

# Editorial

Nicky Hayes

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**P**SYCHOLOGICAL LITERACY is an increasingly popular topic in psychological circles, but what does it actually mean? In this Special Issue, we present a number of papers exploring the idea. We begin with a challenging discussion about psychological literacy from Steve Newstead, who asks what the concept of psychological literacy actually means, and if it does exist, just how new a concept is it?

Having placed the cat firmly among the pigeons, we then go on to see whether there is meaning in the concept, and if so, how the idea is being implemented in modern psychology teaching. Many people find the concept valuable: Hulme et al. present a summary of the symposium on psychological literacy held at the British Psychological Society's Annual Conference in 2015, which outlines a range of contexts within which psychological literacy has relevance, and Taylor and Hulme examine a number of case studies on the topic, teasing out their most striking issues. The need to enhance staff as well as students' psychological literacy is just one of many observations emerging from their analysis.

Kent and Skipper report on an innovative module aiming to address the issue of psychological literacy in final year undergraduates, to prepare them to enter the wide world with an effective psychological toolkit at their fingertips. The inclusion of external partners to set realistic challenges is one which both students and the partners found particularly valuable. Another third-year intervention is reported by Turner and Davila-Ross, who discuss the use of oral exams as a vehicle for assessing and enhancing psychological literacy.

We move from the third to the first year as Skipper compares incremental with innate theories of intelligence, and reports on an intervention aiming to induce an incremental approach which will enhance motivation and self-efficacy. Bohan et al. report on an initiative directed particularly towards the informational literacy. New students often need explicit support to refine and enhance their competence in information gathering, but dedicated courses are nothing like as effective as embedding that support in subject learning activities. And Gibbons explores aspects of eustress among first-year students: a topic that is often ignored as only negative forms of stress are generally recognised.

Finally, Banyard and Hulme take us beyond the undergraduate curriculum and into a wider aspect of psychological literacy: the quest to develop a psychologically literate public. With more than 100,000 people taking pre-degree psychology courses every year, psychological knowledge in the general population is becoming more widespread, and the process of democratisation continues to make psychological knowledge widely available. Psychology, the authors argue, has the potential to be revolutionary in society, and psychological literacy is how this can happen.

We have two book reviews this issue, and James Hartley produces his usual summary of recent papers on teaching, learning, writing and assessment. We are always grateful to James for his submission, but he has signalled to us that he would soon like to retire from this duty. So if anyone would like to take up the baton and continue his good work, please get in touch with either James or the Editor. In the meantime, I hope you enjoy this issue!

**Nicky Hayes**

## **Call for Papers**

### **Special Issue on Internationalism in Psychology Teaching**

Guest Editor: Dr Caprice Lantz, University of Bradford.

*Psychology Teaching Review* is planning to publish a Special Issue on Internationalism in Psychology Teaching in Autumn 2016, and is inviting submissions. Submissions may take the form of full Refereed Papers, normally 5000 to 7000 words in length, Debating Points which are usually 2000 to 4000 words long, or Short Notes of up to 1000 words. They should be submitted by email as an attached Word or Word-compatible document, to [ptr@bps.org.uk](mailto:ptr@bps.org.uk).

If you have an article or discussion piece on this topic, we would be pleased to hear from you. Detailed submission guidelines may be found on the *Psychology Teaching Review* page of the British Psychological Society's website, or may be obtained by request from [ptr@bps.co.uk](mailto:ptr@bps.co.uk).

# Psychological literacy and The Emperor's New Clothes

Stephen E. Newstead

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*Despite the widespread use of the term psychological literacy, it is argued in this paper that it lacks a clear definition and empirical support. The claim that all psychology students possess psychological literacy in the sense of knowing the main ideas and concepts is relatively uncontroversial. However, the claim that they also possess a wide range of generic skills is open to question since most of the skills are ones that all graduates might be expected to possess. The more ambitious claim that a training in psychology produces 'global citizens' is at best aspirational, with little indication that it corresponds to current reality. In order to be useful the concept needs both clearer definition and empirical research to justify the claims made.*

**Keywords:** *psychological literacy; generic skills; undergraduate degree.*

**I**LAY NO CLAIM TO BE AN EXPERT on psychological literacy. When I retired in 2009 the term had not really entered common usage or even common consciousness. That has all changed in the last few years: it has now entered the psychologists' lexicon and even from my slightly detached perspective I have heard the term used on many occasions. I have even attended a conference (the International Conference on Psychology Education, held in Arizona in 2014) where it was one of the main themes. But I have often been left wondering what it really is, whether it can be defined, whether it contains anything new, and whether it relates to what today's graduates possess. It was considerations such as these that led me to put pen to paper (or rather fingers to keyboard) after many years of wordlessness. The existence of the Special Issue of this publication spurred me to do this now rather than later. I recognise that I may be out of date with many of my ideas, but, in my naivety as an external commentator, I believe that the issues I raise are genuine, and that responding to them might make the concept of psychological literacy both clearer and more useful.

## Definitions of psychological literacy

There are many definitions of psychological literacy. In my study of the literature I have detected three main, but rather different, aspects to the concept. As originally used, the term referred to a knowledge of the essential literature or knowledge-base in psychology. In later definitions it was expanded to include the sorts of generic skills that a knowledge of psychology ought to impart, skills that are deemed to be useful in guiding personal behaviour and should improve employment prospects. More ambitiously, the term is also used to include much more wide-ranging skills that can be applied to society in general. It is worth examining these rather different (though overlapping) definitions in turn.

The original use of the term is generally attributed to Boneau (1990). In an interesting study, he asked writers of textbooks to indicate what they thought were the most important concepts in their area of psychology. Boneau's list of the 'Top 100' concepts makes interesting reading from a vantage point nearly 30 years on. Concepts from psychophysics (e.g. absolute threshold, just noticeable difference) and from Gestalt psychology figure prominently in this list; one suspects they would not do so if the study were repeated today. From the present perspective, however, of more interest is

Boneau's use of the term psychological literacy to refer to the most important concepts that should be contained in the study of psychology. In this original sense, then, the term in effect summarises the basic or essential knowledge that students of psychology should possess.

The second main use of the term psychological literacy stems from the National Conference on Undergraduate Education held in 2008 under the auspices of the American Psychological Association. A key publication coming out of this conference is that of McGovern et al. (2010) in which the authors attempted to define what psychological literacy means. They summarise the qualities that all psychology graduates would be expected to possess:

- having a well-defined vocabulary and basic knowledge of the critical subject matter of psychology;
- valuing the intellectual challenges required to use scientific thinking and the disciplined analysis of information to evaluate alternative courses of action;
- taking a creative and amiable skeptical approach to problem solving;
- applying psychological principles to personal, social, and organisational issues in work, relationships, and the broader community;
- acting ethically;
- being competent in using and evaluating information and technology;
- communicating effectively in different modes and with many different audiences;
- recognising, understanding, and fostering respect for diversity;
- being insightful and reflective about one's own and others' behavior and mental processes. (p.11)

The first bullet point on this list is essentially the type of literacy described by Boneau, in other words knowledge of the key areas of the discipline. The remaining items can be characterised as general skills. In other words, the undergraduate degree is assumed to fit students with a wide range of useful

skills as well as factual and conceptual knowledge.

The third type of psychological literacy is hinted at by McGovern et al. but has been most clearly articulated by Cranney and others. For example, Cranney, Botwood and Morris (2012) define it as 'the general capacity to adaptively and intentionally apply psychology to meet personal, professional and societal needs'. This type of psychological literacy involves applying psychology for the advantage of society in general. As Mair, Taylor and Hulme (2013) put it, 'they are 'global citizens' (Stevens & Gielen 2007) who are able to apply their subject knowledge and associated skills and attributes to problem solving and interacting with the everyday world around them.' The Australian website devoted to psychological literacy phrases it even more graphically: 'The 'mountain top' in the development of psychological literacy is Global Citizenship, which, put simply, is the capacity to think and behave as if the whole world is one's home, to be shared with all people who care about the world's future.'

I recognise that it is somewhat artificial to force these definitions into discrete categories, and in reality it is more of a continuum. However, for purposes of exposition I think such categorisation is useful and it might be helpful to give these different types of literacy names. The original, Boneau, use of the term we might call knowledge literacy; the second usage we might call skills literacy; while the third usage we can call cultural literacy. Clearly these differ in what they entail and in how ambitious they are in their claims. It might be helpful to think of these in terms of today's psychology undergraduates: we might expect that all of them will acquire the basic knowledge of psychology, and we might hope that some of them will apply their knowledge to develop their personal skills; but how many of them would we expect to become global citizens? The three types of literacy are a little like Maslow's hierarchy of needs, in that knowledge literacy is required before the skills can be applied,

and both knowledge and skills need to be present before they can be applied to the benefit of society.

This very brief overview has demonstrated that there is no single or agreed definition of psychological literacy, and indeed the picture is no doubt much more complicated than I have painted it. As Mair et al. (2013) acknowledge in their overview, 'there is no agreed definition of the term'. There are, however, dangers in having such a wide range of definitions of psychological literacy: while it allows a host of behaviours and skills to be brought under a single umbrella, one is left with the feeling that it can be all things to all people. And a term which can be adapted to everyone's point of view runs the risk of becoming vacuous.

Another approach to the issue of definition is to look at what would NOT be included as psychological literacy. There are a number of skills and attributes which might have some foundation in psychology, including: leadership; teamwork; persuasion; lie detection; social interaction; decision making; counselling; child rearing and parenthood; personality assessment; reading the thoughts of other people; self-presentation; and no doubt many others. A consideration of whether these should be included or not might at least set the boundaries for psychological literacy. There is at the moment a case going through the English courts considering whether bridge is a sport, and therefore eligible for central funding, with persuasive arguments on both sides. Assessment of boundary cases is important in agreeing on a definition, though, of course, there will always be instances which could fall on either side. But most fuzzy concepts (such as sport) have core instances upon which everyone would agree. It might be useful to determine what these are in the case of psychological literacy.

A further perspective on the meaning of psychological literacy comes from the study by Roberts, Heritage and Gasson (2015). They devised measures of all nine of the attributes covered in McGovern's analysis

and presented these to psychology students. If psychological literacy is a single dimension then these should presumably all be correlated with each other, but they were not. Factor analysis pulled out three factors which they called reflective processes, generic graduate attributes and psychology as a helping profession. The factors that they extracted are no doubt in large part due to the precise tests they selected, and one can quibble at the tests used since they are almost all short, self-report measures. But I suspect that their conclusion – that there are different dimensions to psychological literacy – is almost certainly correct.

### **Precursors to psychological literacy**

Is psychological literacy something new, discovered (or at least named) only in the last few years, or is it something that has been there all along which has just given a new name? The answer differs depending on which type of psychological literacy is being discussed.

Knowledge literacy has arguably been around ever since psychology has been studied as a discipline. That is not to say that we know what the core knowledge is, and indeed this changes over time, but there have been a number of attempts to characterise the essential knowledge and concepts. In the UK, for a long time the British Psychological Society's syllabus for its qualifying exam gave a general indication of the key areas of psychology but it never had any official status outside the Society.

More recently, national 'benchmarks' have been produced in the UK for all the main subject areas of study at degree level (e.g. QAA, 2010). I had the (slightly dubious) privilege of chairing the group which drew up the first benchmark statement for psychology in 2000, an enterprise which brought protests from some members of the profession. The inclusion of qualitative methods in the guidelines proved especially problematic. However, the howls of protest that we had given too much emphasis to such methods were balanced by an equally

strong protest that we had given too little attention to them. The planning group took this as indicating that we had probably got the balance just about right!

Not everyone would agree on what the key terms and concepts are, and many would argue (often quite correctly) that the content tends to reflect white, Western, and male ideas and values. But surely the claim that there is some essential content to a psychology degree would gain universal assent. Thus knowledge literacy has been around for a long time, even though we have not yet achieved a full consensus on what that knowledge should be.

Skills literacy has also been around for a while. Nearly 30 years ago, Arnold et al. (1987) advocated a reorientation of psychology degrees to place more emphasis on skills development. We suggested that reading and listening skills, writing skills, oral presentation skills, numeracy and research skills, computing skills and even social and interpersonal skills could be successfully developed in the context of a psychology degree. Other writers have produced similar lists (e.g. Hayes, 1996) and – importantly – have added thinking skills such as problem solving and critical evaluation to the list.

There may have been an element of wishful thinking in these papers, since I don't think any of the authors would claim that psychology students graduated with all these skills – and even if they did, many of the students would probably not realise they had acquired these skills! There was clearly an element of curriculum development in these papers in that they attempted to encourage skills development and make them more obvious in the degree programmes.

While not perhaps leading to the rapid changes to the psychology degree that these authors might have hoped for, these ideas did not fall on deaf ears and there has been a gradual change. If we look at the psychology benchmark statement (QAA, 2010),

it states that psychology graduates should have skills of oral and written communication, computer literacy, information collection and organisation, critically examining material, teamwork, scientific problem solving and critical thinking, personal planning and project management. This is an impressive list of skills, even though we cannot be sure that all graduates acquire them. Thus skills literacy is not something new, though recent discussions of psychological literacy may have helped to clarify the nature of the skills and expand the range of skills that psychology students are purported to acquire.

It is, however, worth noting that other disciplines also lay claim to developing these skills, and indeed many of these skills are arguably ones that any graduate would be expected to possess. For several years now, there has been an attempt to define what are the main graduate attributes (or, to use a recently-coined and rather ugly term, to define 'graduateness'). A major aspect of this has been to define generic, or employability, skills. A document published by the QAA indicates that all graduates should have the following skills/attributes: understanding a complex body of knowledge; analytical and problem-solving skills; evaluation of evidence, arguments and assumptions; sound judgement; effective communication; personal responsibility; and decision making (QAA, 2008). There is, of course, considerable overlap between this list and the qualities that are included in definitions of psychological literacy.

While there are clear antecedents to both knowledge and skills literacy, cultural literacy (global citizenship) is much newer. As far as I can tell it is only recently that this has been articulated as part of psychological literacy; hence it is here that the real novelty of recent formulations of psychological literacy lies. But as we shall see, it is also here that some of the main issues surrounding the concept arise.

### **Do our students possess these skills?**

A reading of the QAA (2010) benchmark statement for psychology suggests that all psychology students should develop a range of skills and knowledge as part of their degree studies, but do they? Again it makes sense to consider the three types of literacy separately when considering this question.

Knowledge literacy I think we can more or less take for granted. The syllabuses that are produced and the content of the classes taught all try to cover the main ideas and concepts in psychology, and in many countries there are national guidelines as to what that content should be. There may be slight differences of emphasis, but the common ground in all these syllabuses gives confidence that the basic material is covered. Furthermore, most of the assessment systems that we use, whether these are essay-based or multiple choice, are designed to ensure that students have a reasonable grasp of the core material. I suspect we might be surprised by how little psychology some of our graduates know, but I will not dwell on this.

The evidence concerning skills literacy is not quite so clear. As indicated earlier, many of these skills are ones that all graduates might be expected to possess. Hence two questions seem to suggest themselves. Firstly, do psychology graduates develop these generic skills to a higher standard than other students? Secondly, are there certain generic skills that only psychology students acquire?

In response to the first question, there are plausible reasons to believe that psychology students might be better able to develop many generic skills than other students. After all, topics such as problem-solving, thinking, decision making, language and communication are all areas that are likely to be covered at a theoretical level in the psychology curriculum and thus provide an underpinning for the development of skills in these areas. Some of these skills might be promoted in other disciplines (for example, thinking skills in philosophy, communication skills in English) but the theoretical analysis is likely to be more thorough

in psychology and the combination of skills that are potentially included is surely unique.

Empirical evidence on this question is hard to come by since there seem to have been few studies (at least ones that I could find) which directly compare different disciplines on these dimensions. This may reflect my own ignorance of the literature: there have been so many studies using psychology students as participants that I am sure that embedded in some of these there are data on this question. However, much of this data may be incidental to the main issues being investigated in the research. As just one example, one of the leading researchers on human reasoning, Keith Stanovich, has on a number of occasions, found differences in reasoning performance between different areas of study, but has never actually published these (Stanovich, personal communication, 2015).

In one of the few examples of studies of discipline differences that I could find, the results are not especially encouraging. Burke et al. (2014) found that the study of psychology helped develop thinking skills about psychological topics, but that philosophy (and not psychology) led to an improvement in generic thinking skills. If this pattern of results were to be replicated it would provide one answer to both of the two questions raised. It would suggest that a psychology degree improves thinking about psychology-related issues but does not transfer to critical thinking in general, at least not as well as it does in philosophy students. It would, however, be extremely dangerous to generalise from just his one study. And indeed there may be a whole range of other studies of discipline differences, not just in thinking skills but in the whole range of skills mentioned by McGovern et al., which have found different results – but I have been unable to find them.

If we turn to cultural literacy the picture is even murkier. I suspect that, as with other skills, there is little evidence to either support or refute the claim that these skills

are any better developed in psychology graduates than in those from other disciplines. Indeed, in the case of cultural literacy it is not clear what sort of evidence could be adduced. In their battery of tests designed to assess cultural literacy, Roberts et al. (2015) used the Psychology as a Helping Profession Scale (Gervasio, Wendorf & Yoder, 2010) to measure the application of psychological principles in personal and social life. This may go some way towards providing a useable measure, but being a 'global citizen' surely goes some way beyond this.

This illustrates a much wider problem in that there are few easy-to-use ways of assessing the development of skills, with the possible exception of critical thinking skills where there is a wealth of research. The work of Roberts et al. is a useful starting point but they were constrained by having to use simple, self-report measures in order to make their research manageable. Rather more sophisticated measures will be needed if we are to investigate more convincingly the development of generic and cultural literacy in psychology students and those in other disciplines.

Hence evidence that psychology graduates are uniquely equipped with what I have termed skills and cultural literacy is hard to come by. It would be surprising if they did not show superiority in evaluating psychological knowledge, concepts and practices, but presumably all graduates are better at evaluating their own discipline than others.

### **Do psychology degrees effectively promote psychological literacy?**

A related question is that of whether we promote the development of skills literacy and cultural literacy in psychology degrees. To me as a relative outsider it is not clear that we do. It is generally agreed that assessment is key to both motivating students to acquire skills and to ensuring that they have developed some kind of competence in them (e.g. Halpern, 2013). A quick trawl through the websites of UK universities reveals that traditional modes of assessment such as essay-

based exams and, to a lesser extent, multiple choice questions, still predominate. I suspect that most of these are designed to test knowledge rather than skills. Increasingly over the years there has been a move towards more continuous assessment and some of this may well be skills-based, but it is impossible to tell from the websites. If, as I suspect is the case, we place too little emphasis on the assessment of skills, it is likely that students do not give them the priority they deserve. There have been interesting suggestions as to how the attributes associated with psychological literacy can be assessed (e.g. Butler & Halpern, 2013; Cranney et al., 2013) but it is far from clear that these suggestions have been widely adopted.

One might also expect there to be an increase in the emphasis given to teaching some of the skills and attributes associated with psychological literacy. Worrell et al. (2010) provide some fascinating ideas and principles as to how this might be done, and there has been a surge in publications on how such teaching can be embedded within a psychology degree (see almost any recent issue of publications such as *Teaching of Psychology*, *Psychology Learning and Teaching*, and this publication). This is encouraging, but what remains to be seen is how widely and successfully such methods are adopted. In the UK at least, it is research that is the key to promotion, and hence there are relatively few incentives to read articles on teaching methods and put them into practice.

### **Do psychology teachers demonstrate psychological literacy?**

I hope it goes without saying the lecturing staff know the principal concepts in psychology and hence demonstrate psychological literacy in the basic sense. But how good are they at using the skills in their own practice? This is a question that I have raised on a number of occasions over the years, and the answer, I fear, is not very encouraging. Psychology lecturers should be able to use their knowledge of how people learn, com-

municate, think and interact to improve their own teaching and hence enhance students' learning. But it is only rarely that this happens.

A prime example of this is in student assessment. We know the requirements of a good assessment system: that it should be reliable, valid, and fair; but we also know that most of our assessment does not reach these standards. The reliability of marking psychology essays has long been known to be unreliable (e.g. Newstead & Dennis, 1994), with marks given to final year essays varying widely, even among highly experienced markers. There have been attempts to improve this through the introduction of explicit marking criteria (e.g. Elander et al., 2006) but these are unlikely to solve the problem, and may also inhibit creativity in essay writers. Multiple-choice exams, especially if computer-marked, have the advantage of being reliable but they are mainly of use in assessing knowledge rather than some of the other skills that a psychology degree is supposed to impart.

Assessments cannot be valid if they are not reliable. But even if our assessments are reliable, would they be valid? In other words, do they assess what they are supposed to assess? This begs the question as to what exactly students are expected to learn from their studies, but as we have seen in the previous discussion, many authors would claim that students should acquire a wide range of subject-specific and generic skills. Most assessment systems tap into core knowledge reasonably well, but skills are much more difficult to assess. As we saw in an earlier section, there are interesting suggestions as to what such assessment systems might look like, but little evidence that such methods are in widespread use. To give just one example, problem-based assessments have the potential to reflect the application of skills, but (in the UK at least), medicine seems to have adopted these much more readily than have psychology teachers. The challenge is even more marked with respect to cultural literacy: just how can global citizenship be assessed?

As to whether our assessments are fair, there is evidence that in some respects they may not be. There is some evidence that males and females may be assessed rather differently on essays (Bradley, 1984; but see also Newstead & Denis, 1990) and on projects (Dennis, Newstead & Wright, 1996). And there is evidence that many students get away with cheating (Newstead, Franklyn-Stokes & Armstead, 1992). There have been attempts to remove some of these biases, for example, through the use of blind marking (to make it less easy to identify the gender of the students) and computer systems such as Turnitin (to detect instances of plagiarism). It would be good to know that psychologists had been instrumental in making these changes, and indeed their research has made a contribution; but in truth the changes have been far from confined to psychology.

Assessment is only one example of ways in which psychology teachers might have employed their psychological literacy more widely. I could have given other examples such as the application of learning principles, memory techniques, social interaction, motivation theory and many others. I do not believe the situation is any better with these, though I know these areas less well than I do the literature on assessment.

## **Conclusion**

In the title of this article I referred to *The Emperor's New Clothes*, the Hans Christian Andersen children's story in which it takes a little boy to notice that the Emperor's shiny new suit does not actually exist. Those who take offence at my use of this provocative title might take some comfort from the fact that I have paid the price for this choice, since Danny Kaye singing 'The king is in the all together' has been reverberating through my head the entire time I have been writing. But is the concept of psychological literacy, as hinted in the title, a vacuous one? Do our students graduate clothed in psychological literacy or are they, like Danny Kaye's king, 'all together as naked as the day that [they were] born'?

I do not want to suggest that the concept is completely vacuous, and indeed it may have numerous benefits in 'selling' psychology to employers and government agencies. However, the term is, in my opinion, bandied around too readily. For example, Cranney, Dotwood and Morris (2012) recommend that 'psychological literacy should be the primary outcome of the psychology major' though they acknowledge that some of the more ambitious aspects of the term are aspirational rather than current reality. And Trapp et al. (2011) put psychological literacy (in which they go so far as to include compassionate awareness, cultural competence and global citizenship) as part of what a psychology education should achieve, though without any clear indication as to how these aims might be achieved.

It is surely too soon to be making such wide-ranging claims when the concept does not yet have a clearly defined meaning. Furthermore, we have little evidence as to whether our students currently possess psychological literacy skills, nor even agreed ways of assessing those skills. Perhaps most depressingly, it may well be the case that those charged with developing students' psychological literacy skills do not possess those skills themselves.

So should we abandon the term? I think this would be going too far. What we need to do is to ensure that we have an agreed definition of what it means, even if this allows some variation around the edges. It seems unlikely that it is a single unitary concept so we need to know and agree what the dimensions are. The tripartite categorisation I have presented here is one, but only one, way of doing this. This is an empirical question, for which the work of Roberts et al. (2015) provides a starting point.

We also need to develop and agree ways of assessing psychological literacy. There are two aspects to this. Firstly there is the need to develop ways of assessing our own students' performance to ensure that the required skills and attributes are present; I suspect this will require rather more sophisticated ways

of assessment than most people currently use, and is likely to need measures of actual behaviour, not just written tests. Secondly, there is the need to develop ways of assessing such skills in a wider range of students if we wish to claim that our students are the ones who excel in these skills.

Additionally we need to develop proven ways of promoting psychological literacy in our students and to ensure that they are widely adopted. I am aware that such efforts have already started but clearly much more development work is required.

I will finish with a number of questions. If these can be answered satisfactorily (and many of them will require empirical data) then the concept of psychological literacy should have a healthy future.

- Can we agree on a definition of psychological literacy? I am sure that a single definition is both impossible and undesirable, since it is right that different degree programmes should emphasise different aspects of knowledge and skills. But surely there is a central core to the concept which could be agreed.
- Is psychological literacy a unitary concept? If, as I suspect, it is not, what are the main components? The answer to this question will require conceptual analysis and also experimentation, perhaps developing the work of Roberts et al. (2015).
- What elements of psychological literacy are attributes that all graduates would be expected to acquire, irrespective of discipline? Is there any evidence that psychology students acquire some of these generic skills any better than other graduates?
- What elements of psychological literacy are unique to psychology, or at least developed much better by a training in psychology?
- Is there any evidence that a psychology degree develops what I have termed cultural literacy?
- How can we make sure that our students do acquire psychological literacy, in other words how do we embed it into our

degrees? This will require developments both in the way the curriculum is taught and in the way it is assessed.

- How do we ensure that psychology teachers (many of whom are dinosaurs like me) develop their own psychological literacy to a level where they can pass this on to students?

I suspect I will not make myself popular with those working in the field by raising the points I have done in this article and by criticising the concept of psychological literacy. However, I think it is only fair to ourselves, to employers and – most importantly – to our students to be clear about the concept and what it is legitimate to claim about the skills acquired.

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# Psychological literacy: A multifaceted perspective

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*The concept of psychological literacy has grown in importance within psychology education at all levels, in the UK and globally, in recent years. Increasingly, psychology educators and policy makers are seeking to emphasise the relevance and usefulness of psychology within everyday life, within the workplace, and as an element of global citizenship.*

*The Division of Academics, Researchers and Teachers in Psychology (DART-P), recognising this recent development, hosted a symposium at the British Psychological Society (BPS) Annual Conference 2015, at which the concept of psychological literacy was explored within the context of higher and pre-tertiary psychology education. The aim of the symposium, reflected in this article, was to explore current thinking, developments and practice within contemporary psychology education, with a view to stimulating critical discussion and reflection on psychological literacy and its delivery within both pre-tertiary and higher education contexts. Ultimately, the symposium, and this article, are intended to facilitate exploration of the opportunities provided by psychology education, at all levels, to develop students as psychologically literate citizens.*

*This article summarises the talks and discussions which occurred during the symposium. Firstly, we introduce the concept and literature surrounding psychological literacy and its importance to modern psychology education. This is followed by a case study illustrating one way in which psychological literacy has been embedded into the curriculum within a university undergraduate programme. We move to consider the development of thinking about psychological literacy in a historical context, linking it to societal benefits and Miller's (1969) concept of 'giving psychology away'. This raises the question of the extent to which pre-tertiary psychology education can equip students with psychological literacy, and the impact of the growing numbers of people who have studied psychology upon society. In England and Wales, the most popular pre-tertiary psychology qualification is the A level, which has undergone recent revisions, and so we consider the contribution of the new A level psychology specifications to psychological literacy. In conclusion, this paper offers some thoughts about the implications of the growth in emphasis on education for psychological literacy, reflecting the discussions held during the plenary session at the end of the symposium.*

**Keywords:** *psychological literacy; higher education; pre-tertiary; A-level; transferable skills; global citizenship.*

## 1. Julie Hulme: Psychological literacy: Bringing psychology to life

**J**ULIE HULME set the scene for the symposium, introducing the related concepts of psychological literacy and psychologically literate citizenship, outlining recent practices with regard to the embedding of psychological literacy within curricula, and signposting available resources relating to psychological literacy.

Psychological literacy was first defined by McGovern et al. (2010, p.210), who

suggested that it was comprised of the following skills and knowledge that would be acquired by students during the course of an education in psychology:

- vocabulary and knowledge of the critical subject matter of psychology;
- scientific thinking, disciplined analysis of information to evaluate alternative courses of action;
- creative and 'amiable skeptic' approach to problem solving;
- applying psychological principles to

personal, social and organisational issues in work, relationships and the broader community;

- acting ethically;
- competent in using and evaluating information and technology;
- communicating effectively in different modes and with many different audiences;
- recognising, understanding and fostering respect for diversity;
- insightful and reflective about one's own and others' behaviour and mental processes.

It is noticeable that the specific subject content that is to be learned by psychology students becoming psychologically literate is not defined in McGovern's account. Instead, the emphasis is on learning enough psychology to be able to think critically, solve problems, and apply knowledge of psychology to become an effective scientist and citizen. To a large extent, McGovern here encapsulates the way in which psychology education facilitates students' enculturation into the discipline (Brown, Collins & Duguid, 1989), and supports them in learning to 'think like' a psychologist (Hulme & De Wilde, 2015, p.20). Psychological literacy is also perceived in McGovern's account as facilitating self-awareness and understanding in a social context.

The underpinning knowledge and skills that constitute psychology are thus much wider than its academic 'ingredients' might suggest. Trapp et al. (2011) designated psychology as a STEM+ subject, arguing that it fosters all of the skills that might be expected of a typical science graduate, alongside communication and interpersonal skills more typical of a social sciences or humanities graduate. Psychological literacy is, therefore, useful to students not only if they pursue a career in psychology, but more generally to facilitate their contributions as global citizens, an issue which is at the forefront of many university learning and teaching policies at the moment (e.g. Bourke, Bamber & Lyons, 2012; Mair, Taylor & Hulme, 2013).

The idea that psychology is useful in the wider world is not a new one; Miller (1969) talked about the need to 'give psychology away' (p.1071), in that understanding human behaviour could provide a means to promote human welfare through a peaceful 'psychological revolution' (p.1065). More recently, these conceptions have been developed around the theme of psychologically literate citizenship (Cranney & Dunn, 2011). It is suggested that many of the problems facing the modern world require psychological understanding in order to achieve a solution, as argued eloquently here:

*'Today's students must prepare themselves for a world in which knowledge is accumulating at a rapidly accelerating rate and in which old problems such as poverty, racism, and pollution join new problems such as global terrorism, a health crisis created by alarming increases in obesity, and the growing gap between the poor and the very rich. All of these problems require psychological skills, knowledge and values for their solution.'* (Halpern, 2010, p.162).

Harré (2011) expanded on these themes by considering the role of psychology in changing behaviour to improve ecological sustainability and so to create a better world. Hulme (2014) went a step further, suggesting that psychological skills and knowledge can be applied to all aspects of human life, asking:

*'Do we want to enhance wellbeing in our workplace? Reduce the negative impact that our species has on the global environment? Increase charitable giving? Reduce bullying, conflict and racism, or improve our nation's health? ...Solving our problems as a global community requires people with an understanding of psychology.'* (pp.934–935)

Thus psychology education can be argued to enhance the lives of the students who study it, and the lives of those around them. In some respects, psychology is like a pebble, thrown into a pond, which creates ripples all around it, influencing the individual student first, who can then apply their knowledge and skills to their immediate family, their

Figure 1: Psychological literacy is influential on all aspects of human life, from understanding the self to the global context.



workplace, community and the world at large. This is illustrated in Figure 1.

The current BPS (2012a) accreditation criteria for undergraduate degrees, and the BPS policy work around pre-tertiary psychology education (BPS, 2012b), underline the importance of developing psychological literacy through psychology education. The challenge for psychology educators, then, is how to maximise the opportunities within the psychology curriculum to ensure that students develop psychological literacy. Dunn et al. (2011, p.16) argue that 'Promoting psychological literacy entails reorienting what and how we teach students in a way that emphasises psychology's relevance'. This implies a need for a constructively aligned curriculum (Biggs, 1999), with learning outcomes that directly signpost the application of psychological skills and knowledge in a real-world context, learning activities that allow students opportunities to practice such application, and authentic assessments (Ashford-Rowe, Herrington & Brown, 2014; Gulikers, Bastiaens & Kirschner, 2004) that genuinely assess students' abilities to apply their knowledge to solve real-world problems. Taylor and

Hulme (2015; see also this volume) have collated examples of best practice within higher education within a compendium, to be published on the Psychological Literacy website (Cranney, nd; Taylor & Hulme, 2015), some of the ideas from which could be adapted for use at other levels of the education system. Research methods training perhaps provides an obvious tool for encouraging students to develop independent learning and problem-solving skills, as does some content intended to deliver employability. The psychology curriculum itself, however, can also be applied to real-world contexts; for example, students' self-awareness can be developed through understanding of learning theory and metacognition, social psychology can be readily applied to the workplace, and the psychology of behaviour change is relevant to global issues such as health improvement, environmental sustainability and community living. Ethics, diversity and inclusion are also embedded throughout the psychological literature, particularly within the field of individual differences.

In addition to finding ways of incorporating psychological literacy within the curriculum, McGovern (2011) suggests that

it is important to model it within our own practice as educators. This includes delivering learning and teaching in ways that are informed by psychological principles, modelling a problem-solving approach using our own psychological skills and knowledge, and interacting inclusively with students. An interesting aspect of this is a need for teachers to consider ethics within their own teaching, particularly around equipping students to understand their own competences and limitations, including around their maturity and level of education, when encouraging them to apply psychology to solving problems.

Embracing the challenge of embedding psychological literacy within the curriculum is worthwhile for many reasons. Firstly, it directly appeals to students, many of whom chose to study psychology because they perceive that it will help them to make a difference to society (Bromnick & Horowitz, 2013). Secondly, students are more likely to engage with content that they perceive as relevant to their own lives (Jones, 2009). Learning about personally relevant subject material is also supportive of student transitions (Hulme & De Wilde, 2015; Kitching & Hulme, 2013). Finally, psychological literacy is closely allied to global citizenship (Cranney & Dunn, 2011), as well as to employability and internationalisation (Reddy, Lantz & Hulme, 2013) and has much to offer with regards to improving the quality of life for humans and other animals around the globe.

**2. Rebecca Skinner, Francesca Worsnop, Elizabeth Collins & Roger Watt:  
Making psychologically literate citizens:  
The Stirling experience**

In order to be able to facilitate the embedding of psychological literacy into the psychology curriculum, it is helpful to identify and share examples of best practice. This year, the psychology undergraduate programme at Stirling has been awarded the inaugural BPS Education and Public Engagement Board Award for Innovation in

Psychology Programmes (BPS, 2014), as a result of their work on psychologically literate citizenship (see also Watt, 2013), which is achieved through a model of working with students as partners (Healey, Flint & Harrington, 2014).

A key issue in delivering psychological literacy and psychologically literate citizenship within the curriculum that was encountered during the development of the Stirling programme was that whilst academics are familiar with the requirements to facilitate students in developing knowledge, skills and understanding, they may be less familiar with the attitudinal components that constitute citizenship. It can be argued that psychologically literate citizenship has a foundation in deeds, rather than words, and is best delivered and assessed through project working, rather than traditional assessments such as essays. The related concepts of psychological literacy and psychologically literate citizenship at Stirling are clearly defined, allowing shared understanding between members of the teaching team and the students themselves: psychological literacy is the ability to recognise how and where psychology is relevant in the real-world; psychologically literate citizenship is the willingness and ability to act on that recognition, safely, for the benefit of others. It is not only about what one knows or understands, it is something one has the confidence and independence to do.

This emphasis on the practical and active aspects of psychological literacy is important to the ethos of the Stirling programme. The team emphasised the importance of independence, collaboration and honesty, on the part of both students and tutors. Students were required to be responsible for their own learning, so that they developed abilities to work unsupervised, and to know when to ask for support (rather than directive help). Within the context of collaboration, it was important to recognise one's own strengths, and the strengths of others in the group.

The undergraduate programme at Stirling is a four-year psychology degree, as is usual within Scottish higher education. The

model is highly consistent with the Vygotskian concept of scaffolding (Vygotsky, 1978) with first and second year students learning research methods and statistics from fourth year student tutors and mentors. Much of the focus on psychologically literate citizenship is introduced within the third year of the degree, as students begin to take part in supervised research, which is then followed up by more fully independent work in the fourth year, with some of them also adopting tutor and mentoring roles for second year students at this point. The fourth year is devoted to developing and articulating the confidence and safety that are perceived as crucial to becoming a psychologically literate citizen. The dissertation, which takes place in the autumn semester of the final year, is supervised, and runs alongside two elective modules, one which focuses around staff-led small group discussions, and one which uses peer-mentoring to develop research methods skills. In the final, spring semester, students carry out a group research project, working largely unsupervised, which focuses on psychologically literate citizenship. Alongside this, a further two elective modules are taken. One builds upon the staff-led small group discussion module, using a similar format but this time co-led by staff and students, while the other is entirely student-led. There is, therefore, a shift of control, from staff to students, within the learning process. This shift of control has to be based on mutual respect and trust between students and staff. That is a powerful point to reach: to stand back and watch what students can achieve, without staff.

Thus the final year of the Stirling programme introduces independence gradually, so that the final quarter of the year is entirely based on student contributions and has no academic staff input whatsoever. In this final stage, students are given a real-world problem, with a client, and they are asked to examine, explore, research if necessary and report to the client. They are given no hints about how to proceed and no help or advice on methodology or theory. The

reports they produce are worth 17 per cent of their final year credits. At the same time, within the student-led elective module, they are also given the opportunity to organise and run a conference showcasing their work, entirely without staff input. Their contribution to this conference is assessed alongside their reflections on the learning experience and is worth eight per cent of their final year grades. The purpose of these two assignments is articulation; students prove to themselves (and also to employers and to academic staff) that they are capable of being independent. Students find these two experiences very rewarding, and the work produced is of a very high quality.

A key finding from the work at Stirling is that this combination of independence, collaboration and honesty is crucial in developing leadership skills amongst the psychology student body. Not only do students have the opportunity to develop their potential and ability to lead, but the work they do as part of their degree provides them with evidence of their leadership contribution, which is invaluable when they are seeking jobs or places for further study. Unusually, at undergraduate level, students have the opportunity to develop and deliver their own, credit-bearing modules, and to teach each other; they have project management experience, skills for communicating with clients, event organisation experience, and oral and written presentation skills. Students are able to articulate their own personal examples of their development as confident and employable graduates. They are, by the time they graduate, psychologically literate citizens, who are capable of making a real contribution to the world beyond university.

### **3. Philip Banyard: Giving psychology away: How George Miller's vision is being realised by psychological literacy**

Not all of psychology education occurs within universities, and it is important to consider the impact of psychology education at all levels upon wider society. Psychology is growing in popularity, and as such, many

individuals have at least some psychological knowledge. To what extent is this potential growth in psychological literacy affecting communities?

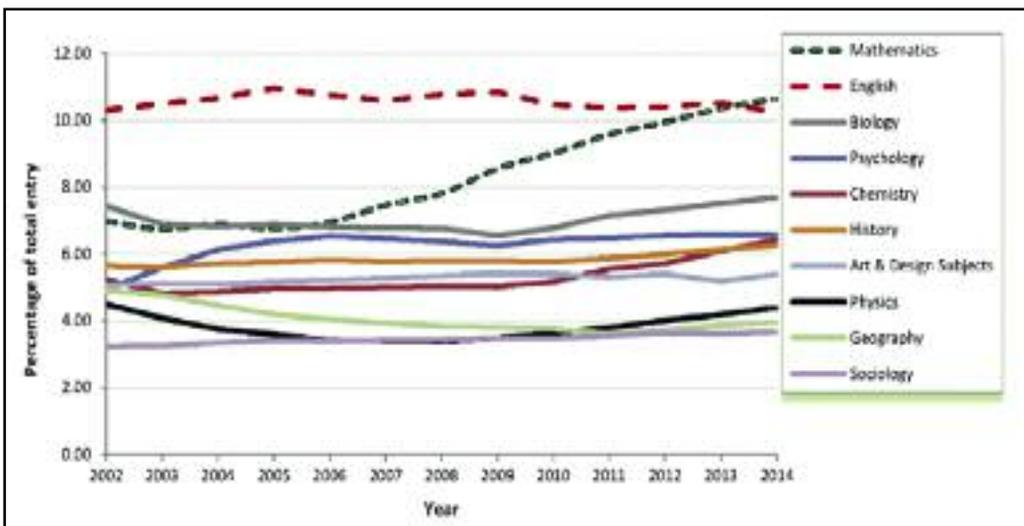
Within higher education, there are over 91,000 students studying psychology (HESA, 2014). Psychology is the fourth most popular subject of study at pre-tertiary level; last year, there were over 56,000 entries for A-level psychology and over 101,000 entries for AS-level psychology (JCQ, 2014). One consequence of the growth in popularity of psychology courses at all levels is the increasing proportion of the population of the UK who have taken a programme of study in the subject. It is estimated that for the last 15 years over 13 per cent of each cohort of 18-year-olds have taken a named qualification in psychology (BPS, 2013), while many more have taken psychology as part of their courses in other subjects, such as health and social care. A result of this is that the UK population possesses a growing awareness of the basic ideas of psychology (a picture which is mirrored across the globe, and particularly within Europe, the US, Canada, Australia and New Zealand).

Many A-level and other pre-tertiary psychology students go on to apply to read the subject at university but the majority do not. As a result, for a large number of people, the A-level is the only psychology they will study and so these courses are in a position to have a profound effect on the nation's understanding of psychological concepts. With over 100,000 people taking these courses every year for over a generation (see Figure 2), it can be deduced that approximately two million individuals in the UK alone have studied psychology over the last 20 years, and thus that the nation may be becoming increasingly psychologically literate as a result of engagement with pre-tertiary psychology education.

Given the numbers of people who study psychology at pre-tertiary level, it is important to consider what this psychological literacy means in practical terms. What are representations of psychology that are held by these students and how do they differ from those held by psychologists?

A survey of psychology A-level students conducted by the BPS (2012) investigated students' perceptions of their chosen course

Figure 2: Top 10 A-level subjects as a percentage of the total entry over the period 2002 to 2014 (taken from JCQ, 2014).



of study. Students frequently identified psychology as an interesting subject, which differed from other school-based subjects, and had relevance to real life. However, they disliked the amount of content and emphasis on remembering within the A-level curriculum. A question about who they perceived to be the most important or influential psychologists revealed a strong focus on historical (particularly Freud and Milgram), rather than contemporary, psychological research and theory, suggesting that there may be a difference between psychology as it is understood within academia, and psychology as it is perceived by the majority of those who study it at pre-tertiary level (Banyard & Duffy, 2014).

This raises a question about who determines the nature of psychology; traditionally, academics have claimed ownership of psychological knowledge. However, in modern times, there has been a democratisation of knowledge; access to psychological knowledge is widely available through the internet, and it is becoming increasingly important for individuals to be able to evaluate critically, select appropriate material and synthesise information, rather than simply to acquire it (Candy, 2000; Delanty, 1998). Psychology is no longer in the exclusive domain of psychology academics, or experts, but is becoming the property of the wider population.

The growing psychological literacy of the UK population, as a result of the increased popularity of psychology and growth in engagement with pre-tertiary psychology education, could be argued to be beginning to fulfil Miller's (1969) vision of giving psychology away. This has implications for education policy makers and for teachers, who need to consider carefully the nature of the pre-tertiary psychology curriculum, and the ways in which psychology is taught, in order to maximise societal opportunities arising from improved national psychological literacy.

#### **4. Helen Kitching: Potential implications of the new A-level psychology syllabuses: Could the more contemporary topics introduced enhance psychological literacy?**

Given that the largest number of psychology students in the UK are those who study AS and A-level psychology, it is important to reflect upon the extent to which these qualifications deliver psychological literacy and psychologically literate citizenship. In 2012, Ofqual announced a reform of AS and A-levels in the UK, including psychology, to create more ambitious qualifications, to decouple AS from A-level, review assessment objectives, and to enhance the mathematical and employability skills, and preparedness for further study, of students who study these qualifications. The new subject criteria were published in November 2014, and the four UK examination boards (AQA, 2015; OCR, 2015; Pearson EdExcel, 2015; WJEC/ Eduqas, 2015) subsequently produced psychology specifications for teaching from September 2015.

At the time of writing, pre-tertiary teachers were choosing the examination board whose specification they would teach, and starting to prepare for the new academic year. It was important to consider the extent to which the new syllabus would engage and enthuse students, as well as fit comfortably with teachers' interests, skills and expertise, and to reflect on the degree to which the new qualifications would equip learners with skills which were appropriate to their aspirations and ambitions with regard to future study and employment. A key issue, then, in making a choice, was whether the new specifications would facilitate students' development of psychological literacy.

One important aspect of psychological literacy, according to McGovern et al. (2010, p210) involves having a 'well-defined vocabulary and basic knowledge of the critical subject matter of psychology'. The question of what defines critical subject matter in terms of pre-tertiary psychology is a pertinent one. Is it where psychology has come from or does it refer to where we are today?

A frequent criticism of the legacy awards was that they were too historical in content. This has been addressed to some degree in the new specifications, although all of the boards have updated their specifications in different ways. Two boards have introduced requisite 'contemporary studies' (OCR, 2015; Pearson Edexcel, 2015), whereas the other two have focused on 'contemporary topics' (AQA, 2015; WJEC/Eduqas, 2015). It is noticeable that some of the research covered in these parts of the specifications derives from the 1990s. The extent to which an 18-year-old might consider a 20-year-old study to be 'contemporary' could be open to questioning. However, given that the specifications are likely to remain in place for a number of years, and that the prescribed content must remain valid for the lifespan of the specification, it is understandable that the boards may have felt the need to draw upon landmark studies from the relatively recent past, rather than from very recent studies that have not yet stood the test of time. Certainly, incorporating research from the 1990s onwards provides a more up-to-date perspective on psychology than that presented in the legacy specifications.

According to McGovern et al. (2010), psychologically literate learners are able to apply psychological principles to personal, social and organisational issues in work, relationships and the broader community. Whilst we would not expect A-level students to be able to use their psychological skills directly to solve work and community issues (for ethical reasons), providing them with topic areas that are relevant to their everyday lives and contemporary issues for society will hopefully provide them with an insight into way things happen, how they can be solved and who could help them (for example, knowing when to seek advice or support from professional psychologists). Learning psychology could also empower them to advocate for changes within their own communities, and, for example, to look at solutions to bullying that may not already be in place in their school.

The four new UK A-level specifications offer different content relating to real life issues such as these, which will differently impact upon the psychological literacy of the learners who study them. For example, the WJEC/Eduqas (2015) specification addresses issues of bullying, while Pearson Edexcel (2015) requires students to consider the application of knowledge from social psychology to reduce prejudice in situations such as crowd behaviour or rioting. The boards make it clear that learners should be looking at how psychology impacts on society, not just academic argument (Pearson Edexcel, 2015). This provides learners with the basis to view psychology from an applied perspective which should support their psychological literacy.

McGovern et al. (2010) also state that learners should be competent in using and evaluating information. The Office of Qualifications and Examinations Regulation (Ofqual) has set the weighting for mathematics within the psychology subject criteria (with which all four examination boards must comply) at 10 per cent. It is not clear at this stage how much calculation of statistical tests learners will be expected to do in the examinations, but the newly enhanced requirement to study non-parametric statistics will hopefully broaden the students' understanding of the tests themselves and encourage them to become more competent in data handling and thus assisting the transition to higher education (Field, 2014; Hulme & De Wilde, 2015; Kitching & Hulme, 2013).

All of the examination boards require students to study research methods. However, the precise approach to practical research differs across the different boards. One board specifies compulsory practical work to take place throughout the course, which will be examined, in addition to testing students' understanding of research methods through assessment of their ability to apply learning from practical work to novel scenarios in the examination (WJEC/Eduqas, 2015). The other three

boards recommend that students do practical work throughout the course, but these are not examined directly, and assessment of these skills is through similar application of learning to novel scenarios within the examinations (AQA, 2015; OCR, 2015; Pearson Edexcel, 2015). Although it is impossible to determine which students have actually had practical experience, it could be expected that those who have personally conducted practical work are likely to do better when applying their knowledge and understanding to the novel scenarios. If this is the case, then it might be expected that all four boards' specifications should enhance psychological literacy through the development of skills in research methods.

Part of being a psychologically literate student is acting ethically (McGovern et al., 2010). Learners within the A-level specification are expected to have an understanding of the BPS ethical guidelines (BPS, 2009) and to be able to apply these both within the context of conducting their own research, and in evaluating others' research. The expectation is that all students who conduct research will do so in an ethical manner under the guidance of their teacher. There is a great opportunity for teachers to explore the applicability of ethical principles in a broader sense, extending beyond research into everyday life, around issues such as diversity and inclusivity, such as showing respect for other members of the class, being intolerant of bullying, or being supportive if their classmates choose to disclose personal information such as relating to a phobia or to mental ill health.

The new A-level specifications offer opportunities for learners to come away with a sense of being psychologically literate. The emphasis on application of knowledge supports this idea. It is always going to be difficult to go far beyond the specification in a climate which is so exam orientated. However, if these examinations are designed in such a way that taps into skills pertaining to psychological literacy then it can only benefit our learners, and, consistent with the

themes running throughout this paper, help to create a better world.

### **Discussion (chaired by Simon Goodson)**

The four talks presented during the DART-P symposium at the BPS annual conference were united by a common theme: the opportunities provided by psychology education, at all levels, to develop students as psychologically literate citizens, who can contribute to society in a multitude of ways. The scientific literacy skills which underpin psychology education facilitate employability and economic contributions, as well as equipping individuals with problem-solving and critical thinking skills. Likewise, the communication and interpersonal skills acquired through psychology education, more usually associated with social science and humanities education, support the development of well-rounded individuals who are competent to work in social contexts. In addition, the raised awareness of diversity, inclusion and ethical integrity that result from psychology education are central to the global citizenship agenda which currently prevails in the UK education system. Finally, it is clear that psychological literacy incorporates aspects of critical thinking and information literacy, which are essential to success in an era of rapid knowledge growth and ease of access to information. While the psychological literacy acquired from engagement with pre-tertiary psychology qualifications will be less sophisticated than that achieved during higher education qualifications, there is a clear added value that arises from studying psychology, which goes beyond its academic content, and supports the development of global citizenship.

The popularity of psychology creates a strong opportunity to facilitate actively the development of scientific, interpersonal and citizenship skills and values within the UK population. This requires continued support for the embedding of psychological literacy within the psychology curriculum from the BPS, and active engagement with psychological literacy on the part of educators and

educational managers, policy-makers (ideally including at government level), examination boards and students themselves.

A note of caution, however, should be sounded clearly; during discussion, delegates at the symposium emphasised that students must be made aware of the ethical implications of psychological literacy. The BPS (2009, p.16) code of ethics advises that: 'Psychologists should... practice within the bounds of their competence'. Psychology students, however well informed they may be regarding psychological knowledge, are not qualified psychologists, and may not practice as such. However, training in psychological literacy would be expected to provide good grounding in ethical issues, and one aspect of this may involve exploring with students themselves the extent to which it is appropriate to apply psychology to everyday life, and the point at which it becomes appropriate to seek support from professionally qualified individuals. There is scope for the BPS and other interested stakeholders in psychology to explore ways to best exploit the opportunities provided by psychological literacy, whilst maintaining safe practices that will protect educators, students and the public.

So, what next for psychological literacy? There is clearly an opportunity here for psychology education to impact positively on global society, in terms of enhancing health and wellbeing, the economy, the ecological health of the planet, and more. To facilitate this, psychology educators themselves need to embrace the attitudes associated with psychologically literate citizenship; we need to share practice, particularly around issues of curriculum design, ethics, classroom teaching practices and assessment. The psychological literacy agenda will need to be made explicit within and throughout psychology education, to elucidate for students, employers and others, the benefits that can be gained through the study of psychology and its application to everyday life. To some extent, it is now the responsibility of psychology educators to work collectively to

define, explain and promote the concept of psychologically literate citizenship to the wider world, to facilitate Miller's (1969) vision of 'giving psychology away'.

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# Introducing a compendium of psychological literacy case studies: Reflections on psychological literacy in practice

Jacqui Taylor & Julie Hulme

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*This article introduces a set of case studies that were submitted to us following requests in psychology conferences and publications, and through professional networks. The full versions of the case studies make up the first version of a Psychological Literacy Compendium of Practice that is available online at [www.psychologicalliteracy.com](http://www.psychologicalliteracy.com). The first part of this article presents a brief synopsis of each case study and categorises case studies to allow those considering introducing psychological literacy activities to easily compare and contrast different approaches. Categories include: when the activity takes place in the curriculum; whether it is a core or elective unit, or optional activity; and assessment strategies. In the second section, we evaluate each case study in terms of which of the nine psychological attributes identified by McGovern et al. (2010) each case study illustrates. This information can be used to assist curriculum design and quality assurance procedures, and highlights the need to define the attributes of psychological literacy that activities are designed to address. Finally, we conclude with a discussion and some suggestions for future work and activities. This article aims to highlight practical ideas to develop psychological literacy and to encourage academics and practitioners to use the Compendium to develop activities to embed psychological literacy within the Psychology curriculum.*

**Keywords:** *psychological literacy; graduate attributes; global citizenship; practical examples.*

## Introduction

**P**SYCHOLOGICAL LITERACY is a relatively recent concept within psychology education, and can be loosely conceptualised as an ability to apply the knowledge, skills and attributes acquired through the study of psychology in a real-world context (Halpern, 2010; Hulme, 2014; Mair, Taylor & Hulme, 2013). The related concept, psychologically literate citizenship, seeks to extend psychological literacy and to explain its importance in the context of social responsibility and contribution (Cranney & Dunn, 2011). Both concepts have been increasingly emphasised by psychologists within the UK higher education sector in recent years. The importance of psychological literacy was first recognised in the UK by Trapp et al. (2011), who recommended that it should be embedded throughout the higher education psychology curriculum as a way to enhance

the value of psychology education to graduates and to the UK economy. This was followed by the incorporation of psychological literacy into the British Psychological Society (BPS) accreditation criteria (BPS, 2012a) for undergraduate psychology programmes (first published in 2012, and updated in 2014), which state that the skills acquired through the study of psychology at undergraduate level: *'represent a coherent set of knowledge, skills and values that underpin students' psychological literacy and which enable them to apply psychology to real life contexts. These scientific, critical thinking and ethical skills encapsulate the contributions a psychology graduate can make to the workplace and to society more generally'* (p.26).

As can be seen from this quote from the BPS (2014), psychological literacy recognises the intrinsic value of studying psychology for

life beyond the education system. Hulme (2014) argues that psychological literacy incorporates aspects of scientific and information literacy, enabling students and graduates to develop as lifelong learners who are able to keep up with the ever-changing demands of an information-rich society and workplace. Psychology graduates are also able to apply psychological knowledge to real-world problem solving, for the benefits of their communities and societies, in ways that can improve productivity, environmental sustainability, interactions with technology, and health, among other issues. In this regard, they can become inter-culturally competent and ethically aware global citizens. In addition, psychological literacy within the curriculum facilitates students in appreciating the relevance of psychology to everyday life, which in turn helps to make the subject more interesting and engaging.

In response to a growing demand in the UK for information on psychological literacy, the HEA produced some resources (Mair, Taylor & Hulme, 2013; Watt, 2013) for academic psychologists to introduce the concept and to stimulate reflection on ways in which psychological literacy might be embedded within the UK undergraduate psychology curriculum. Additionally, other recent articles from countries outside the UK expand upon the many merits of embedding psychological literacy within psychology curricula within higher education (Dunn et al., 2011) and further education (EFPTA, 2014; Sokolová, Lemešová & Kittler, 2014). Even more recent work is widely covered in this special issue of *Psychology Teaching Review* highlighting the 'added value' of psychology (e.g. Hulme et al., 2015). One of the key suggestions for further work highlighted by Mair, Taylor and Hulme (2013) was the need for practical examples to demonstrate psychological literacy in action and this suggestion stimulated us to produce a Compendium.

The aim of the Compendium was not to replicate existing resources, but rather to seek to collate contemporary practical examples of approaches taken by higher educa-

tion psychology providers, with a view to sharing practice and encouraging others to consider adapting these examples within their own curriculum. Requests were circulated through a variety of media within the UK, including professional networks, e-bulletins and publications produced by the BPS and the Higher Education Academy (HEA), and through flyers and verbal requests at psychology learning and teaching conferences. All of the case studies submitted to the Compendium were included and while they were not peer reviewed, editorial feedback was provided and various versions submitted.

### **Synopses and categorisation of case studies**

Full case studies are available at <http://eprints.bournemouth.ac.uk/22906/>

As can be seen from Table 1, the majority of case studies included in the Compendium involved the teaching and learning of Psychological Literacy in a specific unit at one level, rather than a whole-course approach, although the case studies by Cachia et al. and Reddy report employability and placement activities at all levels of the degree programme, and another case study by Rosenkranz involves the collaboration of level 4 and level 6 students. Similarly, most case studies are led by an active academic, rather than a course team. These observations are consistent the majority of publications on Psychological Literacy (Mair et al., 2013; Trapp et al., 2011) which recommend embedding it throughout a degree programme to realise the true benefits and ensure all students come into contact with the concept, similar to the incorporation of employability at all levels of the degree now (Reddy et al., 2013) and not just an add-on.

As can be seen in Table 1, psychological literacy was mainly covered at level 6 in the case studies submitted to the compendium. Although it was encouraging to see that many students were exposed to Psychological Literacy, only six case studies were based on core units; suggesting that students could proceed through a university degree without

**Table 1: The categorisation of case studies according to: where they are included in the curriculum; whether the activity is compulsory, optional or voluntary; and the type of activity and assessment.**

	Level in degree	Psychology Area/Unit	Core/Elective/Voluntary	Activity/Assessment	Description
Brunsdon	6	Mental health	Elective unit	Enquiry-based learning Pecha Kucha presentations	Students are provided with enquiry-based learning scenarios by external organisations (e.g. charities, health departments), and conduct research to propose solutions and recommendations, presented at a conference to organisational representatives.
Cachia et al.	4, 5, 6	Employability	Core unit	Reflection activities/work experience PDP plan and reflections	This degree embraces the concept of psychological literacy as the pathway to enhanced employability. Throughout the degree there is a running thread of embedded opportunities for students to reflect and identify how their knowledge, skills and abilities relate to and influence their personal and professional development.
Cachia	6	Occupational psychology	Elective unit	Case study for group work Evaluate intervention	Students work in groups to formulate a strategy to analyse case studies, to design and implement an intervention, and to evaluate its effectiveness. The module encourages students to apply theoretical psychology and understanding of research methods to real-world organisational scenarios.
Elcock & Jones	4	Psychology in everyday life	Core unit	Written critique of media reports Media article	This module facilitates the development of psychological literacy in everyday life, specifically through critical analysis of media reports on psychological topics. Students are also encouraged to learn to write about psychology accessibly for a popular readership.
Griffin	6	Experiential learning	Voluntary activity	Peer mentoring Reflective assignment	Students engaged in peer mentoring reflect upon the relevance of psychology to the peer mentoring process, and to other aspects of everyday life and experience.
Hadlington	6	Employability	Core unit	Volunteering or work based Two reflective portfolios	Students' employability is developed through a credit-bearing module which gives them the opportunity to reflect on the relevance of psychology to their work or volunteering.

Continued

Table 1: Continued.

	Level in degree	Psychology Area/Unit	Core/Elective/Voluntary	Activity/Assessment	Description
Hill	6	Occupational psychology	Core unit	Enquiry-based learning Powerpoint presentation	Students are engaged in small group enquiry-based learning activities in which partner organisations provide real-life issues. Each team explores psychology-based solutions which are presented back to the external partners.
Hughes	6	Experiential learning	Voluntary activity	Volunteering	Students volunteer to run Pyramid Clubs for children aged 7-14 years with early signs of mental ill health. After training, students gain experience of working with these children, and reflect on the impact of psychological theories on real life.
Kent & Skipper	6	Occupational Psychology	Elective unit	Group work Prepare bid for service contract	Working in project teams, students produced a research-informed rationale, project proposal and advertising campaign to solve real issues faced by local employers and community organisations.
Maunder	4	Developmental/Educational Psychology	Core unit	Volunteering Report and group presentation	Students arrange an educational volunteering opportunity, and reflect on the ways in which their experiences compare and contrast to developmental and educational psychological theory.
Mayer et al.	End of level 5	Psychological research methods	Voluntary activity	Research apprentice volunteers	Students obtain hands on research experience working as interns within real psychological research teams. This develops their insight into psychological research and builds their confidence to facilitate engagement with research with the potential of real-world influence.
Pauli et al.	6	Peer-assisted learning	Elective unit	Peer-assisted learning Reflective report and report	Students are engaged in peer-assisted learning, supporting first year students with psychological research methods content, through a formal module. This raises students' awareness of their potential as psychologically literate citizens.
Reddy	4, 5, 6	Placement	Elective unit	Placement year Regular logs and poster presentation	Students engage with psychological literacy through a whole-programme approach to employability, which includes: preparation, support during sandwich placement year, and ongoing professional development and reflective activities.

Continued

Table 1: Continued.

	Level in degree	Psychology Area/Unit	Core/Elective/Voluntary	Activity/Assessment	Description
Rosenkranz	4, 6	Psychological enquiry	Voluntary activity	Peer mentoring Written reflection	Final year students peer mentor first years. This supports transition to university, social integration and academic skill development in first years, while third years gain experience of support which develops their psychological literacy and leadership skills.
Smith & Morton	6	Social Psychology	Elective unit	Problem-based learning Propose intervention	Students' ability to think like an applied social psychologist was developed through the presentation of novel problems which required them to identify the problem, analyse it, develop a theoretical model to explain it and then design an intervention.
Walker	5	Work, volunteering and applied psychology	Elective unit	Volunteering Demonstration and reflective report	StuPlacements offer students the opportunity to experience psychology in a work and community context, and assessment encourages them to focus on their own experiential learning and its relationship with psychology theory.
Watt	6	Psychological enquiry	Core unit	Group project Reports for different audiences	Final year students undertake an unsupervised group research project as their final piece of work to solve a real-world problem. This follows a year building confidence, independence and leadership opportunities. Students demonstrate to themselves and others how far they have achieved psychological literacy.
Weinberg	6	Occupational Psychology	Elective unit	Problem-based learning Case study and charge intervention	Students are supported through lectures and discussions to apply theoretical models of psychology to improve wellbeing in a work-place of their choice. They adopt the role of an organisational consultant, and reflect critically on the relevance of psychology in the real-world of work.

exposure to psychological literacy-focused units. The majority of case studies were based on elective units and some were based on voluntary extra-curricular activities, therefore missing out on the potential for value to all students (Hulme et al., 2014).

Psychological literacy lends itself more naturally to some topics than others, but as was highlighted in the HEA Psychological Literacy Guide (Mair, Taylor & Hulme, 2013) it can be covered by academics across the whole syllabus. The units where psychological literacy was covered in the Compendium range from core units such as social and developmental psychology to more applied units such as occupational psychology and mental health. While the majority consisted of more generic units developing transferable skills and learning and included: experiential learning, psychological enquiry, psychology in everyday life and employability. In fact, except for three case studies, all aimed to develop skills for employability in some way.

Teaching and learning activities were varied and included many interactive techniques, such as seminar discussion or group-work, and enquiry-based or project-based learning; although the majority of activities involved either placement, volunteering or work based learning or peer mentoring. Not all units covering psychological literacy activities were assessed. The level of assessment varied and some were novel, such as asking students to present in the Pecha Kucha format, and proposing, developing and evaluating an intervention and assessing peer-assisted learning. However, reflective pieces were the most usual form of assessment method. When designing activities and assessment educators need to make links to programme intended learning outcomes, and consider university quality assurance procedures and professional body requirements. It is also important to define the attributes of psychological literacy that activities are designed to address so we thought it would also be useful to map these on to those attributes already defined.

### Psychological literacy attributes

One of the broadest definitions of psychological literacy was proposed by McGovern et al. (2010), and although it has been considered by some academics as too broad, it is a frequently cited definition within the psychological literacy literature. McGovern et al. (2010, p.11) comprehensively identify nine attributes that link psychological literacy to those that graduates from psychology degrees should display. These are:

1. having a well-defined vocabulary and basic knowledge of the critical subject matter of psychology;
2. valuing the intellectual challenges required to use scientific thinking and the disciplined analysis of information to evaluate alternative courses of action;
3. taking a creative and amiable sceptical approach to problem solving;
4. applying psychological principles to personal, social, and organisational issues in work, relationships, and the broader community;
5. acting ethically;
6. being competent in using and evaluating information and technology;
7. communicating effectively in different modes and with many different audiences;
8. recognising, understanding, and fostering respect for diversity;
9. being insightful and reflective about one's own and others' behaviour and mental processes.

Table 2 highlights which of the case studies address each of the nine attributes. Although many of the case studies address many of the attributes to some extent, we wanted to highlight the key attributes addressed so those indicated by \* are highlighted as the two primary attributes. Therefore, it can be seen that if an academic or team would like to include reflective activities they could review the work presented by Cachia et al. or Griffin. Similarly, for activities and reflections relating to the development of a sceptical approach to psychology

**Table 2: Mapping of the case studies to each of the nine attributes highlighted by McGovern et al. (2010).**

	1. Knowledge of subject matter.	2. Evaluate alternative courses.	3. Sceptical approach.	4. Apply in work, relationships, community.	5. Acting ethically.	6. Using/evaluating information and technology.	7. Communication.	8. Diversity.	9. Reflection.
Brunsdon	x	*	x	*		x	x		
Cachia et al.	x	x		*					*
Cachia	x	*		*		x			
Elcock & Jones	x		*	x	x	*	x		
Griffin				x	x		x	*	*
Hadlington	x			*					*
Hill		x	*	*			x		
Hughes				*	x		x	x	*
Kent & Skipper	x	*		*		x	x		x
Maunder	*			*			x		x
Mayer et al.	*			x	x	*			
Pauli et al.	x				x		*		*
Reddy	x			*		x	x		*
Rosenkratz	x				x		*		*
Smith & Morton	x	*	*			x			
Walker	*			*					x
Watt	x		*	*		x			x
Weinberg	x		x	*	*				

research reported across various media see Elcock and Jones. For evaluating alternative courses of action when presented with a novel problem and to design an intervention or solution, one could review the case studies by Smith and Morton, Hill, Kent and Skipper, Watt or Brunsdon.

As Table 2 shows, the majority of case studies address the fourth and ninth attributes relating to employability and reflection, and these are as key attributes (in bold). Also, some of the attributes were covered in most case studies but in a more subsidiary

way, for example, the first and sixth attributes relating to psychology subject matter and evaluation of information. However, surprisingly some attributes were rarely featured, for example, the fifth and eighth attributes on ethics and diversity and we would like to specifically include case studies that address these attributes in the revised addition of the Compendium. While completing this mapping exercise, we realised that there were two attributes not included in McGovern’s attributes which could be added. The first is global citizenship and

although considered very important in recent reviews (Bourke, Bamber & Lyons, 2012; Cranney & Dunn, 2011), it was not specifically covered in the case studies submitted to us. The other attribute, highlighted in a recent study by Roberts, Heritage and Gasson (2015) as one of three factors that best represented the construct of psychological literacy, is a 'supporting and caring' dimension. This dimension is inherent in many learning and teaching activities in psychology and ultimately a motivator for many students to study psychology where psychology is viewed as a helping profession. When the case studies were re-reviewed, four authors (Hughes, Griffin, Maunder and Pauli et al.) were identified who specifically referred to the caring and supportive elements of their activities. These four case studies are distinctive in that they all include volunteering activities; with two focussing on peer mentoring of undergraduate students at a lower level in the degree, and the other two case studies on volunteering with school children. We will discuss the value of such activities in the next section.

## **Discussion**

A recent study by Hulme and Kitching (2015), on behalf of the HEA and the BPS, found that, within the UK, psychology undergraduate providers are keen to identify practical ways to embed psychological literacy within the curriculum, and to assess it, especially given the difficulties associated with teaching and assessing practical skills with large student numbers. This article, and the Compendium itself, are first steps to attempt to provide examples of practice from within the community of psychology educators, in the hope of inspiring others to borrow ideas, adapt them, and create their own. The next challenge is likely to be the identification of specific learning outcomes and the assessment thereof. As highlighted by Roberts et al. (2015), for the measurement of psychological literacy to progress there is a need to develop and evaluate

objective measures of psychological literacy: 'there is urgent need for the construct to be accurately measured so that student and institutional level progress can be assessed and monitored' (p.105).

We realise that the case studies included are neither exhaustive nor representative of all psychological literacy activities taking place. Indeed, we hope to continue to update the Compendium over the coming years, to continue to support undergraduate psychology providers in identifying and sharing good practice in embedding psychological literacy within the curriculum. In particular, there is a need to collate more case studies where the focus is not just on employability and reflection, but perhaps with more emphasis on those dimensions under-represented. Additionally the two attributes not included within McGovern's nine attributes should be considered. There is a clear need to include examples of good practice occurring globally and we would like to appeal for case studies that address intercultural competence and the ability to work internationally. Similarly, it is easy for students (and staff) to lose sight of psychology as a profession able to enhance the wellbeing of others, when there is a strong focus within Universities on research and publications or when assessments become less varied and narrow. We would like to include case studies that specifically focus on caring and the development of skills such as empathy. In order to facilitate the development of psychological literacy and psychologically literate citizenship within our students, it might be expected that the curriculum would contain all aspects of psychological literacy, and that all aspects would be encountered by all students.

It is clear that the most advantages will come from embedding psychological literacy across a degree programme so that all students are exposed to it, and to all of its components; if psychological literacy is only in optional modules, then many students are missing out on those important skills and ability to gain extra value. Also, psychology

educators are missing out on an opportunity to engage their students with the discipline and through making the relevance of psychology apparent, are likely to engage them far more deeply than might be the case through teaching more abstract theory (Dunn et al., 2011; Grabinger & Dunlap, 1995). Hulme (2014) notes that embedding psychological literacy in the curriculum may enhance students' intrinsic motivation to learn, by bringing psychology to life – but also by bringing life to psychology. We would like to disseminate examples of where this is occurring and how it is managed in a practical sense by a programme team or department.

Additionally, there appears to be a need for academic staff to develop their own psychological literacy (McGovern, 2011). The Research Excellence Framework (REF, 2014) exercise which took place recently in the UK has gone some way into highlighting societal impact of all research, including pure. However, not all academics are practiced in thinking about how theoretical psychology can be applied to real-world contexts. If we want our students to think psychologically, then we need to model it ourselves as academics, researchers and teachers. Looking forward, it is hoped that the current proposals for the planned Teaching Excellence Framework will ensure that such activities are recognised and rewarded.

We hope that the Compendium goes some way to start developing a bank of resources exemplifying the ways in which psychology teachers, researchers and academics have supported the psychologically literate development of their undergraduate students. It is hoped that the reader will be stimulated and inspired to use these examples, to benefit from the experiences of others and to develop their own creative solutions to embedding psychological literacy within the curriculum. If you have case studies that you wish to contribute to the next edition of the Compendium, please contact us. We are undertaking further dissemination activities over the course of 2015/16 and hope to upload a revised edition during 2016.

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# Making a difference with psychology: Reporting on a module to develop psychological literacy in final year undergraduates

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*Improving students' psychological literacy has become a key part of the new British Psychological Society accreditation. This is fuelling an emphasis on helping students to apply their degree knowledge critically and innovatively, both to enhance their chances in a competitive job market and to give them the skills to make a real-world difference. This paper describes the design, implementation and evaluation of a module that boosts psychological literacy in final year undergraduates. We invited external partners to give us examples of current problems they were facing. We then asked groups of students to design a feasible solution to the problem, supported by psychological theories and findings. The module also helped students explore the psychology behind job hunting. We found that the module had a beneficial impact on students' learning and skills and the external partners found their ideas useful and innovative. Here we outline the challenges and successes of our approach as a model for any colleagues who may be interested in developing their own teaching in this area.*

**Keywords:** *psychological literacy; employability; innovative assessment; compartmentalisation of knowledge; transferable skills.*

## 1. Introduction

**B**ETWEEN 80 and 85 per cent of psychology graduates will not continue into careers in professional psychology (QAA, 2010). If their degrees are to have relevance to our students' future lives we need to find a way to connect their studies with the fields of work they are most likely to enter. However, psychological literacy is not simply a way of helping our students in their future employment, it is a way of developing their understanding of how psychology can be used for the betterment of society as a whole (Trapp et al., 2011). In this paper we describe and evaluate a final year undergraduate module that was specifically created to develop students' psychological literacy and to better prepare them to use their psychological knowledge in the workplace and beyond.

Psychological literacy has been defined as having the ability to '...apply psychological principles to personal, social and organisa-

tional issues in work, relationships and the broader community' (McGovern et al., 2010, p.11). Specifically, psychological literacy entails:

- having a well-defined vocabulary and basic knowledge of the critical subject matter of psychology;
- valuing the intellectual challenges required to use scientific thinking and the disciplined analysis of information to evaluate alternative courses of action;
- taking a creative and amiable sceptical approach to problem solving;
- applying psychological principles to personal, social, and organisational issues in work, relationships, and the broader community;
- acting ethically;
- being competent in using and evaluating information and technology;
- communicating effectively in different modes and with many different audiences;

- recognising, understanding, and fostering respect for diversity;
- being insightful and reflective about one's own and others' behaviour and mental processes (p.11).

We felt that some of these skills were well developed during other modules within our programme. However, some were either not explored, or only addressed implicitly, making it hard for students to recognise that they had developed these skills or to apply them outside of academia. We aimed to tackle what we saw as some of the key unrecognised and underutilised psychological literacy skills (compartmentalisation of knowledge, application of knowledge and skills, and helping students to recognise their value to potential employers) through a new final year module entitled 'Making a Difference with Psychology'.

Most lecturers will be aware of the problem of compartmentalisation in students' knowledge. Vinner (1990, p.92) described this as 'situations where two pieces of knowledge (of information) that are known to an individual and that should be connected in the person's thought process, nevertheless remain unrelated'. Often students do not see material that was covered in another module or lecture as relevant to their current topic and therefore do not use it. This compartmentalisation can impede development and use of knowledge.

By their third year most students are experts at ignoring anything that isn't specifically mentioned in a particular module, or even the lectures specifically relating to the assessment. When it comes to preparing students for the world beyond academia we felt this was counter-intuitive, as they need to draw on all their knowledge and to understand the links between different pieces of information. A key aim for our module was to empower students to draw on all their available knowledge and evaluate for themselves what was relevant or applicable to the task at hand.

Florance, Miell and van Laar (2011) state that 'just about every job suitable for a

general graduate will be done better by a psychology graduate' (p.699). For example, the strong foundation in research design, scientific thinking and critical evaluation that all psychology students receive equips them to be able to undertake a disciplined analysis of available information and evaluate alternative courses of action in any number of occupational contexts. In practice, however, we observe that many students struggle to use their theoretical knowledge in an applied fashion. Although students might occasionally be asked to design an intervention or develop practice recommendations, such tasks are typically not embedded within specific, local environments and contingencies. This means that knowledge remains at a decontextualised, academic level and is not necessarily connected to work and lives outside the academic context. Our module aimed to encourage students to consider how to apply their knowledge and skills in the real-world.

Employability is 'a set of achievements, understandings and personal attributes that make individuals more likely to gain employment and be successful in their chosen careers' (Knight & Yorke, 2003). The National Association of Colleges and Employers (NACE) surveyed 260 employers and asked what skills they planned to prioritise when recruiting from the class of 2015. The most important abilities were: teamwork, decision making, problem solving, communicating effectively with people inside and outside the organisation and planning, organising and prioritising work. We wanted our module to help students to develop all of these skills (some of which are not developed elsewhere in the curriculum) but crucially we wanted students to recognise their existing employability skills.

Hulme (2014) suggests that the training psychology students receive during their degree can benefit potential employers. We would argue this can only be true if psychology graduates are able to successfully apply the discipline-specific knowledge and skills gained during their degree to novel

scenarios and contexts once they graduate. The ability to leverage their degree training following graduation relies on students recognising its relevance and utility in novel settings. Forging those links was a key goal for the module.

In this paper we will introduce the structure of our module and how it addressed what we saw as the key issues for developing psychological literacy. We will discuss the challenges we faced when implementing the module and how we overcame these. Finally, we will evaluate the effectiveness of the module in achieving our aims and make suggestions for others considering developing a similar course or embedding psychological literacy within their existing curriculum.

## **2. Making a difference with psychology**

The module's explicit aim was to develop students' psychological literacy, particularly by encouraging them to search for links between previously compartmentalised knowledge, apply knowledge to real-world situations and recognise their employability skills. The intended learning outcomes that focused on specific, demonstrable examples of those aims were to:

- Present information and arguments effectively to both academic and non academic audiences.
- Apply psychological theories and findings to real-world situations.
- Evaluate existing theories in psychology
- Identify and select appropriate and relevant information from the research literature.
- Design a real-world intervention grounded in social psychological theories and findings.
- Work effectively as part of a team.
- Critically evaluate theories and techniques for employment recruitment, candidate selection, and interviewing procedures.

### **2.1. Teaching outline**

We started by identifying some of the common career destinations for psychology graduates from career destination statistics from our institution and through informal discussions with our students. The three most popular areas were advertising, teaching, and business management. We then used these to design our course. The module's teaching schedule was as follows:

Week 1 – Advertising.

Week 2 – Marketing.

Week 3 – Teaching.

Week 4 – Learning.

Week 5 – Leadership.

Week 6 – Management.

Week 7 – Preparing for assessments and getting feedback in class.

Week 8 – Student coursework presentations.

Week 9 – Graduate recruitment.

Week 10 – Interviewing.

During the first half of the module we ran sessions covering key theories and findings in the three career areas. We focused on reminding students of theories they had already covered, rather than teaching them new content. Crucially, the classes involved extensive practical exercises in which students had to generate novel ideas, solutions or recommendations to solve hypothetical challenges using their psychological knowledge and understanding. For example, one class activity was as follows:

'A local council is streamlining its' home-care support services. Three teams of 10 support workers are being condensed into two teams of 12 (six staff will be made redundant). Use your knowledge of social psychology of groups to generate recommendations for the new team managers about how to manage the organisational change.'

During class we made sure to challenge students to support their recommendations with theories and research evidence. The aims of the classes were to refresh and extend students' understanding of relevant key theories and findings, and support them

to see how they might convert their academic understanding of a topic into something useful and beneficial to practitioners in that field.

Two sessions were then spent supporting students to prepare for the coursework assessment and assessing their presentations before the final two sessions focused specifically on exploring how psychology theories, findings and research methods are used during employment recruitment and selection procedures. The aim of the final fortnight was to help students recognise how their discipline-specific training could assist them in understanding and engaging with their imminent job hunt following graduation. Again the teaching sessions contained practical exercises; for example students were asked to advise a recruitment panel about appropriate selection methods for specific positions (e.g. leisure centre manager).

## 2.2. Assessment regime

At the start of the module, groups of between three and five students formed psychology consultancy firms. They worked in these groups during all class activities. During the first class, the firms were presented with an 'Invitation to Tender' (ITT) for contracts from local schools and businesses; one was presented for each of the career areas. For example:

- A. Design a marketing campaign to promote bedtime reading to parents of KS1 children.
- B. Design a training programme to boost the confidence of primary school teaching assistants.
- C. Design a training programme to boost the effectiveness of mid-level managers in a large logistics company.

The ITTs contained detailed information outlining the local context, scale and scope of the project, essential and desirable deliverables and logistical constraints. For the first two years in which the module ran, the ITTs were fictional. However, by the third year we began to involve external partners and ask the students to solve real challenges.

In their consultancy firms, students were asked to design the campaign/intervention/programme specified in the ITT and also use the research literature to demonstrate their ideas stood a good chance of being successful. They had to pitch their ideas in a presentation (10 per cent of the module mark) and produce written tender documents (40 per cent of the module mark). The documents took the form of:

1. Project Proposal Outline (PPO) – What they planned to do and examples of their designs (1500 words).
2. Research Informed Rationale (RIR) – Why their idea would be effective, based on theories and findings from psychology (1500 words).

Because of the novelty of the assessment, we devoted a session to discussing the students' ideas and helping to prepare them for *Dragon's Den* style assessed presentations. We also provided feedback after the presentations and gave students a few days to revise or modify their written tender documents before they were finally submitted.

We were initially cautious about running a final year module with such a large element of group work. Previous literature has suggested that group work can lead to tensions, particularly around ensuring that group members recognise the mixed talent within the group and delegation of tasks, ensuring fair participation of all group members and evaluating each individual's contribution (Barfield, 2003; Kennedy, 2006; Meyer, 2010). To negate some of these challenges, reflect individual performance and minimise social loafing we required students to give anonymous peer assessments for themselves and others in their group using WebPA software. These assessments were used to moderate group marks by + or – five per cent. This allowed us to give higher marks to students who had contributed more and lower marks for those who had contributed less. Although this was the first time the students had done any formal peer assessment, no students reported any concerns or problems. The end-of-module eval-

uation indicated that 76 per cent thought using peer assessment to moderate group marks for individuals was a good idea.

The second assessment was an end-of-module exam (worth 50 per cent of the overall module mark). The style of questions mirrored the type of questions set for the in-class activities. Students were required to write three essays in two hours to demonstrate breadth across the topics covered by the module:

Section A: This was similar to the ITT in that students were asked to design interventions and use psychological evidence to show that their idea stood a good chance of success.

Section B: Students were required to write one answer from a choice of two questions about employment recruitment and selection.

### **3. Designing teaching to promote psychological literacy**

Most final year modules are highly specialised, focused entities, that target advanced niche knowledge; for example autism or peer relationships. However, instead of introducing students to more topic knowledge, our module aimed to bring together knowledge they had learned throughout their degree, encourage them to reflect on the knowledge they already held and discover how they could use this for their own development and the development of others. The module was specifically designed to help students:

1. Overcome the perennial problem of knowledge compartmentalisation in which students do not cross pollinate their thinking and reasoning with information gained in different modules.
2. Apply their existing discipline-specific knowledge and skills to novel problems and situations to create new ideas and produce tangible impact on the world around them.
3. Recognise and leverage the unique value of their psychology training to prospective employers.

#### **3.1. Compartmentalisation of knowledge**

We wanted to empower students to draw on all their available knowledge and evaluate for themselves what was relevant or applicable to the task at hand. In our lecture material we revisited key studies and theories instead of presenting new information on the topic. We hinted and mentioned much more than we covered in detail. For example in Week 1 the students were asked to think about everything they had studied that might be useful when trying to persuade someone. We then created a list of many potential psychology theories and studies that could be referred to when designing an advertising campaign.

Throughout the module (including for the assessments) we continued to encourage them to draw on all sources of knowledge, including those from their other Dual Honours subject or elective modules. They became more consciously aware of the large store of knowledge they had developed throughout their degree and how this resource was now available to help them to develop themselves, and also those around them. Through this, we encouraged students to better understand the nature of knowledge as changing and evolving and how removing the artificial compartments between their knowledge could help them to develop exciting new ideas.

Critically, however, they needed to evaluate the relevance of any information they chose to cite and defend its inclusion and credibility. This was an important skill for the module and beyond because we 'live in a world full of data' (Porkess, 2013). Students need to be able to select relevant, reliable information and synthesise this to develop their own ideas on a large range of topics which affect their lives, for example, around voting or health care choices. To enhance this skill, during class we provided students with a pack of six to eight articles or book chapters. We would set time-limited activities that required the students to work in groups to very quickly select relevant information out of the materials provided. They needed

to develop mechanisms for quickly eliminating or including material based on the specific scenario at hand.

### **3.2. Application of skills**

We wanted our students to be able to use the knowledge and skills gained during their degree to accomplish something tangible and relevant to the world beyond academia. For us the goal was not to teach the skills that might one day be transferred but actually to help students manage the process of transferring their existing skills from the academic context to an applied setting. Various theorists have advocated experiential or constructivist models of learning to help students build flexible and transferable knowledge structures through the process of producing a tangible object (e.g. Kolb, 1984; Paavola & Hakkarainen, 2005; Papert, 1991). Both of the assessments for our module required students to design a creative solution to a workplace challenge. They needed to demonstrate that their idea was both practically feasible (drawing on research design and methods training) and likely to succeed (based on the available research evidence).

Teaching activities were designed to encourage students to more broadly apply their ability to think critically. For example, during a session on advertising the students spent time dissecting a television advert and identifying the various persuasive strategies being used. In addition to evaluating the work of other people, we also wanted them to be able to evaluate their own ideas and designs. All the ITTs contained a requirement for the students to state how they would evaluate the success or failure of their plan if it were to be implemented. A marking criterion specifically addressed the rigour and appropriateness of their evaluation strategy. This aspect of the module developed students' understanding of what 'critical evaluation' is beyond the academic context and helped them recognise the value of their skills to a potential employer.

Students responded enthusiastically to the opportunity to be creative during in-class activities. Initially we found we needed to push students to provide the empirical support behind their ideas. However, week by week we could see the students improve at grounding their ideas in an evidence base and using research evidence to generate better ideas and justify them more convincingly. By the end of the module we were confident that our students had come to appreciate that whilst 'common sense' may help them to invent novel ideas to solve real-world problems, an evidence-based, informed approach was vital for longer term success (Mair, Taylor & Hulme, 2013).

The module emphasised engaging with real-world problems and situations that the students might face in their future careers. Many students cite a wish to help as a reason for enrolling in a psychology course (Bromnick & Horowitz, 2013) and, in fact, psychology students are more likely than some other graduates to engage in voluntary work (HESA, 2012). The fact that their work could be used to make a real-world difference encouraged the students to think deeply about creative ideas which could be used, which also took into account real-world limitations. For example, when we ran the module with hypothetical ITTs, students were a little fanciful and over ambitious with their ideas. However, when we worked with external partners, the students took greater care over the feasibility of their ideas and the rigour about the theoretical underpinnings. They knew that there was a chance that their ideas could be used in the real-world and this encouraged them to think about practicality more deeply. Using genuine problems for the ITT meant the students' ideas had the potential to impact practice. For example, elements from our students' postgraduate recruitment campaigns are now being implemented. This provides additional motivation and sense of accomplishment for the students as well as being an exciting addition to their CV.

### **3.3. Recognising employability**

Employability skills were foregrounded in the design of the module and reinforced explicitly throughout. Many students do not understand the recruitment and selection process, including, how job descriptions are developed and how candidates are selected. In fact, 26 per cent of students report feeling mentally distressed due to concerns about graduate employment (NUS, 2013). Throughout the module we asked students to use their psychological knowledge to help others to solve problems. In the final section of the module we asked them to use this knowledge to help themselves manage the recruitment and selection process. We taught students more about the process, both as a psychologist and as a candidate who is actively searching for jobs. We also helped them to recognise all the skills that they already had which would help them to find a job.

In order to do this, we gave students examples of challenging interview questions and asked them how they would answer them. We then discussed the theories behind what interviewers were looking for and gave them the opportunity to answer again. In this way, we gave them more knowledge of the process of applying for jobs which will hopefully give them an advantage over other graduates. The in-class activities helped them to recognise the personal relevance of their research methods training in understanding processes such as psychometric testing. Additionally, the end-of-module exam assessed their knowledge of recruitment and selection practices from an academic psychology perspective. Students, therefore, developed their understanding of the recruitment process both as a psychologist and as a job applicant.

A key element of the module was encouraging students to think about how to present to different audiences, both orally and in their writing. During their university career almost every piece of work they do is presented for an academic audience. However, in the future they are likely to need to be

able to present to a range of audiences (NACE, 2015) and this is a key element of psychological literacy (McGovern et al., 2010). To allow them to develop this skill during class, students were asked to, for example, design a poster about promoting a positive classroom environment for children for use in a classroom and another to display for teachers in a staffroom. They had to think about language and how to present their ideas differently to these different audiences. Students also had to pitch their assessed presentation for a non-academic audience. They needed to be persuasive in encouraging the external partner to choose their idea and be aware of the fact that they were presenting to an audience which had different skills and knowledge to their own. Additionally, the written assessment involved students writing for two audiences. The PPO was written for a lay audience to describe what their idea was. However, the RIR was written for an expert academic audience to evaluate the research evidence supporting their proposal. Therefore, we helped students to think about how to present their knowledge differently depending on their audience. This is likely to stand them in good stead in their future workplaces.

## **4. Outcome**

Overall we have been delighted with the success of this module. Students were challenged by the activities but engaged well and could demonstrate that they had achieved the intended learning outcomes through the assessments.

### **4.1 Tutors' perceptions of the module**

This module was fun to teach. It was refreshing to concentrate on helping students to develop skills rather than gain knowledge. Whilst teaching this module both authors saw the students experience more 'light-bulb moments' (suddenly grasping a new way of thinking) than we have in seen during any of our other teaching. The innovative assessment proved to be an effective measure of how well

students had achieved the aims of the module. The specificity of the project proposal, combined with the need to justify their design choices with appropriate research evidence, forced students out of their comfortable module-bound compartments and into a creative mindset focused on the needs of their 'clients'.

The originality and rigour of the work produced by the students was exciting and the marking criteria were effective for grading the work consistently. As with any new assessment regime, elements were revised after first being trialled. We discuss some of the implementation challenges in a later section.

#### *4.2 Students' perceptions of the module*

Student feedback supported our own intuition that the module did achieve the intended learning outcomes. In the student end-of-module evaluation, 100 per cent of respondents agreed that the module had helped them to work effectively as part of team, 84 per cent agreed it had helped them apply psychological knowledge to real-world situations, and 92 per cent said the module helped them to understand recruitment and selections strategies.

It is particularly noteworthy that 85 per cent of students reported that they valued the applied nature of the module. In the additional comments section, one student wrote; 'I really enjoyed this module and liked how the assessment felt relevant and realistic.' Overall, informal feedback within class was very positive. It was a challenging module but the students seemed to enjoy it and particularly valued the practical element.

Many students told us they found it valuable to consider recruitment and selection within their psychology curriculum. They acknowledged that they would have been unlikely to visit the careers service to explore this. However, having being made aware of the variety of selection techniques to which they might be subjected, they now felt better equipped and more confident to tackle their own job hunt. Several students commented

that they now had a concrete example of how to demonstrate 'competencies' when applying for jobs.

#### *4.3 External partners' perceptions of the module*

The external partners stated that the input required from them was relatively small and easy to manage. They were excited to obtain a fresh perspective to help them to 'solve' a problem or develop some new ideas. They also enjoyed the opportunity to get involved with the students. Furthermore, a crossover benefit of engaging external partners is that these partners also become more aware of the real life applicability of psychological skills and knowledge. This may encourage them to consider employing psychology graduates in future.

### **5. Implementation challenges**

In this section we will briefly discuss some of the peculiarities of this module, which any colleagues who are considering adapting this to suit their own teaching context might want to bear in mind. The implementation challenges were linked to the distinctive elements of the module, namely the assessment design and engaging with external partners.

#### *5.1. Assessment design*

Many of the students were nervous at the start of the module because of the unusual focus on skills instead of knowledge, the novel assessment method and the reliance on group work in their final year. For these reasons, many students did not select the module as a first choice. However, we found that even those students who did not choose the module subsequently came to value the experience. Previous literature suggests that students take action to minimise anxiety and stress in their degree (van der Wattering et al., 2008). Similarly, novelty in assessment has been found to increase negative affect in students (Bevitt, 2015). However, we and others have found that once students complete the assessments successfully and develop new skills, they feel a sense of pride, achievement and can see the value of the

task (Young & Marks-Maran, 2014). This was certainly true for our module and is one of the reasons we feel it might work better as core module to support all students rather than a small elective option where students might be worried about choosing a ‘risky’ option compared to others in their cohort.

Group work formed a substantial part of the module as we strove to make the course-work similar to real work situations where most employees must work as part of a team. Although initially anxious about this, in-class discussions of how group work is common in the workplace combined with the use of WebPA to evaluate each student’s contribution allayed students’ fears. A pleasant surprise was the alacrity with which students embraced the use of WebPA peer assessment to moderate group marks. In fact, we increased the weighting of the peer assessment from six to 10 per cent when repeating the module. No students expressed any concerns about the use of peer assessment.

A key challenge with such a radical departure from the standard final year assessment methods was generating appropriate and robust marking systems. Before the very first use of the Contract Tender assessment the first author created a detailed set of marking criteria, including specific indicators of performance for all grade boundaries. As an example, one of the four

marking criteria for the PPO is included in Table 1 below.

In practice we found the criteria almost completely removed ambiguity about marking decisions and provided an effective framework for evaluating innovative and imaginative work by students. It also helped to focus student attention on the key skills they needed to demonstrate.

We did not develop unique marking criteria for the exam questions, choosing instead to be guided by the normal academic judgement used when marking. We felt it was important to ensure parity across all final year modules so as not to advantage or disadvantage students taking our module. During the first year of exam marking, both authors were slightly disappointed by the overall quality of student work. We felt that they struggled to show the same creativity that they had shown during group work.

We found that marks in the group coursework report were higher than those in the individual exam, which supported our observations that group work enhanced students’ performance in these applied tasks. On this basis we felt that more support was needed to help students transition from group-based applied thinking – in which different students may have been responsible for the creative and research focused aspects – towards individual applications of knowl-

**Table 1: Design a feasible project that could realistically be implemented.**

Fail (<40%)	The proposed project is not feasible. It could not be practically or realistically implemented.
D (40–49%)	Feasibility issues have either not been addressed or have been given only minimal consideration. The project could not easily be implemented.
C (50–59%)	Considers some practical concerns and the project is broadly feasible. Some implementation issues remain. No alternatives have been considered.
B (60–69%)	The project is feasible and the proposal outlines how this could be achieved. There is some evidence that alternatives have been considered.
A (>70%)	The project is feasible and the proposal outlines how this could be achieved. It shows awareness of potential areas of difficulty. Some indication is given for how problems might be overcome.

edge required for the exam. The following year we changed the exam to a seen paper to give students more time to cultivate their ideas and ensure that they used all the skills they had developed in the module. This had the intended effect of giving students more time to be creative and more opportunity to locate and evaluate relevant literature. The exam answers did then better reflect student attainment of the learning outcomes.

Presenting to a non-academic audience was also challenging for students, but they coped admirably. During years where the ITTs were fictional, we saw students in suits give elaborate performances which were very creative. Unexpectedly, the flamboyancy of earlier years vanished when the external partners were invited to attend the presentations. We can't be sure if this is down to individual differences in the cohort or the additional nerves associated with presenting to an external audience but it does indicate that students might need more encouragement and support to break the mould in front of a new audience.

### **5.2. Working with external partners**

For the first and second years in which we ran the module we developed fictional ITTs, designed to encourage students to engage with the theories that had been discussed in the sessions. This worked well and is a simple (and more controllable) way of running the module. However, in the third year, we decided to involve external partners in the module to make it more applicable to real-world settings. We worked together with these external partners to design ITTs based on real-world problems. The external partners were recruited from contacts which we already had in place, through research groups, schools and through a social enterprise network. Because of existing contacts, recruiting external partners has not been particularly difficult for us, but is a potential challenge for the module and needs to be carefully considered.

The input required from the external partners was around four hours of their

time. Partners were recruited at outreach events, where we gave them information about the module and asked if they might be interested in being involved. If they were interested, we invited them to a planning meeting to explore their workplace challenges and to draft out the ITT. This was then sent to them for approval and they could make changes if required. The partners were then asked to attend the student presentations and ask questions, which took approximately two hours depending on the size of the class. With the students' permission, we made a copy of their tender documents available to the external partners. All of the students agreed and were excited that their ideas could have a real-world impact.

As well as engaging the external partners, it was also important to manage their expectations. For example, in one year no students chose the Leadership ITT. We think this was because it was the final of the three topics covered in the sessions and, therefore, it gave the students less time to work on developing their ideas. We did make partners aware that this could happen but of course it was disappointing for them. We have decided that we will use the same ITT the following year and will change the order of the topics in order to give all ITTs a similar chance of being chosen.

We also had to manage partner's expectations of the difference between having a group of students compared to a professional company responding to their ITT. We had trained the students in delivering presentations and designing interventions but of course they were not yet at a professional standard. For example, while we had extensive discussions with the students about the tone of their presentation and documents, there were times when thoughtless phrases such as 'Teachers don't know the research' were uttered. Teaching was, therefore, a good choice of topic as teachers were used to giving feedback in a constructive fashion and were less fazed by these slips than others may have been. This illustrates the importance of considering who to invite as an external

partner and having discussions with both students and external partners about expectations and appropriate behaviour.

Overall the external partners were a very valuable addition to the module and offered students a rare opportunity to solve real-world problems. It is, however, important to consider how to develop these external contacts and to engage fully them in the process.

## **6. Summary and recommendations**

Although our module has so far operated as an elective module, our recommendation would be to consider offering it as a core component of a psychology degree. We noted that the novelty of the assessment could be a barrier to students selecting the module. Obtaining the highest possible overall mark in their degree is often more important to students than developing new skills. A module such as this may be seen as a risky choice as it involves novel assessments and group work. However, upon completing the module all our students recognised that they had fostered skills that would stand them in good stead in the workplace. Indeed, despite low initial take-up numbers, the end-of-module feedback indicated it had been very positively received in comparison to most other elective modules on offer. As a core module, all students would have the same opportunity to develop important employability skills that are not covered elsewhere in the curriculum. In the increasingly competitive graduate job market it is becoming ever more important to ensure that all our students are able to recognise and articulate the value of their psychological training to any future employer.

We chose our three topics based on a combination of staff expertise, career destinations and informal conversations with students. However, tutors could explore different topic areas, for example law enforcement and criminal justice, healthcare, sports and exercise or coaching, depending on the specialist knowledge of staff and the interests of students and external partners. As the module does not necessitate developing a

wealth of new material refreshing, synthesising and applying knowledge, it would be possible to change quite regularly to allow students to explore a range of topics.

Our experience with this module revealed that students really valued explicitly exploring how the knowledge and skills gained during their degree would be useful to them, both when seeking graduate employment and once they have entered their chosen career. Exploring links between psychological topics and workplace scenarios could be embedded in core lectures and many of the in-class activities we developed could be incorporated into seminars throughout the degree. Whether through a dedicated module like ours or scattered across the curriculum, we recommend that others consider how to help students apply psychological knowledge in their future workplace and graduate job hunt as this was the key element which students seemed to enjoy and value.

The contract tender assessment need not focus exclusively on employment scenarios. Instead, ITTs could be developed to allow students to develop strategies for tackling the ethical and social challenges present in our communities and wider society. If this approach were to be adopted, then there would be less of a need to involve external partners, though this would still be desirable if possible. Thus, our approach could help develop graduates who are able to think both critically and innovatively to make a real-world difference on a larger scale (McGovern et al., 2010).

As a concept, psychological literacy continues to gain both traction and importance as part of degree level teaching. It is now referenced in the BPS accreditation criteria and universities are increasingly likely to be required to explicitly demonstrate how they support students to gain relevant skills beyond the independent final-year research project and ethical awareness instruction. As such, this module provides one model for how psychological literacy can be embedded within the undergraduate curriculum.

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# Using oral exams to assess psychological literacy: The final year research project interview

Mark Turner & Marina Davila-Ross

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*The ability to reason scientifically and communicate research appropriately is central to psychological literacy. Scientific research has little value unless scientists are able to convey results and their consequences clearly to others. In this study, we outline a method of assessing the development of psychological literacy in undergraduate students. Data from three cohorts undertaking assessed interviews as part of a final year research project unit are examined. This assessment evaluated students' ability to explain the purposes and findings of their research to a lay audience, to articulate the conceptual basis and methodological background to their approach, and to reflect on their own development during the research process. Analysis of marks and feedback from the assessment suggests it provides a reliable means of evaluating skills that contribute to psychological literacy in a manner that is both educationally acceptable to students and a valid indicator of their general level of course performance.*

**Keywords:** oral assessment; final year project; student employability.

## Introduction

**T**HIS STUDY presents and evaluates the use of oral examinations as a means of assessing undergraduate psychology student learning during their final year empirical research project. Learning how to communicate scientific findings to others in speech as well as writing, is an important part of the development of undergraduate psychologists which can contribute to their future employability. In this study, we examine the reliability and validity of this form of assessment and consider some of the educational and practical implications of using oral examinations to assess psychological literacy.

Psychology remains one of the most popular degree choices with over 100,000 applications made annually to study the subject at UK universities (Universities and Colleges Admissions Service [UCAS], 2015). The continued expansion of higher education, to which the subject area of psychology contributes, is founded on the premise that university study will reward students in the long term through the opportunity to progress into better paid, highly skilled employment

(Morrison, 2014). Growth in participation rates has placed an increased expectation on higher education institutions to supply graduates who are ready for the demands of the modern workplace and possess the professional skills that employers want (e.g. Docherty & Fernandez, 2014; Tomlinson, 2010). An additional challenge for the psychology subject area is that its graduates are known to take longer to progress into graduate careers following university and less than 20 per cent are thought to eventually become professional psychologists (e.g. Trapp et al., 2011; Van Laar & Udell, 2008). In a survey of four cohorts of psychology graduates between one and seven years post-graduation, Coulthard (2013, 2015) found that only 40 per cent of psychology students were in full-time employment 12 months after graduating increasing to 67 per cent four years after graduation. Moreover, only 60 per cent of psychology graduates reported that having a degree in psychology had been necessary for obtaining their current employment, confirming that a large proportion of psychology graduates may not explicitly make

use of subject knowledge from their degree following graduation (Lantz, 2011). It is, therefore, a growing concern within higher education to provide opportunities for students to gain work-related skills and experience during their degree (Quality Assurance Agency [QAA], 2014); and for psychology students in particular, to incorporate professional development as a core standard within undergraduate curricula (British Psychological Society [BPS], 2014).

One approach important to the development of the employment potential of psychology students is the concept of 'psychological literacy'. Psychological literacy is a broad concept that is assumed to encapsulate employability skills, global citizenship and scientific understanding (Cranney et al., 2013). By emphasising to students the scientific, evidence-based reasoning implicit within the study of psychology and its value and relevance to different professions, it is possible that the employability of graduates can be enhanced (Mair, Taylor & Hulme, 2013). Since psychological understanding might be used beneficially by graduates to help others function more effectively and ethically within the workplace or wider society, it is necessary for providers of psychology programmes to present students with opportunities to 'apply their skills and knowledge to authentic problems in a range of contexts that demonstrate the broad application of psychological theory to real life and work situations.' (Mair et al., 2013, p.6). The challenge faced by education providers then is to consider how psychological literacy might be better integrated into undergraduate degree programmes.

Several distinct but related interpretations of psychological literacy exist (e.g. Cranney et al., 2011; McGovern et al., 2010; Trapp et al., 2011) which indicate the concept to be both broad and complex (Roberts, Heritage & Gasson, 2015). Central to most definitions lie four key principles whereby the demonstration of psychological literacy should include: (i) fluency in the core knowl-

edge, concepts and practice of psychology; (ii) use of scientific inquiry and critical thinking; (iii) ethical and socially responsible actions and behaviour; and (iv) professional awareness, development and reflection.

A further pervasive theme evident in most definitions of psychological literacy and implicit within the sub-principles is an overarching requirement for effective communication. Whether presenting or reporting research findings, communicating psychological beliefs to the public, or interacting successfully with others, someone who is 'psychologically literate' should be capable of expressing relevant information in a manner appropriate to their intended audience. As Trapp et al. (2011) have indicated, central to the notion is communicating the value of psychology in everyday contexts, such that when engaging with communities, employers and the media the real-life applicability of psychological skills and knowledge can be conveyed and common misperceptions about psychology can be challenged. Since many problems within contemporary society (e.g. obesity, work-life balance, radicalisation) are behaviourally based, the more those trained in psychology are able to communicate their understanding to others, the greater the net benefit to society may potentially be (Cranney, Botwood & Morris, 2012).

Whilst there is common agreement that psychological literacy should be a primary outcome of an undergraduate psychology education both in the UK (Mair et al., 2013) and elsewhere (e.g. Cranney et al., 2012; American Psychological Association [APA], 2013), the abstract and multi-dimensional nature of the construct presents a barrier to its integration into curricula with some authors suggesting there is an urgent need to more clearly specify an operational definition of the concept, its boundaries and how it can be measured in order to improve its real-world utility (Roberts et al., 2015). As Halpern and Butler (2011) argue, simply calling for students to be educated about psychological literacy may prove hollow unless an effective means of assessing how

well students develop this collection of attributes is developed. Assessments that evaluate psychological literacy are, therefore, required.

Some attempts at examining psychological literacy in undergraduates have explored its links to more generic graduate skills and abilities. Morris et al. (2013) evaluated a cross-section of undergraduates, finding that whilst the importance of psychological literacy was rated highly by students, the extent to which students felt they had developed these skills during their studies was rated only moderately. Using psychometric test responses from over 500 students in an Australian university, Roberts et al. (2015) concluded that psychological literacy could best be characterised as consisting of three primary components: reflective processes, general academic attributes, and the perception of psychology as a helping profession, although scores on these dimensions did not correlate strongly with students' self-rated assessment of nine individual characteristics derived from the definition of psychological literacy proposed by McGovern et al. (2010). The authors conclude that further objective means of identifying psychological literacy are required.

Potential activities that might provide a means of embedding psychological literacy within undergraduate curricula have been considered by some authors. For example, Mair et al. (2013) identify several concepts common to undergraduate psychology syllabuses (e.g. social influence, mental health, resilience) where students might be able to use their knowledge to benefit others, whilst Taylor and Mair (2013) suggest three different ways of encouraging students to reflect on social psychological aspects of their learning including tasks exploring environmental behaviour, teamwork-based activities and mock interviews. Trapp et al. (2011) proposed setting applied problems within businesses or the local community such that employers and students are able to see how taught materials have real-world relevance. The authors also recommend that under-

graduate curricula should require a diverse range of assessment practices so that all skills defined in the psychology benchmark statement (QAA, 2010) are evaluated. Moreover, to improve the employability of graduates, students should be encouraged to *communicate* the skills they develop during their degree to others, rather than assuming the abilities that psychology graduates possess will be publically recognised. It follows that the development of assessments that promote an evaluation of the multi-dimensional components of psychological literacy and also allow students to practice the communication and demonstration of these attributes will be key to successfully embedding and enhancing its inclusion within undergraduate curricula.

Several authors have suggested scenario-based approaches to assessment whereby students are asked to adaptively apply psychological concepts to explain events or propose solutions. Such activities might include evaluating newspaper editorials or advertisement claims (e.g. Halpern & Butler, 2011), writing letters intended for a non-psychological audience outlining the evidence for and against a particular course of action (e.g. Cranney et al., 2013) or case study analyses which require students to implement a strategy or propose an intervention (e.g. McGovern et al., 2010). A common issue with situated learning experiences, however, is that they can be difficult for students to accomplish in a limited time frame without over trivialising the nature of the task. This makes the standardisation of such tasks for the purpose of assessment challenging given the ambiguity which exists in the potential approaches to each topic and the variable outcomes that may be obtained. Cranney et al. (2013) advocate a portfolio-based approach, where students are required to build up evidence and reflect on their skills development across several modules on their degree, or the use of 'capstone' modules which require students to apply the knowledge and skills learned from earlier in their studies. The nature of capstone units,

however, is known to vary widely across institutions and may be taken to include internships, research projects, outreach experiences or a mixture of these options (Weimer, 2012). Therefore, the need exists for more consistent methods of assessing psychological literacy to be developed which might readily fit into undergraduate UK degree programmes and which are relevant to the diverse range of attributes which contribute to the concept.

One possibility for the assessment of psychological literacy which also satisfies the related goal of contributing to the development of employability skills in students is the use of oral (*viva voce*) examinations. Using oral examinations to assess student competencies is well established in many subject areas including medicine (e.g. Evans, Ingersoll & Smith, 1966) and law (e.g. Butler & Wiseman, 1993). *Viva voce* examinations also have a long tradition in the assessment of doctoral research and have been shown to increase self-perceptions of academic competence in PhD students (Jackson & Tinkler, 2001).

The pedagogic benefits of interview-based oral examinations have been well researched. In most forms of the assessment, a set of questions are developed that cover core aspects of domain knowledge and skills that students are expected to demonstrate. Both the students' depth of comprehension of this content and their ability to communicate this effectively can, therefore, be evaluated (Joughin, 1998). The approach allows examiners to explore topics in direct conversation with students such that knowledge can be further interrogated and questions can be clarified, maximising opportunities for students to demonstrate their full potential. Students are forced to rely on their own words and understanding strengthening the academic integrity of the assessment and reducing the potential for plagiarism. Oral assessment is also thought to improve depth of learning with some evidence suggesting that students prepare more thoroughly for this form of assessment to help improve con-

fidence in their ability to deal with questions and to avoid feeling foolish in front of the examiner (Butler & Wiseman, 1993; Joughin, 2003). The presence of examiner panels with whom the student interacts directly, whilst providing motivation, can also lead to stress in students and may impede their ability to perform to their best, although research evidence that might confirm a direct link between anxiety levels and students' oral performance in *viva voce* examinations appears inconclusive (Arndt, Guly & McManus, 1986). A further factor to consider in the use of oral examinations is the unavoidable lack of anonymity for the student, which may contravene assessment protocols in some universities. As a consequence, assessments may be influenced by prior knowledge of the student or be subject to other sources of bias similar to those found in selection interviews (e.g. Arvey, 1979). To protect against this, safeguards are required to standardise the interview process, assessment criteria used, and allocation of examiners to students.

Oral examinations have been used successfully to evaluate business communication skills in human resource undergraduates (Burke-Smalley, 2014), assess pharmaceutical students' confidence in care settings (Sibbald, 1998) and evaluate understanding of customer service relationships in marketing undergraduates (Pearce & Lee, 2009). However, evidence regarding the extent to which oral assessments are indicative of a student's overall level of ability appears mixed. Oakley and Hencken (2005) used 30-minute assessed interviews with undergraduate sports science students, finding performance on the assessment where six interview questions were drawn at random correlated positively with end-of-year exam scores. Torke et al. (2010) compared the performance of medical students on a written theory examination with their performance during a 10- to 15-minute *viva voce* assessment that contributed to the same module. Students were given a 'viva card' of preliminary interview topics whilst waiting their turn to take the

examination in an attempt to allow students to mentally prepare, although examiners deviated to other topics later during the examination. The authors found that whilst the ratio of students passing and failing each assessment did not vary, overall scores on the two assessments did not correlate well, concluding that whilst viva voce examinations may be suitable to differentiate between top performing students where more in-depth questions can be posed, they should not be used in isolation to determine whether a student passes or fails a subject.

An old but comprehensive study conducted by Evans et al. (1966) similarly found no correlation between 20-minute oral examinations and an objective written examination taken two days later by students on the same module. In this study, medical students were interviewed twice by different pairs of assessors. Good agreement ( $r > 0.7$ ) was found between junior and senior physicians within each interview team, and between different teams of assessors. Oral examination grades also correlated positively with the total amount of time each student spent talking and the number of words spoken during the interview which the authors attributed to more fluent speakers being better able to organise their thoughts. However, no relationship was found between spoken interview performance and grading of the same interviews from verbatim written transcripts, when marked independently two months later; described by the authors as 'oral parallax' (p.654) given the shift in evaluation of the same information when considered via a different medium. More recently, Huxham, Campbell and Westwood (2012) also found undergraduate biology students scored significantly higher when assessed by oral examination compared to students who answered the same questions by written examination, which the authors suggest may be related to an increased sense of professionalism in the oral context. This pattern held for questions that required scientific analysis and those which asked students to reflect on skills development.

The existing literature shows that oral examinations are used across different academic disciplines to improve student skills where the assessment format has clear vocational relevance, although evidence regarding the predictive validity of oral examinations as an indicator of general course performance is less clear cut, and may be dependent on the interview methodology used. In addition, relatively little is known about the utility of oral examinations on undergraduate courses within the psychology subject area, despite the obvious importance of oral communication skills within the profession. The use of interviews to assess learning from undergraduate research projects not only fits well with the core aspects of the psychology subject benchmark (QAA, 2010) but also encourages students to engage in social conversation about the validity of the scientific conclusions, a central component of psychological literacy (Cranney et al., 2013). Whilst most scientists consider the reporting and visibility of their research in broadcast and print media to be important (Peters, 2013) this process can often lead to the misrepresentation of findings through over-simplification, exaggeration or omission of critical detail, such that some researchers feel ill-prepared in the art of public communication (Kaye et al., 2011; Wien 2014). Misconceptions about psychology, outside of the scientific discipline, are common in everyday society and it is important for psychologists to help develop public understanding by challenging incorrect assumptions. It follows that engaging undergraduates with opportunities to explain research findings in a manner that is appropriate to different audiences should be a fundamental goal of undergraduate programmes in psychology. The ability to present scientific arguments and communicate findings accurately will be key to improving the scientific literacy of the general public, and may help counter public scepticism about psychology and its ability to address significant issues within society. As Crowe (2012, p.58) points out, 'Psychology

leaders, educators, and graduates should be capable of “giving psychology away” to receptive members of the public, many of whom will have influence on their immediate and wider communities.’

The current study, therefore, seeks to investigate the use and effectiveness of oral examinations as a means of assessing the psychological literacy of undergraduate students by examining their application to a substantial core research component of all BPS accredited courses, the final year research project. The specific aims of the study, were:

- To examine the validity of assessed oral project interviews to predict students’ performance elsewhere on their psychology degree.
- To examine the reliability of oral project interviews as an assessment method where different teams of interviewers are used.
- To examine students’ views on the acceptability and educational impact of oral project interviews.
- To consider the impact of prior mock interviews on students’ preparedness and perceptions of assessed interviews.

## Method

### Sample

Participants were 454 final year undergraduate students enrolled on two BPS accredited undergraduate psychology programmes at one university within the UK. As part of these degree programmes, all students complete a compulsory 40-credit empirical research project unit, equivalent to 33 per cent of the total marks available during their final year.

Data from three cohorts of students are examined of whom 443 attended an assessed project interview as part of the final year project unit. The remaining 11 students did not complete the assessment on grounds of reasonable adjustment, extenuating circumstances on the day of the interview or non-completion of the academic year. The final data sample, therefore, comprised those

graduating in 2013 ( $N=163$ ), 2014 ( $N=155$ ) and 2015 ( $N=125$ ), of whom 72 (16 per cent) were male and 371 (84 per cent) were female.

### Project interview design and preparation

The project interview was designed to meet three key objectives. Firstly, to allow students to demonstrate their ability to explain aspects of their final year project as if to an interview panel unfamiliar with their work and with only a general awareness of the discipline. Secondly, to give students an opportunity to expand on the written account of their project with respect to the process of conducting research and identifying learning from this culminating aspect of their degree. Thirdly, to assess the extent to which students’ interview performance was consistent with the standard of scientific reasoning and communication skills expected of a graduate of psychology.

Project interviews lasted for 15 minutes. All interviews were timed so as not to extend beyond this limit and audio recorded for the purposes of later mark verification. Students were advised that whilst interviewers would be friendly and try to place them at ease, the conduct of the interview was a formal summative assessment and they should respond accordingly. Interviews started and finished at a designated time, such that late arrivals would have time deducted from their interview.

The interview assessment contributed 10 per cent of the student’s overall mark for the project unit, with the remaining 90 per cent being derived from a written project report of up to 8000 words. This weighting was chosen to strike a balance between limiting student anxiety arising from the credit value of the interview whilst still providing students with an opportunity to improve upon the overall degree class of their project. The assessment regulations of our institution also meant that a student could not successfully pass the project unit without attempting all assessments on the unit. Interviews were held approximately seven weeks after students had completed and submitted

their written project reports. However, to limit the diverse effects that a good or bad report mark may have on student anxiety or motivation during the interview, the decision was made not to release report marks to students prior to interview.

Students were informed prior to the interviews that they should address their answers as if to an intelligent lay person or professional who was not familiar with the specifics of their study. Project supervisors were not included on interview panels, such that interviewers were naive to the nature of each student project. Students were also informed that they could bring a copy of their project report to the interview if they wished, but that this was not necessary and not advised. It was not the purpose of the interview to examine the detailed information in their work, but their ability to explain their work that was of primary importance. For this reason, interviewers read only the abstract of the student's work prior to each interview, to familiarise themselves with the basic nature of the study conducted.

As Oakley and Hencken (2005) recommend, student anxiety can be reduced by making students more familiar with the structure and style of the assessment beforehand. To help students prepare for the interview, online tutorial materials were developed consisting of a guide to the interview process, three videos of full interviews conducted with ex-students showing good and bad answers to different questions, a pool of practice interview questions, and an online forum to which students could post questions. Additionally, a special project interview workshop was held six weeks prior to the assessment period where marking criteria were discussed and any further queries could be addressed. Students were also given the opportunity to practice responding to interview questions via a mock interview with their project supervisor after completion of their project report. Supervisors were asked to make use of the practice questions available within the online tutorial for this purpose.

### ***Operational procedures***

Interviews were held over a three-day period two weeks prior to the students' end-of-year examinations. All interviews were held in the same location comprising six adjacent research rooms within the psychology department, with students first being asked to report to a central waiting area from where they were collected. To help standardise practice between different interviewers, all interviewers attended a group training session covering expected interview questioning and marking protocol prior to the main interviews.

Each student was assessed by a panel of two academic staff. The first interviewer acted as the lead interviewer, covering set themes from a pre-defined list of compulsory questions such that all candidates were asked the same core questions. The second interviewer acted as the primary marker, making notes about the candidate's answers and scoring their responses in each question category as the interview progressed. If time permitted and where relevant to the candidate's earlier responses, the second interviewer would also ask follow-up questions selected from a supplementary list of questions, used by all interview teams. Interviewers were permitted to be encouraging and supportive by repeating or rephrasing questions if required, but were not permitted to assist students beyond this.

Depending on cohort size, five or six interview teams were used to assess all students, such that each team undertook between 25 to 30 interviews over a three-day period. First and second interviewers were systematically rotated over the three-day assessment period such that each first interviewer marked with each second interviewer. The reliability of oral assessments has been shown to increase when multiple examiners are used (Wass et al., 2003). This arises since sharing perceptions helps interviewers become more aware of the inferences they make, information is less likely to be missed, and bias in decision-making is reduced since interviewers provide checks on each other (Campion, Palmer & Campion, 1997).

Students were allocated to scheduled interview slots which exceeded the expected duration of the interview so that the interview procedure could be explained to the student, to allow for overrun, and to provide time for the interviewers to agree marks and complete a feedback sheet with comments for the student, before starting their next interview. Assessment and feedback was therefore completed instantaneously, with both project report and interview results being made available to all students two working days following the date of the last interview sessions.

### ***Interview questions and marking criteria***

Students were asked questions structured around five main themes. The five themes required students to: (i) give a concise non-specialist explanation of their project; (ii) explain the rationale for their study; (iii) demonstrate an understanding of methodological issues concerning their study; (iv) provide an interpretation of their findings; and (v) reflect on what they had learned from the project process. Themes were chosen to reflect the nature of questions that a recent graduate might reasonably be expected to answer about their research project when attending a selection interview following university.

Each theme consisted of at least two compulsory questions asked by the lead interviewer and a further three supplementary questions that could be asked by the second interviewer. Using the same question pool and asking questions in the same order whilst limiting requests for elaboration is known to improve the consistency of the interview process (Campion et al., 1997). However, some variety in follow-up questions was felt desirable to help reduce the possibility of questions being passed between students tested on different days (Oakley & Hencken, 2005). Interviewers attempted to devote around the same amount of time to each theme, with the second interviewer monitoring the elapsed time and moving the discussion on, as required.

To facilitate the opening of the interview, the first two questions were disclosed to students before the assessment. These were: 'How would you explain your project to a non-psychologist?' and 'How did the idea for your project emerge?' Student responses to each of the five interview themes were graded by the second interviewer on a discontinuous percentage scale, with a mark being awarded for each theme. An overall mark was then calculated by the second interviewer, determined as the mean score of these five themes plus an additional mark based on their global assessment of the candidate's performance during the interview.

The lead interviewer, blind to the marks awarded by the second interviewer, would also independently provide an overall mark for the interview. A final interview mark was then agreed following discussion between the two interviewers, taking into consideration the first and second interviewer marks and interview marking criteria. Marking criteria in the first class category for each interview theme plus the global assessment of the candidate are shown in Table 1.

## **Results**

### **Concurrent validity**

To examine project interviews in the context of students' performance elsewhere on their degree, agreed interview marks were compared with project report marks, final year course averages and students' overall degree classification upon graduation. Paired-samples *t*-tests were used to examine whether interview and project report grades differed for each student. When all cohorts were aggregated, no significant difference was found between interview marks ( $M=67.2\%$ ;  $SD=8.9\%$ ) and project report marks ( $M=66.6\%$ ;  $SD=7.1\%$ ),  $t(437\ df)=1.27$ ,  $p=.21$  n.s.,  $d=0.07$ . This was also true when interview and project marks were examined separately for each cohort (Table 2).

Significant positive correlations, with a moderate effect size were found between project interview and project report marks ( $r_{ip}$ ). In addition, strong positive correlations

**Table 1: Marking criteria for the final year project interview (five main interview themes plus global candidate assessment).**

Interview theme	Marking criteria (first-class response category)
1. Explanation of topic	<p>The student was able to summarise the study and its findings in a succinct and sophisticated manner. Critical analysis of existing literature was excellently used to provide a convincing rationale for the study and the methods. The rationale for the study was clearly placed within an appropriate context. The responses revealed a strong understanding of the significance of the research.</p>
2. Choice of topic	<p>The student clearly explained the development of the study idea (e.g. from previous research) in a highly sophisticated, concise and logical manner. The responses revealed a strong intellectual interest in theory and scientific ideas.</p>
3. Understanding of methodological issues	<p>All relevant information concerning the method and procedures (including identifying issues) were expressed in a simple but sophisticated way, without superfluous detail or repetition of information. The information was logically structured and easy to understand, and the choice of design decisions with respect to particular methods, analyses or approaches are readily understood by the student. There may have been evidence of advanced methodological considerations (e.g. use of power analysis to determine sample size). The student is able to articulate and evaluate the strengths and weaknesses of the chosen methodology and analyses which are accurately interpreted and expressed using recognised language.</p>
4. Depth of interpretation and scientific discussion	<p>The student is able to provide a convincing description and evaluation of their major findings with respect to its practical/theoretical implications, as well as showing an awareness of the potential broader applications of their work. The origins and scientific contribution are clearly placed and understood. The responses given are coherently linked to the issues raised by the project's rationale. The thoughts expressed do not include undue or unsubstantiated claims or speculations. Any criticisms expressed or suggestions for further work are genuine and insightful and naturally emerge from the findings of the study. The response provides a sophisticated analysis of their findings – overall, they demonstrate an excellent understanding of the strengths and weaknesses of their research.</p>
5. Learning derived from study	<p>Responses indicate that the student fully understands key challenges faced within the research process. The student critically evaluates different stages of their study and comes up with convincing, elegant, and/or original solutions on how to improve it. Responses show that the student is able to reflect on their plans and expectations prior to the study and the extent to which these were met. The student is able to illustrate their skills development during the conduct of project using thoughtful examples (e.g. with respect to employability or research skills, etc.). S/he also provides genuine ideas for improvements or future studies that build on their work and are able to explain convincingly why such future studies would be important to conduct. Convincing statements were provided reflecting on the broader application of the subject knowledge.</p>

Table 1: Continued.

<b>6. Global assessment of candidate</b>	<p>The student demonstrates excellent communication skills, a well informed scientific dialogue, and an overall level of competence expected of a graduate. Responses to the questions are clear and well organised with little redundancy, and contained an appropriate balance of description, critical analysis and evaluation. The purpose of their research was clear and their explanations show a clear logical structure with strong attention to detail in every aspect of the interview. Responses consistently were focused on the questions posed. The relative length of the answers provided was appropriate. Overall, the student made a positive impression on the interviewers, which would convince them (in an employment context) to strongly support an application from the candidate towards a graduate position or further academic study.</p>
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+ Grades for each interview theme were awarded on a discontinuous percentage scale. To simplify grading, one of three numerical values only could be assigned to an answer in each degree class band, with the exception of the first class band where four numerical values were used. The numerical values used for grading were: 0%, 20%, 35%, 42%, 45%, 48%, 52%, 55%, 58%, 62%, 65%, 68%, 74%, 79%, 85%, 95%.

Table 2: Comparison of project interview marks, with project report marks and final year average marks for three student cohorts.

Year of Graduation	N	Project Interview		Project Report	Interview vs. Report (paired-samples <i>t</i> )	Validity Coefficient	
		Mean (SD)	Mean (SD)			<i>r<sub>ip</sub></i>	<i>r<sub>iv</sub></i>
2013	163	20% – 95%	65.8% (8.6%)	66.5% (6.9%)	-0.96 n.s.	.38**	.58**
2014	155	55% – 95%	68.3% (8.1%)	67.1% (6.6%)	1.70 n.s.	.40**	.50**
2015	125	42% – 95%	67.7% (9.8%)	66.3% (8.1%)	1.53 n.s.	.37**	.49**

Notes:

*r<sub>ip</sub>* Pearson correlation between project interview (%) and project report mark (%)

*r<sub>iv</sub>* Pearson correlation between project interview (%) with final year course average (%)

\*\**p* < .001

were found between interview marks and final year course averages ( $r_{iy}$ ). These data suggest that students who fared better during the project interview also tended to submit better quality project reports, with the absolute difference in grades achieved by each student being small. Interestingly, interview marks were found to be a better predictor of overall course performance than project report performance, with the value of  $r_{iy}$  (.52) being significantly larger than value of  $r_{ip}$  (.38) when calculated across all three cohorts ( $Z=2.35$ ,  $p=.018$ , 2-tailed).

Since degree classifications are not solely derived from final year average marks within our institution, further analysis was conducted to examine the association between interview performance and final degree class. For the three cohorts combined, 127 students (29 per cent) achieved a first class interview grade, 229 (53 per cent) achieved an upper second class interview grade, 72 (17 per cent) achieved a lower second class interview grade and four (one per cent) were awarded third class or fail grades. Cross tabulation of interview class against final degree class showed a significant association  $\chi^2(9, N=431)=90.32$ ,  $p<.001$ , Cramer's  $V=.264$ , such that for 59 per cent of all students their interview class correctly predicted their final degree class.

### **Reliability**

Interviewer reliability was considered by examining levels of agreement between first and second interviewers, as well as grading differences between different interview teams.

A significant difference was found in marks awarded by the first interviewer ( $M=66.5\%$ ;  $SD=8.3\%$ ) and second interviewer ( $M=67.1\%$ ;  $SD=8.9\%$ ),  $t(391\ df)=3.78$ ,  $p<.001$ , although the effect size was small ( $d=0.06$ ). On average, second interviewers graded half of one per cent mark higher than first interviewers. When data for each cohort were examined separately, differences between first and second interviewers were found in two cohorts only (Table 3).

Examination of the relationship between marks awarded by first and second interviewers showed strong positive correlations ( $r\geq.94$ ) within each cohort group, suggesting pairs of interviewers tended to exhibit similar grading patterns across different candidates (i.e. good inter-rater reliability). The overall consistency in marks awarded within the same interview team, therefore, appears more influential than the absolute differences in marks that occurred between first and second interviewers.

A further threat to reliability is possible bias between interview teams, whereby some marker pairings may grade more harshly than others. Agreed interview marks were therefore examined across different marker pairings using independent groups analysis of variance (ANOVA). No significant differences in agreed marks were found between different interview teams for any of the three cohorts (Table 4). The difference between the most lenient and most severe marker pairings ranged from three to five per cent in each cohort with the mean marks for all teams falling within approximately 0.25 standard deviations of the overall cohort mean. The observed effect size between teams in each cohort were, therefore, small ( $\eta^2\ p\leq 0.04$ ).

Since pairs of markers did not interview all students within each cohort, grading differences between interview teams will also be dependent on ability variations in the subset of students they assessed. To examine differences in the grades awarded by different interview teams whilst controlling for the effect of project quality, analysis of covariance was used on the data from each cohort, with the final year project report mark as a covariate (Table 4). Project report marks were found to be a significant covariate ( $p<.001$ ) of interview marks in the three ANCOVA analyses conducted. However, no significant difference in agreed interview marks between different marking teams was found for 2013 graduates  $F(5,150)=1.27$ ,  $p=.281$  n.s., 2014 graduates  $F(5,145)=0.59$ ,  $p=.706$  n.s. or 2015 graduates  $F(4,119)=0.29$ ,  $p=.883$  n.s. even when the effect of project

Table 3: Comparison of marking agreement and inter-rater reliability between first and second interviewers.

Year of Graduation	Project Interview		First vs. Second Interviewers (paired-samples <i>t</i> )	Effect Size ( <i>d</i> )	Inter-rater reliability ( <i>r</i> )
	First Interviewer Mean (SD) %	Second Interviewer Mean (SD) %			
2013	65.3% (7.8%)	65.9% (8.5%)	-2.69*	0.07	.94**
2014	67.3% (7.5%)	68.2% (8.1%)	-3.87**	0.10	.95**
2015	67.4% (9.8%)	67.5% (10.6%)	-0.11 n.s.	0.00	.95**

\**p*<.01, \*\**p*<.001

Table 4: Comparison of agreed interview grade between primary markers (second interviewers).

Year of Graduation	Number of marking teams	Agreed Interview Marks <i>M</i> ( <i>SD</i> )			Statistical Comparison of Marker Pairings		
		Lowest marker pairing	Highest marker pairing	All markers	<i>df</i>	ANOVA <i>F</i>	Effect size $\eta^2_p$
2013	6	64.6% (9.0%)	67.5% (6.0%)	65.8% (8.6%)	(5,157)	0.42 n.s.	0.013
2014	6	65.4% (6.9%)	70.3% (10.2%)	68.3% (8.1%)	(5,149)	1.30 n.s.	0.042
2015	5	65.6% (12.1%)	69.1% (9.0%)	67.7% (10.0%)	(4,120)	0.44 n.s.	0.014

report mark was taken into account. Overall, these data suggest no systematic differences occurred in the judgements made by different marking teams in the evaluation of project interview performance.

Threats to reliability might also arise through contrast errors, if markers become more lenient or severe over time through judgements being influenced by impressions of earlier candidates, or if question sets are compromised following the initial interviews. To examine marking variation over time, marks awarded to students interviewed on different days were compared using independent groups ANOVA (Table 5).

A slight trend for mark inflation of between one to three per cent was observed from day one to day three of the interviewing schedule, but this was not statistically significant in any of the three cohorts. In addition, when project report mark was introduced as a covariate in the analyses to compensate for differences in project quality, no significant differences were observed across the three testing days, with small effect sizes being observed ( $\eta^2 p < 0.04$ ). From this analysis, there is, therefore, no evidence to suggest that assessment standards changed over time or that students gained an advantage by being tested on later days.

### ***Student feedback on project interviews***

The educational impact of the interviews was evaluated through student satisfaction ratings gathered as part of course feedback for the 2013 and 2014 cohorts. Students were assured that their responses would be treated confidentially and would only be used to inform the future development of the interview assessment. Feedback suggested 94 per cent of students had accessed the online materials regarding the project interview and 81 per cent had discussed the interview with their supervisor. Most students had also taken the opportunity to practice being interviewed, with 68 per cent reporting they had arranged a mock interview with their project supervisor, of whom 93 per cent reported finding this helpful.

Acceptance of the interview format was also high, with 97 per cent of students agreeing that the assessments used were appropriate; the perceived appropriateness of assessment also correlated positively ( $r=.55$ ) with students' overall satisfaction with the project unit.

Since course satisfaction data are gathered anonymously within our institution, it was not possible to relate the feedback shown in Table 6 to student performance during interviews. A further voluntary survey was therefore undertaken with the 2015 cohort after graduation in which more specific feedback was sought (Table 7). Whilst the response rate was low, no significant difference was found in interview marks between students who did ( $M=71.9\%$ ,  $SD=11.3\%$ ) and did not ( $M=67.1\%$ ,  $SD=9.7\%$ ) respond to the survey ( $t(123)=1.78$ , n.s.) suggesting differences in interview outcomes were not a source of non-response bias. Of those replying, 60 per cent reported taking part in the interview had been a positive experience. Moreover, 80 per cent reported that they now felt more confident being able to communicate psychological findings to others whilst over 60 per cent felt taking part in the assessment had benefited their interview skills or would help them when applying for jobs in the future.

Of those who took part in a mock interview, 80 per cent agreed this had helped them prepare for the real assessment. Comparison of actual interview marks between those who did ( $M=73.2\%$ ,  $SD=12.1\%$ ) and did not ( $M=67.0\%$ ,  $SD=6.2\%$ ) report having a mock interview suggested a trend for mock interviewees to achieve higher marks although this was not statistically significant ( $t(16)=0.86$ ,  $p=.41$  n.s.). Those who obtained higher interview grades were also more likely to rate the interview experience as positive ( $r=.67$ ).

Examination of open-text comments about the interview revealed the most frequently expressed opinions were that the assessment weighting (10 per cent of the

Table 5: Comparison of agreed interview grades for students assessed on different days of the three-day interview period.

Year of Graduation	Agreed Interview Marks <i>M (SD) N</i>			Effect of Day of Interview		
	Day 1	Day 2	Day 3	ANOVA ( <i>df</i> ) <i>F, p</i>	ANCOVA + ( <i>df</i> ) <i>F, p</i>	Effect Size $\eta^2_p$
2013	65.7% (8.7%) N=56	66.4% (7.1%) N=52	67.6% (7.3%) N=45	(2, 160) 0.73, n.s.	(2, 157) 0.94, n.s.	0.010
2014	66.9% (5.7%) N=55	67.6% (8.7%) N=54	70.7% (9.4%) N=46	(2, 152) 2.87, n.s.	(2, 148) 1.73, n.s.	0.036
2015	67.2% (8.2%) N=45	67.5% (9.9%) N=43	68.5% (11.9%) N=37	(2, 122) 0.18, n.s.	(2, 121) 0.12, n.s.	0.003

+ using project report mark as a covariate.

Table 6: Project interview student feedback (2013 and 2014 cohorts).

Question	Mean Rating (SD) †	Students agreeing with statement (%)	Correlation with overall unit satisfaction (r)
1. The information I received during lectures, about the project interview, was helpful.	4.09 (0.68)	83.4%	.35**
2. The information I received in the project handbook, about the project interview, was helpful.	4.31 (0.64)	93.1%	.31**
3. The online information for the project interview was helpful.	4.37 (0.68)	94.5%	.28**
4. My supervisor offered me support and guidance for my project interview.	4.64 (0.61)	95.6%	.44**
5. My mock project interview with my supervisor was helpful.	4.58 (0.74)	93.3%	.38**
6. The assessments for the project unit were appropriate.	4.39 (0.56)	97.2%	.55**

N=236, response rate=74%.

† Responses made on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree).

\*  $p < .05$  \*\*  $p < .01$

Table 7: Project interview student feedback (2015 cohort only).

Question	Mean Rating (SD) †	Students agreeing with statement (%)	Correlation with overall unit satisfaction (r)
1. I feel taking part in the project interview has benefited my interview skills.	3.53 (1.11)	66.7%	.61**
2. I now feel more confident in being able to communicate (my) psychological findings to others.	3.80 (0.93)	80.0%	.53**
3. Having done a project interview will help me when applying for jobs or courses in the future.	3.57 (1.00)	63.3%	.37
4. On the whole, I found completing the project interview to be a positive experience.	3.53 (1.11)	60.0%	.67**
5. Taking part in a mock interview with my supervisor helped prepare me for the real interview.	4.20 (1.04)	80.0%	.22

N=30, response rate=24%.

† Responses made on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree).

\*  $p < .05$  \*\*  $p < .01$

overall project mark) did not reflect the effort students had placed into preparing and that the interview weighting was disproportionate to the stress created by the assessment. Whilst this could be taken as suggesting a preference for increasing the assessment weighting, some students commented that the assessment format may have disadvantaged shy and nervous students, although none directly reported feeling that nerves had affected their own performance. Others would have preferred the interview to have been closer to their project report hand-in date. Planning is, therefore, required with interview assessments to ensure the timing and weighting of the assessment reflects student effort without creating undue anxiety.

### Discussion

The ability to communicate research findings and scientific opinions to others in an accurate and professional manner is central to developing psychological literacy and an important employability skill for psychology graduates. The present study suggests oral interviews can be used as a reliable means of assessing the development of such attributes in undergraduate psychologists in a manner that is both educationally acceptable to students and a valid indicator of their general level of performance.

For approximately six out of every 10 students, project interview classifications were consistent with their overall degree classifications. Whilst on the surface this may not seem remarkable, it should be noted that the net contribution of the interview to degree classifications was small, equivalent to three per cent of the final year. Despite this, interview marks were found to correlate more strongly with students' final year course average than they did with project report marks. This may suggest that the interview assessment is more predictive of the broad range of skills students develop across their degree and, therefore, highly relevant to their learning as an undergraduate.

The range of topics considered during

the interview were selected to cover each student's ability to explain in simple terms the purposes and findings of a research study, demonstrate they understood the reasoning behind their work, and to show critical awareness of the limits of their approach such that its contribution could be appropriately framed. These were in addition to asking students to reflect on their own development during the research process and evaluating their general ability to communicate effectively in a professional setting. The assessment, therefore, provides a relatively efficient means by which student learning across several of the core skills within the QAA (2010) psychology benchmark and emphasised within recent definitions of psychological literacy (e.g. Cranney et al., 2011; Mair et al., 2013) can be evaluated.

Final year research projects are a culminating feature of undergraduate degree programmes in psychology through which many graduate attributes are practiced. However, students do not always see the connection between what they have achieved through their project and their own employability (Healey et al., 2013). The addition of a corresponding assessment which specifically encourages students to verbalise the personal skills they have developed through their project can only benefit students in future recruitment and selection contexts. Oral assessments may also help students to prepare for the forms of communication they will encounter in their future careers, more so than other forms of undergraduate assessment (Joughin, 2003). As Huxham et al. (2012) suggest, oral assessments act as a powerful tool in helping students establish a professional identity which adds to the perceived authenticity of this form of assessment. This view is consistent with the positive evaluation of the appropriateness and perceived future benefit of the project interviews reported by students in the present study.

A common view expressed within the literature is that oral presentations are resource intensive and time-consuming to conduct, which can be particularly problem-

atic with large class sizes (e.g. Butler & Wiseman, 1993; Joughin, 2003). We found that five or six teams of markers working together in a rotated pattern of pairings could readily accommodate cohort sizes of up to 180 students over a three-day period (10 to 12 interviews per team per day). Moreover, since the interview duration was relatively short, time could be built into the schedule for mark co-ordination and the production of written feedback to students, meaning that outcomes could be communicated to students very quickly following the assessment. We estimate that the total person-hours for all markers would, therefore, not far exceed the time required by one person to mark written assessments, marked at the rate of one assessment per-hour in a similar sized cohort. Beyond practical considerations of staff workload, the three-day interviewing period as an event in its own right, was found to add value to the sense of community within our department with positive reactions being reported by both students and staff each year. Whilst other efficiency measures are possible to reduce time costs, such as using single examiners rather than interview panels (Butler & Wiseman, 1993) or conducting interviews with multiple students present (Oakley & Hencken, 2005) these were not felt to be appropriate in this context, to maintain the perceived fairness of the assessment, as well as the confidentiality of each candidate.

Within our interview structure, supplementary questions were used to probe the boundaries of students' knowledge. Consistent with Butler and Wiseman (1993), this appeared to be effective for gauging depth of understanding and for distinguishing between competent and exceptional candidates. Additional question probes were also particularly important in cases where students responded briefly to questions and helped avoid progressing too quickly through key aspects of the interview. In such cases, second interviewers were able to monitor the time spent on each interview theme to ensure all students had approxi-

mately equivalent periods addressing topics, and more anxious students who might answer quickly were not disadvantaged.

Some research on *viva voce* examinations suggests questions often address the recall of basic information rather requiring students to demonstrate depth of understanding (e.g. Davis & Karunathilake, 2005; Evans et al., 1966). Examiners, therefore, mistake confidence and articulate expression in candidates for enhanced subject knowledge, such that eloquent but weaker students may receive better ratings than their performance warrants (Thomas et al., 1993; Torke et al., 2010). In the present study, the marking criteria used specifically required examiners to separate out their assessment of the style and subject content of answers provided by candidates in an attempt to mitigate against such effects. Comparison of the marking within interview teams as well as between different teams suggested a consistent pattern of grading was followed throughout the project interviews. In addition, no evidence was found to suggest that students' interview performance was evaluated leniently, or was inconsistent with their performance elsewhere on their degree, which might be expected if confidence rather than knowledge was being rewarded. As McAdams and Robertson (2012) have also pointed out, the use of oral assessments in an academic programme can be justified where the mastery of professional skills such as using evidence to make a verbal case, presenting a persuasive argument, and adapting communication styles to suit a particular audience are required within the field. It can, therefore, be concluded that the use of assessed project interviews provides a promising and reasonable means by which psychological literacy, and more specifically, the ability to communicate scientific thinking and findings in a clear and appropriate manner may be evaluated on undergraduate programmes.

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# An evaluation of an intervention to change first-year psychology students' theory of intelligence

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*Some people hold an entity theory of intelligence: they think of intelligence as innate. In contrast, others hold an incremental theory, believing that intelligence can be changed. Previous research has shown that an incremental theory is associated with positive outcomes. The aim of this paper was to evaluate an intervention which promoted an incremental view of intelligence in first-year university students. Thirty-five students were shown a presentation which discussed research promoting an incremental view of intelligence (intervention group). Forty-four students were shown a presentation which discussed research on memory (control group). Participants completed measures of theory of intelligence, goals and behavioural intentions before and after the presentation. Results suggested that the intervention had been successful in promoting an incremental view of intelligence and thus positive learning behaviours. Interventions such as this may therefore have a positive impact on student success at university.*

**Keywords:** *theory of intelligence; intervention; transition to university.*

ACCORDING TO an influential body of work from Dweck and colleagues (1999) people view intelligence in one of two ways. Some hold an entity theory of intelligence: they believe that intelligence is innate and that some people are naturally more clever than others. In contrast, some hold an incremental theory and believe that intelligence is like a muscle, which can be changed over time. These beliefs are implicit, meaning they are fundamental and often difficult to verbalise, but they can have a strong impact on behaviour (Chiu, Dweck & Hong, 1997). Holding an incremental theory has been found to lead to a number of positive outcomes such as choosing challenging goals and persisting following failure (Elliott & Dweck, 1988, Kinlaw & Kurtz-Costes, 2007; Mangels et al., 2006; Wirthwein et al., 2013; Wormington & Corpus, 2011). However, there is little research examining how we can promote an incremental theory of intelligence in university students. This was the aim of the current paper.

An incremental theory of intelligence has been associated with a number of positive outcomes. For example, those who hold an

incremental theory are more likely to espouse learning goals (Dweck & Legett, 1988; Elliott & Dweck, 1988). Learning goals are goals where the learner wants to understand the material and engage with it at a deep level. They want to enhance their skills. An example of this would be a student trying to understand the formula behind the standard deviation, regardless of whether it will be in the assessment. By contrast, those who hold an entity theory are more likely to hold performance goals. These are goals where the learner is primarily interested in passing the assessment and does not want to engage with the material at a deep level. In these cases, the learner is concerned with proving, validating or documenting their ability. An example of this is knowing which buttons to click in SPSS to find the standard deviation to get the correct answer in the assessment; but not understanding what the test is doing. Unsurprisingly, learning goals have been found to lead to positive outcomes in terms of achievement in the longer term. Therefore, incremental theorists may be more likely to succeed in education and more likely to achieve higher grades.

Similarly, an incremental theory has been found to lead to positive outcomes when faced with failure (Robins & Pals, 2002). Everyone is likely to perform badly at some point in their education and their responses to this may have a strong impact on their future performance and likelihood of persisting in education (Hong et al., 1999; Stipek & Gralinsky, 1996). Previous research suggests that those who hold an incremental theory are more likely to respond positively to failure (Henderson & Dweck, 1990). This is because they believe that their performance was caused by their efforts and techniques, which can be easily changed. Therefore, failure is a sign that more effort or a new technique is needed. It is also a signal to them that there is an opportunity to learn new things. In contrast, entity theorists see failure as threatening. They believe that intelligence is fixed and difficult to change. Because of this, failure indicates that they are not clever enough to succeed in the task and this fixed view makes them feel that they are also unlikely to succeed in the future. Thus, they are more likely to show low persistence (Dweck, 1999) and also self-handicapping behaviours (Robins & Pals, 2002). This again suggests that an incremental theory of intelligence is associated with positive learning behaviours and academic success.

What Works? (2012) found that students commonly drop out of university for three main reasons: they are experiencing academic issues; they feel that they do not 'fit in'; or they are concerned about not achieving their future aspirations. These beliefs may be partially associated with an entity theory of intelligence. Therefore, promoting an incremental theory may help to reduce student dropout rates. For example, an incremental theory may encourage students to view their performance as within their control. This may help them to feel less negative if they do not achieve high grades immediately and may also help them to improve their performance, due to the fact that they are likely to hold learning goals

and persist following failure. An incremental theory of intelligence may also lead them to feel that they fit in at university. Some students, particularly those from widening participation (WP) groups, such as those from lower socio-economic groups or attending schools of low progression, may be more likely to feel that they do not fit in at university. They may also perhaps view other students, such as those from more traditional backgrounds, as being more 'intelligent' than them. Promoting an incremental view of intelligence may help students feel that they belong in university because they feel that they too have the potential to succeed if they work hard. Finally, an incremental theory could encourage students to feel that they can achieve their broader goals for their future careers by working hard and improving their techniques. This highlights the importance of better understanding how we can promote an incremental view of intelligence in students.

Previous research suggests that an incremental theory of intelligence can be promoted by feedback. Process forms of feedback, for example, 'You worked hard in this' can encourage an incremental view of intelligence (Kamins & Dweck, 1999). This is because they explicitly state that success in the task was caused by effort levels or techniques. However, person forms of feedback, for example, 'You are really clever' promote more of an entity view of intelligence. This is because they suggest that an innate ability has led to success in the task.

The impact of feedback on theory of intelligence has been examined in various experimental settings. For example, Cimpian et al. (2007) asked young children to draw a picture and then gave them feedback on their drawing. They found that children who received process forms of feedback were more likely to persist following failure.

Furthermore, Mueller and Dweck (1998) examined the impact of feedback on children's goals, response to failure and academic performance. To begin, all children

completed an easy set of problems and were told they had received a high score; they also received either person, process or no feedback. They were then asked questions to ascertain whether they held learning or performance goals. Children were then given a second, more challenging set of problems, and told that they had performed badly in them. They then rated their desire to persist in the task and their attributions for their failure. Finally they were given a set of easy problems again. Results suggested that those children who received process praise were more likely to hold an incremental theory of intelligence. They were more likely to choose a complex task rather than a simple task. Furthermore, when they experienced a failure, those who received process feedback were more likely to state that they would like to persist. Finally, when faced with the final simple set of problems they performed well on them. This suggested that process praise led to positive learning behaviours. In contrast, children who were given person praise showed an entity theory of intelligence and chose simple tasks rather than complex ones. These children also showed a helpless response to their failure and when they were faced with a further, easy set of problems failed to complete them. The finding that students were unable to complete the final set of problems which were at a similar level to those they had previously completed with ease, simply because they had recently failed on other problems, illustrates how theory of intelligence can have a strong long-term impact on students' academic performance. In addition to this experimental research, it has been found that children whose parents used high levels of process feedback at age two were more likely to hold incremental views of intelligence when they were eight years old (Gunderson et al., 2015).

Other research suggests that an incremental theory of intelligence can be promoted with a targeted intervention. For example, Blackwell, Trzesniewski, and Dweck (2007) designed an intervention for secondary school students. This involved

eight sessions being delivered to students about the brain and memory. Students in the intervention group also received information about how the brain is constantly changing and how effort can lead to improvement. By contrast, those in the control group were taught about memory in general and specific techniques to improve memory. Results suggested that those in the intervention group showed higher motivation and also performed better academically than those in the control group.

Therefore, it appears to be possible to influence theory of intelligence via feedback or intervention programmes. These sorts of interventions may be particularly effective and important during periods of transition. When young people make the transition from one educational environment to another they may find it challenging, as the standard of expected work increases and they may well be studying a subject that they have not previously studied. Students who hold an incremental theory of intelligence may be more likely to cope better with this transition as they are likely to show positive learning behaviours such as choosing challenging learning goals, responding positively to the academic challenge and believing that they can succeed with effort (Dweck, 1999). Additionally, as previously discussed, they are more likely to respond positively to failure. Indeed Henderson and Dweck (1990) found that students who held an incremental theory of intelligence were more likely to achieve better grades during the transition to high school than those who held an entity theory, controlling for previous grades.

However, most of this research has been conducted with children and less has been conducted with university students. Some research suggests that students who received process feedback were more likely to persist following failure (Skipper & Douglas, 2012); this suggests that students' theory of intelligence may also be changed by teacher feedback. In addition to examining the impact of teacher feedback, some research has more explicitly examined how students respond

when they are given information about what skill is being tested. In a study by Aronson (1999) (cited in Aronson, Fried & Good, 2002) students took a challenging verbal test. Before they took the test they were told that the questions would test verbal ability which was either described as malleable, fixed or they were given no further information. Results showed that those in the 'fixed' ability condition were most anxious and scored lower than those in the control condition, while those in the 'malleable' condition showed the lowest anxiety and scored the highest. This suggests that teacher feedback and also teachers explicitly explaining what is being tested for can impact students' learning behaviours and performance.

Additionally, Aronson, Fried and Good (2002) designed an intervention-style experiment to manipulate college students' theories of intelligence and in turn their grades. To do this they asked college students to participate in a scholastic pen pals programme where they received letters from school children who were struggling academically and were asked to write letters to encourage them. Some were asked to write to the children about an incremental theory of intelligence, and how intelligence could be changed. Another group were asked to write to the children about multiple intelligences and how everyone has strengths. A control group did not write letters. In order to promote these views of intelligence, participants watched a video discussing research which showed evidence supporting these theories. In fact, the letters which the students received were not written by children and the aim of the study was to encourage the students themselves to view intelligence in these ways. Results suggested that those in the malleable intelligence condition showed more learning goals and performed better in tests than those in the other conditions. This suggests that the study was successful in promoting an incremental theory of intelligence. However, it would not be possible to

deliver this intervention to students across different year groups because students who had participated in previous years would be likely to discuss the study and reveal the deception to new students, which would reduce efficacy of the intervention.

Thus, research suggests that an incremental theory of intelligence can be promoted via feedback and also via training programmes. However, there is currently no simple intervention which could be used for a large number of university students, particularly during transition to university. This is an important gap in the literature. A simple intervention which could be delivered to a large number of students as a part of First Year class activities has the potential to have a strong impact on students' experiences of university. Additionally, interventions as part of the curriculum rather than as an 'add on' has been found to enhance their success (What Works? 2012). Thus, the aim of the current paper was to examine whether it is possible to change students' theory of intelligence via a short intervention and whether this could impact other variables such as learning goals and behavioural intentions.

Eighty students were recruited in their first year at university and were randomly assigned to the intervention or the control group. Two presentations were created. The presentation for the intervention group discussed research showing how the brain changed as participants learned new things. The presentation for the control group discussed research relating to memory in general. Participants completed a questionnaire before the presentation and immediately afterwards. It was hypothesised that those in the intervention group would show a more incremental theory of intelligence and in turn more learning-focused goals and show different behavioural intentions in that they would be more likely to choose more complex tasks and less likely to choose simple tasks than those in the control group.

## **Method**

### ***Participants and design***

Participants were 80 psychology students who were in their first year of university. This was a convenience sample. Participants were drawn from six seminar groups, which were randomly chosen and all students within the groups were invited to participate. All participants were aged 18 to 21 ( $M=19$  years 5 months,  $SD=2.41$ ) and 66 were female. Participants were from a variety of ethnic groups including 57 White British participants; the other 23 included a number of ethnic groups, such as four Asian British, three African British and three mixed race participants.

All participants were studying psychology. Twenty-eight students were studying single honours psychology, and the remainder were studying dual honours degrees. Of these, 15 were studying psychology and criminology, nine psychology and neurobiology, six psychology and biology and three psychology and forensics.

The design was mixed methods, using both quantitative and qualitative measures. The quantitative element involved a repeated measures design, comparing participants' answers before and after the intervention. The independent variable (IV) was whether participants had been randomly assigned to the control group or the intervention group. The dependent variables (DVs) were theory of intelligence, goals and behavioural intentions to choose simple and complex tasks.

### ***Materials***

#### ***Intervention***

The intervention itself consisted of two PowerPoint presentations, one for the intervention group and one for the control group. Both were one-hour long and contained information and an activity. The presentation for the intervention group included research studies which provided evidence that effort and technique were vital to success. For example, Ericsson (1991) worked with violinists studying at a music

academy. The students were streamed into three groups, those expected to become international soloists, those who were expected to become performers in top orchestras and less able students who were expected to teach. They found that the only significant difference between these three groups was the number of hours of practicing they had done. Other studies exploring brain plasticity, such as that of Maguire, Woollett and Spiers (2006) were presented. In this study, the brains of London taxi drivers were compared to brains of bus drivers using an MRI. Results showed that taxi drivers had greater grey matter volume in mid-posterior hippocampi, a region specialising in acquiring and using complex spatial information to navigate efficiently. Taxi drivers had to navigate around London by memory while bus drivers followed a set route. Their behaviours had changed their brain structure, thus suggesting that the brain could be developed like a muscle. A number of other studies were also presented as well as more informal facts about learning and memory but always focused on how effort and techniques led to success.

The control group presentation focused on memory. Research around the impact of music on memory was presented, for example, Ludke, Ferreira and Overy (2013) asked students to learn Hungarian phrases either by singing them or by saying them. Results suggested that those who sang performed better in later memory tests. Other research presented examined the impact of drugs on memory, for example, research by Smith et al. (2014) which suggested that students who had smoked marijuana showed decreases in the size of the thalamus and striatum, areas that are important for processing rewards, learning and working memory and that they also performed poorly on a memory test. Therefore, this session focussed on research into memory techniques and how it can be hindered via drugs. It was important that the experience of the control group was as similar as possible to

the intervention group or it could be argued that the extra information the intervention group had received or techniques for improving memory could have impacted students' learning and achievements rather than the focus on theory of intelligence.

All students then completed an activity based on research by Mantyla (1986). Students were asked to listen to a list of 20 words and write down two words which they associated with them. Students were then asked to try to remember the words without their cues. After attempting this, they were allowed to use their cues to remember the words. The activity was then explained slightly differently depending on the group participants were in. Those in the experimental group were told that the reason the cues helped was that they helped them to remember what they were thinking about when they learned the information. This then was explicitly linked to how neurones form connections when we learn new information and, therefore, linked the activity to brain plasticity. Those in the control group were simply told that we remember things better when we link ideas together and this was presented as a memory technique.

### *Questionnaire*

The students completed questionnaires before the presentation. The questionnaire was repeated immediately following the intervention. The questionnaires were also repeated across the course of the year at times when students received feedback on summative assessments. However, this data will not be presented here as data analysis is still in progress.

The questionnaire consisted of a number of sections. The first of these included demographic questions such as date of birth and gender. As well as this, participants were asked questions about what grade they would like to get in their degree and also what grade they thought that they would get in their degree. To answer these questions, students circled a grade classification from first class to third. Students were also asked

to answer the question 'What factors do you think will influence your success at university?' This was a free response question and was asked before students could complete the rest of the questions to avoid biasing their responses.

Theory of intelligence was measured by asking students to complete an equation showing what percentage of intelligence was due to effort and what percentage was due to ability. They were reminded that the numbers needed to add up to 100 per cent. This was adapted from Mueller and Dweck (1997).

In order to examine students' goal orientation, a measure was taken directly from Grant and Dweck (2003). Students were asked 12 questions relating goals. An example item for performance goals is: 'I really want to get good grades in my classes' and an example item for learning goals is: 'I strive to constantly learn and improve in my courses'. These 12 items were answered on a scale of 1 (strongly disagree) to 7 (strongly agree).

In order to examine their behavioural intentions, students were given a scenario. It said:

'In your next seminar your tutor describes the principles of research design and choosing the best statistical test. Your tutor then gives you the option of two tasks.

Task 1 is something you could do very easily; you would probably get all the answers right but wouldn't learn anything new. Task 2 is something you couldn't do very easily; you would probably get some answers wrong but would learn something new.'

Students were asked how likely they would be to choose each task on a scale of 1 (very unlikely) to 6 (very likely). This procedure was adapted from Mueller and Dweck (1998) where participants were asked to choose simple or complex tasks to complete in future.

Immediately following the presentation, students repeated the questionnaire. They

again answered the same questions on their theory of intelligence, goals and task choice.

**Procedure**

Participants in seminar groups were recruited in the first week of term. Three seminar groups were randomly assigned to the intervention group and three to the control group, giving a total of 36 students in the intervention group and 44 in the control group. Participants were told that the researcher was interested in their experiences of transitioning to university level study and the presentation and activities, as well as the questions they would be asked would allow them to reflect on this. The participants were given an information sheet and after reading it, signed a consent form if they wanted to participate. It was made clear to students that the questionnaire element was entirely optional but the presentation would be useful in their development and understanding of the course. Participants then listened to the presentation which was delivered by the same female teacher to all groups, and participated in the activity. Immediately following this, participants completed a second questionnaire.

Students were asked to give their date of birth on the questionnaire. This allowed their responses across time points to be matched, but maintained anonymity. This was made clear to participants. This also meant that if students wished to withdraw

their data they could give the experimenter their date of birth and their information could be removed. After they had completed all the questionnaires across the year, participants were debriefed and given the opportunity to ask questions.

**Results**

To begin, the grades which the students wanted to achieve and believed they could achieve in their degree were examined. Descriptive statistics for overall aspirations and beliefs across all students are shown in Table 1. Furthermore, results examining individuals' responses suggested that only 26 per cent of students felt that they would achieve the grade they wanted (whether that was a first or a 2:i) while 70 per cent indicated that they would achieve a grade lower than they would like and five per cent predicted they would get two grades lower than they would like (four per cent missing values).

The free response question asked students what led to success at university. Due to the fact that most participants wrote only a sentence in answer to this, a light touch content analysis was performed to give a flavour of the common responses. A more detailed qualitative analysis would not have been appropriate due to the small extracts. To begin, participants' responses were read a number of times until common clusters (categories) of similar answers became

**Table 1: Students' predictions of the grades they hope to achieve and the grades they feel that they will achieve in their degree.**

	Percentage of students stating that they hoped to achieve this grade	Percentage of students stating that they thought they would achieve this grade
First	74	13
2:i	23	70
2:ii	0	15
Third	0	0
Missing	3	2

apparent (e.g. effort/teachers/peers). I noted down the number of times each cluster of answers was mentioned. Participants discussed a wide variety of reasons for what might impact their success at university. For example, the largest proportion of 26 per cent mentioned effort as being important in predicting their success at university. Half of these were in the intervention and half were in the control group. Similarly, 15 per cent of students mentioned that the number of hours they put into studying would impact their success. This again suggests an incremental view. Interestingly, only four per cent mentioned ability as being important to their success at university. The second most commonly mentioned factor was friends (24 per cent). Friends were thought to influence success both in a positive way, for example, discussing courses and giving support, but as well as this, students recognised that friends could actually lead them to be less successful by distracting them. This leads on to the third most commonly mentioned element, time management which was mentioned by 19 per cent of students. Motivation was also seen as important by 17 per cent of participants. Finally, good teachers were seen as key by 17 per cent.

To examine students' learning goals, questions relating to performance goals were reverse coded, then the average goal including both learning and performance goal measures was calculated. Therefore, a higher number indicates more learning-focused goals and less performance-related goals.

Next, a one-way ANOVA with group (intervention or control) as the IV and measures of theory of intelligence, behavioural intentions and goals as DVs was conducted to examine whether there were any significant differences between the two groups before the presentation. Results from this analysis were not significant for theory of intelligence  $F(1,74)=1.132$ ,  $p=.291$ , choosing an easy task  $F(1,79)=.181$ ,  $p=.672$ , choosing a complex task  $F(1,79)=.534$ ,  $p=.467$  or goal

orientation  $F(1,78)=.290$ ,  $p=.592$  (See Table 2 for descriptive statistics). This suggests that before the presentation, there were no differences between the intervention and the control group.

The changes from pre- to post-intervention, based on group were then examined. Means and standard deviations are presented in Table 2. A difference score was calculated by subtracting scores at pre-test from scores at the post-test. A one-way ANOVA with condition (intervention or control) as the IV and the theory of intelligence difference score as the DV revealed that immediately following the presentation, those in the intervention group came to view intelligence in a more incremental fashion, but the control group did not  $F(1,72)=56.23$ ,  $p<.001$ .

Other ANOVAs showed that students in the intervention group became significantly more likely to choose a complex task  $F(1,69)=4.27$ ,  $p=.043$ . In terms of choosing a simple task, the effect was not significant, but means tended in the hypothesised direction  $F(1,69)=3.37$ ,  $p=.071$ . Students also came to hold more learning than performance related goals  $F(1,60)=6.74$ ,  $p=.012$ .

## Discussion

Results from the current evaluation suggest that the intervention was successful in changing students' theory of intelligence in the short term and that this also changed students' goal orientation and behavioural intentions around choosing complex tasks. Furthermore, the intervention group became less likely to choose simple tasks and effects may have been significant with a larger sample size.

This is in line with previous studies which suggest that theory of intelligence can be changed. Previous research has changed theory of intelligence to a more incremental view in the short term by giving process feedback (Kamins & Dweck, 1999; Mueller & Dweck, 1998). Similarly, Blackwell et al. (2007) and Aronson, Fried and Good (2002) were able to change theory of intelligence in the longer term with a targeted intervention.

**Table 2: Means and standard deviations pre- and post-test measures of theory of intelligence, behavioural intentions and goals.**

	Intervention Group				Control Group			
	Pre-test		Post-test		Pre-test		Post-test	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Incremental Intelligence	51.77	13.51	65.32	17.36	54.81	13.90	54.37	13.74
Easy task	3.64	1.11	3.21	1.29	3.65	1.32	3.61	1.31
Complex task	4.27	1.13	4.54	1.03	4.15	1.00	4.13	1.11
Goal	4.26	.65	4.41	.67	4.09	.61	4.05	.64

This also changed motivation and achievement. The current paper tentatively suggests that theory of intelligence can be changed by a short term intervention. Future evaluation of this intervention will examine whether these effects are found in the longer term across the academic year. It will also examine whether this intervention has also had an impact on academic performance and dropout rates.

A strength of this intervention is that it was targeted at first-year students. Upon entering a new educational establishment there is the opportunity to change perceptions and behaviours. Students are unclear as to what 'success' looks like in the new establishment and what they need to do to perform well. This is, therefore, a good time for interventions to be delivered which suggest to students what will lead to success at university. Promoting an incremental theory at this important time may encourage students to feel that effort and techniques will be key to their success at university and this is likely to lead to positive academic behaviours and, in turn, improved long term achievement (Dweck, 1999). This sort of intervention may also help to negate some of the variables which are associated with student drop out, such as feelings of not fitting in and concern about achieving future aspirations (What Works? 2012).

The intervention also formed part of the usual classes and drew on psychological research to make it appear to be a 'normal' seminar activity. What Works? (2012) suggests that setting interventions within the curriculum can enhance their efficacy, thus also illustrating a strength to the current approach. Additionally, the intervention was only one hour long and is easy to administer. If it is found to be successful in influencing perceptions, behavioural intentions and performance in the longer term it could therefore form part of early curriculum activities for students.

However, it is unlikely that a one-hour intervention will be successful in changing perceptions and behaviours across an entire academic year. It will be important to repeat the intervention in some way to ensure that an incremental theory continues to be promoted. This may be particularly important when students receive grades for their work as at this time they are likely to try to understand why they have achieved the mark they did. The intervention could, therefore, be 'topped up' when student performance is being evaluated by using process feedback. This could be delivered both verbally on tasks, for example in small group teaching and also in written feedback on essays. As previously discussed, process feedback has been found to be very effective in promoting

an incremental view of intelligence, and in turn learning goals and a mastery response to failure (Elliott & Dweck, 1988; Mueller & Dweck, 1998). Thus, combining an intervention and feedback may lead to a stronger and longer term impact. Again this also has the benefit of fitting easily into existing practice.

Additionally, the current evaluation measured behavioural intentions using a scenario. Scenarios have been used in educational research to examine students' responses to a range of stimuli. These have often been used for ethical reasons, for example, in examining the impact of teacher criticism (Skipper & Douglas, 2015). Similarly, scenarios can allow us to examine behavioural intentions in a large number of participants easily. However, intentions do not necessarily become behaviours. Therefore, future research should examine real task choice and behaviours in students rather than simply hypothetical choices.

It is also interesting to note that most students believed that they would receive a grade lower than they would like in their final degree. It could be that the students wanted a first-class degree, but that they were being realistic in the goal they felt they could achieve. However, another possible reason for this could be that they do not want to set a challenging goal which they may then fail to achieve. This could indicate an entity view of intelligence as it minimises the risks of failure. Additionally, if someone truly holds an incremental view of intelligence then they should believe that they can achieve a higher grade than they currently are achieving. In later stages of this evaluation, students will be asked about their current grades and the grades they think they can achieve in their final degree. Based on the literature (e.g. Dweck, 1999) it would be expected that students who hold an incremental theory of intelligence should believe that they can achieve a higher grade than they are currently achieving. Measuring this will then provide further evidence as to the efficacy of the intervention in changing theory of intelligence.

However, it is also important to consider the broader educational and social environment in which students find themselves. Teachers can have a strong impact on students by giving feedback (Hattie & Timperley, 2007) or delivering an intervention such as the one described above. Teacher behaviours can also enhance student motivation and enjoyment of classes (Hattie, 2012) and this was discussed by students in the content analysis. However, peers and classmates can also have a strong impact on student academic performance (Hattie & Yates, 2013). In fact, due to limited contact hours and teaching from a large number of staff, peers are likely to have a stronger impact on students' perceptions and their performance than teachers. The content analysis in the current study showed that many students raised the point that friends could help them to achieve more, for example, by encouraging them to work hard. However, it was also noted that peers can distract them and they need to find a balance between work and social life.

Other students' beliefs about intelligence may also influence their peers. For example, those who hold an entity theory may downplay down the amount of time they spent on a task in order to make themselves seem more intelligent while incremental theorists may emphasise their effort levels or techniques (Dweck, 1999). Therefore, students may unconsciously promote their own view of intelligence to their peers. Explicitly discussing these implicit theories and encouraging students to reflect on them may lead them to better understand the effects their beliefs have on their own behaviour. This may help to minimise the potential negative impact of comments such as these from peers. However, the broader learning community is clearly key in fully understanding students' perception and performance.

The current paper suggests that this intervention was successful in changing students' theory of intelligence, goal orientation and behavioural intentions in the short term. However, further research is

needed to examine whether these changes can be maintained over a longer time period and perhaps how this could be combined with feedback in order to have a long term impact on students' theory of intelligence and, therefore, performance in first year at university.

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

Jason Bohan, Niamh Friel & Larissa Szymanek

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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

**T**HE 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-McInnis, 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 dis-orienting 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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# Stress, eustress and the National Student Survey

Chris Gibbons

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*The aim was to explore the relationship between sources of stress and a range of coping behaviours on student satisfaction and motivation. Most research exploring sources of stress construes stress as distress, with little attempt to consider positive, good stress or 'eustress' experiences. A cohort of first-year psychology students (N=88) were surveyed on a range of stressors. These were amended from the UK National Student Survey (NSS, 2011). Published university league tables draw heavily on student course satisfaction but study results suggest there was also merit in measuring students' intellectual motivation and the extent to which they felt part of a learning community. Using multiple regression analyses, it was found that even the attributes that normally help one to adjust to change, such as self-efficacy, do little to help the new student adjust to university life, such was the acuteness of perceived stress in the first year. Social opportunities within the university were important to help new students integrate into university life and to help them network and build support. Educators need to consider how course experiences contribute, not just to potential distress but to potential eustress.*

**Keywords:** student stress; eustress; coping; satisfaction; motivation; learning; transition.

## Introduction

**S**TRESS can be the result of 'too much or too little arousal resulting in harm to mind and body' (Schafer 1992, p.14). There is a growing body of evidence that has looked at stress among university students and its affect on wellbeing (Leicester University, 2002; Robotham & Claire, 2006)

As illustrated in Figure 1, a certain amount of perceived stress and physiological arousal is necessary if one is to perform at the optimum (B). If a source of stress is perceived as negligible (A) or, more likely, is perceived as exceeding one's capacity to cope (C), then distress results (Yerkes & Dodson, 1908). That optimal level of stress or arousal is called 'eustress' (Lazarus & Folkman, 1984) and little research has looked at sources of eustress in students (Association for University Counsellors, 2002; Gibbons, 2008, 2010; Leicester University, 2002).

Sources of academic stress include examinations and assessments (Robotham & Claire, 2006); fear of failure; the quality of teaching, as well as lack of timely feedback on assessments (Gibbons, 2008, 2010). Personal sources of stress include financial

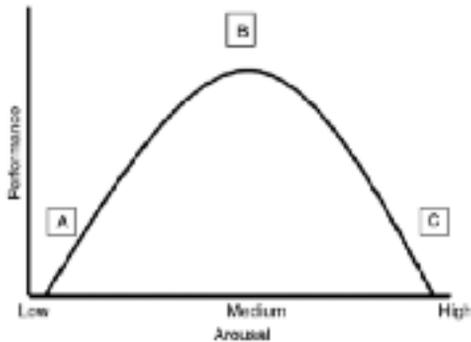
concerns; a lack of or difficulties in managing one's apparent free time and a concern about career direction (Leicester University, 2002).

## The National Student Survey and stress in students

The National Student Survey (NSS) was first introduced in 2005 and it was a product of the 2003 Government White Paper, 'The Future of Higher Education'. The theme of this White Paper was to make students 'intelligent customers'. The survey involves students rating a number of common experiences, for example, teaching and learning, assessment and feedback, learning resources, etc., and in this study each of these factors was treated as a potential source of stress.

The NSS was initially met with resistance by many universities because it was seen as duplicating internal feedback mechanisms. However, once the findings were incorporated into university league tables by national newspapers it took on a whole new importance.

Figure 1: The Yerkes–Dodson curve.



The results of university league tables, underwritten by the findings from the NSS, focus exclusively on measures of course satisfaction, although NSS questions exist that measure intellectual motivation and the extent to which students feel part of a learning community (NSS, 2011). This study considered all three and while the validity of the NSS is often challenged (e.g. Sabri, 2013), it is used here because it is, de facto, the recognised measure of the university student experience.

### Coping with stress

In Lazarus and Folkman's (1984) Transactional model of stress, the primary appraisal refers to the initial perception about a stressor and whether it is judged to be positive (leading to eustress), negative (leading to distress) or benign. The secondary appraisal refers to the coping responses the individual draws on. Interacting between the perception of stress and how one responds are a number of moderators. These include personality (McCrea & Costa, 1992); self-efficacy (Schaubroeck & Merritt, 1997); perceived control, support and coping style (e.g. Gibbons, 2010; Van der Doef & Maes, 1999). While these different coping resources or moderators are drawn on to manage perceived sources of stress, it is important to remember that they also affect the initial judgement and appraisal of stress and, in turn, its subsequent impact on well-being. The NSS measures final year students' perceptions. This study will explore the

perception of students in their first year. Perceptions of stress change the more one experiences such demands and for that reason it is not the intention to draw any conclusions about final year student experience. However, there is merit in exploring the experience of first-year students because attrition and retention issues are greatest among first-year students throughout the UK (Chemers et al., 2001)

### Aims

The literature drawing on the NSS makes almost no reference to students' intellectual motivation, nor the extent to which students feel part of a learning community. Similarly, little attention has been given to the experiences associated with optimal levels of stress or eustress, among first-year students (Gibbons, 2012). The aim of this study was to address these short-comings. Significant positive correlations were expected between the student experiences rated as potential eustress (uplifting ratings) and course satisfaction, motivation and feeling part of a learning community; and significant negative correlations were expected for the distress (hassle ratings); significant correlations were expected between the coping factors, that is, personality, self-efficacy, control, support and coping style against course satisfaction, motivation and feeling part of a learning community.

### Method

A student questionnaire was given to all first-year BSc psychology students to complete on a voluntary basis early in their second semester at a university in Northern Ireland. The questionnaire consisted of items from the NSS (2011) along with items from earlier NSS versions measuring intellectual motivation and feeling part of a learning community. Students used a continuous response scale rating each item twice – once as a potential uplift and once as potential hassle. Self-efficacy was measured using the Generalised Self-efficacy scale (Schwarzer, 1992). Across a range of samples there is good

evidence of convergent and discriminant validity and it has produced test, retest reliability values from .69 to .80 (e.g. Chen, Gully & Eden, 2001). A range of coping factors were measured using the Brief Cope (Carver, 1997). The grouping of the items was based on earlier factor analysis research (Gibbons, 2009). The short version of Costa and McCrea's (2004) Five-factor inventory was used to measure extraversion, agreeableness, conscientiousness, neuroticism and openness. More than acceptable evidence for its validity and reliability have been offered across several studies (e.g. Gosling, Rentfrow & Swann, 2003). All the questionnaires were numbered and confidentiality was maintained. In total 88 were returned, this accounted for 55 per cent of the cohort. Students were informed that they were free to withdraw at any time and that being involved would mean they would be eligible to apply for course credit.

## Results

Data from 88 participants were entered into the analysis. The mean age was 22 years, 79 per cent ( $N=70$ ) were female and 21 per cent ( $N=18$ ) male. Pearsons correlations and *t*-tests were undertaken for each outcome measure (course satisfaction, motivation and feeling part of a learning community) against demographic factors, the sources of stress rated as hassles and again as uplifts, and for personality, coping and self-efficacy measures. Those predictors that were significant for a particular outcome measure were entered into a stepwise multiple regression until the most parsimonious model was established.

For the regression model with feeling part of a learning community the R squared was .423 and the adjusted R squared .362. For the model with intellectual motivation as the outcome the R squared was .328 and the adjusted R squared .256. For the model with course satisfaction, the R squared was .307 and the adjusted R squared .263.

## Discussion

### *Learning community*

The outcome measure in the first model looked at the extent to which students felt part of a group committed to learning and exploring academic interests. In terms of sources of stress, those rated as a hassle were stronger predictors of scores on learning community compared to those rated as an uplift. The one exception was that when learning resources were rated as an uplift, scores on feeling part of a learning community increased, though the relationship was only a trend. Learning resources refer to library and IT resources and the more students rated these as helping the more they felt part of a learning community.

Course delivery was a source of stress and referred to the learning materials provided; the pedagogic strategies used and how stimulated the students were by this. The more this was rated as a hassle the less students felt part of a learning community.

The more the university support facilities (i.e. the University Student Guidance Centre, personal tutors and other students) were rated as a hassle, the lower were the scores on learning community. The value of peer support above the infra-structure of support provided by the university has been found in earlier work (Gibbons, 2010), and it may have been this element that was the most important within this broad measure of support used: As students adjust to the new and challenging demands on their course they turn to their peers for social comparison and to help manage these demands. Their peers are perceived as being able to offer more immediate support and empathy. Moreover, students may feel that seeking out help through formal support links involves more effort and perhaps may leave the student doubting their competence compared to conversations with other students where learning issues can be discussed and resolved at an earlier stage.

The measure 'social opportunities' referred to the provision of formal opportunities on the course to interact with other

students and, across the university, in terms of social events, clubs and societies. The more social opportunities were rated as a hassle the lower were the scores on learning community. This highlights the importance of support and social engagement not just within the course but as an important part of the wider experience of being a student. Such wider social opportunities will invariably involve time with some students on their course and some that are not. Where students experience disappointment with such opportunities it appears to make them less likely to engage with peers in a learning context on their course (i.e. to feel part of a learning community).

In general, the dominance of hassles over uplifting ratings across all the regression models may be more indicative of the stage these first year students are at in their transition to university life. They are facing differences in pedagogy and how one learns at university compared to earlier learning, and this is to say nothing of the demands of financial management, independent living and forming new relationships, common for most first-year students. A source of stress that is new and difficult to manage can have significant stress effects as one masters the right strategies and this may explain the dominance of hassle over uplifting ratings.

It may also be the case that it is not meaningful to rate some of the sources of stress as potential uplifts, for example, course content and structure and careers advice. Such factors are unlikely to be rated as uplifting even when students are satisfied with them because, in such circumstances, these experiences would be seen as a normal part of the course. However, if students are dissatisfied with such factors it is likely that they will be rated as a hassle. A similar distinction was made by Herzberg (1959) between hygiene factors and motivators. In a work context, hygiene factors can include the physical work environment and status at work and which, if present, do not increase motivation or satisfaction but if absent do contribute to dissatisfaction.

In terms of coping and personality, dispositional control and openness were significant predictors. The stronger the students' sense of control or the more open their personality the more they felt part of a learning community. It is likely that as a sense of control increased so too does autonomy and learning independence and, in this case, a willingness to engage in learning with others.

Openness was a positive predictor. This suggests that a willingness and interest to explore new ideas goes hand in hand with feeling part of a learning community. Interestingly, none of the other aspects of personality, such as extraversion and self-efficacy or effective coping strategies, such as approach based coping, featured in any regression model. A possible explanation may link to the fact that these students were mid-way through their first year and the demands of adjusting to university life are likely to remain high for many – both in the university, in terms of how one is expected to learn, and outside in terms of the demands associated with being a new student and in establishing a work-life balance. The challenge of being a new student may mean that even those with the attributes that normally help are often overwhelmed by the demands involved in adjusting to university life. This is likely to explain the prevalence of hassles ratings over uplifting ones and the absence of attributes that are often found associated with learning and achievement.

### ***Intellectual motivation***

The outcome measure in the second model was intellectual motivation. The predictor with the largest Beta value was the work-home interface. This referred to measures on personal and family health; to important relationships and to personal aspects of one's life. The more these were rated as positive and uplifting the less, ironically, were reported scores on intellectual motivation. It may be the case that the more personal and family relationships and one's health are valued (the work-home interface measure)

the more students are likely to engage with friends and family and this may sometimes be at the expense of the time spent studying and this affects intellectual motivation. Unlike the rest of the UK, most students in Northern Ireland are home students and the culture is not just to return home during semester breaks but, for most students, to return home almost every weekend and substantial numbers live and commute from home. This finding suggests that students have yet to find the balance between the time spent with family and friends and the time needed to engage fully with their studies.

As with the earlier regression model, the more social opportunities were rated as a hassle the lower were scores on intellectual motivation and a similar explanation may apply: that is, disappointments with formal 'social opportunities' meant students engaged less with others on their course and this impacted on their intellectual motivation. However, given the value of peer support in enhancing learning, wellbeing and satisfaction (Gibbons et al., 2008, 2010), it is likely that where students are able to benefit from such support, it will have a positive impact on intellectual motivation. The challenge is to make the social opportunities, both those course specific and university wide, of a kind that students feel they can engage in.

As anticipated, openness was a significant predictor of higher scores on intellectual motivation, and where learning resources were valued, intellectual motivation increased. The more students felt the content and structure of the course was less relevant and the more they rated the learning and teaching strategies as a hassle, the lower were scores on intellectual motivation. In these final examples the predictors were not significant but they did make for the most parsimonious model and so it is important that educators remain focused on searching for new ways to engage their students and that the demands of research mean they do not lose sight of students' learning needs.

### **Course satisfaction**

The outcome measure in the final model was course satisfaction and it was found that the more teaching was rated as uplifting and the more the structure and relevance of the course was clear the higher were scores on course satisfaction and vice versa when rated as a hassle. Social opportunities was a predictor in all three models and it is likely that the more students can network and engage with others on the course and through clubs and societies the better placed they are to integrate into the wider university life. Their friendship networks may increase, their confidence and enjoyment may grow and this puts them in a better position to adapt to and engage more with the demands on their course. The challenge in a university where so many students commute home so frequently is to offer social opportunities which are enticing enough to make students want to stay. Integrating more social opportunities during the teaching week, through clubs and societies and sports, could be considered and networking benefits could be achieved by extending the induction period at the start of the course, by integrating more peer-based learning in lectures and including more or frontloading more small-group personal tutorials in the first semester. Such initiatives could help increase a students' support network.

### **Limitations**

There were a number of limitations, most notable was the use of the NSS with an assumed validity. It was used because its completion by final-year students across the UK underpins university league tables and so it is, de facto, a recognised measure of the student experience. However, there is much that still needs to be done to establish a level of validity that matches its frequency of use. Other limitations link to the choice of a survey design. The sample type was voluntary and while the response rate from the target population was not untypical (55 per cent), a larger sample would allow for more variables to be entered into the regression models and

interaction effects to be tested.

### **Summary and conclusions**

Common factors linked to feeling part of a learning community included library and IT resources; learning resources and pedagogic strategies; university support facilities and the social opportunities available. This final factor was in all three regression models and it may be the support element that was particularly important. The different demands students were asked to rate were more frequently rated as a hassle than as an uplift (12 to four respectively). This finding, along with the absence of the types of coping and dispositional attributes normally linked to satisfaction and wellbeing (Gibbons, 2012), may well reflect a particularly anxious period of adjustment for students early in their studies. Moreover, some of the sources of stress may equate to Herzberg's hygiene factors where it may not be appropriate to rate them as potential uplifting factors and the questionnaire should be re-configured to reflect this.

With intellectual motivation, the work-home interface was a predictor but in a counter-intuitive way: when rated as an uplift, intellectual motivation fell. It was suggested that this was linked to balancing course demands with time spent with family and friends. Openness and dispositional control were important predictors with the first two models. Other than these, there was a conspicuous absence of personality traits and coping strategies normally associated with positive outcome measures and this may reflect the acute stress involved in the early transition to university life. Where research has found such dispositional influences are predictive it is with samples of second and final year students (Gibbons, 2008, 2010).

### **Recommendations**

To effectively review the student experience one should draw on several outcome measures. University league tables based on NSS course satisfaction results could offer more meaningful insights if the results on learning community and intellectual motivation were also considered.

The early part of the first year is a period of acute stress for many and this may explain why retention and attrition are particular issues in the first year. It is important that educators are aware of this student experience and consider ways of building on the existing strategies to support them.

It is likely that an effective way to do this is to promote initiatives for students to interact and network more with each other and not just during induction week but throughout the first semester, for example, through class exercises, by rotating group composition in group activities in tutorials and lab classes, by introducing paired one to two minutes exercises in lectures and by supporting subject society events.

Making students aware of the evidence that the first year is a particularly challenging time and why is critical. It is important that students who experience associated anxiety do not see this as a reflection of their ability or inability as individual learners but of the circumstances and challenges the first year poses.

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# Giving psychology away: How George Miller's vision is being realised by psychological literacy

Philip Banyard & Julie A. Hulme

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*In George Miller's famous address to the American Psychological Association in 1969 he explored the aims and future direction of psychology. Psychology could develop as a professional elite that develops specialised knowledge that experts can hold on to or it could aim to 'give psychology away' and to allow the general public access to psychological knowledge that will be of benefit to them. In so doing it will create 'a new and different public conception of what is humanly possible and humanly desirable'. This vision is being realised 50 years on by the wide dissemination of psychology knowledge through, for example, university school courses in the subject, and the growth of psychological literacy in the general public. This paper discusses issues raised by this and the implications for the profession of psychology and the perception of psychology in the general public are discussed.*

**Keywords:** *psychological literacy; George Miller; public perceptions; A-level psychology; democratisation.*

## Giving psychology away

**I**N 1969 GEORGE MILLER addressed the American Psychological Association (APA) as President and laid out a challenge that still resonates today. He started by saying,

The most urgent problems of our world today are the problems we have made for ourselves (1969, p.1063).

At the time when he gave the address the US government was at the height of its military action in Vietnam against the peasant army of Vietnamese people. This military incursion into a foreign country resulted in substantial loss of life (55,000 from the US and 1.5 million from Vietnam; Pilger, 1989) with no obvious military, social or economic benefit. Then as now there was concern about the involvement of psychology with the military (APA, 2015; Banyard & Flanagan, 2011).

If these sorts of modern-day problems have been made by people then if we want to solve them we need to know a bit more about people. This is where psychology comes in. And, Miller continues, if psychology can help with our problems then it should try to do so. He suggests that our obligations as citizens (rather than as scientists) mean that

if we have something of practical value to contribute, we should make every effort to ensure that it is implemented.

Miller recognised the revolutionary potential of psychology and went on to say, ...if we were ever to achieve substantial progress toward our stated aim – toward the understanding, prediction and control of mental and behavioural phenomena – the implications for every aspect of society would make brave men tremble (1969, p.1065).

Miller suggested that despite this potential nothing very revolutionary had emerged from psychology so far. Psychometric tests and factor analysis, for example, he pointed out as being admirable but not comparable to the impact of gunpowder, the steam engine or genetic surgery. And in the 45 years since this address it is difficult to identify any great additions to the list. A recent discussion in *The Psychologist* (Banyard, 2015) challenged psychologists to come up with an achievement that matched the non-stick frying pan in its impact and usefulness. The responses were not encouraging.

This absence of major findings appears to create a narrative of despair about the impact of psychology but Miller offered a more positive message;

I believe that the real impact of psychology will be felt, not through the technological products it places in the hands of powerful men, but through its effects on the public at large, through a new and different public conception of what is humanly possible and humanly desirable (1969, p.1066).

### **Psychological literacy**

We argue here that this public conception is being realised today through psychological literacy. The term psychological literacy was first introduced by Boneau (1990), who defined it rather broadly in terms of the skills and knowledge acquired through the study of psychology. More recently, though, it has been developed to move away from the rather prescriptive list provided by Boneau, and instead to emphasise the ways in which psychological skills and knowledge can be applied to solve real-world problems and to enhance everyday life. McGovern et al. (2010, p.11) define psychological literacy as having the ability to apply *'psychological principles to personal, social, and organisational issues in work, relationships and the broader community'*. It incorporates a reflective approach, involving personal insight, self-awareness and understanding of others, based on psychological knowledge. The related concept, psychologically literate citizenship (Cranney & Dunn, 2011), refers to the application of psychological literacy to social, community and global issues, and is closely linked to the concept of global citizenship (Bourke et al., 2012). According to McGovern et al. (2010, p.10), psychologically literate citizens are *'critical scientific thinkers and ethical and socially responsible participants in their communities'*. In a practical example of this, Harré (2011), in her book *Psychology For A Better World* demonstrates the ways in which psychology can be applied to improve global environmental sustainability.

Indeed, Halpern suggests that psychological literacy is relevant to many of the issues faced in modern human life:

Today's students must prepare themselves for a world in which knowledge is accumulating at a rapidly accelerating rate and in which old problems such as poverty, racism and pollution join new problems such as global terrorism, a health crisis created by alarming increases in obesity, and the growing gap between the poor and the very rich. All of these problems require psychological skills, knowledge and values for their solution (Halpern, 2010, p.162).

The assumptions within the construct of psychological literacy are that psychology students acquire skills, knowledge, values, insight and social responsibility through their psychology education, and that these acquisitions can then be applied to real-world problem solving in everyday life (Hulme, 2014). This may be an over-simplified perspective, and clearly caution is needed in ensuring that students are aware of their own limitations as non-qualified psychologists (see also Hulme et al., 2015, this issue). However, the basic tenets of psychological literacy resonate strongly with Miller's concept of *'giving psychology away'*; within the framework of psychological literacy, psychology will no longer be the sole preserve of professionally qualified psychologists, but instead, psychological knowledge will be freely available within the community, via individuals who have experienced some sort of psychology education, but are not experts in psychology, where it can be applied to resolve social and global issues.

### **Public perceptions of psychology**

Psychological literacy affects the perception that people hold about psychology and psychologists. Psychology has shown a concern about how the public perceives it and this concern has been apparent since the subject first broke away from philosophy (Wood, Jones & Benjamin, 1986). More recently the APA has been proactive in finding out what

are the public perceptions of the subject. They commissioned a report (Penn, Schoen & Berland Associates, 2008) based on a survey of 1000 adults. On the plus side the report found that the general public in the US have a positive view of psychology and believe that studying human behaviour can solve real-world issues, consistent with the concept of psychological literacy. On the down side they did not have a good understanding of the breadth and depth of psychology and did not see it as a hard science. One of the authors summarised it by saying *'Psychology in general is viewed as a career that treats "the individual", similar to psychiatry and social work, but not medicine'* (Mills, 2009, p.28). They found that the public are very sceptical of psychology's scientific credentials with only 30 per cent agreeing with the statement *'psychology attempts to understand the way people behave through scientific research'*.

The sense that psychology is not part of scientific activity is reinforced by the categorisation of books on the psychology shelves. These shelves heave with self-help books but the advice presented in only five per cent of the 3500 self-help books published each year is verified scientifically (Arkovitz & Lilienfeld, 2006). And there is only one psychology magazine which is aimed at the general public and based on rigorous research: *Scientific American Mind: Behaviour, Brain, Science, Insights* (Lilienfeld, 2012).

When asked about psychological concepts the general public will sometimes report opinions that vary substantially from accepted understandings in psychology. For example, a telephone survey in the US exploring beliefs in about memory found that 63 per cent of respondents agreed with the statement that memory works like a video camera, 48 per cent agreed that memory is permanent and 37 per cent agreed that the testimony of a single confident eyewitness should be enough to convict a criminal defendant (Simons & Chabris, 2011).

In the UK, a study with teachers interested in the neuroscience of learning

(Dekker et al., 2012) found that 29 per cent agreed that *'If pupils do not drink sufficient amounts of water (i.e. six to eight glasses a day) their brains shrink'*, 93 per cent agreed that *'Individuals learn better when they receive information in their preferred learning style (e.g. auditory, visual, kinesthetic)'* and 48 per cent agreed that *'We only use 10 per cent of our brain'*. There is no evidence for any of these statements yet these myths have taken hold even among people with an interest in the topic. In fact, part of the problem may be that some of the myths are competing with genuine scientific psychological evidence, such as that cognition is improved by hydration (Edmonds & Jeffes, 2009) and that eating breakfast can enhance some children's cognitive performance (Hoyland, Dye & Lawton, 2009). How can a teacher, with limited knowledge of psychology, distinguish between the two types of information? Improved psychological literacy in the educational community can only assist.

In the US, the general public views psychology as less valuable to society than a number of other disciplines, including physics, business, medicine, and engineering (Janda et al., 1998). Clearly the general public holds very different ideas about psychology, its scientific credibility and its findings to the ideas held by psychologists themselves.

The public misunderstanding of the nature of psychology is widespread and persistent; indeed, research has consistently reported that even A-level psychology teachers are suspicious about psychology's scientific status (Maras & Bradshaw, 2007; Rowley & Delgarno, 2010). Given the value of psychology as a discipline for helping to enhance human life, in a scientific and evidence-based (rather than self-help) way, changing public perceptions of psychology would be a worthwhile endeavour.

Psychology has at least two useful assets in its campaign to be understood better by non-specialists, and both are aspects of psychological literacy. Firstly, the business of changing minds and attitudes lies very much

at the core of psychology. Social psychologists have been concerned with persuasion and marketing, and health psychologists with attitude and behaviour change for many years. There is surely potential for psychologically literate psychologists to apply some of these theories to solving the problem of psychology's bad press.

Secondly, one of the key skills included in McGovern et al.'s (2010) outline of psychological literacy is '*communicating effectively in different modes and with many different audiences*'. Psychology is a popular subject, and as a discipline, we have at our disposal an army of individuals who have studied psychology, appreciate its scientific foundations, and are able to communicate effectively with different audiences. It may be time for a '*peaceful revolution*' (Miller, 1969), in which we mobilise our troops and start to deploy those effective communication skills to reshape the public perceptions of our discipline. The implication, then and now, is that we need to reflect on how we communicate and change the ways that we teach.

### **A-level psychology**

One driver for the growth of psychological literacy is the popularity of educational courses in psychology in schools and colleges. It is estimated that for the last 15 years over 13 per cent of each cohort of 18-year-olds have taken a qualification in the psychology (BPS, 2013) and if you add in the number taking psychology as part of their courses in health and social care, for example, then a picture develops of a population with a growing awareness of the basic ideas of psychology.

Many A-level Psychology students go on to apply to read the subject at university but the majority do not. Of the over 100,000 students who take an AS-level examination in the subject, about 56 per cent progress to complete the A-level (JCQ, 2014). At undergraduate level approximately 23,000 students start a degree each year in psychology of whom 59 per cent have an A-level in the subject (HESA, 2013) which indicates

that the progression from A-level to HE in psychology is only around 25 per cent. In other words, of the 100,000 who start an advanced school course in psychology less than 15 per cent continue with the subject at university.

These data tell us that AS- or A-level is the only formal psychology many students will study and so these courses are in a position to have a profound effect on the nation's understanding of psychological concepts. With over 100,000 people taking these courses every year for over a generation the nation is becoming psychologically literate through this route. The question to consider is what this psychological literacy means in practical terms. What are the representations of psychology that are held by these students and how do they differ from those held by psychologists?

Surveys of A-level students show the subject is held in high regard by them but their view of the content is distorted by a dated curriculum that is largely populated with historical, male Americans (Banyard & Duffy, 2014; McGuinness, 2003) and focused on social and developmental topics. Also, the subject is not so highly valued outside of the student body with many negative comments from government figures and elite universities concerning scientific rigour (Jarvis, 2011; Russell Group, 2011). This suggests a mismatch between the perceptions of their subject held by academic psychologists and those held by the informed (psychologically literate?) general public who have studied the subject for at least a year. This also has implications with regard to correcting the misconceptions of psychology held by the general public, as discussed above, and suggests that the psychology community may be missing an opportunity to educate the populace in terms of psychological literacy.

### **Democratisation**

There is a general change in our relationship with knowledge being brought about by digital technologies (Candy, 2000). The access to information afforded by these tech-

nologies allows us, for example, to self-diagnose perceived medical and psychological conditions, and the access to other people through social media allows for the sharing of experience and practice. The internet plays a role for young people in mediating information on sensitive issues (Borzekowski & Rickert, 2001) and this confirms research showing the disinhibiting effect of the internet and the increased willingness to seek out information on embarrassing issues online when compared with the telephone or face-to-face communication (Joinson & Banyard, 2002, 2003).

This democratisation of knowledge poses a challenge to the centralised model of learning and to the power of the professions such as psychology. The communication theorist Harold Innis writes,

...new technologies alter the structure of our interests: the things we think about. They alter the character of our symbols and the things we think with. And they alter the nature of community: the arena in which thoughts develop (1954, p.20).

Innis's comment is derived from his work on ancient civilisations and at the time that he was writing, in the middle of the twentieth century, he argued that contemporary advances in communication had the effect of enlarging the range of reception while at the same time reducing the points of distribution (Carey, 1989); in other words – broadcasting. Innis argued that an oral tradition of knowledge transfer within a society (in contrast to a written tradition) challenges the development of monopolies and enhances the democratic processes within that society. In contrast, the digital technologies of the 21st century create an opportunity for learners to take more control of their learning and to engage in sharing of personal understandings that is a new manifestation of the oral tradition.

Social media provide an opportunity for greater democratisation of our everyday lives. Although the roles of Facebook and Twitter in the Arab Spring of 2010 have been overstated, it is clear that social media have an impact on

political events (Beaumont, 2011; Brym et al., 2014). These social media take broadcasting out of the hands of powerful organisations and allow individuals to take part and follow their own agenda. In the area of education these facilities democratise learning by giving greater access to knowledge and ideas and greater opportunities to form communities of expertise and to disseminate information (Underwood et al., 2010).

This process of democratisation has the potential to take knowledge out of the hands of an elite body of academics and professions. Just as the invention of the printing press challenged the power of the church in the Middle Ages by making knowledge accessible to ordinary people, this new revolution in communication is a challenge to academic orthodoxy. Psychological knowledge is very much a part of this; consistent with Miller's vision of a psychology that belongs to the people, accessible psychological knowledge can facilitate this challenge to established academia.

Once more, psychological literacy is a key aspect of this. McGovern's definition of psychological literacy includes:

scientific thinking, disciplined analysis of information to evaluate alternative courses of action and competent in using and evaluating information and technology (McGovern, 2010, p.11).

These components of psychological literacy closely resemble the educational construct of information literacy (Eisenberg, Lowe & Spitzer, 2004). Our psychologically literate citizens are able to find, sort through, evaluate and select appropriate knowledge in order to make sense of competing information, and draw evidence-based conclusions. For the school teacher, or parent, who is unsure of whether giving a child breakfast or a drink of water is beneficial for their learning in school (see above), being psychologically literate means being able to make the most of freely available information, thanks to the recent democratisation of knowledge, to find and make sense of the evidence for themselves.

### Digital natives

Digital technologies have also changed the power relationships within education. Prensky (2001) points to the new expectations, skills and experiences of digital natives (those brought up with digital technologies). He argues that,

The single biggest problem facing education today is that our Digital Immigrant instructors, who speak an outdated language..., are struggling to teach a population that speaks an entirely new language (Prensky, 2001, p.2).

The process of labelling a generation as being fundamentally different is not new, for example, baby boomers and Generation X (Bennett & Maton, 2010). It is, however, too simplistic to suggest a typology that divides us into digital natives or digital immigrants (Salajan et al., 2010) and the creation of additional types for example digital settlers (Palfrey & Gasser, 2010) and digital tourists (Toledo, 2007) has not added to the discussion. Moving beyond the issues with rigid typologies, however, Prensky's metaphor directs us to the technologically rich worlds of the people and to consider how this impacts their learning and everyday life.

The behaviour of people is always changing and driving the bottom-up development of new technologies. For example, texting was a bi-product of mobile telephone technology but young people discovered it as a means of communicating cheaply and from the first message being sent in 1992 it developed to the point where 7.4 trillion texts were sent in 2011 (Gayomali, 2012). Currently there appears to be a move away from Facebook especially by the young (Garside, 2013; YouGov, 2014) as new means of communicating become more popular. People find new uses for technologies and make them their own but then move on to novel communication strategies as they become available. Again, McGovern's conceptualisation of psychological literacy as encompassing the skills to be 'competent in using and evaluating information and technology' (McGovern, 2010, p.11) is relevant

here. As times and communication strategies evolve, our psychologically literate citizens will move with them, and be able to remain in touch through their ability to learn to use new technology.

### Reflexive literacy

The bottom-up pressures on knowledge are not new or unique to technology. Literacy is commonly conceptualised as a top-down process whereby people learn the rules of grammar and the vocabulary of a particular language. This is only partly true and languages are always evolving. One obvious example is the continual refreshing of the vocabulary. The *Oxford English Dictionary* provides regular updates to its list of words. Most recently it has added words such as *carne asada*, *crony capitalism*, *digital footprint*, *duck face*, *man crush*, *Obamacare*, *retweet*, *shabby chic*, *simples*, *sticker licker*, *teachable moment*, *the ant's pants*, *tiki-taka*, *tomoz*, *twerk*, *vaping*, *vishing*, and a personal favourite, *lolcat*. Although many will see these changes as regrettable they illustrate how language changes as a bottom-up process as people develop new understandings about words and how they are expressed.

This evolution of language through bottom-up pressures, resulting from common usage, has been happening for centuries (as those of us who studied Chaucer or Shakespeare at school will have realised quite quickly). In some ways, it seems that psychology is undergoing a similar evolutionary shift. If literacy is a reflexive process, does the same principle also apply to psychological literacy? Will we allow public conceptions to influence the agenda of psychology or will we try and hold on to the specialised knowledge that we have developed?

### Giving it away

Miller's vision for psychology was that it would change our view of ourselves, and he used the example of Freudian theory. He suggested that the practical application (therapy) has only had a limited impact, but the theory itself has changed the way we

think about ourselves in the Western world. This is the type of change that happened when it was discovered, in other branches of science, that our planet is not the centre of the universe, and when it became accepted that our ancestors were hairy and lived in trees. Such theories and discoveries change the way people see themselves. Psychology has the same potential to change our view of who we are and what we can be. In the language of psychological literacy (McGovern et al., 2010, p.11), psychology helps us to become 'insightful and reflective about one's own and others' behaviour and mental processes'.

Miller noted the growing need for psychological services and wrote in 1969 that there were not enough psychologists to meet that need. He went on to say,

the people at large will have to be their own psychologists and make their own applications of the principles we establish (p.1071).

This has implications for how we deal with scientific knowledge. If we follow one path then psychologists will discover things about people, hold onto that knowledge and become experts and they will then be able to use that expert status to sell their services and control the use of the knowledge.

Miller proposed a different path when he wrote,

...our responsibility is less to assume the role of experts and try to apply psychology ourselves than to give it away to the people who really need it (p.1071).

If we follow this path then we make psychological knowledge freely available (open source?) so that the general public can have a better view of who they are and what choices they have. In this way the control issue is about using psychology to allow the ordinary individuals to have more control over their own behaviour and hence their own lives. Miller finished his paper by saying:

I can imagine nothing that we could do that would be more relevant to human welfare, and nothing that could pose a greater challenge to the next generation of psychologists than to discover how best to give psychology away (p.1074).

We argue that the growing psychological literacy brought about by its position as an important part of general education is beginning to fulfil Miller's vision of giving it away.

## **Conclusions**

The general population is becoming increasingly psychologically literate but the understandings it has of psychology do not match those of the profession. Furthermore, there are many widely held misconceptions about psychology and also about human behaviour. One way to respond to these misconceptions is to convince the general public about the value of psychology and psychologists. Lilienfeld (2012) points to

our ability to apply scientific reasoning and rigorous methodology to assessing, evaluating, and alleviating human problems, whether they be mental health difficulties, such as depression or anxiety disorders, or broader societal difficulties, such as prejudice or blind obedience (also see Hayes, 1996) (p.14).

If psychology chooses to follow Miller's vision and seek to give psychology away then we can enhance public understandings of the subject and challenge the misconceptions that take hold. Psychology may not have developed transformational theories or products but it still has the potential to be revolutionary and change our perceptions of who we are and who we can be. One way to further this is through promoting and supporting psychological literacy. Our impact then will not be measured by academic output and conference presentations but by our effect on public perceptions of what is humanly possible.

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# Recent papers on teaching, learning, writing and assessment

Papers selected by James Hartley

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Bennett, R. & Kane, S. (2014)

**Students' interpretations of the meaning of questionnaire items in the National Student Survey.**

*Quality in Higher Education*, 20(2), 129–164.

This paper shows, with lucid examples, that students from different backgrounds, experiences and approaches to learning respond differently to key items in the NSS. This shows the weakness of employing average values for educational management and decision making purposes.

Contact: r.bennett@londonmet.ac.uk

Bourne, A. & Robson, M.A. (2015)

**Participants' reflections on being interviewed about risk and sexual behaviour: Implications for collection of qualitative data on sensitive topics.**

*International Journal of Social Research Methodology*, 18(1), 105–116.

This article outlines how 11 participants reflected on their experiences of taking part in a previous interview study that had explored aspects of their risky sexual behaviour. The themes that emerged described the value that they placed on honest and open interaction within a non-judgemental environment. They also illustrated how being interviewed about prior behaviour can facilitate a sense-making process and possibly provide some degree of cathartic benefit.

Contact: adam.bourne@lshtm.ac.uk

Bradley, S., Kirkby, E. & Madriaga, M. (2015)

**What students value as inspirational and transformative teaching.**

*Innovations in Education and Teaching International*, 53(3), 231–242.

This paper analyses the nominations made by over 3500 students for a large teaching awards scheme with examples of the reasons given for nominating individual teachers. Themes (e.g. good teaching style, rapport with students, vocational concern, etc.) are identified and illustrated with numerous examples. The paper illustrates inadvertently the difficulty of creating a Teaching Evaluation Framework to match the Research Evaluation Framework.

Contact: m.madriaga@shu.ac.uk

Cabanac, G. (2015)

**Unconventional academic writing.**

<http://doi.org/10.6084/m9.figshare.1306561>

This paper summarises approximately 130 papers illustrating whimsy, humour, surprise, irony, anger, and scorn in academic prose. It was originally written to celebrate my 75th birthday, and I highly recommend it!

Contact: Guillaume.cabanac@univ-tlse3.fr

Conaway, W. & Bethune, S. (2015)

**Implicit bias and first name stereotypes: What are the implications for online instruction?**

*Online Learning*, 19(3), June.

The online classroom is seen as being non-threatening, unbiased, and a safe environment because there is no visual contact between tutor and student. However, it is possible that stereotypical names may lead to bias. Here 147 instructors completed an Implicit Attitudes test and the results showed a small degree of bias with respect to students' names.

Contact: Wendy Conaway, Division of General Education, Ashford University, Texas, USA.

Cotterill, S.T. (2015)

**Tearing up the page: Re-thinking the development of effective learning environments in higher education.**

*Innovations in Education and Teaching International*, 52(4), 403–413.

An account of various projects in the UK that are re-thinking current practice in higher education in the UK. Traditional practices (lectures, seminars, quality assurance processes) are seen to negate learning, and the focus of higher education should be on motivating and inspiring students to learn rather than providing a prescribed diet of what and how students are expected to learn.

Contact: [stewart.cotterill@winchester.ac.uk](mailto:stewart.cotterill@winchester.ac.uk)

Gbadamosi, G. (2015)

**Should we bother improving students' attendance at seminars?**

*Innovations in Education and Teaching International*, 52(2), 196–206.

Traditional seminars were revised in format so that six groups of six to eight students each ran their own seminar on topics determined by the tutor's lecture course. Records of attendance at the seminars and the lecture course were collected and compared with data from the previous year. Favourable student views on the procedures were collected in focus groups.

Contact: [ggbadamosi@bournemouth.ac.uk](mailto:ggbadamosi@bournemouth.ac.uk)

See also: Lopez-Bonilla, J.M. & Lopez-Bonilla, L.M. (2015). The multidimensional structure of university absenteeism: An exploratory study. *Innovations in Education and Teaching International*, 52(2), 185–195.

Hartley, J. & Cabanac, G. (2015)

**An academic odyssey: Writing over time.**

*Scientometrics*, 103, 1073–1082.

This paper presents and discusses the results of six studies of my academic writing over 50 years. It reports slight changes in readability, in the styles of titles chosen, and that papers with the highest citations were written with colleagues rather than by me alone. It is noted that my publication rate has remained much the same for 50 years but that this has been achieved in old age at the expense of other academic activities!

Contact: [j.hartley@keele.ac.uk](mailto:j.hartley@keele.ac.uk)

Kozak, M., Krzanowski, W., Cichocka, I. & Hartley, J. (2015)

**The effects of data input errors on subsequent statistical inferences.**

*Journal of Applied Statistics*, 42(9), 2030–2037.

People sometimes make mistakes when inputting data for analysis. In this study with 280 students inputting data, 28 per cent of them made at least one error. Some of these errors were small (e.g. 1.11 rather than 1.21) and some large (e.g. 121 rather than 12.1). Such large errors can have substantial effects. Demonstrations with students may make them proceed more carefully when inputting data.

Contact: Marcin Kozak: [nyggus@gmail.com](mailto:nyggus@gmail.com)

Lai, K-W. & Hong, K-S. (2015)

**Technology use and learning characteristics of students in higher education:**

**Do generational differences exist?**

*British Journal of Educational Technology*, 46(4), 725–738.

One of several papers on this topic about possible differences between learners who are ‘digital natives’ (i.e. born after the development of new technology) and those who are not (i.e. born before this time). This paper, like most of the others, argues that these generational differences do not really exist. Most students use new technologies these days, but what they use them for is rather limited (in terms of learning).

Contact: [wing.lai@otago.ac.nz](mailto:wing.lai@otago.ac.nz)

Lusk, C. & Fearfull, A. (2015)

**Supporting students in higher education: Results and recommendations following a paradigm shift within a Scottish Ancient.**

*Studies in Higher Education*, 40(6), 1107–1127.

This paper describes the implementation of a new ‘Support Advising’ service to replace a traditional ‘Student Counselling’ service in a Scottish University. The revised approach brought together professional staff from other disciplines to provide student-led short-term individual and group work.

Contact: [clusk@st-andrews.ac.uk](mailto:clusk@st-andrews.ac.uk)

McLean, A., Bond, C.H. & Nicholson, H.D. (2015)

**An anatomy of feedback: A phenomenographic investigation of undergraduate students’ conceptions of feedback.**

*Studies in Higher Education*, 40(5), 921–932.

Four different perceptions of feedback (not mutually exclusive) were obtained from interviews with 28 physiotherapy students in New Zealand. These were feedback as ‘telling/correcting’, ‘guiding’, ‘developing understanding’ and ‘opening up a different perspective’. Most students reported on the first two of these categories, three on the third one and only one on the last. The implications for giving feedback are discussed.

Contact: [angela.mclean@otago.ac.nz](mailto:angela.mclean@otago.ac.nz)

See also: Barnard, R., de Luca, R. & Li, J. (2015). First-year undergraduate students’ perceptions of lecturer and peer feedback: A New Zealand action research project. *Studies in Higher Education*, 40(5), 933–944. Contact: [rbarnard@waikato.ac.nz](mailto:rbarnard@waikato.ac.nz)

Medimorec, S. & Pennycook, G. (2015)

**The language of denial: Text analysis reveals differences in language use between climate change proponents and skeptics.**

Climatic Change. doi:10.1007/s10584-015-1475-2

*Coh-Matrix*, *AntConc* and *LIWC* text analysers were used to examine the language of two climate change reports – one supporting the concept (a governmental report) and the other criticising it (written by prominent sceptics). Although roughly the same materials were used by both groups the language of the governmental report was more conservative and more tentative than that used by the sceptics.

Contact: smedimor@waterloo.ca

See also another *LIWC* paper: Brancu, M. et al. (2015). Are there linguistic markers of suicidal writing that can predict the course of treatment? A repeated measures longitudinal analysis. *Archives of Suicidal Research*. doi:10.1080/13811118.2015.1040935

Nairn, K., Cameron, J., Anakin, M., Juntrasook, A., Wass, R., Slogo, J. & Morrison, C. (2015)

**Negotiating the challenge of collaborative writing: Learning from one group's mutiny.**

*Higher Education Research & Development*, 34(3), 596–608.

With the increase in performance-based measures and the need for academics to document and list their publications has come an increase in ways of helping academics to write. One popular development has been the rise of writing groups and retreats. This paper describes what happened when one such group decided to write single paper between them.

Contact: karen.nairn@otago.ac.nz

Onodera, N. & Yoshikane, F. (2015)

**Factors affecting citation rates of research articles.**

*Journal of the Association for Information Science and Technology*, 66(4), 739–764.

This paper provides a comprehensive review of those factors that affect citation rates in scientific journals (and incidentally excludes Psychology). Citation rates were measured for 230 to 240 articles sampled from six disciplines. Two of the main factors were to be the number of references, and particularly their recency. However, the effects of the number of authors per paper and the authors' achievements were weak. Be good to repeat this for Psychology!

Contact: nt.onodera@y5.dion.ne.jp

Open Science Collaboration (2015)

**Estimating the reproducibility of psychological science.**

*Science*, 349 (6251) 28 August, 2015, aac4716-1 – aac4716-8.

The authors conducted replications of 100 experimental and correlational studies published in *Psychological Science*, the *Journal of Personality and Social Psychology*, and the *Journal of Experimental Psychology: Learning, Memory and Cognition*. They report substantial difficulties in replicating studies and their findings. This leads to an interesting discussion about the value of replication studies.

Contact: nosek@virginia.edu

Parsons, S., Abbott, C., McKnight, L. & Davies, C. (2015)

**High risk yet invisible conflicting narratives on social research involving children and young people, and the role of ethics committees.**

*British Educational Research Journal*, 41(4), 709–724.

Different universities and colleges provide different amounts of information for the public about their procedures and, specifically in this case, about their ethics committees. The authors report that approx. Sixty per cent of universities provide some (conflicting and highly varied) details, and 40 per cent do not. They argue for public and consistent information across institutions.

Contact: s.j.parsons@soton.ac.uk

Ravert, R. D., Gomez-Scott, J. & Donnellan, M.B. (2015)

**Equivalency of paper versus tablet computer survey data.**

*Educational Researcher*, 44(5), 308–310.

Collecting data via computer tablets proved to be equivalent to collecting it using paper-based methods. Also this method had the advantage over collecting data via the web (say using Amazon Turk) because you can have more precise knowledge of the respondents.

Contact: mbdonnellan@tamu.edu

Shaw, T., Cross, D., Thomas, L.T. & Zubrick, S.R. (2015)

**Bias in student survey findings from active parental consent procedures.**

*British Educational Research Journal*, 41(2), 229–243.

Active parental consent involves parents giving permission for their child(ren) to take part in a study, typically by signing a consent form. Passive parental consent takes place where parents are informed that if they do not indicate their refusal and ‘opt-out’, their consent will be assumed. Participation rates under passive consent are often over 90 per cent whereas under active consent they vary around 35 per cent, leading to biased samples. Strategies for resolving these difficulties are tried and tested.

Contact: t.shaw@ecu.edu.au

Sio, U. N., Kotovsky, K. & Cagan, J. (2015)

**Fixation or inspiration? A meta-analytic review of the role of examples on design processes.**

*Design Studies*, 39, 70–99.

This paper demonstrates how providing design students with varied examples (as opposed to a few) can help them develop what designs they wish to follow. By analogy it might be of value to provide students in psychology with many examples of different research projects and styles when they are deciding upon their own.

Contact: unsio@cmsu.edu

Smith, E. & White, P. (2015)

**What makes a successful undergraduate? The relationship between student characteristics, degree subject, and academic success at university.**

*British Educational Research Journal*, 41(4), 686–708.

Using data from 38,000 students at one ‘elite’ university the authors conclude that once social background and prior attainment are controlled for, the subjects studied contribute little predictive power to models predicting final degree classifications. Differences in degree outcome were most strongly related to attainment on entry to higher education, sex and ethnicity.

Contact: es228@le.ac.uk

Snape, R. & Skipper, Y. (2015)

**White Water Writers.**

*Keele University: Journal of Academic Development and Evaluation (JADE)*, Issue 4, 32–39.

White Water Writers is a literacy project run from Keele which gives groups of young people the chance to write and publish their own novels. University student volunteers lead the writers through planning, plotting, drafting and proofreading over five days. At the end of the week, the book is printed and released for sale on Amazon Kindle. This approach has been used successfully with primary, secondary, tertiary and special school students. It is truly amazing.

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Yettick, H. (2015)

**One small droplet: News media coverage of peer-reviewed and university-based education research and academic expertise.**

*Educational Researcher*, 44(3), 173–184.

Academic research is hardly read at all by the general public: people rely on newspapers, television and tablets. In this study of 227,095 news items, 0.69 per cent mentioned educational research. Some strategies for improving on these dismal figures are discussed but, as the title suggests, they are unlikely to have a significant effect. Just thought I would cheer you up!

Contact: hyettick@epe.org.

**Useful journals**

*Enhancing the Learner Experience in Higher Education* ([www.northampton.ac.uk/elehe](http://www.northampton.ac.uk/elehe))

*The Internet & Higher Education* (Elsevier)

*Teaching in Higher Education* (Taylor & Francis)

*Teaching, Learning and Enquiry* (Indiana University Press)

*Journal of Higher Education Policy and Management* (Taylor & Francis)

*Online Learning* (<http://onlinelearningconsortium.org/read/online-learning-journal/>)

# Book Reviews

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**W**ELCOME TO THE Book Reviews section of the *Psychology Teaching Review*. This issue sees our reviewers choose a pair of highly accessible, practical psychology texts.

Anna Smith, MSc Psychology student at the University of Birmingham, reviews a relatively recent text, *The Practical Researcher: A student guide to conducting psychological research* by Dana S. Dunn. This is a book which focuses on the pragmatic, real-life application of good practice in the research environment.

Sarah Howcutt, PhD student at Oxford Brookes, reviews *Oxford Revision Guides: AS & A Level Psychology Through Diagrams*, by Grahame Hill. This is a deceptively simple text which does what it says on the tin – and much more besides.

Please do get in touch if you would like to review a book for *Psychology Teaching Review*. Reviewers get to choose and keep the book they review and the submission process is simple and straightforward. A book that comes with your peers' seal of approval is a particularly valuable resource for psychology students and teachers alike – if there is a book that you love, that has set your hair on fire (metaphorically speaking) with inspiration, or just a book that you return to again and again when the research going gets tough, let us know. Classics and contemporary texts are equally welcome on these pages.

I look forward to hearing from you.

**Nikki Newhouse**

Email: [nikki.newhouse.14@ucl.ac.uk](mailto:nikki.newhouse.14@ucl.ac.uk)

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*The Practical Researcher: A student guide to conducting psychological research (3rd ed.)*

**Dana S. Dunn**

John Wiley & Sons, Inc (2013)

Paperback; 429 pages.

ISBN: 978-1-11836-004-0

*Reviewed by Anna Smith*

*The Practical Researcher* is aimed at the novice psychologist wishing to learn practical tools to carry out psychological research. Equally, as noted in the preface, the text is designed to assist teachers of research methods in psychology to bridge the gap between research theory and application. The book places a welcome emphasis on 'doing' as the prime method of learning by providing varied exercises to assist students to use the chapter topics to develop their own research projects during each stage of the process. However, it could also serve as a text for courses that do not have a practical element by teaching students to recognise the elements of 'good'



research and fostering greater confidence in critiquing published papers.

As a mature student recently returned to academia as a postgraduate student of psychology some 15 years after graduating, this book assuaged some of the concerns I had about returning to a subject I feared I had long forgotten.

*The Practical Researcher* is designed to be read chronologically as it provides a step-by-step approach to completing a research project, from identifying and refining a research question through to submitting and publishing a paper. For many new students the idea of choosing their own research topic can seem as accessible as conjuring something from nothing. Dr Dunn addresses the problem with simple guidance and practical exercises, advising the reader to begin by mining themselves for topics of interest. While more advanced topics such as research design or analysis of data can even strike fear into more seasoned psychology students, Dr Dunn uses plain language and a clear overview of key issues in each area alongside wide-ranging real-world research examples to good effect, demystifying the subject into manageable chunks.

*The Practical Researcher* consists of 10 chapters including: The Why and How of Psychological Research, Searching and Reading the Psychological Literature, Writing: A First and Last Consideration, Experimental Research, Applied Research and Field Research: Non-experimental Approaches, and Presenting and Publishing Research, which together cover the research process from inception to publication

The enthusiastic new student might well be tempted to skip straight to Chapter 6 (Experimental Research) as that's where 'the action' really begins. As Dunn says, 'In many ways the first half of this book was preparation for this chapter...' (Dunn, 2013, p.165) but the chapter-by-chapter design works to develop layers of knowledge in stages. While Dr Dunn is keen to emphasise the importance of applying knowledge practically, the early chapters provide the foundations to succeed.

The format of the book made this an accessible read with text frequently broken up with tables, graphics and 'break-out' boxes. The chapter title pages provide a clear breakdown of the topics covered. Within each chapter, I found the mix of theoretical and background information with practical examples very helpful. Each chapter provides initial foundation subject knowledge – for example, Chapter 5 (Ethical Considerations in The Practice of Research) introduces and explains the importance of ethical research and gives a historical framework, before addressing the practicalities of how to complete an ethical approval form. The inclusion of at least four exercises within most chapters serves to keep the reader actively engaged, to check their knowledge or flesh out their own research design ideas. I particularly enjoyed the break-out sections known as Research Foundations, which cover historical context, current issues or additional reflections on each topic, for example providing an extant example from holocaust survivor research to show situations where having a comparable control group may not always be possible (Chapter 7: Applied Research and Field Research: Non-experimental Approaches). Emboldened words throughout the book are linked to a useful glossary of definitions that I referred to a number of times while becoming familiar with new (or long forgotten!) terms.

While this is admittedly a text for students, on occasion I found the more general commentary over-simplistic such as reminders to save your work regularly and advice on how to revise a paragraph. In Chapter 4 (Writing: A First and Last Consideration), Dunn details how to restructure your written work by printing and laying out your pages across the floor for better review. While this might be useful, I was left with the sense that sometimes making mistakes is the best way to learn what works for each individual. Additionally, it is necessarily a challenge to cover such a large topic in one

single text, and on occasion I felt the requisite depth of knowledge of a topic just couldn't be contained within this book. For example, within Chapter 4, as above, the section on writing to APA (American Psychological Association) style would still leave the student needing to consult the APA guidelines. Similarly, Chapter 8 (Planning Analysis and Displaying Data) included a very short section on descriptive and inferential statistics where perhaps a signpost to an introductory statistics text would have been more effective. That said, suggested reading lists at the end of each chapter serve as clear directions for where to go for further information and are a very useful addition.

Ultimately, I would highly recommend this book as a very clear and straightforward guide to carrying out a practical research project and a pleasure to read. Students will undoubtedly be left feeling not only more confident in the 'hows' of research but equally importantly will be filled with enthusiasm for carrying out good quality research, and surely that's of benefit to the entire profession.

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***Oxford Revision Guides:***

***AS & A Level Psychology Through Diagrams***

**Grahame Hill**

Oxford University Press (2009)

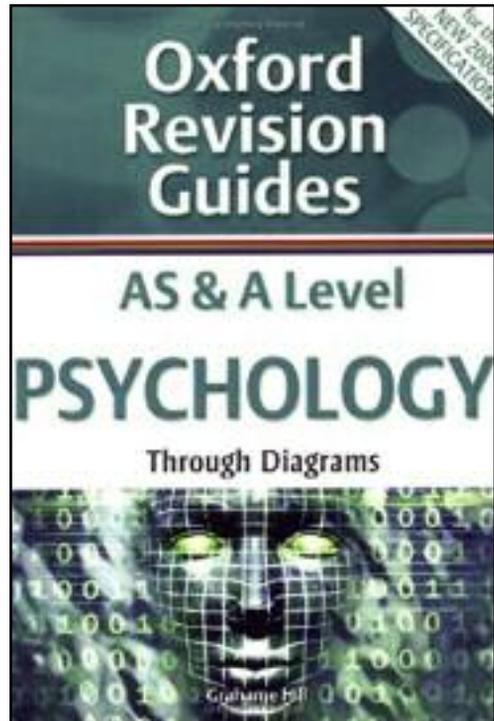
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*Reviewed by Sarah Howcutt*

Readers may think, on first sight, that this book is too limited in scope and dated to be worth a second look. Yet while the level 3 (A-level) curriculum has recently changed, this book not only continues to be relevant to A-level, Access and International Baccalaureate candidates, it should also be introduced to many university students, to ensure that their foundation knowledge is sound.

Grahame Hill's revision guide was created to provide easily accessible summary notes for students undertaking English A-level specifications. The requirements of each exam board, laid out at the start of the book, are no longer current. However, the contents pages group topics by psychology discipline and so students today will easily locate what they need. Similarly the index is detailed without being overwhelming. Many of the pages are still covering material which appears in the new specifications and in early undergraduate modules.



The beauty of this text is that it manages to reduce whole topics to single sides of A4 while still providing considerable detail in terms of both key concepts and the research underpinning them. A key feature of Hill's skill is that he manages to write in a clear, academic style while covering a broad range

on each topic – all within a side of paper. Each page has a unique layout but they are all divided into short paragraphs. These are contained in boxes which are creatively arranged, sometimes in table format to facilitate comparisons; sometimes irregularly in order to be memorable. Throughout the book, the text is interspersed with simple, annotated line drawings to provide additional recall cues and illustration for the reader. It should be noted that this book is printed entirely in greyscale. Initially this could appear unappealing although my own students have enjoyed this format because they could colour-code the text in ways that worked for them.

The book begins by introducing the reader to the key approaches and debates in psychology. This is a key strength of this textbook as many books for this level are so focused on topics that the historical context and philosophy behind research decisions is lost or left until the end, making evaluation more difficult. The book then moves onto research methods and Hill effectively condenses complex topics into a form which makes the learning of them feel possible to the most unconfident of students. For example, when developing an analysis plan, students can access a single table which outlines the questions to ask and the inferential statistical test to choose for each level of data. Many an undergraduate or Master's student would value such a quick reference guide for preparing assignments!

A broad range of topics make up the remainder of the book. As would be expected from a revision guide for A-level, these cover large research fields such as social, developmental, biological and cognitive psychology. Yet Hill also includes applications of the subject including topics within health, forensic, sports, educational, media and anomalistic psychology. Some core

studies or theories, such as Milgram's obedience work, are given a page in their own right so that there is more room for evaluation and discussion. However, there is a good balance between description and evaluation throughout the book, given the need to be selective in the material.

A word of caution is needed for A-level teachers, however. While the initial sections on philosophy and research methods are accessible to a wide audience, the treatment of the topics and theories makes this text better suited to more able students. The evaluations given within many topics are useful ones and grounded in research evidence as well as the debates. However, due to the lack of space for elaboration, the reader is frequently left to 'fill in the gaps' to explain how the cited research provides evidence for or against a theory. Yet for this same reason the text is one that can be used beyond A-level to support students who have not studied the subject before or found concepts difficult to grasp.

In short, this is a text which will now require the user to be selective since the curriculum has now moved on. In places, newer research evidence may be needed to supplement the materials. However, this book has not yet outlived its usefulness since it beautifully models how to make revision notes and has just the right balance of description and evaluation to form the backbone of many essays. This is certainly not a book that is gathering dust on my bookshelf despite its age and apparent simplicity.

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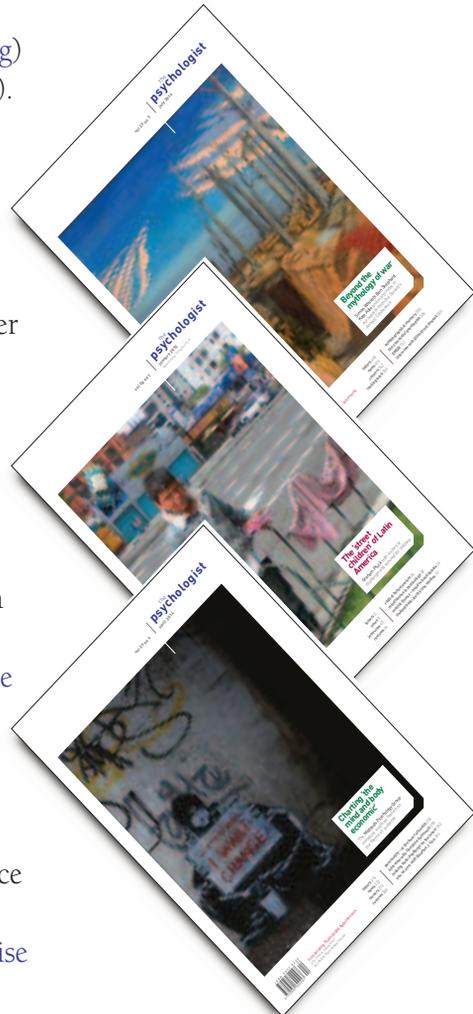
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