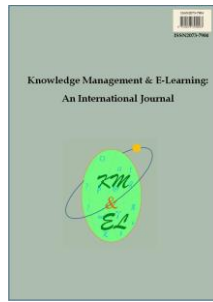# Do no harm: Risk aversion versus risk management in the context of pedagogic frailty

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Do no harm: Risk aversion versus risk management in the context of pedagogic frailty

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Abstract: Innovation in teaching ensures that education remains fit for purpose in a changing world. The model of pedagogic frailty proposes that educators may perceive innovation as risky, which may inhibit innovation, and thus reduce opportunities to update learning experiences. Within psychology, psychological literacy (the skills, knowledge and attributes acquired as outcomes of studying psychology) is becoming increasingly central to the curriculum. Educators are teaching more applied psychology, which requires new pedagogic approaches and are adopting and modelling core professional values espoused as components of psychological literacy, including evidence-based practice, ethics, and professional competence. We argue that psychology educators (and those from other disciplines) may assess the risk of innovation through the lenses of these professional values. The decision to maintain 'safe' practices may reflect a risk management approach, rather than frailty. We propose a model whereby frailty may depend on social context and risk in different educational circumstances. The professional values associated with psychological literacy and similar integrative disciplinary constructs, which at first seem to hinder innovation, may promote innovation which is creative and safe, and will facilitate the development of a rigorous evidence base to inform future practice.

Keywords: Pedagogic frailty; Psychological literacy; Risk management; Education; Innovation

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1. Introduction

Creative and innovative approaches to learning and teaching in Higher Education (HE) are important within a constantly changing sector (Hamel & Valikangas, 2003; Walder, 2014). New challenges require new solutions, and arguably educational materials and methods need to evolve in order to keep pace with the changing demography of the student body, a shifting graduate employment landscape, and digital advances. However, educational innovation carries significant risk (Le Fevre, 2014). When implementing an innovation (for example, a new method of teaching, a new assessment, or a novel use of educational technology), the outcomes are largely unpredictable (Winstone, 2017). Whilst the typical educational model adopted within higher education (HE) institutions is one where students are independent learners, educators still hold significant responsibility for student learning outcomes. With an educational innovation comes the risk that it might have a negative impact on student attainment, progression, and other important factors such as a student's confidence or motivation.

The model of pedagogic frailty presented by Kinchin et al. (2016) captures the challenges faced by the educator in contemporary HE. Drawn from a clinical analogy, the concept of pedagogic frailty represents the stress that can arise from constant change within HE. Within the model, four key factors are seen to underpin the development of the frailty syndrome: a focus on instructional, rather than regulative discourse; a lack of synergy between pedagogy and discipline; unresolved tension in the research-teaching nexus, and perceived externality of the locus of control. The result of these challenges, according to Kinchin et al. (2016), is the adoption of a 'safe and sustainable pedagogic approach' (p. 2). In this paper, we continue the clinical analogy to interrogate this key 'symptom' of pedagogic frailty, risk aversion, within the context of psychology education.

1.1. Risk and educational innovation

The future consequences of trying something new are rarely known, and this can lead to an aversion to take risks (Howard, 2013; Le Fevre, 2014). We might identify two main types of risk inherent to the process of educational innovation. First, an educator might be concerned about the potential adverse or unexpected effects of the innovation on students. This type of risk aligns with common definitions of clinical risk; applying Kohn, Corrigan, and Donaldson's (1999) definition of clinical risk to education would mean conceptualising risk as the probability that students are adversely affected by educational methods, such as through poor achievement and a reduction in learning gains. Second, and perhaps as a result of the first type of risk, an educator might be concerned about the potential effect on their own career development. Developing innovations takes time, and educators need to be confident of institutional support during the initial stages, when students may find the innovation challenging or problematic and thus may evaluate it negatively (e.g. Spooren, Brockx, & Mortelmans, 2013), if they are to be encouraged to risk a new approach. Of course, it is possible that such an innovation might lead to positive outcomes, especially given time to fully develop practice, but a lack of certainty in the absence of institutional reassurance is likely to increase risk aversion.

The risk aversion described by Kinchin et al. (2016) is likely to arise from the combination of uncertainty of outcomes, alongside accountability and the pressures of performativity in contemporary HE. This risk aversion can lead to what in cognitive psychology is termed the '*status quo* bias' (Samuelson & Zeckhauser, 1988); when faced with two options, if one involves continuing to do the same as one is doing now (i.e. where outcomes are predictable), this option is preferred. This bias is directly driven by the uncertainty of the outcomes of the unfamiliar option. The *status quo* bias is highly

likely to underlie the 'safe and sustainable' approach described by Kinchin et al. (2016) that is often evident in university educators. The *status quo* bias means that educators may not recognise that failing to innovate may actually be risky in itself, as teaching is not updated and students may miss opportunities to achieve novel outcomes that are required in the modern world. But is an educator who chooses to adopt a 'safe and sustainable' approach to their teaching necessarily displaying risk aversion? We argue that the answer to this question depends critically on the reasoning behind the educator's decision. Rather than a simple preference for the *status quo*, such a decision could be the result of a detailed assessment of potential risks.

1.2. Risk management

The processes of risk assessment and management are ubiquitous within corporate contexts conferring financial risks, and are also highly prevalent within the healthcare sector, where it is essential to consider the potential impact of treatment programmes on patients (e.g., Wolff, Bourke, Campbell, & Leembruggen, 2001). Whilst the specific definition of risk management varies according to context, common features include an attempt to anticipate and mitigate against adverse outcomes. For example, within the social care sector, risk management is defined as "the processes devised by organizations to minimise negative outcomes which can arise in the delivery of welfare services" (Gurney, 2000, p. 300), and similarly in medicine as "self-protective activities meant to prevent real or potential threats of financial loss due to accident, injury or medical malpractice" (Kraman & Hamm, 1999, p. 963). In some contexts, similar processes can be represented by associated concepts; for example, 'risk minimization' refers to efforts to reduce harm and maximise benefits arising from a practice (Manthorpe, 2000). Furthermore, even in areas where formal risk management is less prevalent, 'duty of care' is an important concept (Stalker, 2003), representing "a principle of protection within which the assessment of need, vulnerability, and risk are essential" (Kemshall & Pritchard, 1997, p. 10).

How might these principles apply to HE? Management of risk in this context is likely to involve consideration of the impact of teaching methods and materials on student outcomes, and attempts to minimise potential adverse effects. Hence, an educator wishing to implement an innovation might consider in detail the potential risks to student learning, and concurrently assess the likelihood of these risks leading to adverse outcomes.

During the process of considering the likelihood that the proposed innovation will confer advantageous, and not disadvantageous outcomes, and of weighing up the probability of likely costs and benefits, the educator might decide that further information is needed to further illuminate the uncertainty surrounding the outcomes (Bowers & Khorakian, 2014). Indeed, Bowers and Khorakian remind us that following an analysis of potential risk, it is not simply a case of choosing between adopting or rejecting the innovation. Instead, the outcome might be to wait until further evidence or information comes to light. Perhaps, then, an educator who chooses a 'safe and sustainable' teaching approach over something more innovative has decided that without sound evidence for the innovation, there is too much uncertainty surrounding the outcomes, and so decides to delay implementation until such evidence is available. Likewise, delaying innovation may provide the educator with time for scholarship and more careful preparation to maximise the probability of its success. Is this behaviour an example of risk aversion, or rather the result of a risk management process?

1.3. 'First do no harm'

The clinical context is particularly useful as an analogue when considering risk management in education, as professional values and responsibility are particularly important. Indeed, according to Szmukler and Rose (2013, p. 132), in a clinical context "it may seem that it is not possible to be a responsible professional without assessing and managing risk". We might surmise that careful analysis and management of risk is more common in disciplines with strong principles and values driving professional conduct. In many professions allied to healthcare, the ethical principle of non-maleficence (Beauchamp & Childress, 2001) underlies decision-making and professional conduct. Deriving from the Latin *Primum non nocere*, the maxim 'First do no harm' is most commonly associated with medical care (e.g. Gillon, 1985), but has been applied to the design of educational interventions (e.g. Michael, 2012). In the context of education, adherence to the principle of non-maleficence requires ensuring that "educational materials and methods avoid unnecessary risks, injury or harm to the students engaging those materials and methods" (Hall, 2010, p. 4). In fact, the implicit social contracts between students and their universities imply that HE institutions have a duty of care to ensure that they always act in the best interests of their students (Prinsloo & Slade, 2014). However, the application of the principle of non-maleficence to education is not without its critics; for some, this duty of care leads to risk aversion, and instead a preference for 'tried and tested' educational methods (Hargreaves, 2008). This echoes the 'safe and sustainable' approach which characterises pedagogic frailty (Kinchin et al., 2016).

2.   Risk in the context of psychology education

As we have outlined elsewhere (Winstone & Hulme, 2017), the discipline of psychology offers a useful context within which to discuss issues surrounding frailty, as it has a clear integrative disciplinary concept, that of psychological literacy (Hulme, 2014; Halpern, 2010; McGovern et al., 2010), which unites the discipline (i.e. what is to be taught) with pedagogy (i.e. how it should be taught). We hope that, in exploring the ways in which psychological literacy interacts with pedagogic frailty, we will provoke discussion of the ways in which integrative disciplinary concepts may facilitate innovation and reduce frailty in other disciplinary contexts.

Psychological literacy encompasses "the skills, knowledge and attributes that can be acquired through the study of psychology, and the ways in which psychology can be applied" (Winstone & Hulme, 2017, p. 2). It can thus be conceptualised as the collective outcomes of a successful psychology education. According to McGovern et al. (2010, p.11):

> *"Psychological literacy means:*
> *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 skeptic approach to problem solving;*
> *Applying psychological principles to personal, social, and organizational 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; and*

Being insightful and reflective about one's own and others' behaviour and mental processes."

Psychological literacy has been embraced relatively recently within the discipline of psychology, but is of growing importance, particularly within the UK, US and Australia, where it has been embedded within professional body requirements for undergraduate psychology within the last five to ten years. As a result, psychology education is changing, in order to embed psychological literacy more explicitly within the curriculum, and to support our students to develop as independent learners, who are employable and who contribute as citizens in a global society. Underpinning these changes is a need for educational innovation, to develop new practices which accommodate this new, relevant and applied psychology. Pedagogic frailty, as conceptualised in Kinchin et al. (2016), could easily be perceived as a barrier to the creativity that is needed at this stage in the development of the discipline. With the increasing pressure, constant change, and fatigue and stress, according to Kinchin, comes inhibition of the "capacity to change practice in response to an evolving teaching environment" (p.2). The resulting preference for the *status quo* can be viewed as risk aversion (Winstone, 2017). However, a 'safe' approach to teaching is one possible outcome of, but not a direct indicator of, pedagogic frailty. A teacher who chooses to maintain a traditional way of teaching may not be doing so as a result of cumulative pressure, but rather as an enactment of their professional values. Those seeking to promote innovation, such as academic developers, may need to be able to differentiate between risk aversion and values-driven risk management in order to facilitate educational innovations.

2.1. Risk management and professional values in psychology education

2.1.1. Value 1: Evidence-based practice

Evidence-based practice is a core value for HE professionals; for example, the Higher Education Academy (HEA) UK Professional Standards Framework (UKPSF), which underpins the sector-standard qualifications for teaching in the UK, requires academics to demonstrate that they: "Use evidence-informed approaches and the outcomes from research, scholarship and continuing professional development" (HEA, 2011) to inform their teaching. Commitment to evidence-based practice is also central to the values of psychology as a discipline. The British Psychological Society (BPS)'s (BPS, 2008, p.iii) professional practice guidelines include the statement that "Applied psychologists help others through the unique application of research-based psychological knowledge and skills in a structured process." Likewise, in 2006, a presidential task force from the American Psychological Association (APA) published a report detailing the benefits of evidence-based practice for patient outcomes (APA Presidential Task Force on Evidence-Based Practice, 2006). Thus individuals teaching psychology within HE have been trained extensively, both as psychologists and as university teachers, to use a strong evidence base to inform their professional practice.

Within the discipline of psychology, the evidence base that can inform learning and teaching approaches comes from at least three different sources. Firstly, as in all disciplines, university teachers are likely to engage with methods that have contributed to their own learning, and of which they have direct, personal experience as a learner (Fraser, 2016). This may be a flawed starting point, but it can be a safe option, especially for those who are new to teaching. Also in common with other disciplines, psychology

academics can draw on scholarship of the pedagogic literature, both generic and discipline specific, and on continuing professional development. This enables them to learn about the effectiveness of different approaches through the evaluations and experiences of others, and thus provides a safe way to introduce new practices and innovations into their own teaching. Finally, psychology academics can draw upon psychology itself to inform their approach; extensive psychological research has investigated what motivates students to learn, and the social, developmental and cognitive factors associated with successful learning (Zinckiewicz, Hammond, & Trapp, 2004). Thus there is a strong evidence base available to psychology academics to inform 'safe practice' with regard to established learning and teaching methods, and relating to teaching the traditional psychology curriculum.

Psychological literacy encompasses a range of psychological skills and knowledge, and their application to problem solving in everyday life. McGovern et al. (2010, p.11) argue that an important component of psychological literacy is the ability to apply "psychological principles to personal, social, and organizational issues in work", which for a psychology academic certainly must include the ability to apply psychology to learning and teaching. However, teaching students to become psychologically literate is a new concept to many psychologists, and as such, the evidence base has not yet been established. Most academics will have studied a theoretical curriculum, rather than the applied emphasis that is currently required, and as such, their own personal experiences are of limited value. Pedagogic and psychological research take time, and as such, although the evidence base is growing (e.g. Mair, Taylor, & Hulme, 2013; Avery & Winstone, 2014), there is relatively little direct evidence available within the pedagogic literature to inform teaching practice relating to psychological literacy. When assessing the risk associated with innovations intended to deliver psychological literacy in the curriculum, the principle of non-maleficence which is so firmly embedded within psychology is an important consideration, and in these circumstances, as argued by Bowers and Khorakian (2014), awaiting further evidence before implementing innovation may be a sensible approach to risk management.

So how can innovation in psychology teaching be facilitated, in order to build such an evidence base and develop teaching to deliver psychological literacy? Psychological literacy itself can be argued to offer some answers to this conundrum. McGovern et al. (2010, p.11) suggest that another central element of psychological literacy, alongside the application of psychological knowledge and skills, is "Taking a creative and amiable skeptic approach to problem solving". Creativity is a key component of psychological literacy, and whilst the pedagogic literature may be sparse with regard to its delivery, a psychologically literate teacher can draw on the vast array of broader psychological and pedagogic literature to identify approaches for which it might be possible to predict likely outcomes. Relevant pedagogic literature includes that on constructive alignment (Biggs, 1996), which can facilitate the development of learning outcomes, learning activities and assessments that emphasise psychological literacy, and authentic assessment (Gulikers, Bastiaens, & Kirschner, 2004), which demonstrates the value of assessing students' skills and knowledge in the context of genuine employability-related problems. Within psychology, the research on social learning theory can inform peer and group-based learning practices, scaffolding, and the role of the teacher as a role model, and evidence from cognitive psychology can facilitate the development of learning activities that enable students to learn deeply and to be able to transfer knowledge and skills to novel contexts. Risk management, then, can be achieved through creative problem solving that draws upon the existing evidence base, but interprets and applies it in novel ways to address the requirements of the new curriculum. Psychological and pedagogical research skills can then be employed to evaluate these

new innovations, and to start to build direct evidence around the efficacy of different approaches to teaching psychological literacy that can be disseminated and used more widely across the sector.

Within a profession that places clear value upon evidence-based practice, therefore, innovation in the absence of a well-established and rigorous evidence base may well be perceived as risky, and taking unnecessary risk may well be viewed as contrary to professional values related to the importance of evidence-based practice, and to contradict the very notion of psychological literacy that educators are trying to teach and model in the classroom. Choosing a 'safe and sustainable' approach using tried and tested methods for which efficacy has been well established, rather than a potentially risky innovative method, could therefore be argued to be evidence of professional risk management, rather than 'frail' risk aversion. However, applying psychologically literate thinking, through creative problem solving and application of existing knowledge in novel contexts, may facilitate innovation and the development of an evidence base.

2.1.2. Value 2: Acting ethically

Professional bodies in psychology lay down very clear ethical guidelines for psychologists, who are expected to adhere to them in all aspects of their professional lives. To quote the British Psychological Society (BPS, 2017): "Ethics is central to everything we do whether in research or practice". Ethics run through the core of the discipline; McGovern et al's (2010, p.11) definition of psychological literacy includes *"acting ethically"* as a key element. As such, ethical principles and an ethical code of conduct are commonly taught at undergraduate level, as a requirement for accreditation. This means that psychologists are very aware of a responsibility for the people with whom we practice: in the case of teaching, these are our students.

The teacher-student relationship is interesting in an ethical context. The BPS ethical code (BPS, 2009, p.9) makes clear that the privilege of power brings ethical responsibility towards those with whom we work: "Finally, ethics is related to the control of power. Clearly, not all clients are powerless but many are disadvantaged by lack of knowledge and certainty compared to the psychologist whose judgement they require." For teachers and students, there is a clear power differential, in part because teachers grade student work, in part because the teacher possesses knowledge and expertise to which the student aspires, and in part because the university endows its staff with authority over students. Students are empowered to some extent by their position as customers of universities, especially where they pay fees, but this may add compulsively to the ethical responsibility and duty of care felt by academic staff towards their students (Stalker, 2003). Academic psychologists, then, are ethically bound to act responsibly towards their students, and obliged to act in the best interests of their wellbeing and their academic success.

Teaching innovation, as we have seen, has the potential to be risky; if an innovation fails, student learning can be compromised. Psychology academics are ethically bound to assess the risk to students, and to factor this into their decision making about teaching delivery. Taking a risk that might seriously compromise student success is professionally unacceptable; on the other hand, small risks that can be compensated through a contingency plan, such as adaptation of a future session to cover the missed learning, may be appropriate. Viewed through this lens, a decision to maintain 'safe' established practice rather than innovate, or to minimise innovation, can be seen as a risk management strategy, rather than frailty and risk aversion *per se*.

Teaching innovations are frequently the subject of pedagogic research and evaluation, and thus also raise questions about ethical conduct when considering students as participants in research. Most professional bodies in psychology have a requirement that participants must provide informed consent for their participation in research, not be coerced into participating through threat or reward, and must be able to withdraw from research without consequence for themselves. Within an educational context, where the researcher is the students' own teacher, this can become complex. If we accept that the teacher has power over students, then informed consent and an absence of coercion are difficult to ensure; there may be a tendency for students to comply with their teachers' requests for participation simply as a result of their authority over them, rather than through a genuine willingness to take part. Likewise, if an innovation is delivered to a whole class, how can a student withdraw without consequence if they miss teaching as a result? In reality, many innovations are delivered without consent being sought, as standard lessons, and consent is introduced at the evaluation stage, with students being able to opt out of the evaluation process if they wish. However, this fails to address the issue of students being used as human 'guinea pigs' in an experiment to determine whether an innovation is effective in promoting learning.

This is not to say that all pedagogic research or evaluation is unethical, but rather to emphasise that there is a requirement for serious ethical consideration when conducting it, taking into account the power disadvantage of our student participants. A careful approach which ensures that innovation is informed by a rigorous evidence base, which involves students in decision making about learning delivery, and which offers alternative options to engage with content in the event that an innovation is not successful or a student does not engage, can all ensure that creative teaching can be delivered and evaluated ethically and with minimal risk to students. This has some similarity to risk management in the health care context, where a drug may be prescribed for its medical benefits, despite a risk of unpleasant side effects, which may require additional treatment; the innovative academic needs to be confident that a benefit to learning will be gained through the novel approach, because it has been informed by a strong evidence base, and to plan ways to mitigate against potential detriment to learning.

Teaching psychological literacy is to some extent problematic in this regard; as we have argued above, evidence is scarce within the discipline community, because it is a concept that has not been taught and tested previously to any great extent. Maintaining safe and established practices could be viewed as ethically responsible, rather than pedagogically frail. Indeed, modelling psychological literacy for students requires the teacher to teach ethically, since ethics are such a central component of the discipline of psychology.

Again, psychological literacy presents a challenge to teaching innovation, in that it requires ethical practice and responsibility for students, and that teaching it in the absence of a strong evidence base may increase risk. Innovation from this perspective requires risk management, and a decision not to innovate could be viewed as ethical practice rather than pedagogic frailty. However, psychological literacy can also provide the solution, through its emphasis on creative problem solving, and application of psychological principles to everyday life and work. Ethical practice requires rigorous risk assessment to ensure that students are protected, and psychologically literate thinking enables any identified risks to be minimised to ensure that innovation is safe and likely to support learning.

2.1.3. Value 3: Professional competence

In addition to consideration of ethics with regard to student learning and participation in pedagogic research, many professional bodies require psychologists to be mindful of their professional competence, and to practice only in areas in which they are appropriately trained and qualified. The BPS, for example, clearly states that psychologists must *"practice within the bounds of their competence"* (BPS, 2009, p16; see also Fouad et al., 2009). This guideline exists with good reason; a little knowledge can be a very dangerous thing when one's subject matter is other people.

In teaching, competence incorporates expertise in two key areas of knowledge: subject knowledge and pedagogic knowledge. In psychology, subject knowledge can be thought of in two domains, relating to theoretical or academic psychology, and practice-based, applied psychology. Most psychology academics are experts in theoretical psychology, but do not necessarily have expertise in psychological practice. However, their teaching may cover topics such as psychopathology, which have clinical relevance as well as being of academic interest. Such topics have been described as 'sensitive' (Hulme & Kitching, 2017; Winstone & Kinchin, 2017), as students may have direct personal experience of the topic being taught, and as such these topics have the potential to cause distress. Within the framework of psychological literacy, covering such topics is important, because it facilitates understanding of issues relating to mental health, and prepares students to live and work in a society in which mental ill health is prevalent. However, innovative teaching methods that focus on applying the material to everyday life have the potential to cause increased distress. This can be problematic for both students and tutors; students sometimes disclose personal experiences to tutors with an expectation that the tutor is an expert in the field, and thus can provide psychological support (Hulme & Kitching, 2017). If an educator is not trained to facilitate such reactions, then they may choose to adopt a 'safe and sustainable' approach to their teaching, in order to avoid the risk of potential psychological harm to students. In this way, they ensure that they act within the boundaries of their professional competence (which does not include clinical practice), and this could be viewed as risk management rather than risk aversion.

Likewise, teaching psychological literacy more generally requires academics to reframe their theoretical psychological knowledge into an applied context which is relevant to problem solving in everyday life. Many academics entered academic careers straight from undergraduate and then postgraduate study, and have limited experience in applying psychology within professional practice outside academia. Creating teaching practices and assessments that support students' development of psychological literacy might arguably be supported by additional subject knowledge that comes from professional training in applied psychology, rather than an academic career pathway.

At undergraduate level, psychology in the UK is traditionally taught as a pure science rather than an applied discipline (Becher, 1989). Neumann (2001) notes that academics identify first and foremost with their academic discipline, rather than with a more generic identity around learning and teaching, and as such, they are more likely to engage with discipline-specific pedagogic literature than either generic literature or literature from other disciplines. The evidence base for application of subject knowledge is well established in other disciplines, most notably within health care professional training, but has not been developed within psychology. As such, psychology tutors are not necessarily familiar with the pedagogic literature on teaching applications of subject knowledge, such as research into problem-based learning, and they may not have

encountered pedagogic approaches to assessing applied psychology such as authentic assessment methods.

In the context of teaching for psychological literacy, then, there is a need to consider innovation in the light of professional competence. Both the subject knowledge and pedagogic knowledge required to teach applied, rather than pure, psychology may be challenging for academics whose own training has been largely theoretical. Frailty, then, is not necessarily the problem for innovation with regard to psychological literacy, but confidence in professional knowledge and thus competence might be.

However, concerns around subject and pedagogic knowledge, and around professional competence more broadly, can be resolved through scholarship and professional development. McGovern et al. (2010, p.11) suggest that psychologically literate individuals are "competent in using and evaluating information", whilst the HEA (2011, p.3) require those teaching in HE in the UK to demonstrate that they "Engage in continuing professional development in subjects/disciplines and their pedagogy, incorporating research, scholarship and the evaluation of professional practices". Professional competence can be developed, and academics are highly skilled in scholarship which can enable them to extend their subject and pedagogic knowledge. In the same way that delaying innovation to allow the establishment of an evidence base may be an appropriate way to manage risk (Bowers & Khorakian, 2014), delaying innovation whilst professional competence is acquired may also be apposite. Psychological literacy in this context encourages professional development and scholarship, and facilitates innovation through risk management, rather than hindering it through risk aversion and frailty.

3.   Conclusion and implications

The pedagogic frailty model (Kinchin et al., 2016) has provided a thought-provoking stimulus for discussion within HE about the factors that might facilitate or hinder innovation in teaching. In particular, the model proposes that risk aversion is a primary symptom of frailty, which prevents innovation. Here, we have argued that appropriate assessment and management of risk are important components of professional responsibility, informed by values relating to evidence-based practice, ethics, and professional competence. We have shown that this approach to risk may be influenced by disciplinary discourse, using the example of psychological literacy (Halpern, 2010; McGovern et al., 2010) to illustrate how an integrative disciplinary concept might provide a lens through which to view risk relating to teaching innovation. We suggest that other integrative disciplinary concepts may also offer insight into professional approaches to educational innovation, and hope that our illustration of these key principles through the lens of psychological literacy will stimulate discussion in other disciplines. Our view of decision making about innovation as a possible risk management, rather than risk averse, strategy, and the influence of these values within the framework of psychological literacy upon a decision to innovate is summarised in Fig. 1.

We propose that psychological literacy, which highlights these professional values, may in the first instance appear to exacerbate frailty and inhibit innovation. However, psychological literacy places considerable emphasis on "*applying psychological principles to personal, social, and organizational issues in work, relationships, and the broader community*" (McGovern et al., 2010, p11), and may in turn offer a solution to the problems that it poses. Existing psychological knowledge provides an evidence base to inform innovation and reduce risk, and psychological

research methods can be applied rigorously to evaluate new approaches and inform further developments. This relates very neatly to McGovern et al's (2010) definition of psychological literacy, which talks about possessing the "critical subject knowledge of psychology", and about "valuing the intellectual challenges required…to evaluate alternative courses of action". Choosing an innovative teaching approach over one that is 'safe and sustainable' requires scholarship and understanding of how students learn, which can be informed by psychological knowledge, and a willingness to deeply engage with a problem to evaluate which approach will best stimulate learning. Finally, psychological literacy relates to insight and reflection, and this is highly compatible with the concept of the teacher as a reflective practitioner, able to evaluate and adapt teaching in the light of experience and evidence. Psychologically literate teachers will ultimately add to the evidence base available to all.
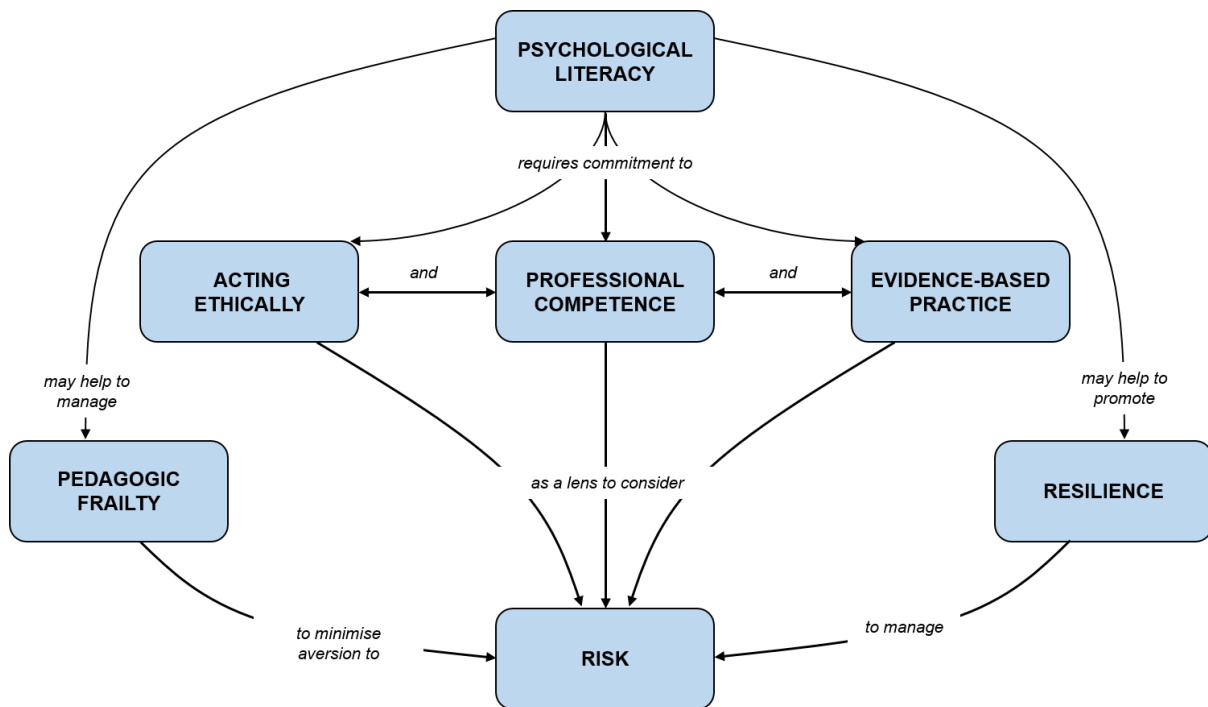
Fig. 1. Concept map representing hypothesised relationship between psychological literacy, professional values, and risk in the context of pedagogic frailty

A study of the motivation to innovate using technology-enhanced learning (Backhouse, 2013) supports our view that innovation is often values driven. In her survey of South African higher education teachers, Backhouse found that the majority of innovators cited pedagogy as their main driver for innovation, as they perceived technology as a way to maximise student engagement and learning. They also felt that technology could enhance the efficiency of their teaching, particular when resources were limited within the institution. However, she also found that institutional support for innovation was an important factor, with both student demand and managerial requirements influencing the decision to innovate with technology-enhanced learning. This suggests that a combination of values, individual factors and institutional factors are likely to predict whether an educator will innovate, or not.

It is note-worthy that the concept of risk management as described here incorporates a combination of factors associated with the individual academic, their students, and the context within which teaching innovation occurs. The adjective 'frail' usually refers to a characteristic of an individual, and in psychology might be considered a 'trait', meaning that it is relatively stable and unchanging over time. Other examples of psychological traits include intelligence and personality. In contrast, we suggest that pedagogic frailty depends on context, such as the topic and students to be taught, the evidence base available, institutional support for staff development and teaching innovation, and the professional competence of the teacher with regard to a specific task. As such, a teacher might be confident to innovate in one setting, and be perceived to be 'frail' as a result of risk aversion in a different circumstance. Within psychology, changeable characteristics that are dependent upon social context are considered to be 'states'. Other examples of psychological states include emotion and motivation. We propose that a state model of pedagogic frailty, incorporating a combination of teacher characteristics and social factors which can change over time and in different circumstances may be required to further research and discussion around this important topic. We hope that this will occur across diverse disciplines, and that ultimately, a better understanding of pedagogic frailty will inform academic development practice, to facilitate pedagogic innovation within discipline-specific contexts.

Within psychology, the first discipline to have been considered in this light, we believe that a psychologically literate teacher is one who is well equipped to deliver innovative teaching that is creative and moves the discipline forwards, and can practice within the bounds of their competence within a given educational context. This may, of course, require professional development and scholarship on the part of the educator, to stretch the bounds of their competence, and this too, draws upon the psychological literacy skills of the teacher. Thus psychological literacy might effectively act as a safety net to reassure the teacher during times of uncertainty and pedagogic frailty (Winstone & Kinchin, 2017). Perhaps the best strategy within psychology, to reduce pedagogic frailty and to foster innovation, is to prioritise the development of psychological literacy and its delivery within our academic community.

References

APA Presidential Task Force on Evidence-Based Practice. (2006). Evidence-based practice in psychology. *American Psychologist, 61*(4), 271–285. doi: 10.1037/0003-066X.61.4.271

Avery, R., & Winstone, N. (2014). *Enhancing STEM student employability through work-related reflective teaching activities and assessments*. Paper presented at the HEA STEM Learning and Teaching Conference. University of Edinburgh, Scotland.

Backhouse, J. (2013). What makes lecturers in higher education use emerging technologies in their teaching? *Knowledge Management & E-Learning, 5*(3), 345–358.

Beauchamp, T. L., & Childress, J. F. (2001). *Principles of biomedical ethics*. New York, NY: Oxford University Press.

Becher, T. (1989). *Academic tribes and territories: Intellectual enquiry and the cultures of disciplines*. Buckingham, UK: SRHE and Open University Press.

Biggs, J. (1996). Enhancing teaching through constructive alignment. *Higher Education, 32*(3), 347–364.

Bowers, J., & Khorakian, A. (2014). Integrating risk management in the innovation project. *European Journal of Innovation Management, 17*(1), 25–40.

BPS. (2008). *Generic professional practice guidelines*. Retrieved from

http://www.bps.org.uk/sites/default/files/documents/generic_professional_practice_guidelines.pdf

BPS. (2009). *Code of ethics and conduct: Guidance published by the Ethics Committee of the British Psychological Society*. Retrieved from https://beta.bps.org.uk/sites/beta.bps.org.uk/files/Policy%20-%20Files/Code%20of%20Ethics%20and%20Conduct%20%282009%29.pdf

BPS. (2017). *Ethics & standards*. Retrieved from https://www.bps.org.uk/taxonomy/term/352

Fouad, N. A., Grus, C. L., Hatcher, R. L., Kaslow, N. J., Hutchings, P. S., Madson, M. B., Collins, F. L., & Crossman, R. E. (2009). Competency benchmarks: A model for understanding and measuring competence in professional psychology across training levels. *Training and Education in Professional Psychology, 3*(4, Suppl.), S5–S26.

Fraser, S. P. (2016). Pedagogical content knowledge (PCK): Exploring its usefulness for science lecturers in higher education. *Research in Science Education, 46*, 141–161.

Gillon, R. (1985). "Primum non nocere" and the principle of non-maleficence. *British Medical Journal, 291*(6488), 130–131.

Gulikers, J. T. M., Bastiaens, T. J., & Kirschner, P. A. (2004). A five-dimensional framework for authentic assessment. *Educational Technology Research and Development, 52*(3), 67–86.

Gurney, A. (2000). Risk management. In M. Davies (Ed.), *The Blackwell Encyclopaedia of Social Work* (pp. 300–303). Oxford, UK: Blackwell.

Hall, B. (2010). Non-maleficence and the preparation of classroom teachers in instructional design. *Journal of Elementary and Secondary Education, 1*(11), 1–16.

Halpern, D. F. (2010). *Undergraduate education in psychology: A blueprint for the future of the discipline*. Washington, DC: American Psychological Association.

Hamel, G., & Valikangas, L. (2003). The quest for resilience. *Harvard Business Review, 81*(9), 52–65.

Hargreaves, J. (2008). Risk: The ethics of a creative curriculum. *Innovations in Education and Teaching International, 45*(3), 227–234.

HEA. (2011). *The UK professional standards framework: for teaching and supporting learning in higher education*. Retrieved from https://www.heacademy.ac.uk/system/files/downloads/uk_professional_standards_framework.pdf

Howard, S. K. (2013). Risk-aversion: Understanding teachers' resistance to technology integration. *Technology, Pedagogy and Education, 22*(3), 357–372.

Hulme, J. A. (2014). Psychological literacy: From classroom to real world. *The Psychologist, 27*, 932–935.

Hulme, J. A., & Kitching, H. J. (2017). The nature of psychology: Reflections on university teachers' experiences of teaching sensitive topics. *Psychology Teaching Review, 23*(1), 4–14.

Kemshall, H., & Pritchard, J. (Eds.). (1997). *Good practice in risk assessment and risk management 2: Protection, rights and responsibilities*. London: Jessica Kingsley Publishers.

Kinchin, I. M., Alpay, E., Curtis, K., Franklin, J., Rivers, C., & Winstone, N. E. (2016). Charting the elements of pedagogic frailty. *Educational Research, 58*(1), 1–23.

Kohn, L. T., Corrigan, J. M., & Donaldson, M. S. (1999). *To err is human: Building a safer health system*. Washington, DC: Institute of Medicine, National Academy Press.

Kraman, S. S., & Hamm, G. (1999). Risk management: Extreme honesty may be the best policy. *Annals of Internal Medicine, 131*(12), 963–967.

Le Fevre, D. M. (2014). Barriers to implementing pedagogical change: The role of teachers' perceptions of risk. *Teaching and Teacher Education, 38*, 56–64.

Mair, C., Taylor, J., & Hulme, J. A. (2013). *An introductory guide to psychological literacy and psychologically literate citizenship*. Retrieved from https://www.heacademy.ac.uk/system/files/resources/psychological_literacy_and_psychologically_literate_citizenship_0.pdf

Manthorpe, J. (2000). Risk assessment. In M. Davies (Ed.), *The Blackwell Encyclopaedia of Social Work* (pp. 298–299). Oxford, UK: Blackwell.

McGovern, T. V., Corey, L. A., Cranney, J., Dixon, W. E., Holmes, J. D., Kuebli, J. E., Ritchey, K., Smith, R. A., & Walker, S. (2010). Psychologically literate citizens. In D. Halpern (Ed.). *Undergraduate education in psychology: Blueprint for the future of the discipline* (pp. 9–27). Washington, DC: American Psychological Association.

Michael, L. (2012). "Primum Non Nocere" for personalized education. In *Proceedings of the Workshop on Personalizing Education with Machine Learning (PEwML).*

Neumann, R. (2001). Disciplinary differences and university teaching. *Studies in Higher Education, 26*(2), 135–146.

Prinsloo, P., & Slade, S. (2014). *Educational triage in higher open education: Walking a moral tightrope*. Retrieved from http://oro.open.ac.uk/40964/3/EDEN%20paper.pdf

Samuelson, W., & Zeckhauser, R. (1988). Status quo bias in decision making. *Journal of Risk and Uncertainty, 1*(1), 7–59.

Spooren, P., Brockx, B., & Mortelmans, D. (2013). On the validity of student evaluation of teaching: The state of the art. *Review of Educational Research, 83*(4), 598–642.

Stalker, K. (2003). Managing risk and uncertainty in social work: A literature review. *Journal of Social Work, 3*(2), 211–233.

Szmukler, G., & Rose, N. (2013). Risk assessment in mental health care: Values and costs. *Behavioral Sciences & the Law, 31*(1), 125–140.

Walder, A. M. (2014). The concept of pedagogical innovation in higher education. *Education Journal, 3*(3), 195–202.

Winstone, N. E. (2017). The '3 Rs' of pedagogic frailty: Risk, reward and resilience. In I. M. Kinchin & N. E. Winstone (Eds.), *Pedagogic frailty and resilience in the University* (pp. 33–48). Rotterdam: Sense Publishers.

Winstone, N. E., & Hulme, J. A. (2017). Integrative disciplinary concepts: The case of psychological literacy. In I. M. Kinchin & N. E. Winstone (Eds.), *Pedagogic frailty and resilience in the University* (pp. 93–107). Rotterdam: Sense Publishers.

Winstone, N. E., & Kinchin, I. M. (2017). Teaching sensitive topics: Psychological literacy as an antidote to pedagogic frailty. *Psychology Teaching Review, 23*(1), 15–29.

Wolff, A. M., Bourke, J., Campbell, I. A., & Leembruggen, D. W. (2001). Detecting and reducing hospital adverse events: outcomes of the Wimmera clinical risk management program. *The Medical Journal of Australia, 174*(12), 621–626.

Zinckiewicz, L., Hammond, N., & Trapp, A. (2004). *Applying psychology disciplinary knowledge to psychology teaching and learning*. Retrieved from https://www.heacademy.ac.uk/system/files/resources/applying_psychology_disciplinary_knowledge.pdf