity to reflect on their development of skills or changes in their level of confidence. It also allows library staff to consider how the confidence of the group as a whole has changed, whether positively or negatively.

## **2.2 The red/amber/green tool as part of a wider approach**

Self-assessment against the statements is used as part of a wider approach which intends to address anxieties around use of the physical and online library and afford opportunities for practice of key skills. Information overload is potentially a cause of library anxiety (Eklof, 2013), therefore teaching always involves demonstration and practical exercises linked to reducing this overload, through filtering searches and selecting appropriate keywords. Indeed, all skills are both demonstrated or explained and explored in practical exercises. Depending on the needs of the specific group, this can include retrieving items in the physical library building, accessing specific electronic books and articles in the online library, subject-based searching using library resources, exercises using well-known online search tools, evaluating information sources and so forth.

Practice of the skills includes classroom-based activities (solo, pair and small group) which library staff are therefore able to observe, as well as take-home activities which are assessed using a short quiz at the start of the next taught session. This ensures that as well as the students gaining practice in their skills and approaches, library staff can monitor student progress to offer feedback and encouragement.

Use of two or more short teaching sessions allows for the responses to the statements from the first session to inform the structure of subsequent sessions. Although all elements will be

covered, a greater emphasis or more practice activities can be associated with the elements corresponding to statements which receive a higher red rating, as these are areas of concern or anxiety for a large proportion of the group.

The responses to the statements after the final teaching session allow for some evaluation of student progress and understanding, in combination with what has been observed in sessions and assessed through activities. It also affords an opportunity to identify any remaining areas of concern or anxiety. These can then be picked up by the module leader. Alternatively, additional digital learning objects can be supplied, extending the librarian support beyond the taught sessions.

### **2.3 Learning from use of the Tool**

Using the library adaptation of the Traffic Lights Toolkit, has yielded some valuable insight into student groups. Due to using the Perception of Challenge Tool in simplified form, some of the ability to dig deeply into the reasons for students' level of confidence is lost. Despite this, using the Tool can provide useful insight for librarians.

Confidence with web searching is always reported as high, both before and after taught sessions. This is perhaps unsurprising, as it is likely that almost all students already use search engines regularly. However, teaching about web searching remains part of the taught sessions, as it ties in with the evaluation of information, and there may be a level of misplaced confidence, as noted below.

Conversely, statements relating to evaluation of information sources and referencing almost always receive lower ratings at first, with a comparatively high proportion of students expressing concern or anxiety about these skills. Confidence regarding evaluation of information quality has tended to increase notably following the taught sessions, with referencing showing a much shallower increase. This has led to continuing evolution in how referencing is taught and is a clear sign of a need for closer cooperation between library and academic staff on how referencing is perceived, taught and assessed.

Very occasionally, reported confidence levels can be seen to decrease between initial and final self-assessment. This is not necessarily cause for alarm, as it may indicate that practice activities have alerted students to an area which requires more development than they had initially assumed. Or it may be that some sort of hindrance such as books being out on loan or online resources being down for maintenance has impacted on confidence.

### **2.4 Library anxiety and the red/amber/green tool**

A pleasing effect of the use of the tool has been seen in the quality of conversations with students regarding information literacy, both during and after the taught sessions. As the tool encourages students to consider feelings of comfort, challenge, concern and anxiety, its use in sessions leads naturally into conversations about these feelings. These can be conversations between individuals and the librarian, but also often take place between students while they work on practical activities.

The simplicity of using red, amber and green serves to make the tool memorable, which means that some students refer back to it after its formal use has ended, using it as a short-hand for their levels of comfort or confidence. Students attending an optional workshop on referencing, for instance, have been known to say that they could be taken out of the red category following the session. Or feedback from an assignment can prompt students to say that their confidence has been knocked and express this in terms of the traffic light colours.

As the tool is used as part of a wider approach, other aspects of the work of the library also serve to address anxiety. For example, the library orientation offered to all new students, and which is often fresh in the memory of the groups the tool is used with, is deliberately designed to counter library anxiety, with a particular emphasis on reducing the potential for information overload. The taught sessions themselves are intended to act as a form of 'prevention through instruction' (Onwuegbuzie et al., 2004, pp.251). Accordingly, there is an emphasis throughout the taught sessions and associated activities on skills rather than on tools. The practical activities relating to the red/amber/green statements are also designed to help reduce anxiety by giving opportunities to explore and exercise competencies in low-stakes ways as well as by ensuring that the exercises build on one another and encourage informal collaborative working.

### **3. Confidence vs competence**

Rating statements with red, amber or green encourages students to consider the affective domain, how they feel about things, particularly expressed in terms of anxiety or confidence. However, even when competency criteria are the subjects of self-assessment, confidence should not be taken to imply competence. The 'unskilled and unaware' effect whereby those who lack skill in a particular area can overestimate or overstate their ability may be in operation (Kruger & Dunning, 1999). Research with students at different levels of university study suggests that this effect is often seen with regard to self-assessment of information literacy (Jackson, 2013; Kim & Shumaker, 2015). This is problematic because those who are confident may be less likely to seek help from librarians or other sources, even if they lack competence (Gross & Latham, 2012).

The red/amber/green ratings should therefore be very clearly identified as rating confidence only, and not viewed as a reliable indicator of competence. Ensuring that other means of assessing competence are incorporated into the associated teaching sessions, whether this assessment is formal or informal, is essential for use of the tool to have any value. The librarian can evaluate how closely changes in confidence mirror changes in competence. And, through practical application of what may initially seem abstract skills and approaches, students have the opportunity to experience the processes of searching for, evaluating or using information, which may give them a more realistic insight into their competence. The experience may also help students to identify areas where further development is required. The few occasions when confidence scores regarding a particular statement have decreased following teaching sessions may suggest that practical experience does indeed lead some students to a more realistic evaluation of their competence.

The Perception of Challenge Tool encourages students to reflect on their confidence about their skills, but does not offer an opportunity to consider changes in confidence while carrying out a task. Carol Kuhlthau's Information Search Process (1991) notes that confidence ebbs and flows during the process of searching, with certain stages being characterised by feelings of frustration or doubt. Indeed, 'uncertainty and anxiety are anticipated and expected as part of the process' (Kuhlthau, 2004, p.7). Anxiety while doing an activity and a feeling of concern about skill level are separate phenomena. It is important to ensure that students do not view experiencing a level of anxiety while carrying out a task as something to be avoided.

A key element of first year university education in the health professions is reflective practice, introduced early in the curriculum to encourage them as professionals to be critical about their practices, learn from their experiences and identify areas in need of change (Oelofsen, 2012, p. 4; Taylor, 2010, p. 7). It is possible that the emphasis on developing these skills allows health and social care students to become adept at interrogating their reactions and evaluating their competence from an early stage in their studies.

## 4. Future steps

Thus far, the red/amber/green tool has been used in modules where information literacy ties directly in with a learning outcome or an assignment. This may be a module learning outcome concerning gathering and evaluating evidence or an assignment which consists of a report on the search for information. This allows for a very clear explanation of both the purpose of the teaching sessions and the importance of the skills expressed in the red/amber/green statements. With some groups, students and librarians discuss how the statements link to the Chartered Institute of Library and Information Professionals (CILIP) Information Literacy Group's definition of information literacy (2018) and how this concept, their module and the statements relate to their profession's code of conduct or standards of proficiency (e.g. Nursing and Midwifery Council, 2018, standard 6; Health and Care Professions Council, 2014, standard 14.14). Some modules using the tool are not tied to one specific profession, therefore these conversations are not always possible. However, the tool could just as easily be employed on other modules where information literacy is not quite so explicitly integrated or assessed. It could also be used in other subjects beyond health and social care.

A logical next step is to create an electronic adaptation of the red/amber/green tool. Although this would remove some of the visual and tactile nature of its use, it would allow it to be scaled across more student groups with no need for additional resource, and would also make the tool more suitable for blended and fully online teaching. It may also make it easier for students to keep a saved record of their own responses and thus to see changes. With an electronic format, students could opt to re-assess their confidence at any point in the academic year if they chose to. It could also be used some time prior to the first taught session, allowing all sessions to flex to the needs of the students to some extent.

An electronic version would facilitate wider use and could also enable integration with other areas of competence or skills. This could help the perception, both among students and among academic colleagues, that information literacy complements and integrates with other academic literacies or skills and should not be seen simply as 'a library thing'.

## 5. Conclusions

Use of the red/amber/green rating tool has been beneficial as part of a teaching approach with students of the health and social care professions. It has enabled students to reflect on their own abilities and confidence levels, and has also facilitated the librarian to make considered adjustments to planned teaching and to reflect on student progress. As a tool to help address library and information anxiety, it helps to make conversations about feelings of concern more natural and encourages students to reflect on progress they have made. Its flexibility means that it can easily be adapted to other groups or other subjects. Situations where the librarian is afforded a greater amount of time could allow for more elements of the Traffic Light Toolkit (Canterbury Christ Church University, 2018a) to be used.

As confidence cannot be reliably equated with competence, it is essential to use the confidence ratings alongside other measures of competency including opportunities to put information literacy into practice. Reflection should also be encouraged, particularly when students complete the ratings exercise for the final time. Research is required to establish the extent of correlation between changes in confidence and changes in competence when using the tool as part of an approach to teaching information literacy.

Involving students in active consideration of their feelings of confidence and anxiety around information literacy can lead to meaningful dialogue between students, librarians and other



university staff. Local use of the tool and its associated statements will continue to evolve, but it has been a valuable addition to the teaching librarian's toolbox.

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## Appendix – examples of full statement sets

### Example 1.

This set of statements was used with students from a 1-year programme intended as an entry point to a range of health and social care undergraduate programmes. The module assignment involved reporting on a search for information.

- I can find the books I need in the library.
- I can find the information I need within a book.
- I can access electronic books.
- I know what journal articles are.
- I can locate journal articles.
- I can use a search engine (e.g. Google) to find info.
- I understand web addresses (URLs).
- I can identify information from reliable sources online.
- I can judge the quality of information.
- I can select the best information for my studies.

### Example 2.

This set of statements is used with a first year group from an undergraduate allied health programme. The academic team wanted to include writing skills as part of the statement set, as part of an approach intended to link information literacy to academic reading and writing.

- I can find books in the library.
- I can access electronic books.

- I can find and access journal articles.
- I can identify key words to help locate information.
- I can use online tools to search for information.
- I can evaluate the authority and credibility of authors of information sources.
- I can use the Harvard referencing style clearly and consistently.
- I can reference a range of different information types correctly.
- I can download and store electronic material for later retrieval.
- I can use academic English to communicate clearly.
- I can structure my writing to present an argument.