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Article *in* Assessment & Evaluation in Higher Education · July 2016

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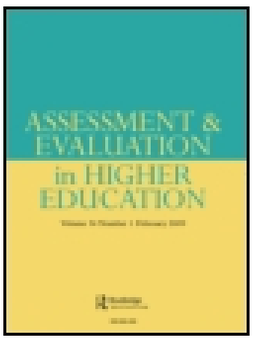

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ISSN: 0260-2938 (Print) 1469-297X (Online) Journal homepage: http://www.tandfonline.com/loi/caeh20

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To cite this article: Alex Forsythe & Sophie Johnson (2016): Thanks, but no-thanks for the feedback, Assessment & Evaluation in Higher Education, DOI: 10.1080/02602938.2016.1202190

To link to this article: http://dx.doi.org/10.1080/02602938.2016.1202190

ASSESSMENT & EVALUATION IN HIGHER EDUCATION, 2016
http://dx.doi.org/10.1080/02602938.2016.1202190

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ABSTRACT

Feedback is an emotional business in which personal disposition influences what is attended to, encoded, consolidated and eventually retrieved. Here, we examine the extent to which students' perceptions of feedback and their personal dispositions can be used to predict whether they appreciate, engage with and act on the feedback that they receive. The study is framed in psychological theories of mindset, defensive behaviours and new psychometric measures of the psychological integration of assessment feedback. Results suggest that, in this university population, growth mindset students were in the minority. Generally, students are fostering self-defensive behaviours that fail to nurture remediation following feedback. Recommendations explore the implications for students who engage in self-deception, and the ways in which psychologists and academics may intercede to help students progress academically by increasing their self-awareness.

KEYWORDS

Feedback; defensive behaviours; mindset; student motivation; performance

Introduction

The goal of good feedback is to help students become aware and translate that awareness into fruitful behavioural change. Students place a high value on their feedback as they recognise it will improve their chances of success (Hemingway 2011; Brown, Roediger, and McDaniel 2014). Research continually confirms the power of feedback on student motivation and performance (Orsmond and Merry 2011; Alderman, Towers, and Bannah 2012; Evans 2013). However, feedback is consistently categorised by students as the least satisfactory aspect of the university learning experience (MacDonald et al. 2007; Lew, Alwis, and Schmidt 2010; Merry et al. 2013).

Feedback strategies that demonstrate the most success encourage an active learning approach, such as the setting of challenging goals (McAlpine 2004; Elikai and Schuhmann 2010; Richardson, Abraham, and Bond 2012), information about the task and how it could be done more effectively, feedback about student errors and how those errors can be avoided (Hattie 2009) and feedback that draws on social-constructivist principles (Evans 2013). Conceptualising these strategies within an active student–student and student–tutor dialogue, rather than a one-way transmission, will increase both the quality of the feedback and student responses to their feedback (Nicol 2010). Evans goes farther in her 2013 systematic review, examining the nature of assessment feedback and comprehensively reviewing effective feedback and feed-forward practices. The author provides a pragmatic action plan for universities which addresses feedback practice at a micro-level, giving students clear guidance on how they can improve their work, and at a macro-level, such as clarifying the role of the student in the feedback process, and ensuring that staff have opportunities for sharing best practice.

There are a number of non-intellectual factors that influence academic performance (Richardson, Abraham, and Bond 2012; McKenny 2014), including student attitudes towards their feedback

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(Chalmers and Fuller 1996; Gibbs and Simpson 2004; Kohn 2011; Pulfrey, Buch, and Butera 2011) and the person who provided that feedback in the first place (Tippin, Lafreniere, and Page 2012). The purpose of this paper is to add to this body of literature by examining the psychological correlates of students' academic performance: specifically, the ways in which the implicit beliefs that students hold about themselves influence the extent to which students respond to feedback, are able to integrate feedback and are able to take deliberate action stemming from that information.

Dweck (2002) has applied the term 'mindset' to explain the two divergent perspectives that people hold with regard to the innateness or malleability of their personal characteristics, with each mindset being reinforced by a motivational framework that consequentially guides behaviour. Those with a growth mindset are motivated to learn, they believe that their basic ability is incremental and that ability can be cultivated through application and experience. Those who foster a fixed mindset believe that they have a certain amount of intelligence that cannot be significantly developed through effort and learning. If intelligence is perceived as unchangeable, the meaning of failure is transformed from an action (I failed) to an identity (I am a failure).

The mindset literature focuses on the impact that an individual's construct of ability has on their motivation and perceptions of their own and others' achievements. This work draws heavily from theories of self-efficacy, which focus on the amount of control an individual believes that they have over their ability. The ascending behaviours that stem from those beliefs influence the way in which individuals cope with challenges. The more self-efficacious a person is, the more persistent they are, and 'those who cease their coping efforts prematurely will retain their self-debilitating and defensive behaviour' (Bandura 1977, 288). Whilst there may be some cross-cultural differences in the manifestation of the mindset construct (Chen and Wong 2015), and some arguments that the mindset hypothesis is unlikely to be a bivariate in nature (Tempelaar et al. 2015), the reach of Dweck's work has increased in the past decade or so (Zhao, Dweck, and Mueller 1998; Dweck and Sorich 1999; Dweck 2002; Molden and Dweck 2006; Dweck and Master 2008; Dweck and Molden 2005; Plaks, Levy, and Dweck 2009; Yeager and Dweck 2012). Theories that emerged from the examination of children's core self-evaluations, and their subsequent performance, have been demonstrated as having important explanatory power in the adult population, directly impacting learning, academic success and ultimately work-related attitudes and behaviours (Burnette et al. 2013; McKenny 2014).

Defensive behaviours are behaviours that occur when an individual perceives or anticipates a threat. As individuals become increasingly defensive, they are less and less effective at accurately perceiving and integrating the information they are receiving. The individual will devote time and energy deflecting that threat, and sometimes that behaviour can be self-destructive. Chan and Lam's (2010) findings, for example, demonstrate the similarities between work of Dweck and the theories of defensive behaviours outlined by Bandura. Chinese students received either summative feedback or formative feedback detailing how they could improve. Feedback that was summative in nature lead to students perceiving less control over their performance, an increased interest in comparative performances and defensive behaviours. Nussbaum and Dweck (2008) also found evidence of defensive behaviours when they gave undergraduates the opportunity to engage with an upward or downward comparison between their work and the works of others. Whilst upward comparisons offered an opportunity for the participating students to learn from the success of others, downward comparison allowed for self-esteem repair. For the incrementally focused student, upward comparisons acted as a self-esteem restoring mechanism, with the opposite occurring for those with a fixed mindset. For fixed mindset students, restoration through the employment of defensive behaviours comes at a high price, as they sacrifice valuable learning opportunities such as formative feedback, dismissing it as unimportant or finding ways to devalue it (Chinn and Brewer 1993). The detrimental impact of a fixed mindset lies with the replacement of active learning opportunities with self-restoring mechanisms that protect self-esteem.

Whilst the mindset frameworks have attracted a great deal of general interest over the past decade, the proportion of empirical literature concerning the relationship between mindsets and feedback is fairly minimal. Where it has featured, the methodology employed tends to involve the manipulation of participant mindset, followed by the observation of subsequent behaviour. Though mindset

manipulation is useful for the purpose of research, it is also artificial and temporary. Whilst there are some problems with self-report measures, they do have some advantages in understanding the attitudes, values, beliefs and behaviours in observational and experimental studies (McDonald 2008).

The existing research suggests that fixed mindset individuals should engage less with the academic feedback that they receive, as they believe that attempts at improvement will be futile. Such attempts also come with the risk of exposure to self-esteem deflating events (Crocker et al. 2006). We are not aware of any empirical work that investigates the triadic relationship between feedback, mindset and types of defence mechanisms in university students. However, understanding the typical behavioural tendencies of students who do not adaptively engage with their feedback could potentially guide educators on how to better support students who, possibly naively, are engaging in self-sabotaging behaviours. It would seem that being defensive or proactive about feedback would depend on your view of yourself and the strategies that you use to engage with (or avoid) the messages contained within that feedback (Richardson, Abraham, and Bond 2012). Acceptance and increased awareness rely on students integrating the message into their self-concept, and this process is critical for the self-regulatory behaviours that are indicative of persistent effort and goal achievement (McKenny 2014). According to the theory of planned behaviour (Ajzen 1991), those attitudes, together with behavioural intentions, predict the extent to which someone will take action.

Boudrias, Bernaud, and Plunier (2014) have identified four feedback antecedents to acceptance and integration:

Face validity

This is the legitimacy of the feedback procedures. To what extent does this assessment procedure and this feedback example accurately reflect my achievements, knowledge or personal characteristics? For example, Tippin, Lafreniere, and Page (2012) report that students place an unrealistically high value on professors acknowledging the effort that they put into their work. They will judge professors as unfair when the perceived effort they have invested in an assignment does not in some way compensate for their poor performance.

Source creditability

Research constantly demonstrates that trust in the individual assessing you is of critical importance to feedback acceptance (Boudrias, Bernaud, and Plunier 2014). Students will sift for quality and utility based on how they perceive the status of the 'tutor' and the learner's prior experience (Boud and Molloy 2013). For example, if a PhD student is marking a student paper, is their intention to help the undergraduate student learn and develop, or is their motivation to help themselves in the progression of their career? As academics we may feel that the intention should be both, but some students will give more weight to their individual self-perceptions of the PhD student's competency and selfish motivations.

Message valence

Simply put this is the extent to which the message is positive or negative, with students responding more positively to the former because it will be more consistent with their self image. Ideas around message valence are possibly the major motivator for the 'feedback sandwich'; bad news buried in good, which undermines the feedback message (Schwarz 2013; Stone and Heen 2014).

Challenge interventions

Most advice, no matter how it is framed, runs a significant risk of being ignored. Nobody likes being told something they know they should change, or something they have heard before, and the first response is almost always to defend the existing position (Rogers 2012). Challenge interventions are experiences

that push students beyond the protection of their current position and lead them towards new perspectives and experiences. This will take the form of learning that confronts students, in a constructive manner, to think about their blind spots, in other words, congruence between their thoughts, actions and success within a given context. (Boudrais et al. 2014; Stone and Heen 2014).

These four antecedents influence awareness gained from feedback, or the extent to which feedback contributes to better self-understanding of one's performance and knowledge, the extent to which one is prepared to accept feedback and the extent to which one is prepared to act on that information (Boudrais et al. 2012).

Here, we examine the extent to which students' perceptions of feedback can be used to infer whether they appreciate and engage with the feedback that they receive. Feedback is an emotional business in which personal disposition influences what is attended to, encoded, consolidated and eventually retrieved. By investigating the predictors of their behavioural change, through an understanding of defence mechanism tendencies, we can strive to make students more acutely aware that good learning involves a temporary destabilisation of their world view. Their learning will be less effectual if they spend time monitoring the extent to which they make mistakes because they will have less cognitive resources available to solve the problems and questions posed to them. Given the relatively poor satisfaction that students within the higher education sector are expressing in relation to their feedback (Merry et al. 2013), this research would seem timely. We hypothesise that, when integrating their psychological feedback, fixed mindset students will report more maladaptive tendencies and defensive behaviours than growth mindset students.

Methodology

Ethical approval was granted by the appropriate university committee for the examination of student attitudinal and behavioural responses to feedback, their mindset and defence mechanisms (IPHS-1415-153).

Students were not paid for their participation; they were encouraged to participate voluntarily through the online survey hosting website, 'Qualtrics', which the University of Liverpool subscribes to for the hosting of survey-type studies. The online nature of the data collection makes survey completion more convenient for students, and it reduces the resource waste associated with paper and pen administration. The online questionnaire was distributed to potential participants by the use of an anonymous link guaranteeing anonymity for the participants. Participants could withdraw at any time. Information about anonymity and the purpose of the study were made clear in the information page and consent form. None of the questions concerned sensitive topics such as sexuality, crime, drug use, religious beliefs and political views. Race and ethnicity were not measured as they are considered ethically sensitive.

Two hundred and twenty-two undergraduate students initially responded, but only 151 (113 females and 38 males) completed the entire set of questionnaires. Students described themselves as being from the following disciplines: social sciences (94), science (24), mathematics and engineering (15), arts and languages (9) and business (9). All completed Likert-type questionnaires using a six-point scale ranging from 1 (strongly agree) to 6 (strongly disagree).

Mindset was measured using a combination of two questionnaires consisting of a total of 20 items. An eight-item implicit theories measure developed by Levy and Dweck (1998) depicted intelligence as a fixed entity, 'your intelligence is something very basic about you that you can't change very much', or as malleable, 'no matter how much intelligence you have, you can always change it quite a bit'. The original scale contains only eight items and was devised for the evaluation of school-aged children. It has, however, been reported as having good reliability (Hong et al. 1999) in university students (α 0.80). Psychometrically sufficiently long scales are preferable over overly brief scales (Furr 2011). Given the brevity of the Dweck scale, a second scale (Tomsett 2014) was piloted. The Tomsett scale consists of 12 statements. Six of the items reflected an entity theory of intelligence and six reflected an incremental view. Since no reliability analysis is available for Tomsett, reliability analysis was performed before any subsequent inferential analysis.

The psychological assessment feedback questionnaire (Boudrias, Bernaud, and Plunier 2014) measures eight dimensions of attitudes towards feedback – message valence, assessment face validity, challenge interventions, feedback acceptance, awareness gained from feedback, motivational intention – and two outcome measures, behavioural changes and developmental activities (alpha scales from α 0.65 to 0.90). This measure was originally devised for use following one-to-one psychometric evaluation, as such source credibility was not assessed because there was no way of controlling for variation in coursework assessor.

The Defence-Style Questionnaire (DSQ 60), devised by Thygesen et al. (2008), measures 30 defence mechanisms (see Burgo 2012 for further reading), which form three defences: image distorting, affect regulation and adaptive style. Image distorting is the tendency to grossly reshape reality to meet your internal needs. Thygesen et al. measure this construct as the composite of the defensive constructs of 'rejecting', 'complaining', 'splitting' and 'projection'. Splitting is the tendency to divide experiences into either all-good or all-bad experiences, and 'projection' involves attributing one's own unacknowledged emotions and thoughts onto another.

The second mechanism was named 'affect regulation' and contained the defences of 'intellectualisation', 'dissociation' and 'isolation'. Intellectualisation occurs when individuals focus on the academic/intellectual aspects of a situation as a way of avoiding their emotions. Dissociation is what occurs when someone is able to drastically modify their character to distance themselves from emotional experiences, and isolation is when they are able to completely separate feelings and ideas from an event.

The remaining factor was called the adaptive style and consisted of healthy defensive styles including 'self-observation', 'self-assertion', 'anticipation', 'sublimation' and 'humour'. Scales are calculated by taking the means of the items belonging to each subscale. The three defences are calculated by calculating the means of items belonging to the three factors reported by Thygesen et al. (2008). Reliability statistics for these three scales (Cronbach α) were reported as α 0.64, 0.72 and 0.61.

Results

The Tomsett (2014) scale produced an unacceptably low reliability analysis and was removed from the analysis (Cronbach's α 0.46). The Dweck scale presented much lower reliability (0.60) than in previously reported studies; however, given that the scale has been demonstrated elsewhere as having reliabilities in the range of 0.80, it was felt to be stable enough to permit fixed and growth mindset classification. Histograms presented the expected fixed–growth bi-modal distribution, and students were classified according to their position in the distribution. Eighty-six students in the sample were identified as having a fixed mindset and 65 were growth.

Given the unequal distribution, a Mann–Whitney test was selected. Fixed mindset students are much more likely to exhibit defensive behaviours (Table 1) on image distorting factors $U = 1458.00$, $p < 0.01$, $z = -2.96$, and negative affect regulating factors, than growth mindset individuals $U = 1624.00$, $p < 0.05$, $z = -2.25$. They score lower on positive adaptive factors than growth mindset individuals $U = 1623.00$, $p < 0.05$, $z = -2.25$, motivational intention ($U = 1305.00$, $p < 0.01$, $z = -3.68$) and challenge Interventions $U = 1973.50$, $z = -2.99$, $p < 0.01$. No differences were found for gender or discipline.

Given the smaller sample size for students with a growth mindset, regression analysis focuses only on the fixed mindset group. Each of the variables was regressed onto the two dependent variables,

Table 1. Ranks and inferential analysis for feedback variables by mindset.

Mean rank	Message valance	Assessment of face validity	Feedback acceptance	Challenge intervention	Motivational intention	Awareness gained	Behavioural changes	Developmental activities
Fixed	72.65	73.50	72.46	70.13	68.55	72.31	72.32	71.91
Growth	85.96	83.45	86.54	93.46	98.16	86.97	86.95	88.18
Z	−1.66	−1.23	−1.77	−2.99**	−3.68**	−1.95	−1.83	−2.00

**$p < 0.01$.

Table 2. Ranks and inferential analysis for defence mechanism variables by mindset.

Mean rank	Image distorting	Affect regulating	Adaptive style
Fixed	82.10	80.62	71.37
Growth	57.87	62.25	89.78
Z	−2.96**	−2.25*	−2.25*

*$p < 0.05$,
**$p < 0.01$.

behavioural changes and developmental activities. For behavioural changes, 46% (Adj *R* squared) of the variance $F(9, 141)$ 10.42, $p < 0.01$, was explained by positive motivational intention [β 0.47, $t(141)$ 6.02, $p < 0.01$], followed by affect regulation (negative) [β −0.32, $t(141)$ 3.82, $p < 0.01$]. Low scores indicate that the fixed mindset student is inhibiting or modulating their feelings and thoughts. For the second outcome variable, the likelihood of taking part in developmental activities, 26% (Adj R squared) of the variance $F(9, 141)$ 4.64, $p < 0.01$ was explained by motivational intention [β 0.37, $t(141)$ 4.01, $p < 0.01$] and image distortion [β 0.26, $t(113)$ 2.95, $p < 0.01$].

Discussion

The results from the study provide some support for the two frameworks proposed by Dweck and her colleagues, demonstrating that the way in which students interpret their ability impacts their attitudes towards feedback and their behaviour. Instead of fostering remediation following feedback, those who perceive their intelligence as a fixed entity are more likely to adopt defensive behaviours that will operate to protect their self-esteem. Fixed mindset students have higher scores for the maladaptive defence mechanisms of image distortion and negative affect regulation, and score lower on adaptive style (Table 2). Fixed mindset students score lower than growth mindset students across all the feedback-related variables (Table 1).

Given the larger numbers of fixed mindset students identified in this sample, the results are somewhat worrying. The majority of the students in this sample perceived their talents and abilities as static. These students are less likely to challenge themselves; they may be overly concerned about making mistakes and be highly results focused. Grades fix student attention on their performance, their interest becomes diminished in what they are doing, they skim books seeking out what they 'need to know' and they lose the desire to learn for its own sake (Kohn 2011). This process lowers self-efficacy. It promotes a fear of failure that may consequentially evoke a disregard for feedback (Chalmers and Fuller 1996; Gibbs and Simpson 2004; Pulfrey, Buch, and Butera 2011), and the unrealistic expectation that hard work over mastery should be rewarded (Tippin, Lafreniere, and Page 2012).

Students with a growth mindset scored higher on 'challenge interventions'; this means that these students are more likely to perceive the person who assessed them as outstanding in their ability to draw them out of their comfort zones, to recognise that the individual could destabilise them in a positive way and to see this experience as a positive aspect of their learning. Their motivation to act on their feedback and engage in developmental activities was higher. Conversely, fixed mindset students were more likely to exhibit defensive behaviours such as distorting the facts of feedback, dividing the experience into either all-good or all-bad and have weaker adaptive defensive styles; for example, being less able to self-monitor or defuse negative experiences with humour.

However, it would be wrong to automatically assume that students who have fixed mindsets are not learning motivated. These results demonstrate that fixed mindset students are demonstrating significant levels of motivation. They are, however, reporting maladaptive behaviours in the way in which they dissociate themselves from the thoughts and feelings surrounding their feedback. Defence mechanisms play a key role in helping us tolerate difficult situations by controlling anxiety and protecting our self-esteem; however, they become counterproductive when awareness becomes clouded and reality undermined. The increased prevalence of defensive behaviours in fixed mindset students is of particular concern because student responses to feedback are perhaps more likely to elicit mechanisms

that may act to restore and protect their self-esteem, mechanisms which will operate at the expense of learning opportunities (Crocker et al. 2006). Whereas students who practice positive affect regulation, through processes of reflection, direction of focus, confidence in expressing their views, planning and a general sense of keenness, are likely in some way to be more motivated to change their behaviour in response to feedback. Those students will feel more self-assured when their point of view or world view is challenged in a supportive way.

Evaluating the results of the regression analysis within the framework of the theory of planned behaviour presents a puzzle. Behavioural changes are predicted in the fixed mindset student by positive motivational intention and negative affect regulation, with the individual inhibiting or modulating their feelings and thoughts. This suggests that fixed mindset students are motivated to engage with changing their behaviour in response to feedback; however, they are working hard to dissociate themselves from the thoughts and feelings surrounding that feedback. Similarly, the two key predictors, motivational intention and image distortion, also suggest that in order for students to seek out developmental activities, they have to somehow reshape reality. This is a critical mismatch for enhancing student achievement because we know from the goal setting literature that it is critical to be in touch with the thoughts and feelings surrounding planned behavioural change (Locke and Latham 2006).

The goal of good feedback is to help students become aware and translate that awareness into fruitful behavioural change. Here, we examined the emotional and cognitive reactions to feedback and two behavioural outcomes, changes in behaviour and the uptake of developmental activities. For our fixed mindset students, motivation, along with the ability to inhibit and modulate their thoughts and feelings, is key for them to be able to translate their feedback into behavioural change. The likelihood of these students taking part in developmental activities was similarly influenced by motivational intention, but image distortion also plays an important role. This is an unexpected combination. Image distortion is the tendency to grossly reshape reality to meet your internal needs. It is composed of the tendency to split experiences into all-good or all-bad, the tendency to project unbearable experiences or feelings onto others, to complain and to reject help from others. Yet, these mechanisms trigger the fixed mindset student into seeking out what they see as opportunities to seek help and development.

'The test of a first rate intelligence is the ability to hold two opposed ideas in the mind at the same time, and still retain the ability to function' (Fitzgerald 1945, 60). This quote somewhat explains the occurrence of splitting. Splitting means we do not need to try and hold two conflicting ideas. Splitting permits us to make up our minds and stop obsessing over a situation, person or an experience. However, as a result of splitting, we are often left with some 'not-so-nice bits' that we need to do something with. This is where projection comes in. Projection is a way of disowning the parts we don't want to hold onto by placing them outside of us and frequently onto others. Projection causes anxiety, and to escape this anxiety, people will go to some lengths to convince themselves that their projection is valid. For example, characteristically, students may complain and/or make repetitious requests for help. Ultimately, such developmental attempts are futile because students are trapped in a circle of rejecting what they are told, continually seeking out what they hope will be a different point of view. From this perspective, the fixed mindset student's attempt at developmental opportunities is then futile. Their tendency for image distortion means they may well become trapped in a circle of requests for help, but continue to ignore and fail to act on that good advice.

Recommendations

The majority of students sampled in this study presented with a fixed mindset. According to the work of Dweck (2002) and others, this means they may be afraid of challenges and unwilling to take a chance on the unknown. They may be trapped in rigid and unreliable study routines, unable to self-monitor and unwittingly ignoring useful feedback or distorting that feedback. Such behaviours are defence mechanisms against the unknown. They support an artificial sense of control, regulating the student's view of the knowledge, developing and reinforcing their misunderstanding of how learning is actually taking place. Through this 'unwitting self deception', students confuse familiarity with course materials

with mastery of content (Brown, Roediger, and McDaniel 2014). Little wonder then that students go on to reject, avoid and defend themselves from what can seem like unfair, untrue or at times completely unexpected feedback.

Students cannot escape the discomfort or frustration of disappointment that comes with receiving unfulfilling feedback. We recognise that giving good individualised feedback takes time, and few academics today have the time to sit down with highly anxious students and attend to their personal and emotional needs during a feedback session. That being said, academics ought to be more mindful in considering how highly emotive feedback is delivered. We recommend that students be prepared early in their academic career, through lectures and seminars, with information about feedback theory and practice and, in particular, the goal of feedback in challenging students, confronting them to take new perspectives on their current approach and ideas. Such interventions will help students recognise that they need a degree of stress and emotion to perform well (Elikai and Schuhmann 2010).

Having a fixed attitude about your performance is not particularly conducive with effective learning; however, given the large numbers of students identified as such in this study, we may propose that the fixed mindset is more characteristic of what most students feel at one time or another. Cross wrote that; 'The task of the excellent teacher is to stimulate "apparently ordinary" people to unusual effect. The problem is not identifying the winners: it is in making winners out of ordinary people' (1984, 6). With this in mind, we recommend that academics work to benefit those students by making them more aware of self-sabotaging behaviours, and educating them in how to manage intelligently their emotional experiences to feedback, by growing and developing alternative strategies that support the student in self-vigilance and reflection.

A negative reaction to performance feedback is normal, it is unavoidable, but it is also transient. It is a transient experience, which, if not handled intelligently, will inevitably impact future judgements and behaviours. As part of this emotional education, we must find strategies in which students become more willing to experience, and stay with the emotional experience of failure.

The push towards anonymous, online marking can mean that personal feedback sessions are an incompatible part of the assessment and feedback loop. Anonymous marking is disruptive to the process because it prevents the tutor from giving connected guidance to students on their progress (Boud and Molloy 2013). It is, however, still possible to provide a safe and respectful environment by providing feedback that is timely, accessible, legible and constructive to the point that the students know what they need to do to improve. At the very least, we owe our students a strategy for improvement and sense-making, not a set of diagnostic criteria highlighting what the student has done wrong (Nicol 2010). For example, through action-orientated interventions, such as coaching, mentoring and tuition, which are designed to challenge maladaptive behaviours and dispositions, we can educate students to develop strategies to manage their self-sabotaging behaviours. Similarly, by pollinating the curriculum with opportunities for students to take risks, we can encourage students to become comfortable with the emotional experience of 'possibility' and 'failure'. Through such activities, students can come to realise that just because they are feeling a particular way, it does not follow that emotion is a reliable guide to objective truth (Burgo 2012).

Critique

All studies based on self-report measures, even psychometrically valid measures such as those reported here, have potential problems. In general, students in the social sciences are showered with requests to take part in studies, and there can often be little motivation to take the time necessary to engage with the questionnaire honestly. Even if students are trying to be honest, they may lack the reflective capacity to answer in a meaningful and accurate way. They may not understand the meaning or interpretation of questions, or be predisposed to answering in a particular way, for example, responding to all questions by drawing only on one particular experience. It is important to acknowledge such limitations when we consider concepts such as defence mechanisms, which are largely thought to operate at a subconscious level. The question would be then: Do students at this stage know enough about themselves to

accurately report what their defence mechanism tendencies actually are? That being said, no method is perfect; the value of self-report comes from our ability as researchers to integrate information in a practical, meaningful and valid way.

Conclusion

Understanding how students think about and respond to their feedback is critically important because it empowers us as academics to create positive experiences for our students. In line with Dweck's mindset theory, the results reported here imply that students' self-beliefs influence their subsequent behaviour with regard to accepting and acting on their feedback. The large numbers of fixed mindset students identified in this study suggest that psychology will play an important role in exploring the underlying factors that influence how students avoid the emotional pain that is part of human experience, and in highlighting ways in which academics can support students in the development of their self-esteem.

Disclosure statement

No potential conflict of interest was reported by the authors.

References

Ajzen, I. 1991. "The Theory of Planned Behavior." *Organizational Behavior and Human Decision Processes* 50 (2): 179–211.

Alderman, L., S. Towers, and S. Bannah. 2012. "Student Feedback Systems in Higher Education: A Focused Literature Review and Environmental Scan." *Quality in Higher Education* 18 (3): 261–280.

Bandura, A. 1977. "Self-efficacy: Toward a Unifying Theory of Behavioral Change." *Psychological Review* 84: 191–215.

Boud, D., and E. Molloy. 2013. *Feedback in Higher and Professional Education*. Abingdon: Routledge.

Boudrias, J. S., J. L. Bernaud, and P. Plunier. 2014. "Candidates' Integration of Individual Psychological Assessment Feedback." *Journal of Managerial Psychology* 29 (3): 341–359.

Brown, P. C., H. L. Roediger, 3rd, and M. A. McDaniel. 2014. *Make it Stick*. London: Belknap.

Burgo, J. 2012. *Why did I do that, Psychological Defence Mechanisms and the Way They Shape Our Lives*. Chapel Hill, NC: New Rise.

Burnette, J. L., E. H. O'Boyle, E. M. VanEpps, J. M. Pollack, and Eli J. Finkel. 2013. "Mind-sets Matter: A Meta-analytic Review of Implicit Theories and Self-regulation." *Psychological Bulletin* 139 (3): 655–701.

Chalmers, D., and R. Fuller. 1996. *Teaching for Learning at University*. London: Kogan Page.

Chan, J. C. Y., and S. Lam. 2010. "Effects of Different Evaluative Feedback on Students' Self-efficacy in Learning." *Instructional Science* 38 (1): 37–58.

Chen, W. W., and Y. L. Wong. 2015. "Chinese Mindset: Theories of Intelligence, Goal Orientation and Academic Achievement in Hong Kong Students." *Educational Psychology* 35 (6): 714–725. doi:http://dx.doi.org/10.1080/01443410.2014.893559.

Chinn, C. A., and W. F. Brewer. 1993. "The Role of Anomalous Data in Knowledge Acquisition: A Theoretical Framework and Implications for Science Instruction." *Review of Educational Research* 63: 1–49.

Crocker, J., A. T. Brook, Y. Niiya, and M. Villacorta. 2006. "The Pursuit of Self-esteem: Contingencies of Self-worth and Self-regulation." *Journal of Personality* 74: 1749–1772.

Cross, P. K. 1984. "Societal Imperatives: Needs for an Educated Society." Prepared for the National Conference on Teaching Excellence, Austin, TX, May 23. Accessed October 15, 2015. https://diva.sfsu.edu/collections/kpcross/bundles/210862

Dweck, C. S. 2002. "The Development of Ability Conceptions." In *Development of Achievement Motivation*, edited by A. Wigfield and J. Eccles, 57–88. New York: Academic Press.

Dweck, C. S., and A. Master. 2008. "Self-theories Motivate Self-regulated Learning." In *Motivation and Self-regulated Learning: Theory, Research, and Applications*, edited by D. H. Schunk and B. J. Zimmerman, 31–51. New York: Lawrence Erlbaum.

Dweck, C. S., and D. C. Molden. 2005. "Self-theories: Their Impact on Competence Motivation and Acquisition." In *Handbook of Competence and Motivation*, edited by A. J. Elliot and C. S. Dweck, 122–140. New York: The Guilford Press.

Dweck, C. S., and L. Sorich. 1999. "Mastery-oriented Thinking." In *Coping*, edited by C. R. Snyder, 232–251. New York: Oxford University Press.

Elikai, F., and P. W. Schuhmann. 2010. "An Examination of the Impact of Grading Policies on Students' Achievement." *Issues in Accounting Education* 25 (4): 677–693.

Evans, C. 2013. "Making Sense of Assessment Feedback in Higher Education." *Review of Educational Research* 83 (1): 70–120.

Fitzgerald, F. S. 1945. *The Crack-up*. New York: New Directions.

Furr, M. 2011. *Scale Construction and Psychometrics, for Social and Personality Psychology*. London: Sage.

Gibbs, G., and C. Simpson. 2004. "Conditions under Which Assessment Supports Student Learning." *Learning and Teaching in Higher Education* 1: 3–31.
Hattie, J. 2009. *Visible Learning: A Synthesis of over 800 Meta-analyses Relating to Achievement*. London: Routledge.
Hemingway, A. P. 2011. "How Students' Gratitude for Feedback Can Identify the Right Attitude for Success: Disciplined Optimism." *19 Perspectives: Teaching Legal Research & Writing* 169–173.
Hong, Y., C. Chiu, C. S. Dweck, D. M. Lin, and W. Wan. 1999. "Implicit Theories, Attributions, and Coping: A Meaning System Approach." *Journal of Personality and Social Psychology* 77: 588–599.
Kohn, A. 2011. "The Case against Grades." *Educational Leadership*. http://www.alfiekohn.org/teaching/tcag.htm
Levy, S., and C. S. Dweck. 1998. "Trait- versus Process-focused Social Judgment." *Social Cognition* 16 (1): 151–172.
Lew, M. D. N., W. A. M. Alwis, and H. G. Schmidt. 2010. "Accuracy of Students' Self-assessment and Their Beliefs about Utility." *Assessment & Evaluation in Higher Education* 35: 135–156.
Locke, E. A., and G. P. Latham. 2006. "New Directions in Goal-setting Theory." *Current Directions in Psychological Science* 15: 265–268.
MacDonald, M., J. Williams, D. Kane, P. Gorman, E. Smith, S. Sagu, and G. Cappuccini-Ansfield. 2007. *The 2007 Report on the Student Experience at UCE Birmingham*. Birmingham, AL: University of Central England Birmingham.
McAlpine, L. 2004. "Designing Learning as Well as Teaching: A Research-based Model for Instruction That Emphasizes Learner Practice." *Active Learning in Higher Education* 5 (2): 119–134.
McDonald, J. D. 2008. "Measuring Personality Constructs: The Advantages and Disadvantages of Self-reports, Informant Reports and Behavioural Assessments." *Enquire* 1 (1): 75–94.
McKenny, A. P. 2014. "Impact of Student Goal Orientation and Self-regulation on Learning Outcomes." *Journal of Organizational Psychology* 14 (2): 66–76.
Merry, S., M. Price, D. Carless, and M. Taras, eds. 2013. *Reconceptualising Feedback in Higher Education*. Abingdon: Routledge.
Molden, D. C., and C. S. Dweck. 2006. "Finding "Meaning" in Psychology: A Lay Theories Approach to Self-regulation, Social Perception, and Social Development." *American Psychologist* 61: 192–203.
Nicol, D. 2010. "From Monologue to Dialogue: Improving Written Feedback Processes in Mass Higher Education." *Assessment and Evaluation in Higher Education* 35 (5): 501–517.
Nussbaum, A. D., and C. S. Dweck. 2008. "Defensiveness versus Remediation: Self-theories and Modes of Self-esteem Maintenance." *Personality and Social Psychology Bulletin* 34: 599–612.
Orsmond, P., and S. Merry. 2011. "Feedback Alignment: Effective and Ineffective Links between Tutors' and Students' Understanding of Coursework Feedback." *Assessment & Evaluation in Higher Education* 36: 125–136.
Plaks, J. E., S. R. Levy, and C. S. Dweck. 2009. "Lay Theories of Personality: Cornerstones of Meaning in Social Cognition." *Social and Personality Psychology Compass* 3: 1069–1081.
Pulfrey, C., C. Buch, and F. Butera. 2011. "Why Grades Engender Performance-avoidance Goals: The Mediating Role of Autonomous Motivation." *Journal of Educational Psychology* 103 (3): 683–700.
Richardson, M., C. Abraham, and R. Bond. 2012. "Psychological Correlates of University Students' Academic Performance: A Systematic Review and Meta-analysis." *Psychological Bulletin* 138(2): 353–387, 103, 683–700.
Rogers, J. 2012. *Coaching Skills, a Handbook*. 3rd ed. Maidenhead: Open University Press.
Schwarz, R. 2013. "The Sandwich Approach Undermines Your Feedback." *The Harvard Business Review*. https://hbr.org/2013/04/the-sandwich-approach-undermin/
Stone, D., and S. Heen. 2014. *Thanks for the Feedback, the Science and Art of Receiving Feedback Well*. New York: Portfolio Penguin.
Tempelaar, D. T., B. Rienties, B. Giesbers, and W. H. Gijselaers. 2015. "The Pivotal Role of Effort Beliefs in Mediating Implicit Theories of Intelligence and Achievement Goals and Academic Motivations." *Social Psychology of Education* 18 (1): 101–120.
Thygesen, K. L., M. Drapeau, R. W. Trijsburg, S. Lecours, and Y. de Roten. 2008. "Assessing Defense Styles: Factor Structure and Psychometric Properties of the New Defense Style Questionnaire 60 (DSQ-60)." *International Journal of Psychology and Psychological Therapy* 8 (2): 171–181.
Tippin, G. K., K.D. Lafreniere, and S. Page. 2012. "Student Perspectives of Grading in Physical Education." *European Physical Education Review* 1 (21): 409–420.
Tomsett, J. 2014. "Developing a Growth Mindset Questionnaire for Staff V3." www.scribd.com/doc/248217794/Developing-a-Growth-Mindset-Questionnaire-for-Staff-v3
Yeager, D. S., and C. S. Dweck. 2012. "Mindsets That Promote Resilience: When Students Believe That Personal Characteristics Can Be Developed." *Educational Psychologist* 47: 302–314.
Zhao, W., C. S. Dweck, and C. Mueller. 1998. *Implicit Theories and Depression-like Responses to Failure*. Unpublished Manuscript. New York: Columbia University.