

Impact case study (REF3b)

<p>Institution: Edge Hill University</p>
<p>Unit of Assessment: 4 - Psychology, Psychiatry and Neuroscience</p>
<p>Title of case study: Facilitating intervention based on an enhanced understanding the antecedents and outcomes of debilitating exam-related anxiety.</p>
<p>1. Summary of the impact</p> <p>An ongoing programme of research has been underway at Edge Hill University since 2006 to examine the antecedents and outcomes of debilitating exam-related anxiety. This research has identified a need for intervention with students at critical stages of their educational career (particularly GCSE with the implications for future life trajectory in terms of access to further education and training). Findings have been used to develop and trial a novel, multimodal, ICT-delivered, intervention.</p>
<p>2. Underpinning research</p> <p>The research underpinning this case study was undertaken at Edge Hill University by Putwain, who joined the University in 2006. He has been employed by the University continuously since 2006 and is currently a Reader in Education.</p> <p>The outputs reported here have examined how anxiety and fear of failure may be critical educational outcomes in their own right and also as robust and reliable indicators of lowered educational performance. Models of cognitive processes have been derived from experimental cognitive psychology, experimental psychopathology and health psychology to be usefully applied to the field of sub-clinical test anxiety and to performance in educational contexts.</p> <p>A central and integrative feature of this research is the focus on the role of worrisome cognitions which are implicated in both the maintenance of anxiety and in debilitating performance outcomes. Our research has examined how cognitive distortions, underlying biased information processing in affective clinical disorders, are also linked to test anxiety. In particular the research indicates that catastrophic interpretations of events are a key variable in the disruption of working memory resources during performance-evaluative situations (Item 1, Section 3). This research suggests that regulation of anxiety prior to and during examinations, in addition to the level of anxiety per se, would be a useful site of intervention.</p> <p>In a related fashion, we have also examined how biased information processing may arise from biases in attentional processes towards threatening information. Building on recent advances in the measurement of attentional biases in the mainstream cognitive psychology literature, we have published the first study to demonstrate that attentional biases towards threat are also present in test anxiety under performance-evaluative conditions (Item 4, Section 3). This research suggests that training of attentional focus would be a useful focus for intervention.</p> <p>The interpretation of performance-evaluative situations as threatening is central to models of test anxiety. Using cognitive-appraisal models developed and tested in the health literature, initially for workplace stresses, a main focus of the research</p>

programme has been the application of a transactional model of test anxiety in order to identify the processes and factors which influence the appraisal of tests as threatening and likely to result in worrisome and detrimental ruminative conditions (Items 3, 4 & 5, Section 3). These findings suggest how process variables, such as avoidant motivation, personal beliefs and attributions, may also be useful sites for intervention.

Mainstream models of stress in the health and clinical literatures also highlight the important role played by coping processes in determining the likelihood of detrimental outcomes. Resilience, the ability to withstand pressure and bounce-back from setbacks is also key to this process. Following on from our interest in cognitive-appraisal models, we have also applied this rationale to test anxiety and conducted the first study to examine how academic buoyancy, referring specifically to resiliency type effects in an academic context, relates to test anxiety (Item 6, Section 3). This research shows how modifying beliefs and processes might reduce test anxiety and buffer against debilitating performance effects.

3. References to the research

This case refers to the work of the highlighted author who has been employed at Edge Hill University on a permanent contract since 2006. All items have been published in peer reviewed journals (impact factors given below).

1. Journal Article: **Putwain**, D.W., Connors, E., & Symes, W. (2010) Do cognitive distortions mediate the test anxiety and examination performance relationship? *Educational Psychology*, 30(1), 11-26. doi: 10.1080/01443410903328866
Impact Factor 1.031
2. Journal Article: **Putwain**, D.W., Langdale, H.C., Woods, K.A., Nicholson, L.J. (2011) Developing and piloting a dot-probe measure of attentional bias for test anxiety. *Learning and Individual Differences*, 21(4), 478-482. doi: 10.1016/j.lindif.2011.02.002
Impact Factor 1.507. 5 Year Impact Factor 2.005
3. Journal Article: **Putwain**, D.W., Woods, K.A., & Symes, W. (2010) Personal and situational predictors of test anxiety of students in post-compulsory education. *British Journal of Educational Psychology*, 80(1), 137–160. doi: 10.1348/000709909X466082
Impact Factor 2.093
4. Journal Article: **Putwain**, D.W., & Symes, W. (2011) Classroom fear appeals and examination performance: facilitating or debilitating outcomes? *Learning and Individual Differences*, 21(2), 227-232. doi: 10.1016/j.lindif.2010.11.022
Impact Factor 1.507
5. Journal Article: **Putwain**, D.W., & Symes, W. (2011) Teachers' use of fear appeals in the Mathematics classroom: worrying or motivating students? *British Journal of Educational Psychology* 81(3), 456-474. doi: 10.1348/2044-8279.002005
Impact Factor 2.093. ISI Journal Citation Reports © Ranking: 2012: 11/51 (Psychology Educational)

6. Journal Article: **Putwain**, D.W., & Daly, T. (2013) Do clusters of test anxiety and academic buoyancy differentially predict academic performance? *Learning and Individual Differences*, 27(1), 157-162. doi: 10.1016/j.lindif.2013.07.010
Impact Factor 1.507

4. Details of the impact

The underpinning research has led to the development of a novel test anxiety intervention in the period 2010-2012. This intervention (referred to as STEPS) was developed in conjunction with the Assessment and Qualifications Alliance (AQA), the largest provider of GCSE and A level examinations in England. It is a multimodal and IT-delivered 6 session intervention, designed for use with adolescent students. It is novel in two respects. First, as a self-contained IT package (accessed via CD or intranet server), STEPS can be used as a personal self-help resource, used with small groups with a facilitator or be incorporated into the school personal, social and health curriculum for whole classes. It does not, therefore, rely on a specialist practitioner for its delivery and is a highly cost efficient solution for schools. Second, STEPS has been designed specifically for adolescent students. The IT platform is fully interactive and includes didactic quiz-based instruction, self-reflective exercises and video diaries from adolescent students. STEPS is the first intervention for test anxiety to incorporate these advances and has been trialled in 10 North West schools with 3225 students studying for their GCSE examinations. The outcome study (which is currently under review) revealed it was successful in reducing worrisome cognitions and was considered beneficial by students and teachers at participating schools. Details about STEPS can be found and confirmed via AQA (Other Sources 1 & 2, Section 5) as well as practitioner-focused articles we have used to publicise our work (Other Sources 3 & 4, Section 5).

Interviews with teachers at schools who have utilised STEPS in their schools during the 2012-13 academic year (Factual Statements 1 and 2) have explained how STEPS has been used as a targeted approach with students who experienced a great deal of exam-related anxiety (identified or self-referred) and/ or were underperforming in examinations against their predictions. Students reported that they felt that STEPS was easy to use and had helped them cope with their exam-related anxieties more effectively. Furthermore, having completed STEPS, those students who had underperformed on previous examinations made improvements in their grades. Although teachers recognised that it was difficult to establish what improvements may have been solely due to STEPS, decisions had been taken at both schools to continue using STEPS. Teachers commented:

"The process is a well-structured, time-effective, student-centric approach to the problem of exam stress. I now have a go-to solution that I know materially benefits students who suffer from test anxiety." (Factual Statement 1).

"Possibly more importantly, I asked all the students about the less tangible benefits of undertaking the course and it was clear that their overall quality of life had been greatly enhanced during what would normally be a highly stressful time." (Factual Statement 2).

5. Sources to corroborate the impact

Factual Statements (both address impact on practice, and on pupils):

- 1) Learning Coach, King Edward VI Handsworth School for Girls, Birmingham.
- 2) SEN teacher, a school in North Wales.

Other Sources:

1. The Assessment and Qualifications Alliance, contact details available on request
2. <http://cerp.aqa.org.uk/can-we-help-students-manage-and-minimise-gcse-exam-stress> p10
3. Secondary Education, May 2012, (<http://www.sec-ed.co.uk/best-practice/exam-anxiety/>),
4. Make the Grade, Summer 2012 (<http://edition.pagesuite-professional.co.uk/launch.aspx?referral=mypagesuite&pnum=&refresh=8n1E0Da46r1J&EID=90b4102b-d433-471a-9562-70473af460ac&skip=,>) and Make the Grade, December 2012 (<http://ciea.co.uk/makethegrade/steps-exam-anxiety/>).