Mindful architects

Increasing wellbeing

in the student architectural community

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To cite this report:

Porter, N. (2020). *Mindful architects: increasing wellbeing in the student architectural community.*

Contents

Executive summary

How can mindfulness training help architecture students increase their individual health and wellbeing, and can it inform their skills development as design practitioners?

Recent surveys in the UK have revealed concerns about the mental health of architecture students. Mindfulness, defined as 'paying attention to what's happening in the present moment in the mind, body and external environment, with an attitude of curiosity and kindness' (MAPG, 2015), is an approach to everyday activities and a formalised set of meditation-based practices which has been proven to improve student health and wellbeing in other disciplines, and in other areas of society. Structured courses in mindfulness or 'mindfulness based interventions' (MBIs), such as mindfulness based stress reduction (MBSR), are increasingly used to prevent or treat depression, stress and anxiety, as well as being practiced to enhance focus, productivity and quality of life.

In response to the need to improve architecture student health outcomes, this project tests the specific benefits of mindfulness training for architecture students, from both a personal and professional skills development perspective.

Research questions

Two aspects of the mindfulness – architecture relationship are the focus of this project:

Q1 How can mindfulness training influence the health and wellbeing of architecture students?

Q2 How does mindfulness training influence the way students conceptualise & experience architecture & architectural practice?

Research design and method

University of Nottingham architecture students (Part 1 and 2) were invited to undertake an 8-week pilot Mindfulness-based Stress Reduction (MBSR) programme, conducted on campus by a qualified trainer. Twenty students from across all levels of study agreed to participate, and the training took place between February – April 2018. The programme followed a recognised structure of weekly group sessions (2 hours) where mindful techniques such as meditation were practiced and discussed, followed by daily 'home practice' which participants were encouraged to complete. The programme is based on eight themes >>>>>

MINDFULNESS-BASED STRESS REDUCTION

Week 1- Introducing mindfulness
Week 2- Handling stress
Week 3- The power of being present
Week 4- Patterns of reactivity to stress
Week 5- Responding not reacting
Week 6- Stressful communications and interpersonal mindfulness
Week 7- Lifestyle choices
Week 8- Keeping your mindfulness alive

Participants completed questionnaires before and after the mindfulness-based intervention (immediately after and 6 months after training); these questionnaires explored levels of engagement and effects, as well as responses to a mental wellbeing scale. Post-intervention focus groups with participants and the trainer were conducted.

Results

The MBSR pilot increased the wellbeing of participants significantly. Participants affirmed the overall value and applicability of mindfulness for architecture students. Several commented on the 'dramatic' and 'game-changing' improvements it had made to their studies and their lives.

The main areas where wellbeing was improved were **stress reduction, being more compassionate to themselves (less hypercritical), and improved focus and time management:**

Self-reported reductions in **stress levels**, and a heightened ability to manage and respond to thoughts and feelings of stress, were unanimous amongst respondents. In the pre-mindfulness training surveys, an alarming **63.2%** of participants reported that they 'always or very often' experienced high levels of stress in relation to their studies. Participants reporting high stress frequency of 'always or very often' halved at the end of the study (down to **26.7%**) and **none** of the final survey respondents 6 months later reported high stress at this frequency at all. Frequency of **being judgemental** showed a **very significant decrease** after MBSR training. The **group discussion context** of the MBSR training programme facilitated a therapeutic sense of compassion and shared understanding amongst participants. Pre-training, the majority of participants reported finding it difficult to stay focussed in lectures and in design studio. Self-reported **ability to focus improved significantly** after MBSR training.

Participants were not as forthcoming with comments about spatial awareness, creativity or curiosity compared to their strongly expressed views about stress reduction and compassion. This suggests that **spatial awareness, creativity and curiosity outcomes were not as pronounced as expected**. An adapted form of mindfulness training that incorporated exercises to focus on space and creativity is needed to further explore the potential relationship between mindfulness and design practice more directly.

Finding the time to fully engage with mindfulness practices was very difficult for all participants. Developing strategies to encourage consistent and regular engagement with mindfulness practice is an important consideration if the full benefits of mindfulness training are to be realised.

Recommendations

Offer voluntary MBSR training on campus for architecture students to equip them to manage stress and improve mental health

Develop and pilot a Mindfulness-based Architecture Intervention (MBArchI) tailored specifically to enhance architecture students' skills development

Embed a mindfulness offering within a wider culture shift of wellbeing including students and staff

Acknowledgements

This study was supported by a RIBA research trust grant awarded in 2017. For details about these awards please visit

https:/ /www.architecture.com/education-cpd-and-careers/studying-architecture/advice-on-funding-your-architectural-studies/funding-opportunities-for-students-of-architecture/riba-research-trust-awards

Thank you to project supervisor Professor Tim Heath for overseeing and endorsing this proposal.

Thanks to the organisers of the *International Conference on Mindfulness Asia Pacific*, Auckland, New Zealand, where I was able to present initial findings from this research in February 2019. Particular thanks to attendees who offered feedback, especially fellow architectural academic Dr Burcak Altay.

Thanks to Dr Johanna Bramham, University of Nottingham, for inviting me to share this research at the *Thriving in Higher Education: What works?* 3rd joint staff wellbeing conference, University of Nottingham, 3 July 2019.

I acknowledge with gratitude the influence of architect Robert Evans, who spoke eloquently about mental health and architecture in his opening speech at the University of Nottingham End of Year Show 2017.

Thank you to Mel Wraight for conducting the MBSR training with energy and generosity, and for sharing your insights with us.

Thank you to participants for engaging in your own wellbeing and sharing your experiences with each other and with us.

Preface

Earlier today, while working on the compilation of this report, I became aware of the fact that I was becoming distracted. The first few hours of typing, reading and moving material between spreadsheets and word documents were productive and focussed, interspersed with the occasional coffee and a break for lunch. As the afternoon progressed, however, I started responding to emails instead of working on the report, and the day seemed to be disappearing. I was looking at the clock, looking at my calendar, mentally planning the coming days, weeks, calculating and recalculating how much time each section of the report should take, what other projects and tasks were piling up, what I should prioritise… *why hadn't I finished this already anyway*?

Here I was, reading the comments from architecture students who spoke clearly and candidly of their own struggles to manage the stress of deadlines, self-criticism, feeling like there's never enough time… including feeling unable take a break. These sentiments felt very familiar, as I had seen many students exhibit these patterns and feelings. And I had been the same when I was a student. I was also reading some comments that emphasised the work-changing and even life-changing insights some students had gained through just a few weeks of mindfulness training. If only they could all appreciate that taking a little time to pause and use mindfulness techniques could help them actually work better, and with greater satisfaction!

At that point I realised the obvious – that *I* would do well to follow their lead and 'give myself permission' to pause working and engage in a mindful meditation practice myself. I practiced a 25 minute body scan, a core meditation technique which invites practitioners to tune into their bodily sensations and focus on what they are experiencing, moment by moment and breath by breath, while gently but firmly guiding their attention back every time it inevitably* wanders off to thoughts of work, the past, the future… (*If you don't believe me, try closing your eyes right now and focusing on your breathing for 5 minutes.) During the practice I noticed that my busy mind began to settle, and while it did still wander away from the bodyscanning exercise, I did not become frustrated or impatient (as I used to a lot when beginning to practice some years ago!) Somewhere in that time the thought / feeling / recollection arose that I actually appreciated the opportunity to work on this project, which I was grateful to those who had participated, and that I was keen to share what we had found. Not only that, but a niggling issue about report structure resolved itself, as a potential solution came to mind simply because I had 'stepped back' from the problem for a short while.

So before I resume the task of editing / typing / reading this report, I would like to thank the students, the MBSR trainer who conducted the pilot (Mel), as well as other mindfulness teachers and practitioners I have been fortunate to work with since my own employee staff wellbeing programme introduced me to mindfulness in 2014. I also acknowledge the different architects and academics I have worked with over the years who have enthusiastically shared their passion for architecture and landscape architectural design without necessarily being anxious about it. And thanks to Martin, who has been there since year 1 architecture, always entreating me to take a break and be good to myself.

Nicole Porter, 21 August 2019.

Context: mental health, higher education, architecture and MBIs

Summary

- Mental health and wellbeing in Higher Education (HE) is recognised as an important issue in the UK due to high rates of student ill-health compared to the rest of the population
- Causes of mental ill-health amongst university students populations can include financial and social pressures and coping with change i.e. moving out of home
- Mental health and wellbeing amongst architecture students, and within the architectural profession in general, has recently received increased attention
- Mindfulness-based Interventions (MBI) are one type of treatment within psychology and mental health / wellbeing programmes, including within educational settings, which have gained prominence
- MBIs have been proven to have positive impacts on health and performance in other professional university student cohorts, but this has not been tested within architecture programmes

Mental health and wellbeing in Higher Education

> University can be fun and fulfilling. But it can undoubtedly be a tough learning curve, with many students struggling to adjust to student life, facing increasing academic, social and financial pressures often amplified by perceptions projected through social media. Figures released by Universities UK revealed that the number of students disclosing mental health conditions increased by 194% in the three years leading up to the 2017-18 academic year, with issues such as depression and anxiety now estimated to affect one in four students (Connect Online, 2019).

There has been 'great political, public and professional concern in recent years about student mental health' (Student Minds UK, 2019). Unfortunately, research has shown that mental wellbeing reported by university students is among the lowest across the population (Thorley, 2017: 3). The student charity *Student Minds UK* explains why this is a significant problem and why it warrants serious attention:

> Whilst further research is required, experts have connected [mental health issues for students] to a range of academic, social and financial pressures. Mental health is a critical factor in student and staff retention and success. Universities, as a community setting, present an opportunity to change people's health outcomes for life. As well as responding to illness, we need to promote and improve the mental health and wellbeing of all members of the university community (Student Minds, 2019).

The above statement by Student Minds differentiates between illness and wellbeing. Health is not merely an absence of negative factors, such as illness, but the presence of positive factors that promote overall wellbeing. In the UK, the Office of National Statistics (ONS, 2013) note that 'Personal wellbeing is a particularly important dimension which we define as how satisfied we are with our lives, our sense that what we do in life is worthwhile, our day to day emotional experiences (happiness and anxiety) and our wider mental wellbeing'. While Universities should and do provide mental health services to students as a standard component of healthcare provision, this should be seen as just one facet of health and wellbeing strategies which can support individual flourishing and as well as assist those in distress. As Guild HE assert

> It is not enough to support students when they are in crisis. Preventative strategies are crucial to maintaining healthy and happy student populations. Preventative strategies are likely to be better for the students and less burdensome for mental health services (GUILD, 2018: 5).

Fortunately, the importance of supporting the mental health and wellbeing of university students is gaining recognition across the higher education (HE) sector. The promotion of wellbeing in HE is spelled out in the 2015 Okanagan Charter, the widely adopted international declaration that asserts:

> Health Promoting Universities and Colleges transform the health and sustainability of our current and future societies, strengthen communities and contribute to the wellbeing of people, places and the planet [and] By doing so, they enhance the success of our institutions (International Conference on Health Promoting Universities and Colleges, 2015)

At the national level, Healthy Universities UK, a sector wide network with over 90 member HE institutions, is a signatory to the Okanagan Charter. Healthy Universities UK aspires to a whole-of-university approach 'to create a learning environment and organisational culture that enhances health, wellbeing and sustainability' that 'enables people to achieve their full potential' (Healthy Universities, 2019). In a national student-led example, Student Minds, a charity established to develop new and innovative ways to improve the mental health of students, recently published *The University Mental Health Charter* (Hughes & Spanner, 2019). Student Minds worked with a range of HE stakeholders to develop the Charter, a voluntary award and quality improvement scheme that will recognise universities with exceptional approaches to promote support mental health and wellbeing.

At the University of Nottingham, where the present pilot study took place, student mental health is strategic priority, as evidenced by several health and wellbeing policies and initiatives (University of Nottingham, 2018).

Mental health and wellbeing in architecture

Supporting health and wellbeing has long been recognised as an issue within the architectural profession. Since 1850, the Architects Benevolent Society in the UK has provided 'relief to persons engaged or formerly engaged in the practice of architecture and the wives, widows, children and other dependants of such persons being in necessitous circumstances' (Architects Benevolent Society, 2019a). From this financial welfare provision remit 169 years ago, fast forward to 2019 and the same society 'are putting the mental wellbeing of architectural professionals and students at the top of the agenda' via an online #AnxietyArch campaign (Architects Benevolent Society, 2019b). The year-long campaign, provided in partnership with Anxiety UK, is publishing a monthly blog on health and wellbeing, including one on Education in architecture.

Evidence from the profession and academia illustrates why such a campaign is warranted. In a 2003 RIBA funded report de Graft-Johnson et al (2003), stressful conditions were cited as one of the reasons women left the profession. Similarly in 'The Favoured Circle: the social foundations of Architectural Distinction' (1998) Gary Stevens observed that 'prolonged, intense interaction' (p. 200) and 'sleepless nights, stress and anxiety' (p. 203) are almost expected rites of passage for students. These statements are probably not surprising to those who have trained as architects; multiple surveys of architecture students in the UK in recent years have shown mental ill-health to be at alarming levels. A 2016 study (Waite and Braidwood, 2016) revealed that over half of 450 architecture

students surveyed 'expressed concerns about their mental health', exposing the need for further investigation into student health and ways to improve it. The Architect's Journal annual student survey has traced the increasing numbers of students seeking mental health support, rising from 26 per cent in 2016 to 31 per cent in 2017 and 33 per cent in 2018 (Jessel, 2018). Long hours including all-nighters, low pay, feast-or-famine workloads, high fees and study / living costs for and the need to defend their designs are cited as reasons for these problems (Hohenadel, 2018; Jessel, 2018; Block, 2019).

Examples of initiatives to tackle mental health issues in architecture include advice offered by the RIBA online (RIBA, 2019), and a focus on architecture student health in Australia in 2018 as part of a wider movement of 'improving mental health outcomes in architecture […] as a priority' (Li Bissett, 2018). In the UK, this shift is most notable through the formation of the Architects Mental Wellbeing Forum, a group currently comprising 12 architectural practices, representatives from the RIBA, Architects' Benevolent Society, and architectural students. Founded in late 2017, the AWBF 'was borne out of a belief that we as an industry could all improve our understanding of mental health, and subsequently provide better environments for the mental wellbeing of people working in architecture (AMWF, 2019a).

The Forum recently published the 'Architect's Mental Wellbeing Toolkit (AMWF, 2019b), which includes a section on how the architectural community, including universities and practices, can support the welfare of students in particular (see Appendix 1).

Co-founder of the Forum, architect Ben Channon, is also an advocate of mindfulness and recently published 'Happy by Design', a design guide illustrating strategies for designing buildings that support the wellbeing of their users. Channon's work makes direct reference to mindfulness and the potential to design mindfully, noting that leading Vietnamese architect Vo Trong Nghia 'is a strong advocate of meditation, and recently paid for all of his staff to attend a week-long retreat (2018: p 131).

Mindfulness-based Interventions (MBI), mental health and HE

Mindfulness-Based Interventions (MBIs) are structured courses in mindful awareness which offer a potential means of addressing the mental health of architecture students and of increasing wellbeing more generally. MBIs teach a formalised set of meditation-based practices and other informal approaches to everyday activities. These have been proven to improve health and wellbeing in numerous populations, including student populations. According to the Mental Health Foundation in New Zealand, for example, mindfulness training can be used to develop an increased sense of calmness, improved focus and attention, enhanced self-awareness, reduction in stress levels, and it can be used to assist in the cultivation of healthy relationships (Henning et al, 2018: 27).

Different types of MBI, such as Mindfulness Based Stress Reduction (MBSR), are increasingly used to prevent or treat depression, stress and anxiety, as well as being

practiced to enhance focus, productivity and quality of life. In October 2015, a UK All Parliamentary Group inquiry report 'Mindful UK' asserted that mindfulness is 'an important innovation in mental health which warrants serious attention from politicians, policymakers, public services in health, *education* and criminal justice as well as employers, *professional bodies*, and the researchers, *universities* and donor foundations who can develop the evidence base further' (MAPG, 2015: 5, emphasis added).

Jon Kabat-Zinn, who founded the Mindfulness Based Stress Reduction clinic at the University of Massachusetts Medical Centre in the late 1970s, defined mindfulness as

> **Paying attention in a particular way: on purpose, in the present moment, and non-judgmentally** (Kabat-Zinn, 2004: 4).

Many similar definitions of mindfulness have been put forward by scholars and practitioners since[1], including:

- paying attention to what's happening in the present moment in the mind, body and external environment, with an attitude of curiosity and kindness (MAPG, 2015: 5)
- a method for developing the synthesis between mind and body processes (Henning et al, 2018: 27)
- simply a form of mental training (Penman, 2015: 10)
- a mental discipline aimed at training attention (Hassad and Chambers, 2014: 6)

MBIs are being widely introduced and studied within the HE sector. Research within neuroscience, psychology, business management and pedagogy has studied the effects of mindfulness on students generally (i.e. how students concentrate and reflect), and on students in particular professions, such as medicine and nursing, which are characterised by high stress levels and dealing with complex decisions and responsibilities. According to Henning et al (2018: 27)

> Mindfulness meditation (or training) has been introduced within higher education contexts as a means of accessing information about self and others, to develop awareness of internal connections and how this impacts on the external environment, and to promote creativity, wellbeing, and compassion

For example, an interdisciplinary group of GP's and academics in medicine and psychology in New Zealand developed CALM (*Computer Assisted Learning for the Mind*) to make mindfulness meditation audio instructions, as well as other stress-reduction and health-

[1] For a useful summary of definitions and current research see *Institute of Health Promotion and Education Position Statement: Mindfulness* (Watson and Neil, 2019)

related resources, readily available to students (University of Auckland, 2019). As well as delivering MBIs as part of university mental health services around the world, some are also being integrated into the curricula of particular degrees, and indeed forming the foundations for classes or degrees in their own right as a means of exploring 'contemplative practices' as a form of knowing (Christian, 2018; Bush, 2011)

Despite the growing body of evidence about mindfulness when it is practiced in various settings and circumstances, the relationship between mindfulness and architectural study is not well studied to date. In his recent article 'Contemplative Practices and Mindfulness in the Interior Design Studio Classroom', Cotter Christian, Assistant Professor at Parsons School of Design, NY, writes

> While there is a growing number of courses, research initiatives, and programs offered through student health services, recent searches … demonstrate that the relationships between mindfulness, design, and creativity are not typically the focus of these practices in higher education […] there is much in the practice of art and design inherently connected to contemplative practice and mindfulness, and this work is undoubtedly happening in art and design schools around the world; however, it would appear that there is an opportunity to concretize research around this subject and offer mindfulness programming specific to art, design, and creative practice at the university level (Christian, 2018).

Several recent but isolated individual studies have been completed which link mindfulness and design, and these have informed this research. In the work of Christian (2018), as well Altay (2019), a number of potential benefits of mindfulness training for architecture students have been identified. These include the potential for mindfulness to increase design students' empathy and compassion toward other people (i.e. building users), more confidence when drawing, and greater spatial and sensory awareness. Similarly, Rieken et al (2019) have conducted studies in the US showing that mindfulness training is effective for engineer students, specifically to foster divergent thinking and creativity when solving design problems. Another important recent study relating mindfulness practice to student learning, 'Mindfulness in sustainability science, practice, and teaching' (Wamsler et al, 2018), was conducted in Sweden as part of a 'Contemplative Sustainable Futures' Programme. In this study, 70 students from two sustainability-focused Masters' Programs were offered mindfulness exercises, which were shown to influence the student's ethics and reflective attitudes toward environmental issues. This latter study directly influenced the design of the questionnaire for the present MBSR architecture pilot.

Research questions

Two aspects of the mindfulness – architecture relationship are the focus of this project:

- **How can mindfulness training influence the health and wellbeing of architecture students?**
- **How does mindfulness training influence the way students conceptualise and experience architecture, and architectural practice?**

The first question addresses the wellbeing of individuals who are learning to engage in a demanding profession. Studying and practicing architecture can be highly stressful, with long hours, deadlines, financial pressures, complexity, and multiple responsibilities. Architecture demands a range of skills including creativity, attention to detail, interpersonal skills and time management – all of which can be difficult to accomplish if one is stressed or lacking focus.

The second question explores whether mindfulness training can enhance the skills relevant to being a creative practitioner. To what extent could a 'mindful' approach to architectural practice be beneficial, for example does cultivating 'an attitude of curiosity' influence how to engage with a site? Can cultivating 'compassion' affect how students develop professional ethics or working with others? Mindfulness meditation seeks to promote bodily awareness of one's surroundings, which may influence how students develop an embodied, phenomenological awareness of space and place.

By addressing these questions, this study builds on existing research in education and workplace health to produce an original evidence base that is tailored to the architectural community. By doing so it highlights whether meeting the specific challenges of architectural study may be assisted by mindfulness, and whether it imparts a state of mind-body awareness conducive to greater architectural receptivity and understanding.

Methodology

Summary

- The study was conducted in accordance with University and industry **ethics** standards and protocols
- Following a recruitment and screening process, **20** architecture students voluntarily participated in an 8 week Mindfulness-Based Stress Reduction (MBSR) pilot training programme. Recruited students represented a mix of year levels (**year 1 to year 6**)
- The MBSR programme was conducted at the University of Nottingham campus between February – April 2018 by a **qualified trainer**
- Qualitative **survey data** was collected from participants pre-training, immediately post-training and 6 months post-training
- **Focus groups and interviews** were conducted with the MBSR trainer and participants
- Results of the pilot were assessed by **thematically analysing** the responses from the surveys and focus groups alongside relevant literature

Ethics

Prior to commencing the study, standard research protocols including informed participant consent, confidentiality and secure data storage were approved by the University of Nottingham, Faculty of Engineering Research Ethics Committee.

The MBSR pilot was conducted by Mel Wraight, a qualified independent consultant who is registered with the UK Network for Mindfulness Based Teachers and follows their good practice guidelines (UK Mindfulness-Based Teacher Trainer Network, 2011). Mel is also an accredited counsellor with more than 20 years' experience working with schools, businesses and individuals, who runs the counselling and mindfulness consultancy **Stillpoint Mindfulness** http://www.stillpointmindfulness.co.uk/.

In this context it is important to acknowledge the potential for sensitive personal information to be disclosed during MBSR programmes, and therefore for appropriately trained staff to handle the training and support participants. Mindfulness Based Stress Reduction, and the research questions being asked about the experience and effects of the MBSR training, may raise issues relating to mental health e.g. depression and anxiety, stress, feelings of self-esteem. The MBSR training does not 'induce' such feelings, however they may arise, and then be the subject of discussion. The trainer was experienced in handling these sensitive issues, and was available to provide support during the training and outside training times as well if requested (as stated in the participant application form). Participants were encouraged to seek further support if desired, with details of health services made available to participants.

The academic researcher was not present for any of the MBSR pilot sessions, ensuring students felt free to discuss aspects of their experience without any conflict of interest i.e. if the academic was also acting as a tutor / assessor of student work.

Recruitment of participants

Recruitment to the MBSR pilot study followed **a two-stage process** of introductory communications / promotion of the project, followed by screening of potential recruits.

First, in mid-2017, all architecture students enrolled in RIBA/ ARB accredited courses at the University of Nottingham (K100, K230 and K10I Part 1 + 2 programs), approximately **500** in total, were contacted by email introducing the project and inviting them to attend one of two information 'taster' sessions (see appendix 2)

The 1 hour introductory taster sessions were conducted by Mel Wraight in November and December 2017. Mel conducted short mindfulness practices (i.e. breathing meditations) and discussed the ideas behind these. **Thirty-seven** students attended these sessions, plus a few non-attendees expressed email interest. This represents approximately 8% of the overall student population that were invited.

Attendees at the introductory session were given detailed information about the 8-week pilot, the research study, and application forms to register interest in participating. Note the registration forms were handled in confidence by the MBSR trainer and followed standard processes for screening the suitability of participants for MBSR training.

Following screening, **twenty students** were selected to participate, ranging across all levels of study as follows:

Year 1 = 5 (25%)

Year 2 = 2 (10%)

Year 3 = 3 (15%)

Year 5 = 4 (20%)

Year 6 = 6 (30%)

The MBSR pilot

The pilot MBSR programme took place between February – May 2018.

Sessions were held on campus in the Department, in locations convenient to the students.

Students were split into two groups (1 x 11 and 1 x 9) with each group being conducted on different days to accommodate students with different timetabling requirements.

The programme followed a recognised structure of weekly group sessions (2 hours) where mindful techniques such as meditation were practiced and discussed, followed by daily 'home practice' of approximately 45 minutes duration which participants were encouraged to complete.

The MBSR programme was based on the following themes:

Week + title	**Student attendance ***
1 Introducing mindfulness	16 / 80%
2 Handling stress	20 / 100%
3 The power of being present	17 / 85%
4 Patterns of reactivity to stress	15 / 75%
5 Responding not reacting	15 / 75%
6 Stressful communications and interpersonal mindfulness	11 / 55%
7 Lifestyle choices	9 / 45% **
8 Keeping your mindfulness alive	13 / 65%

*Note two students withdrew form studies mid-way through the programme and ceased participation, which is reflected in these figures

**This was a design review week for the majority of students

Examples of typical practices within the course are available online at https://www.stillpointmindfulness.co.uk/meditations/

It is useful to take note of the mode of MBSR training which is itself highly reflexive, flexible and adaptable in its delivery, making every session and programme unique. The MBSR course is not heavily manualised, meaning the trainer will respond to issues as they arise within the group while ensuring the main teachings of the course are not contaminated or diluted, so each week has certain ideas to convey. As Mel Wraight explains:

> Mindfulness training is 'more caught than taught', so you are catching what the group are bringing up and making your teaching points off the back of that […] It's very responsive […] because of the nature of that process every group is different […] I didn't adapt [the course] in any particular way for these particular groups [as architects…]

Data collection and analysis

To evaluate the effects of the MBSR pilot, a combination of qualitative and quantitative **survey data** was collected from participants, along with qualitative **interview and focus group** data.

SURVEYS:

Participants were invited to voluntarily complete questionnaires before and after the mindfulness-based intervention. These questionnaires explored levels of engagement and effects. The surveys were divided into four parts:

- Part 1 – Your engagement with mindfulness
- Part 2 – Your experiences, thoughts and feelings about studying or practicing architecture
- Part 3 – your opinions about being an architect
- Part 4 – WEMWBS, the Warwick-Edinburgh Mental Wellbeing scale (WEMWBS).

See appendix 3 for all survey questions.

Refer WEMWB details at https://warwick.ac.uk/fac/sci/med/research/platform/wemwbs

Surveys were administered three times:

- Survey 1: ex-ante (before commencing the MBSR training)
- Survey 2: ex-post training evaluation (immediately after completing the MBSR training)
- Survey 3: ex-post training evaluation (six months after completing the MBSR training to gauge any longer term effects)

All surveys were administered online with individual passwords. All responses were anonymised by the software used (BOS online). Survey response rates were as follows:

Pre-pilot	19	95%
Post-pilot	15	75%
6 months post pilot	10	50%

FOCUS GROUPS / INTERVIEWS

Post-intervention focus groups with participants allowed them to relate their experiences of the MBSR training and elaborate on the themes already explored in the questionnaires as well as introduce any additional comments they deemed relevant. Open-ended questions were be based on the questionnaire categories and issues:

- Engagement with mindfulness (types of practice, how often)

- experiences, thoughts and feelings about studying or practicing architecture and how mindfulness may influence these
- attitudes and opinions about being an architect, in relation to themes that intersect with mindfulness themes e.g. curiosity, compassion, judgement, anxiety

Nine participants engaged in the focus groups (45% of the study), which were conducted over 3 sessions in May - June 2018.

An interview with the trainer, Mel Wraight, was conducted separately. Comments from this interview are referenced as (Wraight, 2018).

Interviews were audio recorded and transcribed.

ANALYSIS

Results of the pilot were assessed by **thematically analysing** the responses from the surveys + focus groups alongside relevant literature. These were clustered into eight themes.

Limitations

A number of limitations to the study design should be taken into consideration when reviewing the findings.

First, this is not a randomised controlled trial (RTC), meaning that the students cannot be compared to a control group who have not received the training.

Second, as students were not randomly allocated but volunteered for the study there is the potential for self-selection bias: Given the nature of the MBSR aims and programme description, the participating students may present higher than average levels of stress prior to training, as they were particularly motivated to volunteer to participate. Therefore the students undertaking the study cannot be assumed to be a representative sample.

Third, some participants graduated after the study, so questions about studying architecture in the post 6 month survey may have been less relevant. Such students were asked to substitute the word 'study / student' for 'practice / practitioner' where appropriate.

Fourth, the number of completed surveys reduced over time. The reduction in numbers limits validity and may also skew results given that those who were the most motivated and available to voluntarily compete the final survey may have been most engaged with ongoing MBSR practice, whereas those who opted not to respond may have been less engaged and hence provided different responses.

For this reason, survey responses were analysed using overall percentages of answers given for each survey, rather than comparing numbers of particular responses given at each survey. Survey information is presented consistently with tables colour-coded to distinguish trends between surveys (1), (2) + (3).

I think mindfulness is particularly important for architecture students and I think it helps a lot for me during the course as well

I found I generally took certain elements from the [mindfulness] course or the home practice and applied them throughout the day - even the way I think about architecture or about my life – kind of changed by looking at it through the mindfulness prism. So if I ever got stressed I would [put things in perspective by] using non-judgemental words that mindfulness teaches, that was really helpful

Every session has a theme, one being how to deal with stress and one being how to be kind to yourself, these target well for architecture students because we are often faced with stress and time limits, so I think these are useful particularly for architecture students

It's been very helpful, it's definitely a useful thing […] I've enjoyed architecture more and I've enjoyed what I'm doing, I've produced better work, and I think mindfulness has helped a lot, its changed how I feel about it quite a lot

Theme 1: Levels of engagement with mindfulness

The most important thing to remember is to practice every day

(Kabat-Zinn, 2013: 158)

Summary

- Mindfulness training, like any new skill acquisition, requires practice and a regular commitment of time if it is to be fully effective
- Before the MBSR training pilot, participants already demonstrated reasonable understanding of mindfulness practice. The participants reported a mix of engagement with practice before the study, with some regular meditators alongside less experienced / non practitioners
- Most participants completed some of the regular practices, or shortened versions of the full daily practice. Attendance at the weekly training group sessions was good but dropped at times of peak workload (design reviews)
- Barriers to engaging with the training, both in terms of the 8 x 2hr weekly sessions and the home practice, were common. Perceived lack of time was the main barrier identified, as well as a need to learn to 'give permission' to dedicate time to self-care
- Developing strategies to encourage consistent and regular engagement with mindfulness practice is an important consideration if the full benefits of mindfulness training are to be realised. Having scheduled face-to face group sessions and short practices are helpful

Regularity of daily mindfulness meditation practice is an important part of achieving the improvements in mental health and wellbeing that MBSR training has been proven to deliver. Just as regular exercise at the gym is more likely to produce physical health benefits compared to the occasional or infrequent workout, so too does the efficacy of MBSR depend on actually practising the meditations and other exercises that are recommended. According to different studies, and depending on the variant of

mindfulness-based intervention (MBSR, Mindfulness-based Cognitive Therapy CBCT, and other specialised MBIs i.e. mindful eating) the recommend minimum practice durations and frequencies can vary. For MBSR programmes, the recommend commitment is between 45 minutes – 1 hour daily, six days a week, though it is noted that even just 5 minutes' worth can have a restorative and healing effect (Kabat-Zinn, 2013: 158). Other programmes intentionally recommend shorter periods of practice, for example Penman suggests 'around ten to twenty minutes a day is enough' (2015: 10). The general rule of 'the more the better' applies.

In this section, participant's levels of mindfulness practice are reviewed, along with a presentation and analysis of strategies that were found to influence practice.

Before the 8 week programme it was informative to gauge how the participants defined mindfulness and what they expected it to entail. The following survey 1 responses demonstrate a reasonable understanding of mindfulness. The combination of the introductory taster session, research study materials and participants own existing practice can account for this level of awareness:

How would you describe mindfulness (your understanding or definition?)

To be aware of surroundings and emotions to ground feelings and be accepting of what is happening.
Mindfulness is a state of being self-aware, being able to understand the emotions that one feels, being aware of the surroundings. It is the basic awareness of one's thought.
Being with and accepting what's here, experiencing the present moment as it is rather than trying to change it... not letting thoughts be always in control!
Mindfulness is all about staying in the moment, living in the present and not dwelling on the past or the future.
Mindfulness is being present in the current moment, without worrying about the past or future. This means choosing to pay attention to things such as sights, sounds, smells, tastes that are occurring around us as well as our own thoughts and feelings. It teaches us to centre ourselves in the present, which is important for learning how to direct our concentration and change our thought process in order to be more relaxed and calmer. This may mean that people who practice mindfulness can deal with tricky situations better, and enjoy life more especially with such high pressure and stress as in the modern day. In turn, this may add to better productivity and life choices, in terms of self care also as we are more aware of our minds and bodies. It is different from the way our brains normally think and so may feel unnatural, which is why it gets easier with practice.
Focusing on the present moment and not dwelling on the past or the future. It is being aware of what is going on around you through your senses i.e. sounds, sights, smells etc. and then how your body is feeling - sensations in different parts of the body. Grounding yourself in your own body and being aware of what your body is experiencing without being overwhelmed by it.
Being calm and present without judgement
mindfulness to me is being aware of ourselves, and everything surrounding us at the present moment, without making any judgement.
Mindfulness is being aware of the present moment, yourself and any thoughts or feelings that you may have and then accepting those thoughts, good or bad.

Mindfulness is something everyone is trying to achieve in their live. People might find it hard and don't know how to get started on their mindfulness journey.

Mindfulness is a practice of the mind and how it work. How you can do certain practices to settle the mind
My current understanding of mindfulness is that it is an awareness of being. A particular state of mind which is calm, clear and loving, which is manifested both in the way in which someone feels and how they act toward others.

clear of the mind and ability to control thoughts

Mindfulness is about being more aware and in tune with the environment and our body/mind relationship with it. It is also about consequent heightened understanding - in a non judgemental way - of our own thought processes in relation to everyday life.

my understanding of mindfulness is being aware of your own personal reactions and thought processes in order to gain an enhanced understanding of your emotional mechanics with the desire to influence and control your own personal state of mind.

Mindfulness is about being more aware of the present moment through being more mindful of how your body responds to different sensory stimuli.

Becoming able to increase concentration and focus on a specific task. Making the attention area of my brain larger and stronger.

Mindfulness is the ability to create awareness and strengthen consciousness of the mind and body. This includes gaining a better understanding of the tendencies of the mind to heighten the senses affected and response of the body to various situations/stimuli.

The state of being more aware of oneself

Survey responses revealed that 11 of the 20 participants identified as already having some form of mindfulness practice before the MBSR training:

- two had been trying an online mindfulness app (Headspace – see https://www.headspace.com/)
- one had received some instruction as part of therapy
- one attended yoga classes
- others described using breathing techniques or attempts to exercise focussed attention on daily tasks / spaces / everyday thoughts, often to manage stressful situations

To better understand the levels of engagement with mindfulness, participants were asked to indicate the extent to which mindfulness plays a part in their daily life (figs. 1 – 3):

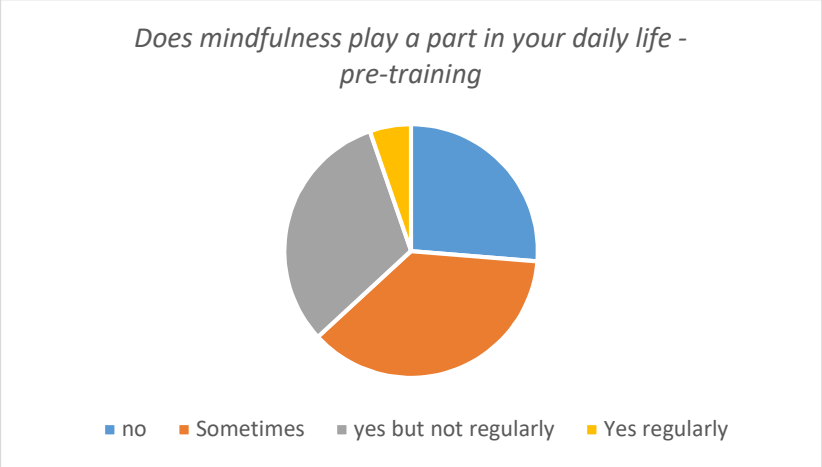


Figure 1: Pre-training responses to the survey question 'Does mindfulness play a part in your daily life?'

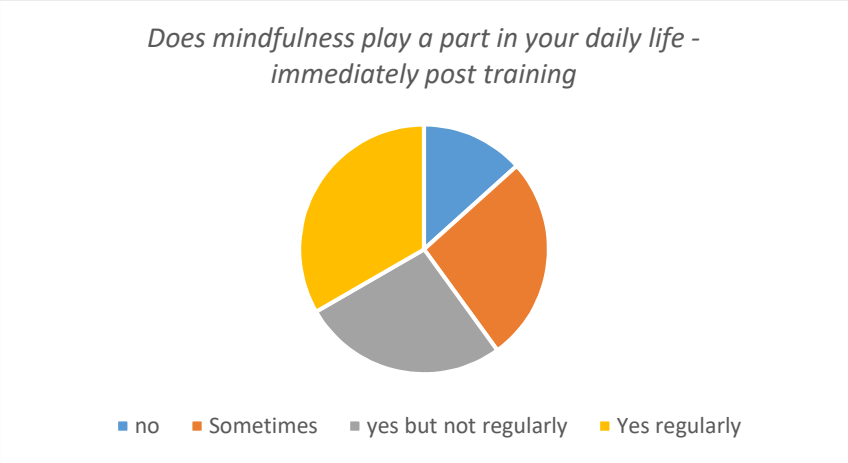


Figure 2: Post-training responses to the survey question 'Does mindfulness play a part in your daily life?'

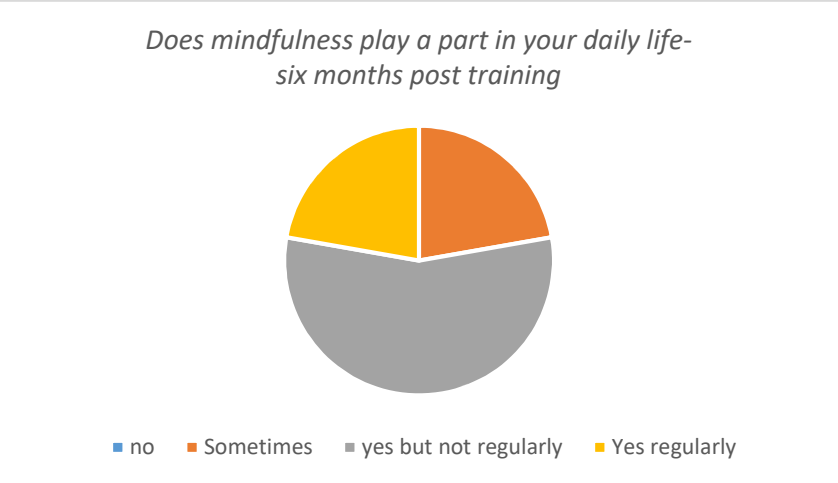


Figure 3: Six months post-training responses to the survey question 'Does mindfulness play a part in your daily life?'

Responses to the question 'does mindfulness play a part in your daily life' reveal the regularity of engagement with mindfulness increased both during and 6 months after the course. Reported levels of regular practice (indicated in yellow) were highest immediately post-training, and while these dropped after 6 months the proportion of those who maintained a daily practice 'but not regularly' was over 50%.

The trainer observed that engagement varied from individual to individual: 'In both groups there was a core of individuals who were very engaged, who generally turning up every week and reporting getting a lot out of it, and there were others [for whom…] there was a sense of dipping in and out depending on how much (work) they had to do outside of [the MBSR course]. … there were some patchy or sporadic attendances that were explained [by participants] as being due to course pressure'. She noted in particular that 'They did not focus on mindfulness as well during the design review week of semester'.

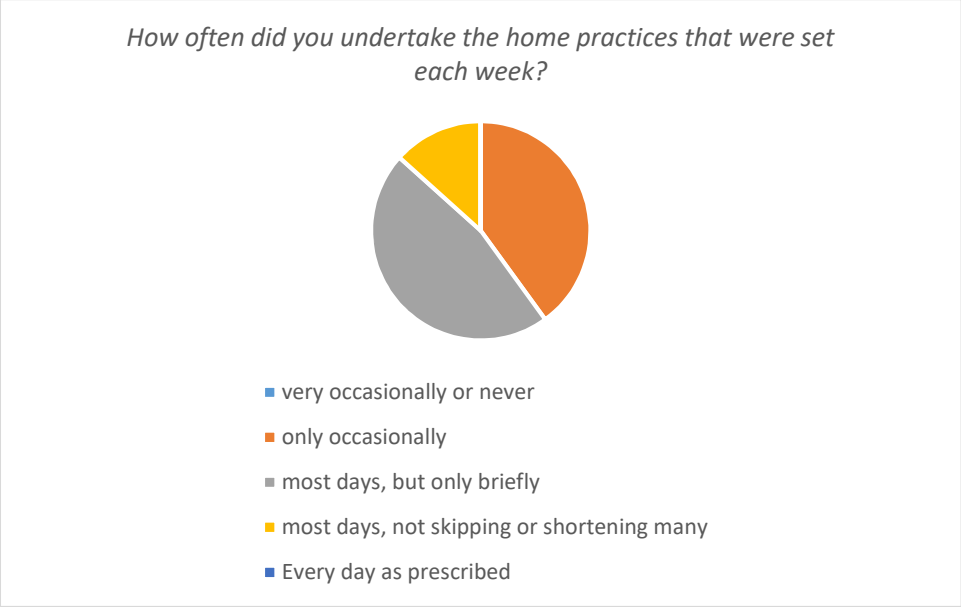


Figure 4 – Responses to the survey question 'How often did you undertake the home practices that were set each week'

As a core component of the MBSR programme, participants are instructed to undertake home practice of around 45 minutes a day, 6 days a week. In the post-MBSR survey participants were asked 'How often did you undertake the home practices that were set each week' (fig. 4). No participants completed all the prescribed home practice, but nor did any omit or miss the practices altogether. The majority were 'only occasionally' completing the practice, or completing a shortened / brief practice session.

When responding to the question 'Were there any obstacles / hindrances / reasons that prevented you from participating' participants overwhelmingly identified lack of time i.e. 'Just felt like I didn't have time to practice' and conflicting demands and obligations i.e. 'Work took priority'. Two participants cited 'forgetfulness', which reflects the challenge of developing a new habit when existing habits or 'auto-pilot' modes of working can prevail i.e. mindlessness. One participant stated they 'weren't allowed' to one session because a studio tutor insisted they attend a class.

Developing mindful practice as a healthy habit is not easily achieved. Overcoming barriers that can prevent engaging with mindfulness will be explored further in other thematic sections of this report (see Time; Self Compassion).

Survey comments and focus group discussion revealed that having the weekly group sessions was in itself a motivating factor that improved engagement compared to independent mindfulness practice. For example, when asked what aspect of the training was most useful, students responded:

> 'I have read some literature about mindfulness before and attended student led meditation sessions at BudSoc [Buddhist Society], however, it was much more comfortable and easier to embrace when led by a professional.'
>
> 'By having a weekly session I found I was more likely to put aside time to practice meditations because I knew that the next week I would be able to discuss how it went and see how I had improved.'
>
> 'The weekly classes - practicing with others and having designated time in the week set aside for meditation.'

On a practical level, attendance patterns varied between the two groups, with those scheduled in the morning having noticeable better attendance than the group whose training took place in the afternoon. Comments made during the focus group affirmed that 'Morning sessions were better since they started the day and left the rest of the day to work'.

Theme 2: Time

Summary

- Studying architecture places high demands on student's time. This necessitates particularly skilled time management and awareness if students are to avoid becoming 'consumed' by academic workloads
- Participants reported being able to manage time better and to feel 'not as rushed' following mindfulness training
- Perceived lack of time was a specific barrier to mindfulness engagement which all participants struggled to overcome, with variable outcomes
- Strategies to make mindful practice easier to access amidst competing time demands were offered, including having flexibility to practice shorter periods
- Using mindful awareness to notice whether non-stop study is actually productive or not (i.e. identifying presenteeism) was discussed when addressing time issues, with mixed success

"I think as a student architecture takes over. First year and second year were not so bad but third year **it becomes all consuming**" (survey 2 comment)

"**I think studying Architecture often does take up all your time but I don't think it needs to be like that**. I am determined that I will try to give myself breaks and go for mini trips on weekends or explore the local area as I know this feeds my curiosity and keeps me enthusiastic about work as I have had a break from it. But this is not the norm for students and it feels like I will not do well if I give myself some freedom to do other things. I think we should be encouraged to have breaks and do other things alongside working hard, otherwise by the end of the term I have lost my love for the course and feel very demoralised and down" (survey 2 comment)

Architecture is extremely demanding and takes up all of a students or professional's time - It is very demanding and **it can take up all of people's time if they are not careful** however it shouldn't! Architecture is a stressful profession - I often worry about whether I will be stressed a lot in my life but it really should be no more stressful than any other job" (survey 2 comment)

The three preceding survey comments articulate the commonly-held student perception that studying (and then practicing) architecture places high demands on their time. Importantly, two of the comments, made immediately after the completion of MBSR training, also reflect an awareness that this is not necessarily an inherent quality of the profession, and that indeed having an 'all consuming' approach to architecture can lead to burnout, can compromise the quality of work, and lead to disenchantment with the profession itself.

It is clear that managing time effectively is an important skill to develop if students are to navigate architectural education and professional life. Wraight identified this as a particular challenge for architecture students who can perceive that 'there is no downtime, there is no time when work could not be being done, and that's a tough one to manage' (Wraight, 2018). Setting up a more mindful awareness of student's own working patterns is especially important considering that 'working long hours at uni sets an expectation for what they will go on to do in their professional careers' (Wraight, 2018).

Mindfulness can improve time management, if one can take the time to practice it as Penman (2015: 47) notes:

> There will be many times when you feel that you do not have any spare time to meditate. This is undoubtedly true […] However, meditation tends to free up more time than it consumes because it helps to streamline life, so it will pay dividends

Hassad and Chambers (2014: 92 – 93) similarly advocate 'investing' time in mindful meditation by using the analogy of a woodcutter thinking they do not have time to sharpen their axe because they have too much wood to cut. In this way, taking time to train and focus the mind (sharpen the axe, so to speak) saves time because the job gets done more effectively, for example by avoiding procrastination and staying focussed.

In this section, the participant's relationship with time is discussed, with consideration of two key issues:

- The influence of mindfulness on perceptions of time and time management
- Finding time to fully participate in the MBSR training

Time management

The survey question directly measuring **time management** (Fig. 5) reveals that feeling rushed or behind in their studies is an all too frequent state for participants, but that these feelings lessened after MBSR training:

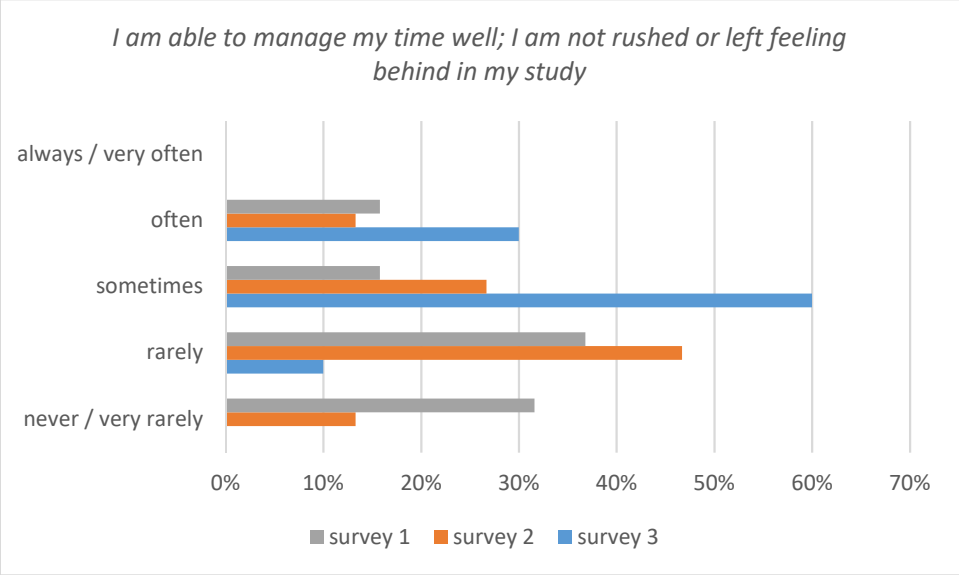


Figure 5 - Responses to the survey question 'I am able to manage my time well; I am not rushed or left feeling behind in my study'

Not a single participant reported 'always or very often' feeling on top of things, regardless of whether this was before or after mindfulness training. However, the frequency of feeling able to manage their time increased – most notably reducing the most negative response: Before training over 30% of participants 'never / rarely' felt like they were managing time well, whereas 6 month post-training 0% indicated such a complete lack of time management and overwhelming feelings of being rushed.

One focus group comment affirmed that their approach to time management had shifted while undertaking mindfulness, though not necessarily attributing this to their training:

> I definitely managed my time better this term, I'm not sure if it's because of mindfulness or just because I am more organised. It was still difficult, with this course it's impossible to be on top of everything all of the time. But I've definitely been more selective with allowing myself rest

The relationship between work demands, time, and managing time by working effectively and with greater focus and awareness is discussed again in the 'focus' theme of this report.

Barriers: Finding time to practice

As noted in the previous section on levels of engagement, participants generally struggled to fully engage in the mindfulness training, especially the time commitment of regular home practice. This created a catch-22 situation where mindful awareness of their work – for example of one's productivity or lack thereof, prioritising tasks, being stuck etc. – may actually allow for gains in time, but the feeling of being unable to stop work prevents such awareness from being truly felt and acted on.

Wraight notes that 'Time is something we have to troubleshoot with most courses, finding the time to practice meditation, and developing it as a habit. Eight weeks is not a very long time to do this. What was different working with architecture students was the barriers that come in the way of them becoming mindful'. Common barriers are busyness and the pressures of work / jobs, and the pressure of family i.e. carer responsibilities. By comparison, the impression she received from architecture students was that perceived time pressures were exacerbated by the open-ended and complex character of design projects, and the workload associated with the course. She remarked:

> What they seemed to say repeatedly was that there was so much work, and so many different elements that they felt that they needed to do, and there were so many layers to each piece of work they were doing […]
>
> it was very much the pressure of their courses, which unlike people's jobs don't fit into people's working hours, so there was a real sense that as students they didn't have a sense of there being a cut off, an end-of-day, they were working on and on every day, well often well into the night […] this was a particular issue that came up time and time again […] that they just felt there was so much work on their course it was really difficult to keep a work-life balance, and if they were keeping a work-life balance, for instance if they were doing the meditation, or yoga, or taking a couple of days off, they felt guilty about that.

This was echoed by participants who had worked in an architectural practice (i.e. year out, summer work); several comments made during focus group discussions compared the stress of study to the experience in the office environment:

[in practice] it finishes at the end of the day, and we were working in teams'

It's less stressful in the workplace […] work is more straightforward

[study and work are] two completely different things […] I think the gap is huge. [In practice] work is work and home is home, it's not like one hours' sleep [when studying…]

Masters students tend to manage better [having had office experience]

When studying having to do what would be asked of team of people in an office

The following participant focus group and survey comments reflect the difficulty students had with time, and how some managed this aspect of their work and their mindfulness practice. Note several acknowledge the value of 'forcing' themselves to take time from

study to do this, and in one case the observation was that pausing to be aware of one's thoughts and feelings during a stressful time felt like it had 'made it worse'[2].

During really stressful times it was 'daunting' to come [to training] and try and relax and be with your thoughts, but at the times I did force myself to go it was really rewarding

2 hours seemed like a big amount of time but actually it was a very worthwhile 2 hours, it was definitely worth those 2 hours each week

I found it harder when I was busy with work and deadlines to dedicate the time to practice. It was beneficial to spend the time doing the practice but I had to always remind myself this.

weekly classes were not a problem, I set aside the time I knew I was going to go […] the home practice I really wanted to do but depending on the work you've got it falls to the bottom of the list so easily […] it varied from week to week

for the weekly session 'it's fixed time so you know you have to go, and since its early in the day it makes you wake up and go and do it' but for the home practice you start to get really busy later on in your course so it's hard to do

I found it difficult because of deadlines […] I started off well but as the semester progressed and [study] pressure built up there were some [training sessions] I had to miss which was regrettable

I would often have a deadline the same day as the session, I would either be so exhausted or so stressed to come. I forced myself to go once before a deadline and the sheer act of being alone with my thoughts actually made me worse which was a real shame!

Quite difficult [to do regular practice]

Mindfully approaching time pressures and overcoming barriers

The trainer proposed a number of strategies to directly address the important issue of workload and time pressures. For example, she suggested

> To do shorter practices if they are struggling to do the 20 minutes of sitting meditation, to see if they can do the 3 step breathing space, which is just a few minutes long [instead], or even just setting an alarm on their phone and dropping in every hour, to just check in 'are my shoulders up around my ears? How's my breathing?' These are just simple ways of 'everyday' mindfulness.

[2] Some research has sought to identify potential adverse effects of mindfulness training for certain populations. For example, Dobkin et al (2012) state that some MBI participants in their studies report increases in perceived stress. They attribute this as follows: 'People described increased awareness of positive and negative aspects of their lives. When 'mindful', one is less likely to avoid unpleasant emotions or interpersonal problems. This may require adjustment and integration before the person is comfortable 'staying with' what arises […] Similar to psychotherapy, issues may be 'stirred up' and circumstances may be experienced as worse before they settle and get better […] it may take more than 8 weeks to come to terms with what one learned and experienced during an MBSR program, particularly when critical issues become evident.'

Students responded positively to this strategy, with one participant noting 'It was difficult to manage time and allocate prescribed portions of day for exercises. However, small or brief routines were much easier to manage and come back to throughout the day' (survey 2 comment).

Another strategy deployed during the training was to look directly at this barrier by encouraging students to direct their awareness toward their work patterns, and to reflect on their experience of how mindfulness impacts upon them. Students were prompted to ask of the MBSR training:

> Is it 'wasted time' or might it be helpful in some way? And what is it like to try and work 16 or 20 hours in a day? What is the quality of your attention in that time, and the quality of your concentration, and the quality of your motivation, your wellbeing…?

The trainer went on to observe that

> Inevitably what they report is 'well I'm kind of there, I'm in front of the computer or I'm in front of the drawing board, but I'm not *really* there, I'm procrastinating or I'm too tired to concentrate or I'm just going through the motions or I'm just doing busy-work, stuff that fools me into thinking I'm being productive or temporarily assuages my guilt about working by looking like I'm working but I'm not really being all that productive or creative

From the participant discussions, Wraight picked up 'a sense of presenteeism' amongst students, that is to say being present in studio for hours and hours and feeling that it was a kind of necessary thing to demonstrate commitment to others. By exploring this theme through mindfulness, students could be in a better position to notice unproductive time (i.e. be aware of presenteeism) and to combat this by choosing to take a break and refocus. This was explored in the MBSR training discussions with mixed results, as the trainer notes:

> So then we look at what it might be like to take a bit of time out regularly to recharge, to nourish yourself, and what impact that might have on the work […] a small number of them tried that and got that, and they could see the benefit, while others perhaps heard it but couldn't quite try it out yet (Wraight, 2018).

Theme 3: Stress reduction

Summary

- Stress reduction is central to MBSR training
- High levels of stress were recorded in pre-mindfulness surveys. Pre-training, high stress frequency of 'always or very often' was reported at an **alarming rate of 63.2%**
- Self-reported reductions in stress levels, and a heightened ability to manage and respond to thoughts and feelings of stress, were unanimous amongst respondents. Participants reporting high stress frequency of 'always or very often' **halved** at the end of the study (down to 26.7%) and **none** of the final survey respondents 6 months later reported high stress at this frequency at all
- To combat stress, breathing exercises and the ability to step back and 'put things in perspective' were mindful strategies that participants reported as effective
- The extent to which architectural education exhibits an underlying culture or 'expectation' of stress emerged during discussions. When paying attention to this mindfully, participants noted the negative effect this could have on their motivation and enjoyment of architecture
- Design reviews were identified as a particular trigger for stress, with resilience in the face of criticism and subsequent self-criticism being an important skill to develop

"Mindfulness has helped to keep me calm and manage anxiety which is something I have never had before until this year"

"In the week where we were focussing on stress we had to write down **behaviours we noticed when we were stressed** and me and a few other people wrote about how we made lists of all the things we needed to do, and sometimes lists are helpful but […] sometimes I'd make it pages long and I'd never do it. [The advice in the course was] making lists is good but you need to make them 'kind, reasonable and wise' [otherwise] I find I get to the end of the day and **I beat myself up for not getting everything done**. Now I'll still make a big list so I don't forget things, but then if I need to make a list of what I need to do I will try to think about 'what can I do today, **what's kind to myself but also productive**' and when I do that I feel better and I get things done, it's not that I'm doing less. I found that really useful, **it was a game changer for me**"

> "Mindfulness **puts things in perspective**. [People can] build up to reviews to be a massive thing that completely blocks out everything else in your world, but mindfulness has given me the ability to stand back from that […] not just with reviews but with the work in general"

Working with dedication, skill, energy, creativity and insight requires self-awareness, and the ability to manage stress. At this point it is important to distinguish between good stress – which is a natural, biophysical response to an external threat - and chronic stress, which impedes our ability to think clearly. Stress in and of itself is not a bad thing, however when it becomes prolonged or too high it has a negative impact on focus and performance. As Hassad and Chambers note (2014: 41), 'an overactive stress centre in the brain (amygdala) hijacks executive functioning', the area of short term or 'working' memory needed 'to learn, create and perform complex tasks'. When this occurs, the mind and body can go into survival mode, with physical symptoms such as increased heart rate as the body prepares for 'flight' (to flee) and stomach pain as the body changes its priorities away from digestion. Over time such high levels of stress are associated with burnout and poor performance, as conceptualised in the classic 'Yerkes-Dodson stress performance curve', where an optimal (i.e. balanced) level of stress can increase performance but beyond a certain point too much stress causes performance to decrease (fig. 6).

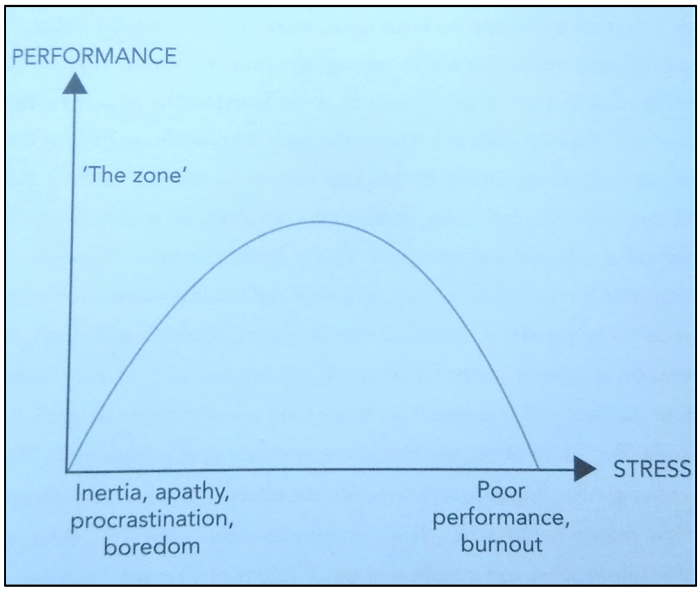


Figure 6. The performance / stress relationship (reproduced in Hassad and Chambers, 2014: 41)

This section divides the topic of stress into the following sub-sections

- Levels of stress and strategies to address them
- A culture of stress, its effects and alternatives
- Design reviews and stress

Note that as stress is a fundamental aspect of MBSR it cuts across several other themes; relevant comments and survey data also appear in 'Comments from participants about MBSR effects – architecture course' in particular.

Levels of stress and strategies to address them

As the title of the programme suggests, Mindfulness Based Stress Reduction is primarily directed toward reducing stress. When reflecting on this, trainer Mel Wraight agreed that MBSR is primarily about discovering 'how can I reduce the stresses in my life', and that therefore 'if students report back a reduction in stress then the course has done its job.'

In short, this result was achieved, as self-reported reductions in stress levels, and a heightened ability to manage and respond to thoughts and feelings of stress, were unanimous amongst respondents.

Stress levels were very high amongst participants at beginning of the training (fig. 7). When asked to indicate frequency of 'high levels of stress in relation to architectural study', at no point did any student claim that they never or rarely experienced high stress. **Pre-training high stress frequency of 'always or very often' was reported at an alarming rate of 63.2%** (1). This level **halved** at the end of the study (26.7%) (2). **None** of the final survey respondents 6 months later reported high stress at this frequency, with 50% reporting they experienced high levels of stress 'often', but no longer 'always or very often' (3).

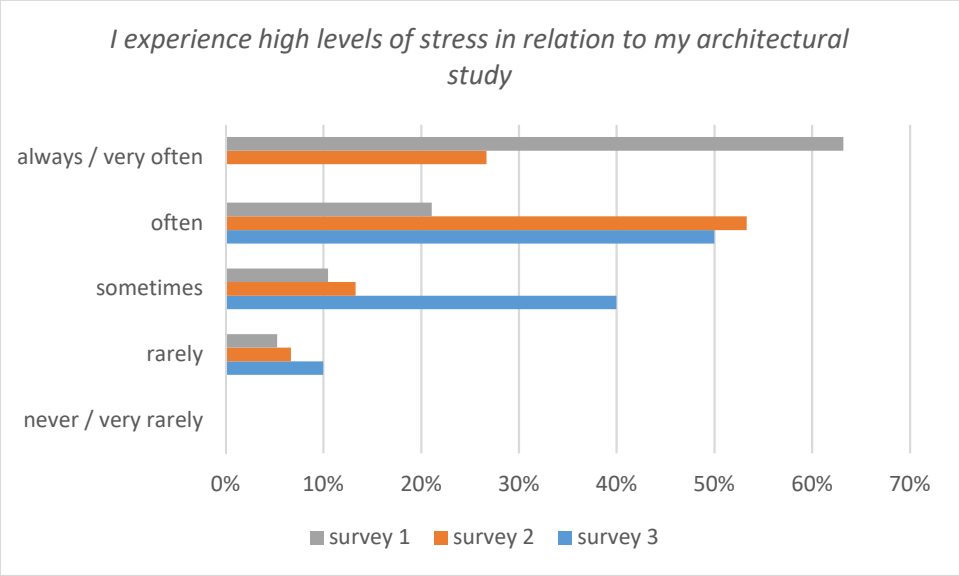


Figure 7 – Responses to the survey question '*I experience high levels of stress in relation to my architectural study*

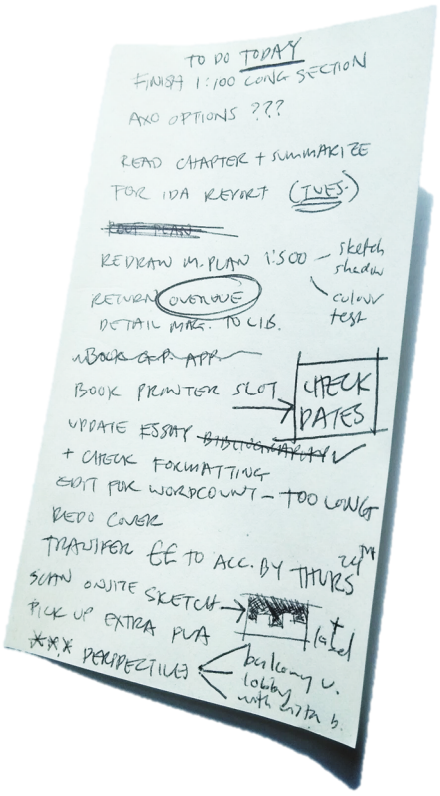
The positive effect that mindfulness training had on participants was elaborated on at length in both survey comments and focus group discussions. When asked 'what did you find most useful about the training', several survey responses identified stress management and awareness as the main benefits, i.e. 'Learnt about how to deal with stress', 'Specific activities related to stress, and noticing when the mind is distracted'. The following focus group comments explain how different participants applied mindful awareness in relation to stressful feelings and thoughts, for example through making use of breathing exercises:

It makes you focus on the present moment as a way of dealing with stress […] it helps you filter your thoughts and kind of focus on what's really important […] to process the negative stuff and look at the world in a different way

I found that if I didn't do a full practice and if I noticed I was getting stressed I would take a few seconds to do the breathing exercises, that was useful

When I was starting to feel overwhelmed I would [try a breathing exercise]. I don't think I would've done it before but there were a couple of times when I realised I was getting stressed, there was a moment when I was messaging a friend and saying 'I know if I just get this bit done then I'll be OK' and then I kind of thought 'that's mad', what I need to do is relax, take some deep breaths, so I did a bit of mindfulness and then came back to it, I gave myself a full hour of it, and I was so much more productive

The focus group comment about writing 'to do' lists that are impossibly long (see quotation at the beginning of this section), highlights a practical application of mindfulness which seemed particularly useful for students. The technique of noticing when certain habits or situations trigger feelings and/ or thoughts of stress is an important skill, i.e. noticing when I write lists I become stressed over not completing them. This awareness can, in turn, enable a process of behaviour change, that is to say doing something about the stress trigger and response i.e. I prioritise the list and become more realistic about what can actually be completed today. It is worthwhile noting that in all the examples cited above, what may be referred to as the external source of stress – the amount of study tasks to complete – does not change. Rather, the student's attitude to the work, and means of approaching it productively, shifts in a way that makes completing the same tasks more effective.



A culture of stress, its effects and alternatives

One theme that emerged during the study was the extent to which architectural education exhibits an underlying culture or 'expectation' of stress. In focus group discussions, participants acknowledged the 'reputation' of being on a tough course, of 'doing all-nighters', to the extent that 'It's assumed that [the course] is going to be stressful [and that] there's nothing we can do about it […] it's expected that it's stressful'. The following survey and focus group comments illustrate the way that stress amongst students can build up to create a contagious 'stressful atmosphere' that can be difficult to recognise and counteract:

> I have improved but it is difficult to not feel stressed on the course. On my own, for example over Easter break I found I was enjoying my work, feeling calm and being very productive. Now I am back at uni I am trying to keep that feeling but it is a daily effort as I have noticed how hard it is to not get swept up in the stressful atmosphere of all the other students worrying about work, deadlines, whether they have enough experience, summer placements etc. I enjoy the course but it is difficult to remain positive and feel like myself at times while studying.
>
> [the mindfulness training] made me see that generally as a course people feel like they need to work all the time, someone else is working so they should be working. It made me think that it's actually more useful to me to take some time for myself, not do it [work] and then go back to it fresher, so that was very useful and quite specific to our course
>
> 'everyone else is working, I suppose I should be too'
>
> I felt [the mindfulness training] was beneficial but that it was working against the system I was in […] we had to take a really mature approach in terms of looking after our mental health, you had to have a lot of conviction that what you were doing was right because it's not like other staff members necessarily understood
>
> in the moments when I had to take time for myself I had to be so strong because [the response was] well this is how it is, this is how we had it, this is how you have it…

Following on from this, it is worthwhile to further consider the effect that an environment of stress can have on student's enjoyment of, and motivation to engage with, their studies. The levels of stress being experienced by architecture students appear to have a direct impact on their ability to enjoy the subject, with more stress equating with less ability to enjoy what they are engaging with. This was gauged in the survey question 'Overall I am happy when engaging in architecture' (fig. 8):

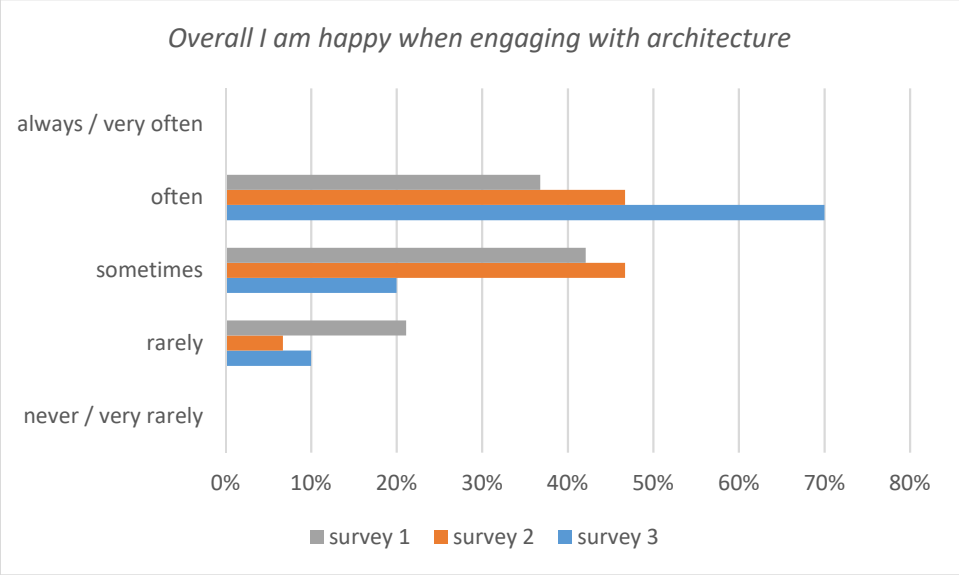


Figure 8 – Responses to the survey question *'Overall I am happy when engaging with architecture'*

No extreme frequencies of happiness or its absence (always / never) were reported at any stage. As with the 'levels of stress' question, responses showed improvement after MBSR training, with the frequency of being happy when engaging in architecture increasing.

The following focus group comments make helpful distinctions between happiness, architecture and stress, acknowledging that happiness per se is never a constant, but that being able to remember (that is to say to be mindful of) what makes architecture appealing and enjoyable is important:

When you take away all the stress, we are actually in quite a privileged situation, it is a really good course to do

We associate it with so much stress that it is difficult to think of it as a happy place

You can't have happiness all the time […] happiness is complex […] it's more about how you approach things

We joke about love / hate, because we love what we do but we also hate it

When students are enjoying it more they'll produce better work, when you are stressed and not enjoying it your motivation to keep going is lost

a lot of us start the course because we are interested in a lot of the things in architecture like designing, but when it all comes down to grades you forget about that, it becomes 'I need to do this and this and this' […] Mindfulness is definitely very good at teaching you to think 'wait a minute, why did I start this? It wasn't to do that!

though I really like architecture as a course that I choose to study and never regretted it, the amount of pressure and stress that I have as a student made me sometimes think that it does not worth it.

I absolutely love architecture but being in my final year (year 3) I have been tested and pushed so hard that it has left me questioning the profession a lot (Survey comment)

These results suggest that where students may become 'swept up' by feelings of stress in their studying environment, equipping them with skills to maintain an overall sense of perspective and to be mindful of their own interests and enjoyment of the subject is beneficial. These comments clearly show the connection between stress and student's perceptions of enjoyment, motivation, and the quality of work they produce. At its extreme, stress, if not managed, can lead to doubts over completing the course or of continuing with pursuing an architectural career.

Design reviews

Prior to the pilot study, design reviews were identified as a specific area of architectural pedagogy that may be stressful (refer earlier section 'architecture and mental health'). As a form of teaching that is a regular feature of design based courses, the review is a public forum where work, including work-in-progress, is submitted and judged in a public context. Wraight confirmed that participants 'spoke about reviews as this very focussed nodal point every few weeks that felt in a sense quite competitive' and stressful. One focus group member commented that it was not necessarily the review itself 'but that build-up to it and that little bit of time before hand which can be stressful so we talked about that [in the mindfulness training sessions]'.

Two survey questions addressed design review issues specifically, and unsurprisingly design reviews were a topic that received lengthy attention during the focus group discussions.

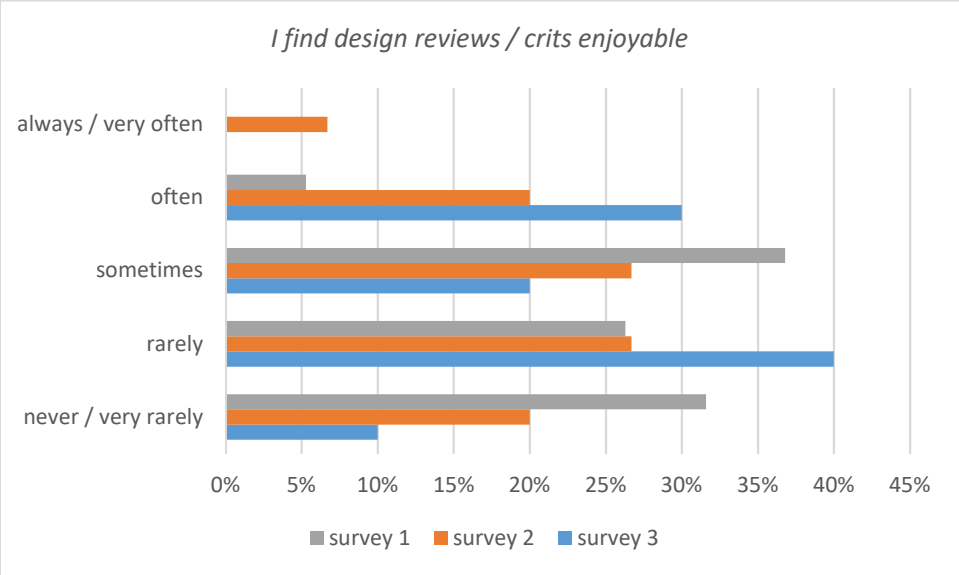


Figure 9 – Responses to the survey question 'I find design reviews / crits enjoyable'

When asked whether they found design reviews enjoyable (fig. 9), participants reported a mixed range of levels of enjoyment of design reviews, though more tended toward rare occasions of enjoyment. Levels of enjoyment increased after training somewhat.

These shifts correlate with the reported frequency of physical symptoms of anxiety being experienced before reviews (fig. 10). Symptoms of anxiety were at a high level before training (1) with over 75% noting symptoms 'always' or 'often', but with 'none' reporting always experiencing these symptoms 6 months after training (3).

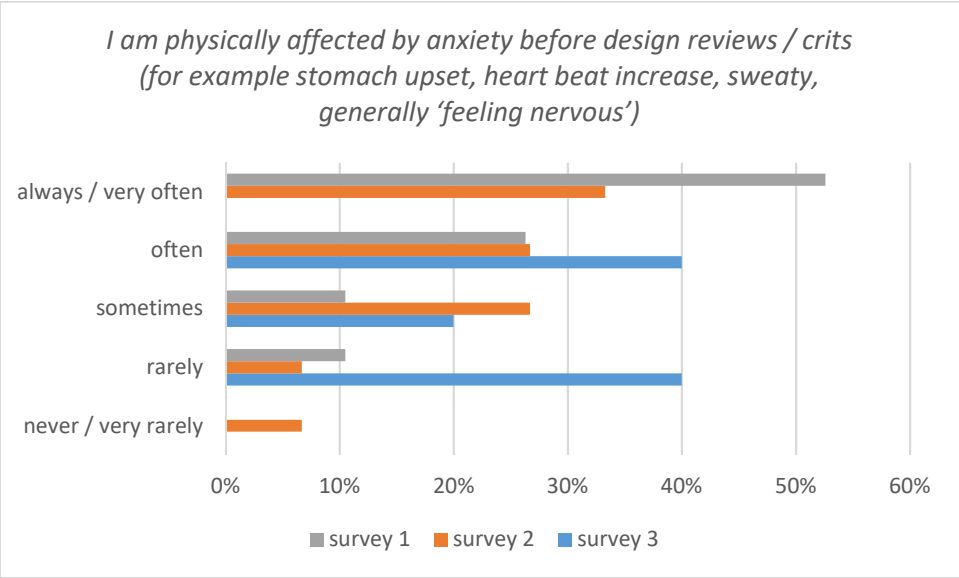


Figure 10 – Responses to the survey question 'I am physically affected by anxiety before design reviews / crits (for example stomach upset, heart beat increase, sweaty, generally 'feeling nervous')

When reflecting on what could make design reviews stressful or otherwise, focus group participants were keen to discuss the design review process itself, distinguishing between the ways that feedback or criticism is given (both peer – peer and staff to student):

[Positive reviews] with sharing work you are passionate about, enthusiastic, having input from peers, supportive staff…

'hung out to dry' […] 'I felt attacked' [...] I had a big audience and everyone is looking at you…

'some brutal ones' 'rip apart people' 'rude' 'disrespectful', [telling a student] 'this is shit'

you are taught to be critical, taught to be quite harsh to other people about their work because then they will get better, but where you cross the line between constructive feedback and really unhelpful feedback

it's about constructive feedback, it's not about brutal, unnecessary feedback, there's a way of giving feedback that is constructive, without pushing students ridiculously hard, it's about being realistic, it's helpful […] if the staff made more of an effort to be more compassionate toward the students, more empathetic, I think that would be a step in the right direction […] tutors need to respect students

In the context of mindfulness-based stress reduction, it is pertinent to look not only at the design review itself, but at the subsequent response to it. Having the resilience to receive criticism in a constructive manner instead of reacting to any criticism as a personal attack is an important skill for creative industry professionals to develop (Penman, 2015: 3), and one which one participant expressed a newly acquired ability to do. Mindfulness emphasises the difference between *reacting* to events and thoughts and *responding* to them. The MBSR training assisted one participant to be less reactive toward feedback:

> After a tutorial for example I wasn't sure if it had gone very well, I was trying to process it for a more neutral perspective, and trying to dissect what was said rather than my emotional response (focus group comment)

Approaches to criticism, whether from others or as self-criticism, and how to react or respond to it, are further explored in the next section.

Theme 4: Self-compassion, compassion, non-judgemental awareness and competitiveness

Summary

- A distinction can be made between judgment – characterised by constructive criticism and making judgements – and being judgmental in a hypercritical and negative way; the former is professional / beneficial but the latter is counterproductive and potentially harmful
- Students report being highly judgemental about their own design work and performance, and to a lesser extent they extend this judgment to their peers
- Frequency of judgement, as reported in the surveys, showed a very significant decrease after MBSR training. **Along with stress reduction and focus this was the most pronounced change in pre-post mindfulness survey responses of all the variables being studied**
- Participants reported feeling more compassionate toward themselves and being more understanding and attentive toward their peers as a result of mindfulness practice
- Competitiveness as a way of perceiving and approaching architectural study can lead to feelings of self-judgment which promote unhealthy work habits and form part of the barrier toward better self-care
- The group discussion context of the MBSR training programme facilitated a therapeutic sense of compassion and shared understanding amongst participants

"Architecture is an **extremely competitive environment**, but I have learnt not to look at other people's work and judge myself or put them down. I very much focus on myself and my own work - every journey in architecture is different! I am a lot kinder to myself. I still am very much **my own worst critic** but I have been getting better since starting the [mindfulness] course. (survey 2 comment)"

"I enjoy the course, it is helpful to keep in mind to not compare yourself to other people as this is often the cause of stress for me, I am more aware now that everyone is in a similar position and we all work in different ways so **I find it easier to look at others work with curiosity rather than anxiety** that mine is different" (survey 3 comment)

"I feel more aware of my anxiety and **allow myself** to take more regular breaks that refresh my ideas (survey 3 comment)"

> "[Participants] had a real feeling of sympathy with each other over the workload they were experiencing as students, and in that respect they were probably finding it therapeutic to share that with each other and see that everybody was struggling, and reach this consensus that '**it's not just me**', and of course that is an aspect of mindfulness anyway, to develop self-compassion, and one of the elements of self-compassion is a sense of compassion with other people, with one's own humanity" (Wraight, 2018)

Mindfulness is defined by the UK Mindfulness All Parliamentary Group as 'paying attention to what's happening in the present moment in the mind, body and external environment, with an attitude of curiosity and **kindness**' (MAPG, 2015: p. 5, emphasis added). Kindness here connotes a generous and compassionate outlook. Prior to this UK definition, the recognised founder of MBSR, Jon Kabat-Zinn, used the word 'non-judgmentally' when referring to the open-minded or open-hearted[3] attitude with which one is to direct one's attention and awareness (Kabat-Zinn, 2004: 4).

Here it is useful to discern between judgment and being judgmental. Whereas the noun judgment is 'the ability to make considered decisions or come to sensible conclusions' the adjective judgemental refers to 'having or displaying an overly critical point of view' (OED, 2019). Synonyms such as fault-finding, censorious, condemnatory, disapproving, disparaging, deprecating, negative, overcritical, hypercritical and scathing capture the exaggerated negative aspect of being judgmental.

By emphasising a compassionate, non-judgmental attitude, mindfulness teaches practitioners to momentarily suspend judgemental thoughts, and to attempt to just let things be as they are. This is not to say that people should stop making judgments, decisions or assertions altogether; rather it allows a more neutral, objective stance. By cultivating a non-judgmental attitude through mindfulness, practitioners become more able to observe thoughts and feelings with equanimity.

By adopting a compassionate attitude toward oneself, an architecture student may learn to manage unproductive self-critical thoughts and feelings which are a cause of stress and which can impede the creative process (creativity is also discussed later in this report). Compassion meditation exercises typically involve bringing feelings of loving-kindness to others and to the self. Penman notes that treating oneself with such compassion can be especially difficult 'for people who work in the creative industries or other hyper-critical, fast-paced organisations', adding 'These jobs have become so immensely pressured that any form of self-compassion, kindness or empathy is often regarded as a sign of weakness' (Penman, 2015: 116). Research has shown, however, that mindfulness 'directly quietens the nagging voice of the inner critic' (Ostafin and Kassman, cited in Penman, 2015: 111).

[3] The term 'mindfulness' as used within the MBI context was translated from the original Pali (*sati*) and Sanskrit (*smrti*) words in the late 18th century, and this translation foregrounds 'memory' and the act or remembering to remember. However, it has been noted by Buddhist and mindfulness scholars more recently that the emotive aspect of this process is also part of the original meaning of mindfulness, such that some have referred to it as 'heartfulness'. Mindfulness is neither wholly intellectual (thought) nor emotional (felt) – it transcends such binary distinctions to encompass both simultaneously. For example see Kabat-Zinn's public lecture on mindfulness (Kabat-Zinn, 2014).

In this section, results are divided into the following sub-themes:

- Judging oneself
- Judging others
- Permission to self-care
- Working in a competitive environment
- The value of MBSR in peer group setting to facilitate compassion

Judgment and non-judgment

Three survey questions addressed judgment as a theme, be it directed toward oneself or others (figs. 11 - 13). Results suggest a high level of self-judgment, with all respondents recording some level of self-judgement at all times, and to a lesser degree judgment of others. The frequency of self-judgment decreased following MBSR training.

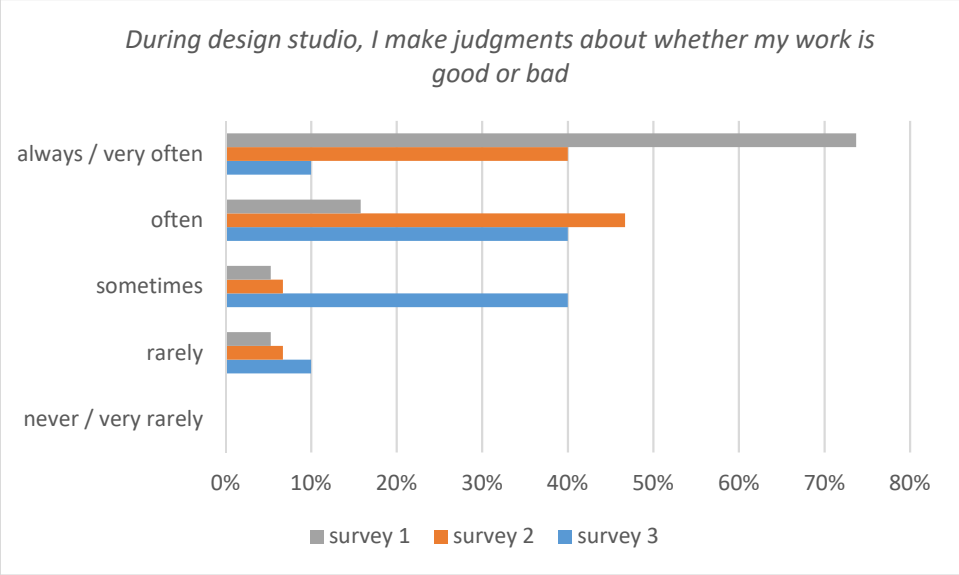


Figure 11 – Responses to the survey question 'During design studio, I make judgments about whether my work is good or bad'

Figure 11 indicates that prior to MBSR training, the overwhelming majority of participants – nearly 75% - were 'always or very often' making judgments about whether their own work was good or bad (1). This gives the impression that such judgment is consistent and normalised. Post-MBSR training saw a dramatic shift, with immediate post-training judgment levels dropping in frequency (2) and 6-month post training decreasing even more (3), with 'always or very often' dropping to just 10%.

While being able to critically assess and form considered judgements about one's own work and make informed decisions is a necessary part of becoming a 'reflective practitioner' (Schon, 1983), some of the participant comments in focus groups reveal that negative judgments about work can become conflated with negative views of oneself. Participants related such experiences during focus groups, for example commenting that after a

perceived negative review 'you then have a terrible opinion of yourself, it often goes into self-doubt'. It was acknowledged that having the resilience to resist this kind of judgmental inner critic was necessary, such that 'It's more how you look at the course so you don't regard yourself as a failure if you can't achieve something, it's more about being kind to yourself'. One participant was able to directly apply this in their daily experience, commenting that 'if I ever got stressed I would [put things in perspective by] using non-judgemental words that mindfulness teaches, that was really helpful' (focus group comment). Achieving this self-compassion was as not easy for some participants, however, as one further comment illustrates:

> Even with mindfulness training, I still find it difficult to not judge my own ideas during the design period. I am more aware of it when it occurs however I feel it is inevitable when working in studio or alone (focus group comment).

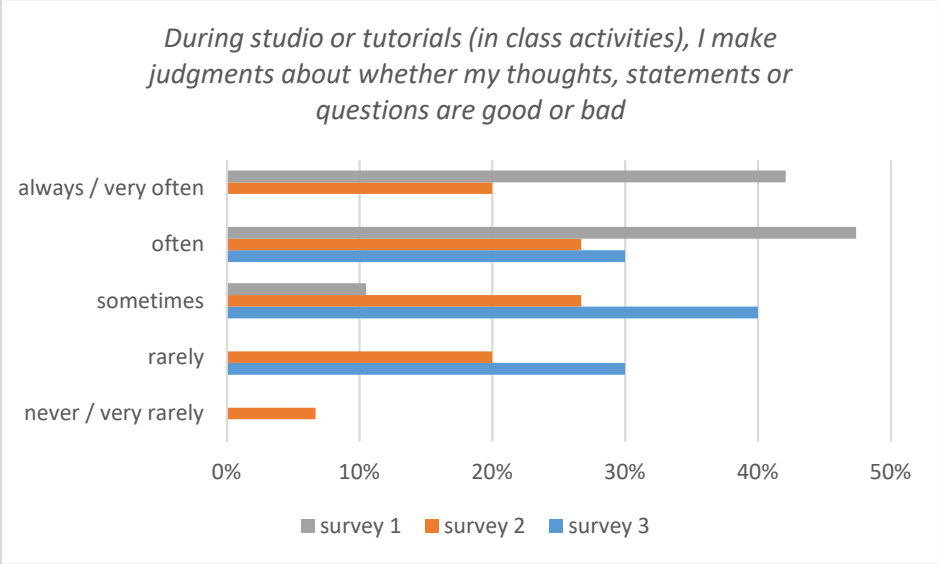


Figure 12 – Responses to the survey question 'During studio or tutorials (in class activities), I make judgments about whether my thoughts, statements or questions are good or bad'

Compassion toward others

Survey responses (fig. 13) suggest participants judge other's work slightly less frequently than their own – and in fact some increases in judgment of others' was noted after training. This may be attributed to attaining a greater awareness of others following the group MBSR sessions i.e. looking outward as well as inward, and not being exclusively caught up in one's own concerns.

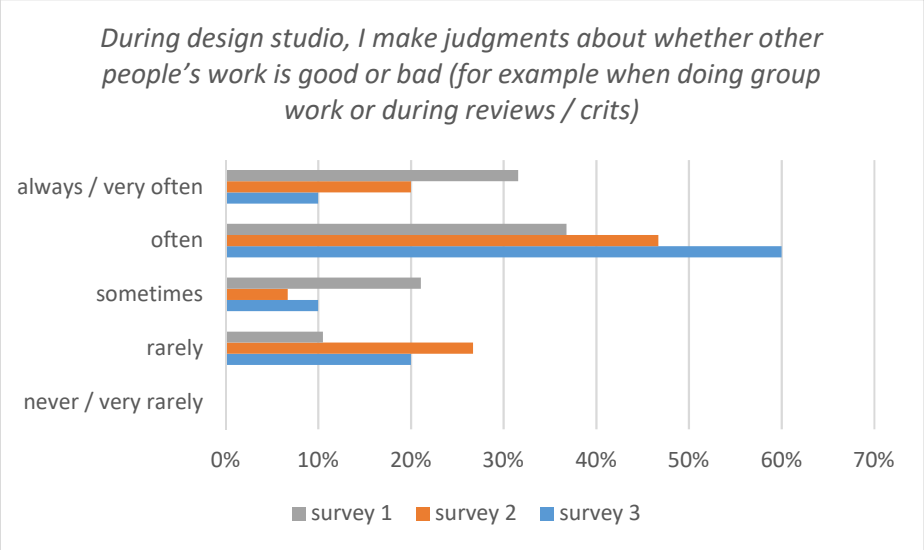


Figure 13 – Responses to the survey question 'During design studio, I make judgments about whether other people's work is good or bad (for example when doing group work or during reviews / crits)'

Again, the *quality* of judgment needs to be carefully defined. Participants showed a heightened awareness of the judgment / judgmentally distinction following the MBSR training, for example:

> I think architects need to be able to make judgements and decisions but that is different from being judgmental. I do not think that we need to compare and criticise each other but it is useful to constructively see what could be improved (focus group comment)
>
> I try to be non-judgmental … It's hard particularly in this profession because it's supposed to be critical, but I guess trying to be critical in a non- mean way… trying to be more constructive with the feedback (focus group comment)

Another aspect of compassion toward others was measured by considering how architecture students work in group situations. The question 'I find it easy to work with others' (fig. 14) sought to reveal interpersonal relations and the influence that a mindful attitude may bring to bear on peer-to-peer interactions and group work dynamics.

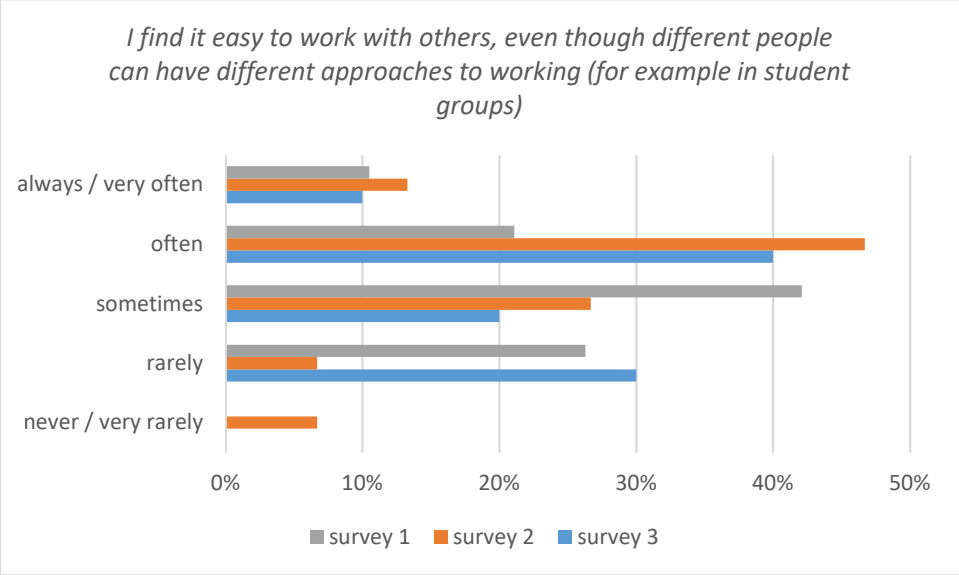


Figure 14– Responses to the survey question 'I find it easy to work with others, even though different people can have different approaches to working (for example in student groups)'

According to the survey responses, the most positive group work interactions were evident immediately after training (2), though this improvement was reversed 6 months later. Few students had any active group work during the semester when this pilot was running, which may had affected responses to this question.

Comments during the focus groups noted a more general application of mindful interactions with peers outside of the formal group work setting, for example in friendship or student household groups. As the vast majority of students live in share houses with fellow students (and often fellow architecture students), it was noted that being mindful of others 'applies to living with someone else'. Following training the participants found it easier to listen effectively to their housemates and peers by 'paying attention to the people around me, my friends on the course, checking up on each other' and responding compassionately when their housemates were expressing difficulties of their own or being difficult to be around. In short, as one participant put it, 'it is about how you treat other people' as well as yourself.

Self-judgment, self- compassion, and permission to self-care

Developing an awareness of, and capacity for, **self-compassion was the most frequently cited useful outcome of the whole training programme**, as reflected in the following survey responses to the question 'What did you find most useful about the training?':

> Learning ways to be kind to myself and prioritising my wellbeing over work even when those around me aren't.
>
> It made me more aware of my current physical and emotional state and taught me to understand myself more. I can now apply this to everyday life.

Finding that time to relax and just stop and focus on myself. I have learnt to listen to my body and really notice it now.

I have noticed the importance to be nice to yourself.

I also enjoyed the self-compassion workshop.

The principles/sayings really helped. (i.e. be self-compassionate, it's okay to have more challenging days etc.)

The meditation sessions and the 'self-compassion' technique were probably the most useful.

These sentiments were reiterated in focus groups, with comments such as

when you are really stressed it's so easy to prioritise work but you actually really need to prioritise yourself, and mindfulness can help you have a better relationship with that

I hadn't realised how harsh on myself I was being until we started talking about it

when you did more mindfulness you learnt not to give yourself such a hard time for not doing home practice

Relating back to barriers to mindful practice, Mel Wraight spoke at length about the importance of self-care as a theme within MBSR, and one that became a large part of these pilot group sessions:

> recognising that self-care is a vital thing to do is a thing that runs through mindfulness but perhaps is not specifically articulated in that way, what we talk about is self-compassion, and permission to self-care is one aspect of this [… Giving permission to self-care] was a sentiment that arose in the groups fairly spontaneously […] some people clearly got a lot from that while for one or two that was a really alien concept that they struggled with that – they couldn't allow themselves to ease up on themselves a little (Wraight, 2018)

Though participants did not necessarily find self-compassion an easy concept to work through, the survey results as well as the following statement from Wraight illustrate that the benefits of persisting with this approach were transformational:

> once they got that idea of tuning in, introspection and self-reflection, they were very into it and got very good at it, and it was a real joy to see some of them wake up to the fact that "oh, so that's what's going on inside me!" […] There were one or two who really took to it and ran with it in the sense of the permission it was giving them to take greater care of themselves (Wraight, 2018)

Competitiveness as a form of self-judgment and comparison

> Competitiveness is inevitable [in] universities – academics are competing with each other in various ways […] there is a lot of collaboration as well, but there is an element of competition at any university, there is a constant assessment and a degree of perfectionism in universities going on, they are very critical places in the sense that everyone is critically analysing themselves and each other within their particular fields of study, but there is a tendency to be very self-critical within universities (Wraight 2018)

The context of higher education as a competitive environment for both students and staff was singled out for discussion amongst participants. Students compete to be admitted into architecture courses, and although they are not necessarily competing against each other during their architecture studies it was reported in focus groups that participants do compare themselves to others in ways that are not always productive:

> mindfulness has helped with competitiveness because we had a whole session on judgement and comparing ourselves to other people and that was really great […] it can be that in those pressurised moments you look at other people's work and [think] "why am I not as good as them?" and mindfulness has been a great way of dealing with that

> I think it almost becomes competitive […] you worry that someone else is working more so you should be working more. [The group discussed how] it feeds perfectionism, you're always trying to reach a goal that's slightly unachievable. So I think we could do with being a little less harsh and judgmental on ourselves at times

The sense of competitiveness can also extend beyond the course, with Wraight observing a sense amongst participants 'getting jobs, or getting the kind of work they want' was a competitive process, which justified a competitive environment at University i.e. thinking 'we have to work this way because its preparing us for this competitive workplace, competitive marketplace for architecture' (Wraight, 2018)

The value of MBSR in a peer group setting

The above results show that architecture students can be overly judgmental on themselves and that their ability to exercise (self) compassion can feel at odds with the environment of competitiveness. The survey and focus group responses below reveal that by having the MBSR training in a peer group setting, where personal experiences of self-criticism and stress could be shared, that participants were able to connect with each other in a therapeutic and safe context. The trainer noted that in general MBSR programs do develop trust within each group, and that the two groups involved in this pilot followed this pattern:

> although it's not group therapy, what we do is reflect a lot on the experiences of the processes of learning meditation, and the processes that come up in meditation, and what that tells people about themselves, so it does have a therapeutic content […] But I also think it's the nature of coming together in a group, with the shared experiences [of being architecture students], and even though they came from different years within the course there was a real sense of sharing of knowledge and of experience […] there is that connection being made […] people became more talkative over the 8 weeks, and there was a mix of less and more talkative people […] as groups of people they were really good at listening to each other (Wraight, 2018).

The context of the mindfulness training and guidance of the trainer facilitated this level of exchange. As one participant remarked:

> Having the mindfulness [training] made it a bit more open anyway, so if you just put those people together - not talking about mindfulness – you probably wouldn't have gotten the same level [of discussion]

When surveyed one participant identified 'Spending time being open with other architects and realising we all have similar worries and fears' as being one of the most useful aspects of the training overall. Focus group comments expressed similar sentiments, with participants agreeing that being in a group of other students was a good thing 'because you know you are not the only one, someone is in the same situation as you, and when you see they can do it and they feel better after the session then you feel that you can do it as well'. In particular having groups of students from a range of year levels was identified as a positive aspect of group sessions: one undergraduate stated 'it was a comfort' to have senior students sharing their experiences and advice, while another elaborated:

> I thought 'it was just me' […] but sometimes when talking about things that were specific to the course and the 5th and 6th years were having the exact same worries or doubting themselves [… so] talking to people from a range of years was really useful (focus group comment)

Managing the group nature of MBSR so that participants feel comfortable to share their experiences, or to choose not to if this is appropriate, does need to be considered in programme planning. Participants noted two additional factors that they felt were necessary to make this work; firstly it was important that if participants wanted to talk to the trainer one-on-one outside the group setting that they had the opportunity, and secondly by offering two groups running concurrently participants could choose which group of peers they shared the environment with (focus group comments).

Theme 5: Focus

Summary

- By repeatedly training the mind to stay focused on an object of attention in the present moment (for example the breath, sensory experiences, thoughts, feelings) mindfulness meditation can improve focus and decrease mind-wandering
- In the pre-training survey, the majority of students reported finding it difficult to stay focussed in lectures, and to a lesser extent in design studio. **Self-reported ability to focus improved significantly after MBSR training**
- Several participants discussed how they were able to focus more on work and non-work tasks, and thus complete them in less time and more effectively
- Focus itself was not, however, highlighted as often as stress or compassion in participant discussions

> "I found the process of doing the practices of mind wandering and bringing it back – I found I noticed myself doing it when I was working; I thought I was working and then **realised my mind's off somewhere else**, and trying to use the same technique to bring it back meant that it was more satisfying because it meant **I could get it done in a shorter time** and knew what I was talking about rather than thinking about something else and five other things going on at once. That was really useful" (focus group comment)

Being able to focus, be it on particular work tasks or by listening to peers, lecturers, clients and so on, is an important academic and interpersonal skill. Levels of mental clarity and decisiveness are also considered indicators of mental wellbeing (see the WEMWBS questions 'I've been thinking clearly' and 'I've been able to make up my own mind about things' in this report, for example).

Through regular practice MBSR techniques have been shown to improve the practitioner's ability to focus their mind and decrease mind wandering, as the ability to focus the mind is 'hardwired into the brain' with repeated practice (Hassad and Chambers, 2015: 25). Again returning to the MAPG definition of mindfulness, we are reminded that being mindful is based on '**paying attention** to what's happening in the present moment in the mind, body and external environment, with an attitude of curiosity and kindness' (MAPG, 2015: 5, emphasis added).

Two survey questions (figs. 15 and 16) sought to capture student's perceived levels of focus in two of their main study contexts; in lectures and in design studio.
Responses to the pre-training survey (1) suggest a concerning level of distraction and mind wandering is experienced by students, with over 65% reporting having difficulty focussing 'always or very often' in lectures, though finding it easier to retain focus in a design studio setting. Significant improvements were reported immediately after training (2), and these improvements increased 6 months after training (3).

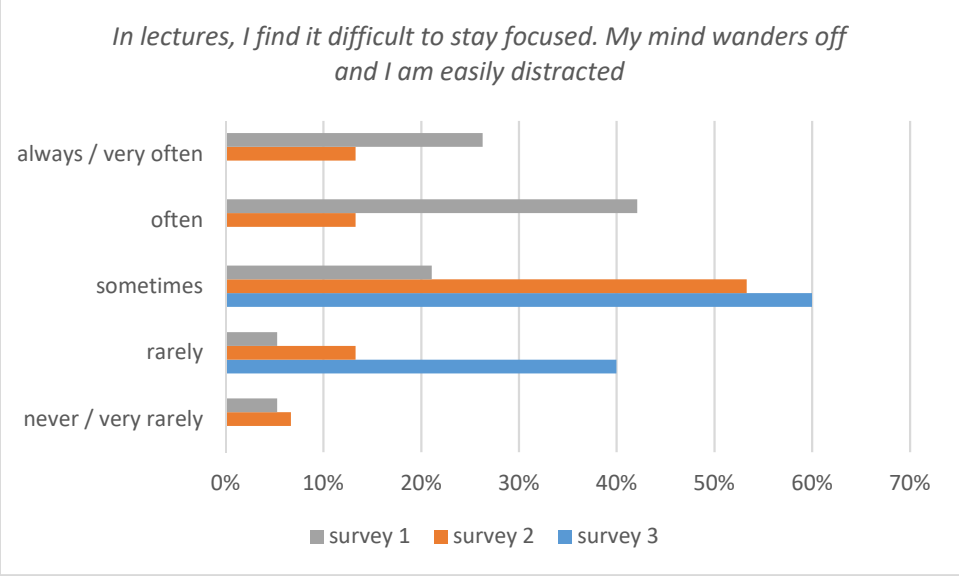


Figure 15 – Responses to the survey question 'In lectures, I find it difficult to stay focused. My mind wanders off and I am easily distracted'

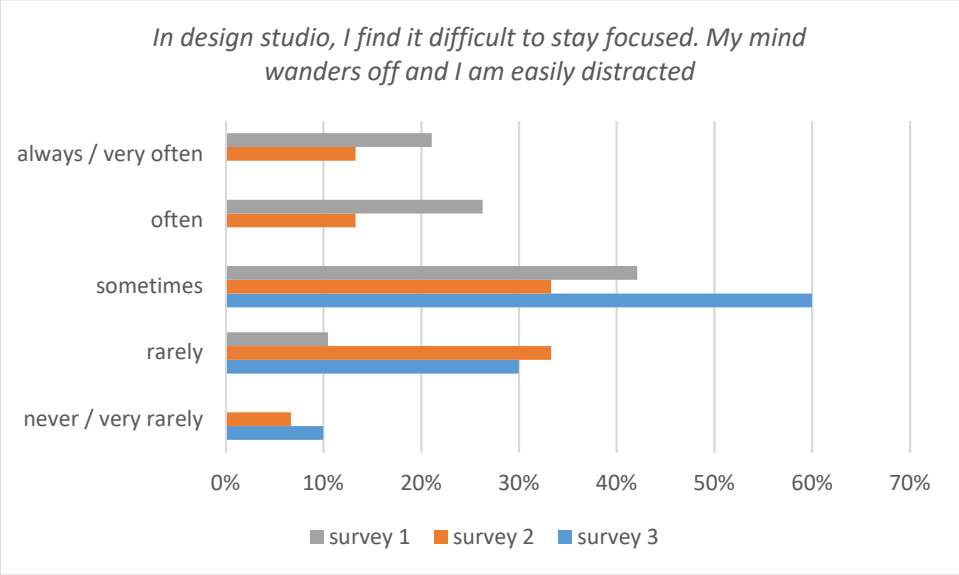


Figure 16 – Responses to the survey question 'In design studio, I find it difficult to stay focused. My mind wanders off and I am easily distracted'

This data suggests that the training did have a positive effect on noticing and responding to mind-wandering, which in turn improved study performance, as existing literature and studies of MBIs suggest it has done in other disciplines. This finding is further evidenced by comments made during focus group comments as follows:

> While I was practicing [mindfulness] it did change my mental state and it did help my work as well, I think it is because for that moment I was prioritising what was important […] **I was working more effectively** since I was more present, more aware of what was going on
>
> [Being mindful] Acknowledges that you can't always focus on things [indefinitely], you need breaks
>
> I think after I have started to have short sessions of daily home practice I can focus better later on in the day […] For example, before the home practice maybe I would spend a day to do something, but now I would spend just the morning because I am more focussed
>
> I was more focussed when I was practicing […] generally more disciplined

The ability of participants to remain focussed, or to become aware that they were not focussed and adapt their behaviour, extended beyond their studies in some cases. One participant found they were able to apply this skill when interacting with friends by 'listening to what people are saying, not just going 'uh huh (nodding)' but not really listening' (focus group comment); another found they could complete tasks more rapidly as a result of being focussed 'both for architecture and other things like housework' (focus group comment).

In a reversal of the scenario of trying to focus on work but being distracted, one participant became aware that 'Even when not doing work, I still think about the work […] instead of keeping it out of my mind for a while' (survey 3 comment). Awareness of such insistent thoughts (rumination) can be a useful step in managing stress, as the ability to objectively observe such thoughts instead of getting 'caught up in them' tends to lessen their frequency and impact.

Focussing the mind in the present is perhaps the central theme of mindfulness. Despite this, and despite the survey question responses above illustrating this having a positive impact for participants, it can be noted that participants did not raise this theme in open-ended survey questions or focus group discussions to the extent that they discussed stress or compassion.

Theme 6: Spatial and embodied awareness

Summary

- Spatial awareness, including an awareness of one's own body and its sensory perceptions of the environment (i.e. contact with the seat when in a sitting meditation), are one component of mindfulness training
- Spatial awareness, in the form of embodied awareness and attentiveness to space and place, is also a relevant quality / practice for architectural designers
- Participants reported high levels of spatial awareness pre-training, and to a slightly lesser extent bodily awareness, with immediate post-mindfulness training showing additional slight increases
- A small number of students spoke about their enhanced experiences of space following training
- A small number reported noticing their bodily sensations more (i.e. sore neck from computer based work)

"I have become more **aware of my spaces** and notice physical elements of my existence in buildings" (survey 3 comment)

If you had a mindfulness-based 'being in the environment' course that would be very different, and what you would work on is embodiment, you'd work on how do we tune into our bodies in this space, how do we tune into this environment, what is that experience like when we do that, when we perceive that space in a more mindful way, using all of our senses, not just our *trance of thinking*, our thinking skills (Wraight)

Mindfulness is defined by the UK Mindfulness All Parliamentary Group as 'paying attention to what's happening in the present moment in the mind, **body** and **external environment**, with an attitude of curiosity and kindness' (MAPG, 2015: 5, emphasis added). It can be easy to become immersed in thought, in a task, on the computer, reading … and not be aware of the spaces around us or the bodily sensory conditions we are experiencing. Mindfulness training invites practitioners to 'tune in' to particular physical sensations, or on external phenomena such as sounds, as a means of focusing on the present and as a form of 'anchor' to hold the mind.

Since certain mindfulness meditation practices seek to promote bodily awareness of one's surroundings, this suggests potential as a means of developing an embodied, phenomenological awareness of space and place. Mindful movement, for example mindful walking or yoga, is a standard component of all mindfulness based interventions. By paying very close attention to one's own bodily sensations, from the feel of each footstep to the effect of gravity working with each stretch and pose, the mindful practitioner can develop one's kinaesthetic awareness (Hassad and Chambers, 2015: 131). The potential to apply this awareness in the design of spaces has been noted by architecture lecturer Burcak Altay (2019) who observes:

> An experiential awareness of lived space through bodily movement and the senses increase knowing about our comfort zones, limits, capabilities and potentials. We can also observe our pleasant, unpleasant or neutral feelings through our moment-to-moment spatial experience. We may then **integrate this knowledge into design**.

Similarly, Christian (2018) has reported on outcomes from an interior architecture design studio where students engaged in contemplative practices, with students responding that 'familiarity with contemplative practices have definitely had an impact on my work in studio' and that 'it has made me far more cognizant of how we interact with space around us'.

With this in mind, participants were asked two survey questions about their spatial and bodily awareness (figs. 17 and 18):

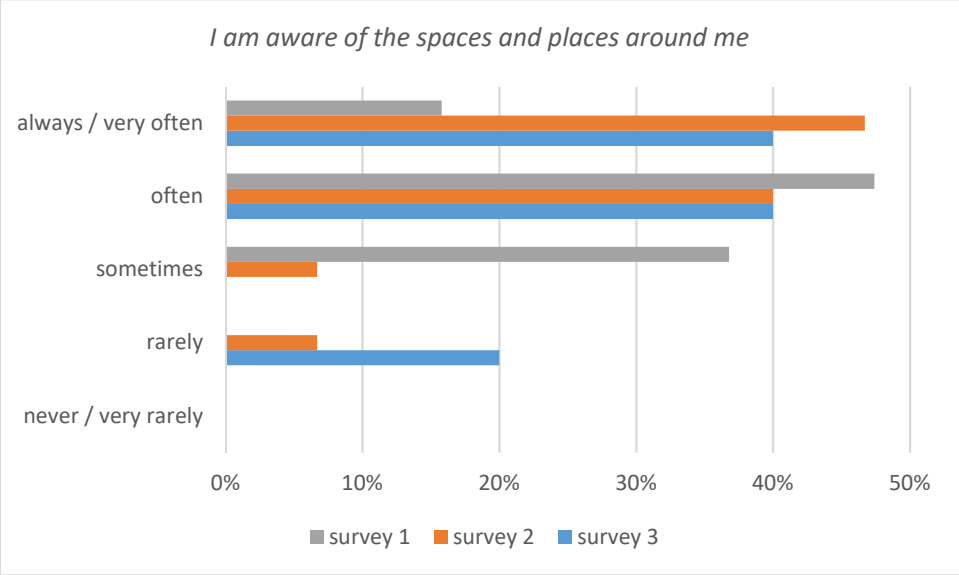


Figure 17 – Responses to the survey question 'I am aware of the spaces and places around me'

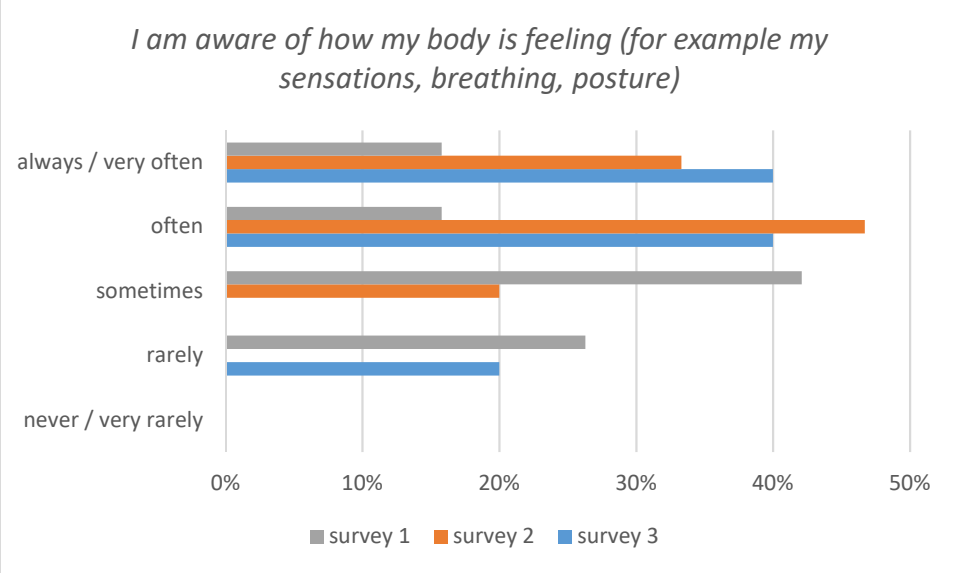


Figure 18 – Responses to the survey question 'I am aware of how my body is feeling (for example my sensations, breathing, posture)'

Responses show a slight but not universal increase in awareness of spaces and bodily sensations. As may be anticipated for students who study space, the pre-mindfulness training levels (1) of spatial awareness were already reported as high, with over 60% being 'always' or 'often' aware of spaces around them. Reported levels of spatial awareness were highest immediately after the training (2) with over 80% being 'always' or 'often' aware of spaces around them before dropping 6 months later (3). Bodily awareness followed a similar pattern, though slightly lower overall.

Mel Wraight opted to undertake some of the MBSR training outdoors to amplify the sensory effects of walking:

> The course was in February so it was cold, coinciding with the week that mindful walking was scheduled. Some students elected to do it barefoot out there in the cold and that was a very embodied visceral experience. The following week one student reported that they had elected to do their mindful walking home practice barefoot in the snow to see what it was like

A few participants commented on their enhanced awareness in the survey and focus group responses, reproduced below:

There's an exercise where we had to close our eyes and walk very slowly […] and I think I hear more traffic and birds, so I think you can feel more about what is surrounding you in your environment, and you can feel the weight of your body touching the ground.

After the course I thought more about focussing on the exterior, and the things around me …walking into uni, trying to be a bit more observing of nature

Sometimes when I'm in a space I'll take the time and really think about how I'm walking or really looking at where I am […] I might take a little more time to look around and it does make you more aware of where you are

I feel the importance of being aware of others and spaces around you but do not feel it is regularly practised especially in times of deadlines where work is rushed to reach a final design (survey 3 comment)

In light of the desk-based nature of architectural work, it was also noted that being mindful of one's posture can also increase health: One focus group participant noted that mindfulness training 'taught us to pay attention to our bodies, so I realised my neck is so stiff while I'm using the computer for a long time …' to which another participant added 'I would agree though I wasn't always that good at doing something about it.'

Overall, the fact that participants did not raise this as frequently in open-ended survey questions or focus group discussions suggest that awareness of space and the body did not figure as prominently in participant's experiences compared to their awareness of stress. The following section on 'creativity and curiosity' picks up on a similar trend and suggests how more targeted mindfulness exercises could foreground embodied experience within a design / spatial context in the future.

Theme 7: Creativity and curiosity

Summary

- Mindfulness has been linked to increased creativity, as it can enable 'divergent thinking' and the insight that can emerge from adopting a curious and attentive attitude
- Results from this MBSR pilot showed pre-mindfulness training levels of creativity and curiosity amongst participants were already strong, and that these increased slightly following training
- Only a few survey and focus group comments linked mindfulness to creativity or curiosity, indicating this was not a strongly perceived element or outcome of the MBSR programme
- An adapted form of mindfulness training focussed on creativity – not stress reduction per se – would be valuable to explore the potential relationship between mindfulness and design practice more directly

> I have the sense that because architecture is about creativity which is a very internal experience, quite a personal thing, it's not a tap that you can turn off and on at will, […] and mindfulness can really help with creativity (Wraight, 2018)

> With stress and things to do you can 'forget to be curious' about the world, mindfulness is a reminder (focus group comment)

Mindfulness is defined by the UK Mindfulness All Parliamentary Group as 'paying attention to what's happening in the present moment in the mind, body and external environment, with **an attitude of curiosity** and kindness' (MAPG, 2015: 5, emphasis added). By seeking to experience each present moment 'as it is', free from habitual thinking, conditioning or distraction, it becomes possible to perceive the world afresh. This quality

has been referred to by Kabat-Zinn as 'beginner's mind', namely 'a mind that is willing to see everything as if for the first time' (2013: 24 – 25). This curious attitude may reward the mindful person with new insights which may otherwise be obscured:

> All life is fascinating and beautiful when the veil of our routinized thinking lifts, even for a moment […] When you observe things through the lens of mindfulness, whether it be during formal meditation practice or in daily living, you invariably begin to appreciate things in a new way because your very perceptions change (Kabat-Zinn, 2013: 176)

Curiosity also links to the attitude of being non-judgemental, as it suggests taking an objective equanimitous stance toward the object (person, task, self) being perceived. Design educator Cotter Christian (2018) observes that mindfulness can support design students 'to develop skills and critical, creative thinking'. Mindfulness author Danny Penman has focussed on these themes to devise a complete 4-week mindfulness training program aimed at freeing up creativity. In his book '*Mindfulness for Creativity: Adapt, create and thrive in a frantic world'*, Penman asserts that mental clutter 'destroys the creativity' of a range of professionals, including 'Designers and engineers [who] fail to see cheap and elegant solutions to problems' (2015: 2) if plagued by clouded or inflexible thinking. When linking mindfulness to creativity, Penman (2015: 3) identifies three necessary skills, all of which can be enhanced through being mindful: First, creative problem solving requires 'divergent thinking', defined as the ability to gather and then integrate new ideas, concepts and information (with a calm mind); second, new ideas need to be recognised (noticed by an aware mind) and third, following new ideas takes 'courage' and 'the resilience to cope with the inevitable attacks and setbacks' that accompanies trying out new ideas. Another way of characterising the mind-state needed for creative insight is to distinguish between Doing mode – being engaged in a task – and Being mode – where one is engaged in pure awareness and experiencing something rather than thinking about it. Penman explains that while Doing mode is very effective for solving 'non-insight' problems where following a logical sequence leads to a solution i.e. convergent thinking, it struggles to facilitate the 'creative leap', i.e. divergent thinking, that is needed when faced with complex, nuanced problems (Penman, 2015: 39 – 40).

In this study, two survey questions addressed the issues of creativity and curiosity respectively (figs. 19 and 20.) Results were very similar for both questions, with the majority of participants finding that they were 'often' creative (40 – 50%) and curious (50 – 65%). Small increases in such states were reported after mindfulness training, though the change was not as significant as for stress reduction and compassion.

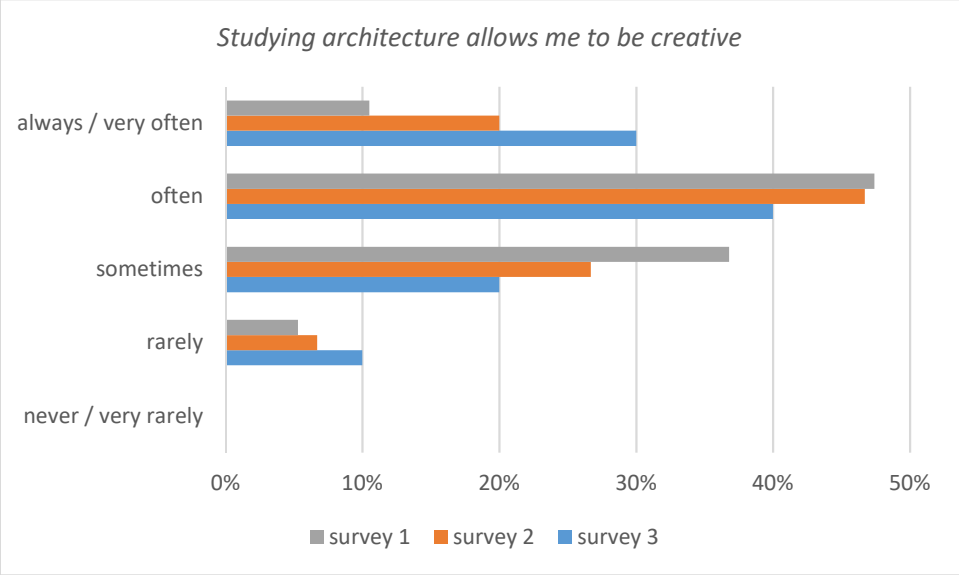


Figure 19 – Responses to the survey question 'Studying architecture allows me to be creative'

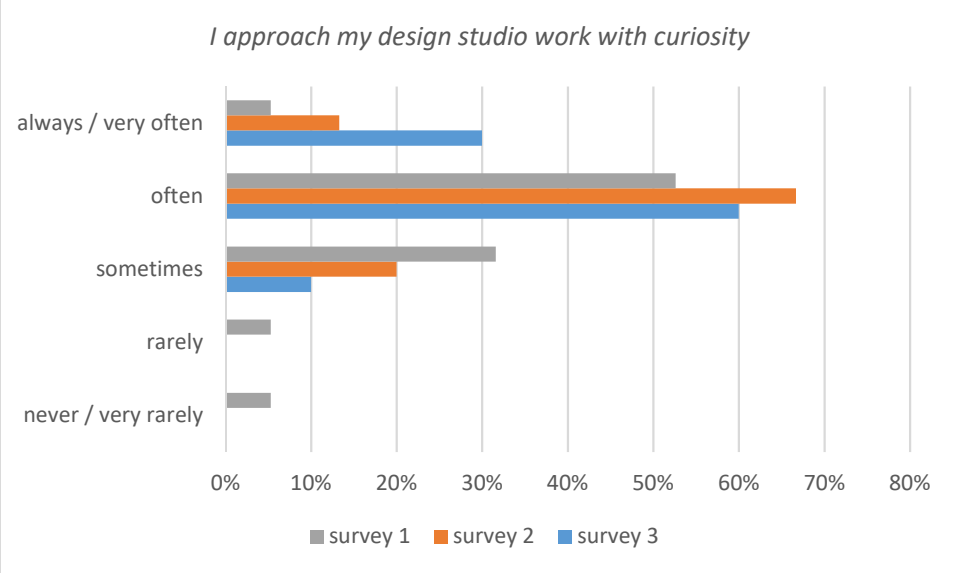


Figure 20 – Responses to the survey question 'I approach my design studio work with curiosity'

When commenting curiosity and creativity, participants tended to relate these states back to stress and the negative effect that stress can have. While one participant felt that 'Uni offers more possibilities to be creative' than practice (focus group comment), others felt this was offset by study pressure, since 'a lot of the creativity is suppressed by the constant pressure to complete unrealistic (by practice standards) amounts of work in short spaces of time' (survey 2 comment).

One participant's engagement with mindfulness had gone on to directly influence their approach to design studio in terms of the design content, not just to the design / study

process and approach. Similar to Channon's work linking spatial design qualities with wellbeing (Channon, 2018), the student described how she devised a 'mindful library' studio project, including an atrium with a waterfall, enclosed reading pods with low ceilings, and featuring interplays of light and natural materials.

As with the results for spatial awareness, participants were not as forthcoming with comments about creativity of curiosity and mindfulness compared to their views about stress reduction and compassion. Reflecting on this, the trainer acknowledged that stress reduction had been the primary focus of the MBSR pilot programme, and that '**You'd need a slightly different mindfulness course'** (Wraight, 2018) to emphasise creativity, curiosity and the embodied aspect of awareness as it extends to the external environment. This corresponds with Hassad and Chamber's assertion that within an educational context, mindfulness can be taught without any explicit goal or intention (just teaching people to be more mindfully aware) but that it is often more effective to frame the exercises as 'applied mindfulness' where professional or task- specific actions are performed with the specific intention of being fully present while doing them (2015: 49 – 50). They note that many programs 'teach students mindfulness and then leave them to figure out on their own how to apply it to their studies' in a targeted way (Hassad and Chambers, 2015: 51). By comparison, Hassad and Chambers give examples of mindfulness programmes adapted for academic success (MAS), for enhancing sport performance, for teaching medical students, and even for teaching mindfully. They conclude that it is helpful 'if mindfulness is not taught as a separate skill divorced from other aspects of the curriculum; it needs to be integrated with other content' (Hassad and Chambers, 2015: 148). Within an architectural context, it is possible that to draw out the 'applied mindfulness' that may develop from cultivating curiosity, for example, that more specific design or spatially oriented exercises could be developed.

Theme 8: Overall wellbeing

"I honestly think it has **dramatically improved my life** in many areas. Sleeping better, stronger social relationships, concentration levels in lectures, confidence, ability to not only manage stress levels but actually be aware of what my body needs and is feeling (survey 3 comment)"

"It helped me a lot in stressful and calmer times and having the tools to understand how I am feeling and know what I could do to look after myself has **really helped me in my studies**"

"I found I generally took certain elements from the [mindfulness] course or the home practice and applied them throughout the day - even **the way I think about architecture or about my life** – kind of changed by looking at it through the mindfulness prism" (focus group comment)

Summary

- The Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) is a 14 question survey used to measure mental wellbeing in adults in the UK, and it was administered in this study.
- WEMWBS scores indicate that the overall wellbeing of participants significantly increased after training, with a 5.76 point increase in score between survey 1 and survey 3 constituting a 'meaningful' change
- Despite significant post-training increases in wellbeing, even the most positive results (survey 3) are still more than 3 points below the National adult UK average
- Participants affirmed the overall value and applicability of mindfulness for architecture students. Several articulated the very impactful changes it had made to their studies and their lives
- Participants noted that mindfulness training, along with other wellbeing measures, should be made available to all architecture students, but that engaging in mindfulness training should be the voluntary choice of each student

In this section the overall effect of the MBSR pilot is evaluated. Two forms of analysis are presented:

First, we present the results of the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS), a set of 14 survey questions designed to evaluate the impact of health initiatives, by measuring wellbeing before-and-after projects. The WEMWBS was established by researchers, with funding from the NHS, to enable the measurement of mental wellbeing in adults in the UK. It is not intended to be diagnostic. An overall score is calculated which compares pre and post MBSR responses with those of UK national averages, and answers to each question are analysed individually.

Second, survey and focus group comments that reflect generally on the value of mindfulness training in general, and to architecture students in particular, are presented.

Overall WEMWBS scores

For each of the 14 WEMWBS questions below, participants were instructions were as follows:

'Below are some statements about feelings and thoughts. Please tick the box that best describes your experience of each over the last two weeks.'

STATEMENTS	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	1	2	3	4	5
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

The scoring for each item is from 1 – 5, making the possible total score range from 14 (lowest level of wellbeing) through to 70 (highest level of wellbeing).

Results from the pre MBSR (survey 1), post MBSR (survey 2) and 6-month post MBSR (survey 3) are summarised below:

Survey 1 average	42.74
Survey 2 average	43.67
Survey 3 average	48.5
National England adult average*	51.61

* see Warwick University statistics at https://warwick.ac.uk/fac/sci/med/research/platform/wemwbs/researchers/interpretations/wemwbs_population_norms_in_health_survey_for_england_data_2011.pdf

Levels of wellbeing before training commenced were at an average of 42.74 (out of possible 70). General slight increases in mental wellbeing were evident immediately after training. Much greater increases in mental wellbeing were evident 6 months after training, albeit with 3 of the 14 indicators being contrary to this trend (explored in question-by-question analysis below). These scores indicate that the overall wellbeing of participants significantly increased after training, with the 5.76 point increase in score between survey 1 and survey 3 constituting a 'meaningful' change. (Putz et al (2012: 11) note that 'While it is impossible to be precise about how much change in WEMWBS is considered 'meaningful', best estimates range from 3 to 8 WEMWBS points difference between 'before' and 'after' time points').

It is worrying that despite these significant increases in wellbeing, even the most positive results (survey 3) remain over 3 points below the National adult UK average.

WEMWBS responses in detail

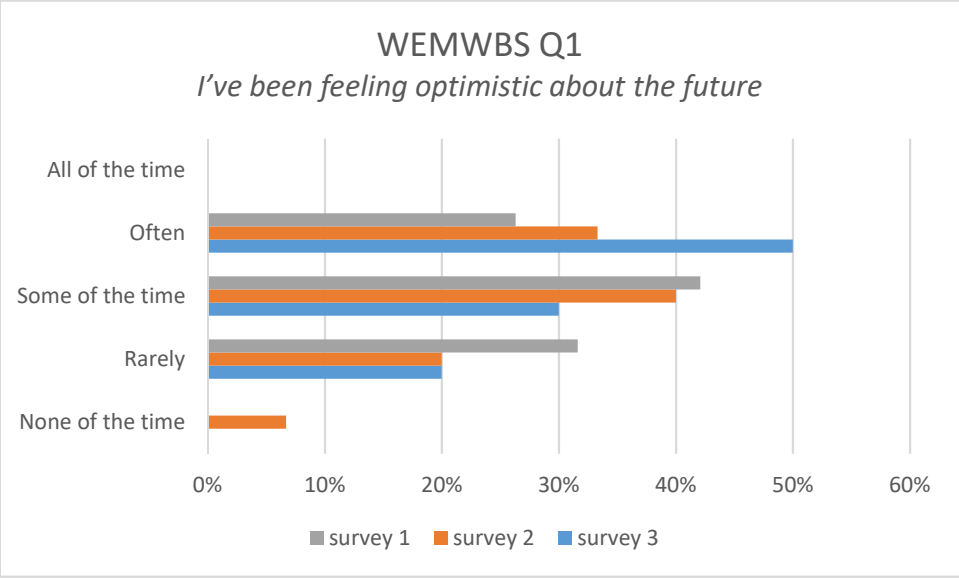


Figure 21 – Responses to the WEMWBS question 'I've been feeling optimistic about the future

Responses to this question (fig. 21) show optimism about the future increased between pre-intervention and post-intervention levels.

Results indicate that optimism was lowest in the pre-MBSR survey (1), and that it increased slightly immediately after the MBSR training (2), with a greater % responses in the 'often category but also an increase in % indicating feeling optimistic 'none of the time'. A significant improvement was indicated by the post 6-month survey (3) with 80% of responses indicating feeling optimistic 'some of the time' or 'often'.

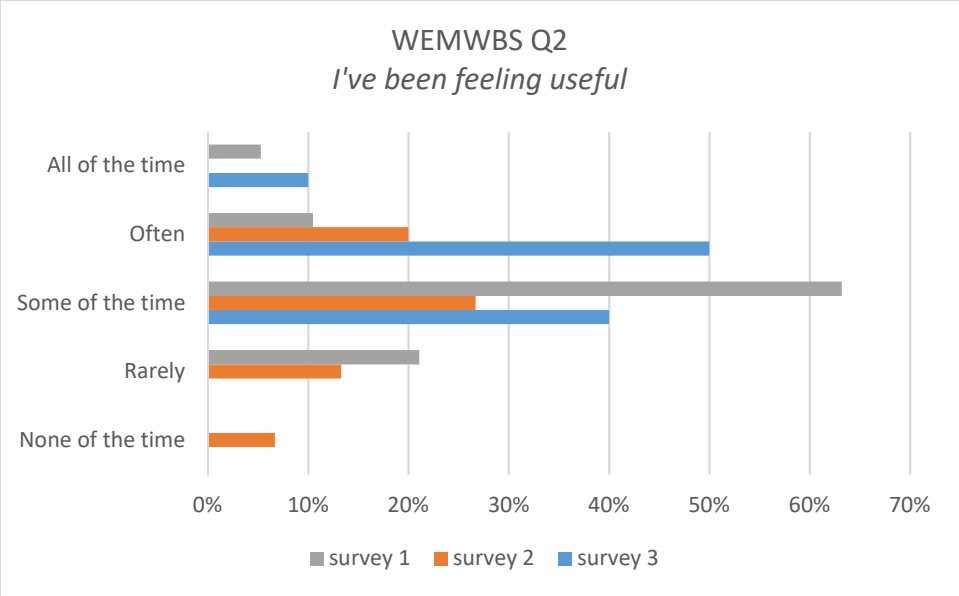


Figure 22 – Responses to the WEMWBS question 'I've been feeling useful'

Responses to the 'feeling useful' question indicate reasonably positive feelings pre-training (1) with over 60% feeling useful 'some of the time'. This % dropped immediately after MBSR training (2) before showing improvement in the 6 month post-training response (3) where usefulness was more 'often' experienced.

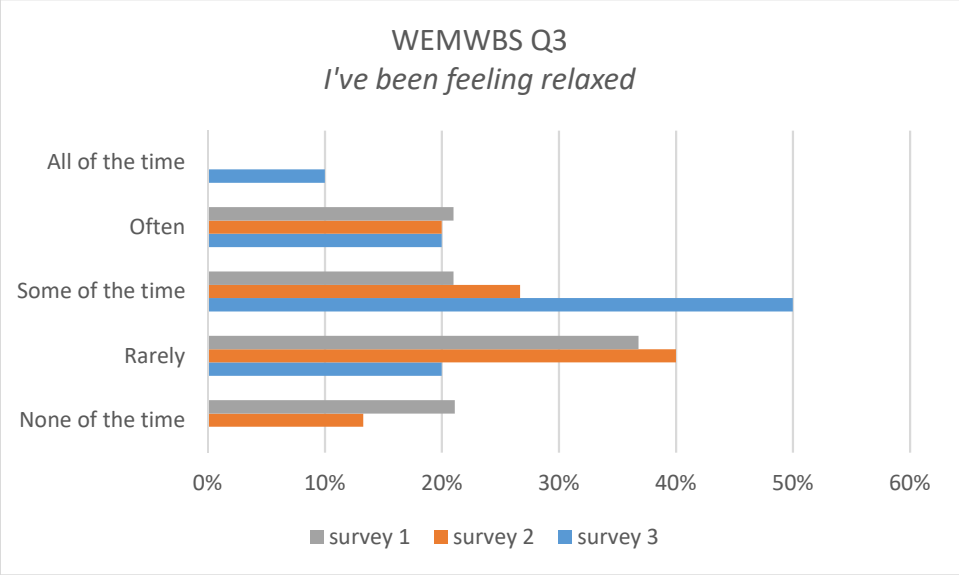


Figure 23 – Responses to the WEMWBS question 'I've been feeling relaxed'

Low levels of 'feeling relaxed' were reported pre-training (1) and immediately after training (2), with 'rarely' being the most common response, and over 20% of pre-training respondents reporting 'none of the time'. This improved noticeably 6 months post-training (3) with all respondents feeling relaxed to some degree, and with an increase in those feeling relaxed 'some of the time' and 'all of the time'.

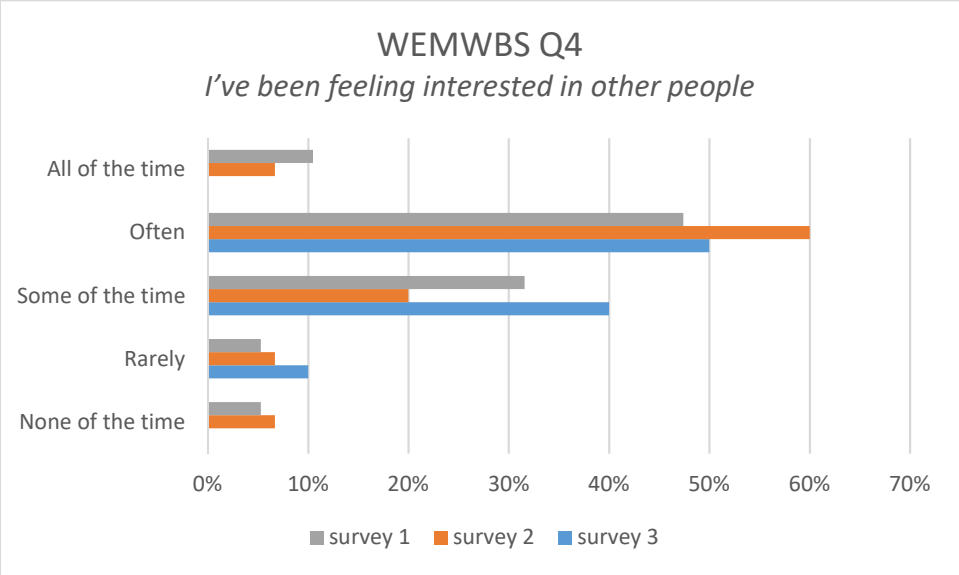


Figure 24 – Responses to the WEMWBS question 'I've been feeling interested in other people'

Interest in other people remained similar between pre and immediate post-training surveys (1) + (2), with a wide range of sentiments being expressed from 'none of the time' to 'all of the time'. After the training (3) interest or disinterest in others became less extreme, with all responses being in the 'rarely, some of the time and often' categories.

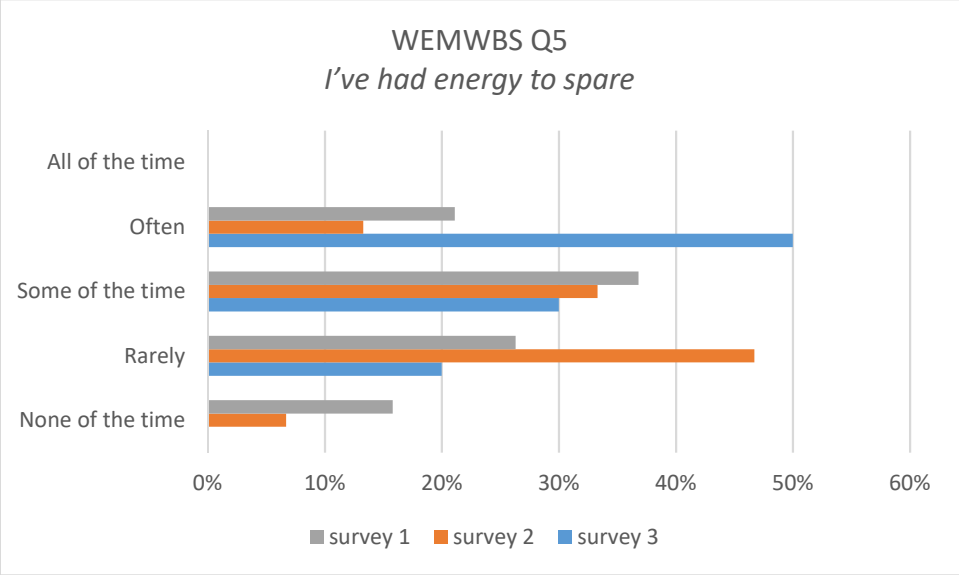


Figure 25 – Responses to the WEMWBS question 'I've had energy to spare all the time'.

No one reported having energy to spare all the time.

Pre-training (1) and immediate post-training (2) energy levels were lowest, before showing an increase 6 months post-training.

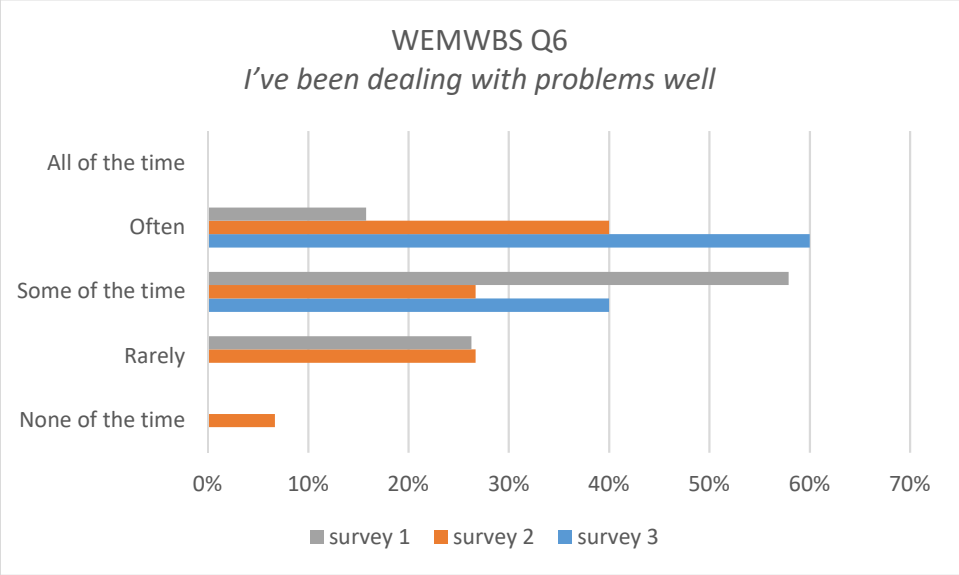


Figure 26 – Responses to the WEMWBS question 'I've been dealing with problems well'

Again the trend between pre and post MBSR training shows increases in wellbeing, in this instance by measuring psychological functioning as evidenced by how well an individual can deal with problems. 60% of respondents reported 'often' dealing with problems well 6 months after training (3), compared to 40% immediately after training (2) and less than 20% before any training (1).

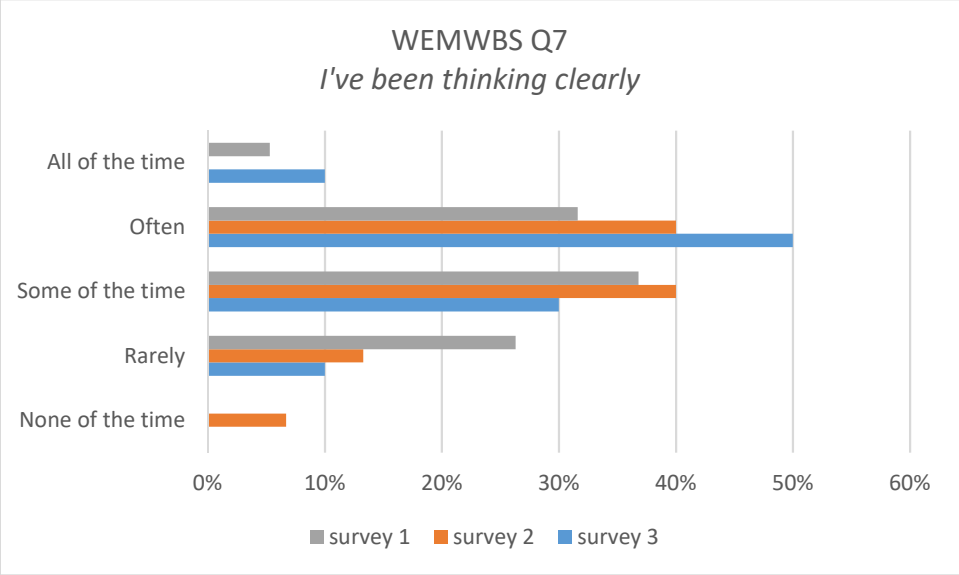


Figure 27 – Responses to the WEMWBS question 'I've been thinking clearly'

Clarity of thinking did not dramatically change throughout the study. However, it was most positive 6 months post-training with 60% thinking clearly 'often' or 'all of the time' (3).

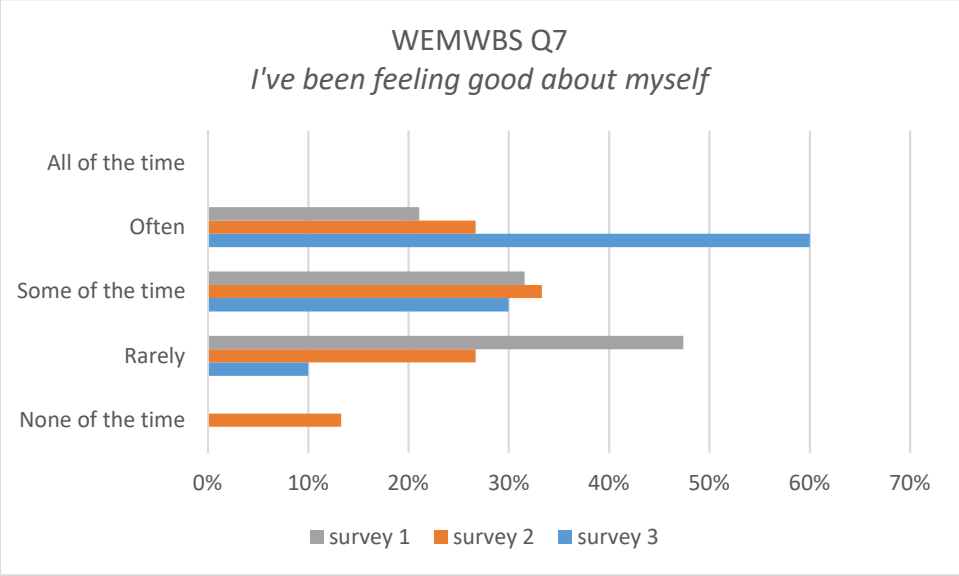


Figure 28 – Responses to the WEMWBS question 'I've been feeling good about myself'

Whilst no respondents felt good about themselves all the time, 60% 'often' felt so 6 months after training (3). The pre-training levels of 'rarely' feeling good, at almost 50% of respondents (1), reveal a concerning lack of self-esteem amongst this cohort to begin with.

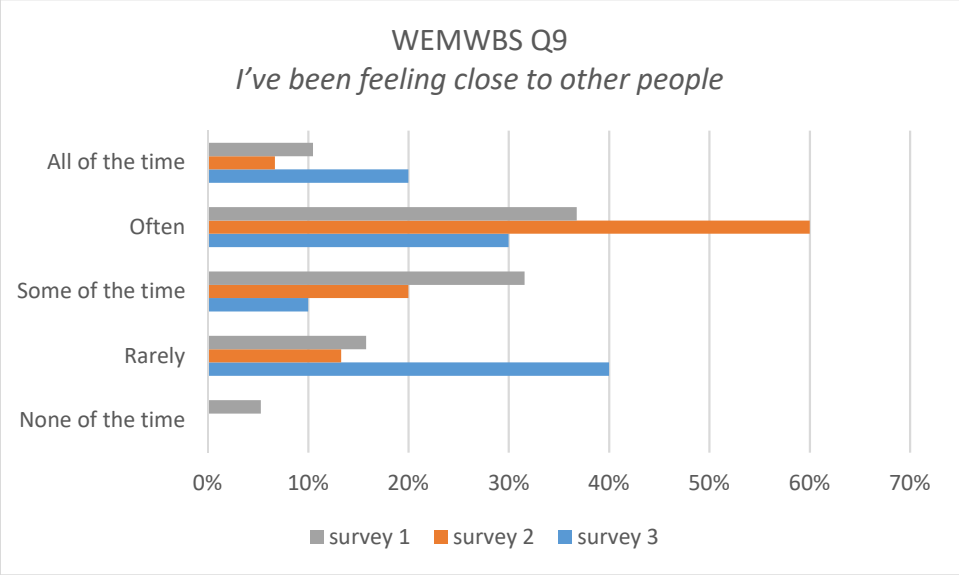


Figure 29 – Responses to the WEMWBS question 'I've been feeling close to other people'

In contrast to all other responses on the WEMWBS, feelings of closeness to others declined between pre (1) and long term post-training (3) levels but showed that such feelings were present more 'often' immediately after the training itself (60%) (2). The sense of closeness created within the MBSR group setting, where experiences, feelings and thoughts were shared, may account for this shift, which would not necessarily be sustained after the group sessions ended.

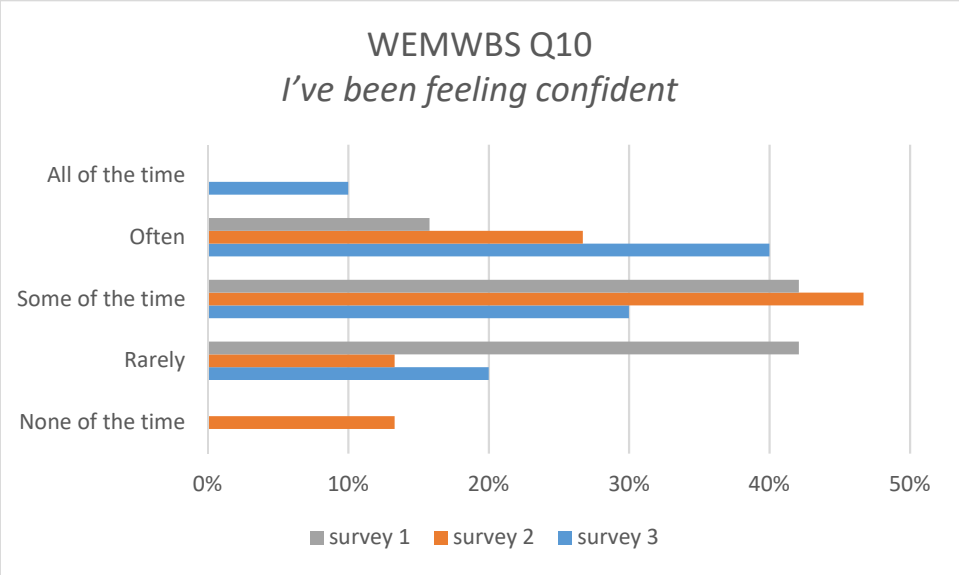


Figure 30 – Responses to the WEMWBS question 'I've been feeling confident'

Levels of confidence before training were low amongst the respondents, with over 80% only feeling confident 'rarely' or 'some of the time' (1). By the final post-training survey 50% were confident 'often' or 'all of the time' (3). However the immediate post-training levels of confidence were lowest (2), a factor which may be due to the timing of the survey in relation to final design reviews.

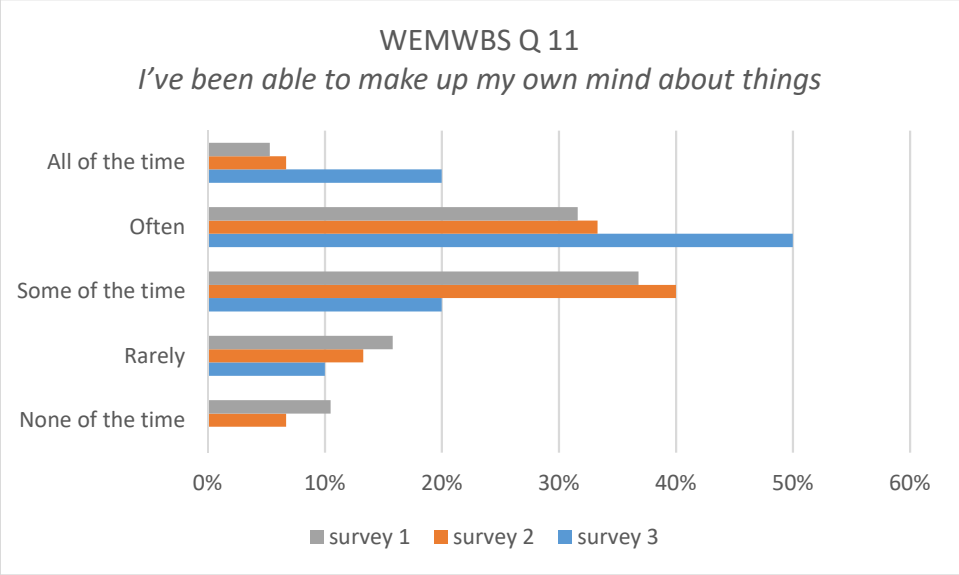


Figure 31 – Responses to the WEMWBS question 'I've been able to make up my own mind about things'

Levels of decisiveness - another indicator of psychological function - were comparable between pre-training and immediate post-training responses (1 + 2). Frequency of decisiveness had increased 6 months after training (3).

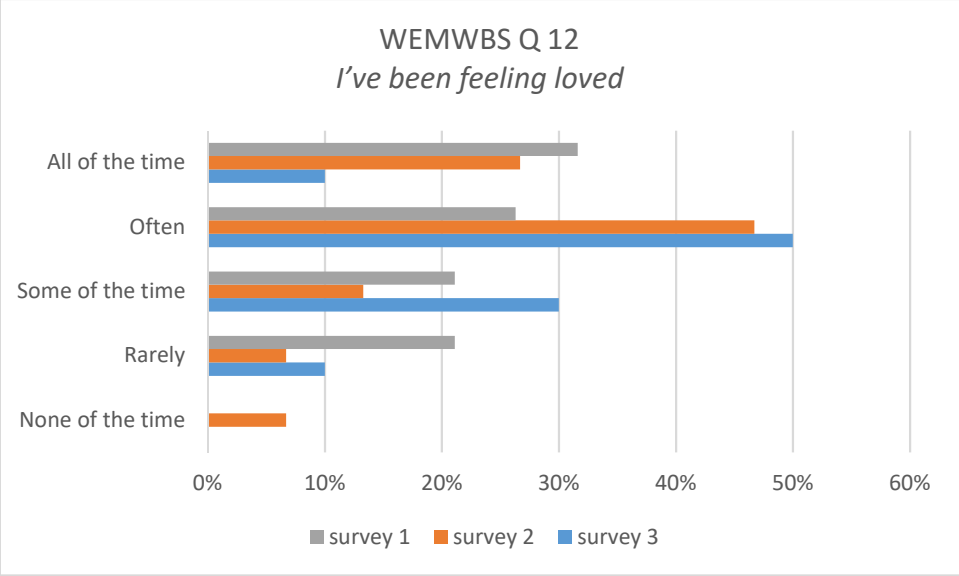


Figure 32 – Responses to the WEMWBS question 'I've been feeling loved'

Cultivating loving-kindness toward oneself and others is a component of mindfulness training. However, responses to the question 'I've been feeling loved' do not illustrate a definite pattern of change between pre and post MBSR training. At the extremes of the scale, levels of feeling love 'all of the time' were highest pre-training (32%) (1), which may be attributed to the survey being conducted in late January just after the Christmas break when students typically leave campus and spend time with family. Feeling love 'some of the time' or less was felt by around 40% of respondents at each point in the survey cycle.

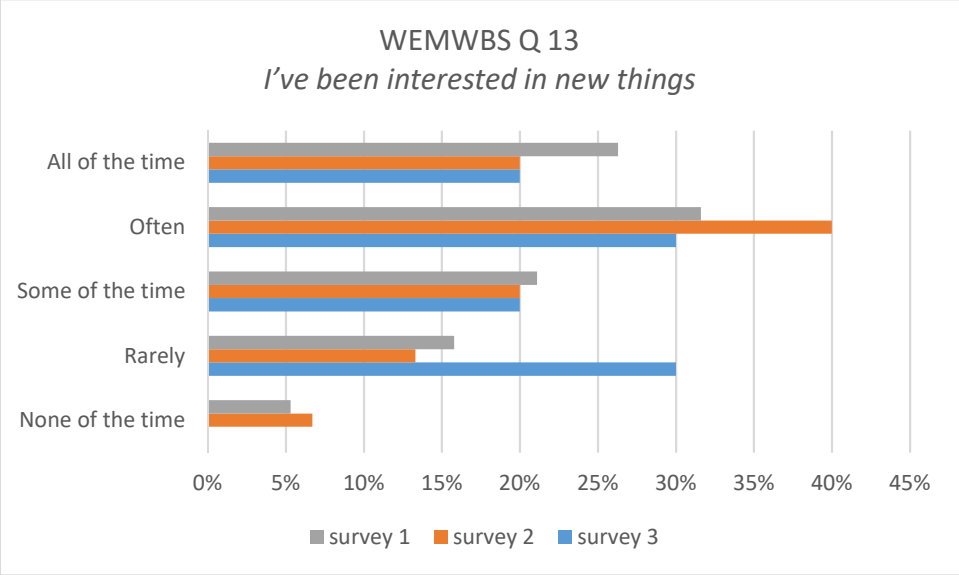


Figure 33 – Responses to the WEMWBS question 'I've been interested in new things'

'Interest in new things' did not change significantly as a result of the MBSR training according to the survey results. The only change of note was at the negative end of the scale, where a minority of students indicated they were interested in new things 'none of the time' before and immediately after training but 6 months later these had shifted to 'rarely' or above.

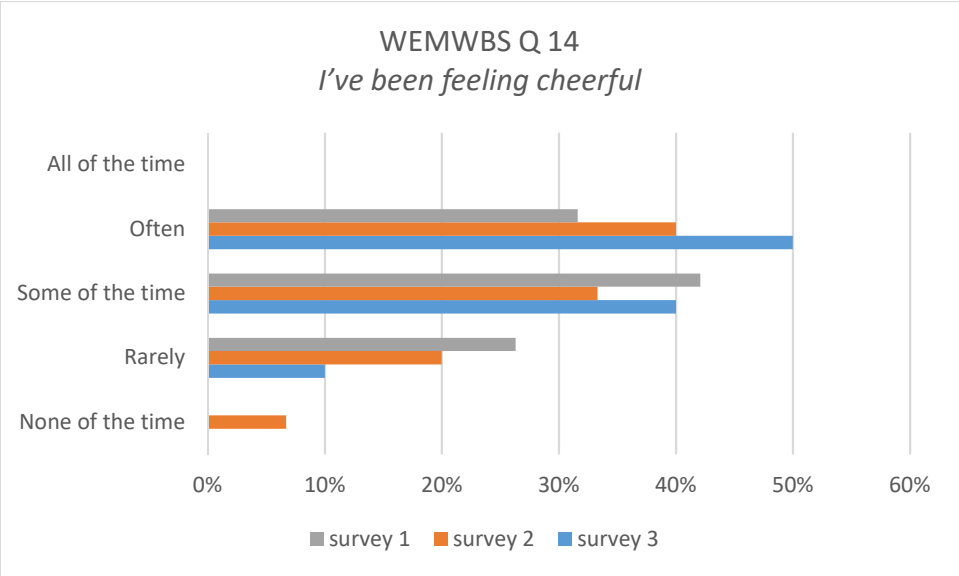


Figure 34 – Responses to the WEMWBS question 'I've been feeling cheerful'

Most respondents indicated feeling cheerful often or some of the time at all 3 points in the survey cycle. Responses 6 months after the training showed the most positive levels though not by a large extent (3).

Comments from participants about MBSR effects – influencing your life

In survey 2 participants were asked 'Has the mindfulness training influenced your life in certain areas? If so, how?' The following responses reproduced below show all but one participant affirmed that the training had influenced their lives. In some cases this positive influence was expressed very emphatically.

Yes, I've started to realize where I'm going wrong as it's happening which then let's me to correct myself before it's too late. It has also made me more relaxed.

Definitely, I remember to be kind to myself more often and this helps me respond better to others. I also often notice when I am being overly harsh towards myself, I will work on improving it but noticing it is a good step and the mindfulness course taught me that.

Massively. I feel like a new person since the training. I'm more aware of everything and understand why and how I'm feeling a particular way. I'm more outgoing, happier, and I think I've shifted a 4 year long depression I was going through. It's taught me to care for myself more in many ways.

Yes! I try and find time to meditate and practice mindfulness almost every evening. I incorporate into a yoga flow which I find really works for me. I feel generally calmer and have found ways to deal with the stress and anxiety that architecture has caused me.

Yes, I've learned more about my own self.

Yes, definitely. I found myself much more controlled when confronted with difficult situations. I find it also easier to respond to stressful situations by taking a step back, and by being more observant of the surroundings.

Yes, I was definitely less stressed and anxious while I was attending the course as I felt I had a way of managing it. I also worried less about getting stressed as I felt by doing the mindfulness meditations I had better headspace.

I think it's made me a bit more relaxed about the architecture course

Yes, I feel much less stressed and have more positive thoughts than I did
Being able to recognise when negative thoughts occur or when I am distracted

I have learnt to see things in a different perspective.

It has made me realise I am too critical on myself and my work. I am becoming more accepting and calm towards myself.

- I'm slightly more positive. - I am slightly more disciplined in regards to eating, sleeping, exercising etc.

No particularly but want to try harder to do some practice

Yes, I can say for certain that it has influenced my mental and physical health, helping me stay more calm and be more at peace with the decisions that I make.

Comments from participants about MBSR effects – architecture

In survey 2, participants were asked specifically about whether the training had been relevant to their architectural course. The following answers, reproduced in full, clearly evidence the relevance of MBSR for these students, most often in relation to stress:

Helps me with dealing the workload.

Yes, I am trying not to burn myself out too fast and to work hard but in my own way. It is easy to get swept up into working all the time and the slightly competitive nature of the course. The course taught me to try to not worry about what others are doing and focus on working at my own level and stopping when I need to.

Yes. It's given me the skills to deal with stress and enjoy times which are demanding and hard. I'm now also a lot better at handling any pre-review nerves I had.

Absolutely, we looked at ways of practicing self-care and managing stress, expectation and anxiety. It has been incredibly relatable to architecture.

Yes, as I deal with a lot of stress and some anxiety.

It is much easier to respond to stress, i.e. architecture, by observing it in a grander scheme of things. Similarly, it is somewhat easier to escape pre deadline panic through breathing and other exercises.

Yes because architecture is renowned for being so stressful with the heavy workload. However, when it is most stressful is when there is a large workload and inevitably then you feel for pressured for time and less likely to do the meditations.

Very much so - architecture doesn't encourage us to look after our mental health very much, whereas the mindfulness course definitely did

Yes, it was. I use mindfulness more often since it helps me think with clear mind during deadlines and even sleep faster while sometimes it was hard when being under too much pressure

During stressful design periods when the workload is intense, the training taught me how to keep focused. There were also a few activities related to self-esteem with a task and to just use our best judgement to make an attempt; I felt this was relevant with the idea of our architecture coursework and to use our judgement to make decisions during a design task.

Yes. Because architecture course is very tough and discouraging. It is important to stay positive in order to continue the course.

It was relevant since Architecture can reduce your self-confidence and become too much of a priority. Mindfulness aided in my realisation that my health (mental and physical) should come first. The breathing exercises help me stay calm while working.

Yes. Architecture is exceptionally stressful. Meditation helps you feel less stressed (so long as you don't feel so stressed that you can't get down to doing it).

yeah, we think a lot about our work and work while eating, not taking time to just be so is good

YES! Because of it I managed to 'calm down' and actually be present for the interim review. (I honestly wouldn't have come otherwise)

When affirming the value of MBSR for architecture students, several participants endorsed its value for all students and suggested how this could be effectively and appropriately provided, alongside other welfare provisions. Others noted that mindfulness training may only be suitable for certain students who have the motivation to engage with it. Focus group and additional survey comments affirming the wider applicability of mindfulness for architecture students included:

> Mindfulness should be promoted more within architecture, not only to help students manage the stress but, I think buildings could be designed more with mindfulness in mind
>
> I think mindfulness is extremely useful for architects […] I am very grateful to have taken part in this course and I really hope this work continues and more is done to improve the issues regarding mental health within architecture schools.
>
> I think mindfulness should be introduced university wide throughout all courses as standard […] Mindfulness should be practiced by all architects and students
>
> I feel like the [architecture] course should teach students how to manage their stress (through mindfulness etc.) as standard (survey 3 comment)
>
> [If you offered] More sessions, demand would be there

Such affirmations were followed by the caveat that mindfulness will not suit everyone at all times. Some participants had first-hand experience of this when they encouraged peers to try it out by recommending meditation to friends / housemates, only to find that some 'were dismissive of mindfulness, despite talking about being stressed' (focus group comment). Other participants agreed that, in short, 'You have to want to do it. If you were put in a room and told to do it I don't think it would work at all.'

When asked whether all architecture students should be given the opportunity to engage with mindfulness programmes, Mel Wraight agreed, but like the students she acknowledged this would only be effective if students volunteered to take up the opportunity:

> What you want are **volunteers not conscripts**. It's not for everybody, it's not a panacea for all the worlds' ills, and having that offered is a great thing but certainly not to make it a required part of the curriculum

Making mindfulness effective for all – final comments

When reflecting on the efficacy of mindfulness, students commented on the wider contextual issues beyond their own 8 – week MBSR experience. One practical comment related to follow-up support, noting

> It's a shame that the course doesn't continue throughout the whole year […] it would be good to have occasional sessions because I found that a couple of weeks after it had finished I kind of started to slowly forget things, and it became increasingly difficult to use what I had learnt in the lessons

Such ongoing support could be formal or it could be more self-organised. In a sign that mindfulness had begun to make itself more visible within the Architecture Department at the University of Nottingham following this pilot study, the student society organised a free lunchtime meditation session in 2018 (see Appendix 4).

It was also suggested during a focus group 'Is there any chance that tutors can get mindfulness lessons?' This comment reflected the observation that some staff and design reviewers (guest practising architects) did not exhibit the qualities of compassion and self-awareness that would enable constructive criticism. This also speaks of the wider issue of the environment or culture that architecture schools cultivate. Mindfulness was put forward as a means of changing the view that stress is an expected part of the course, with one participant suggesting

> You could do some kind of thing that means that both staff and students can have a taster [of mindfulness] and then have the opportunity to carry that on.

Conclusion
Summary of findings

How can mindfulness training influence the health & wellbeing of architecture students?

The self-reported effects documented through surveys and focus group comments, as well as results of the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS), show that **the MBSR pilot increased the wellbeing of participants significantly.**

When comparing pre-MBSR and post-MBSR survey scores for the WEMWBS (a 14 question survey used to measure mental wellbeing in adults in the UK), results indicate that the overall wellbeing of participants significantly increased after MBSR training (with aggregate scores measuring 42.74 survey 1 >> 43.67 survey 2 >> 48.5 survey 3). The 5.76 point increase in score between survey 1 and survey 3 constitutes a statistically 'meaningful' change. Despite this post-training increase in wellbeing, even the most positive results (survey 3) are, however, still more than 3 points below the National adult UK average.

Participants affirmed the overall value and applicability of mindfulness for architecture students. Several commented on the 'dramatic' and 'game-changing' improvements it had made to their studies and their lives.

The main areas where wellbeing was improved were stress reduction, being more compassionate to themselves (less hypercritical), and improved focus and time management.

Stress reduction is central to MBSR training, and results show self-reported reductions in stress levels, and a heightened ability to manage and respond to thoughts and feelings of stress, were unanimous amongst respondents. In the pre-mindfulness training surveys, an alarming **63.2%** of participants reported that they 'always or very often' experienced high levels of stress in relation to their studies. Participants reporting high stress frequency of 'always or very often' halved at the end of the study (down to **26.7%**) and **none** of the

final survey respondents 6 months later reported high stress at this frequency at all. To combat stress, breathing exercises and the ability to step back and 'put things in perspective' were mindful strategies that participants reported as effective. The extent to which architectural education exhibits an underlying culture of stress emerged during discussions. When paying attention to this mindfully, participants noted the negative effect this could have on their motivation and enjoyment of architecture, and acknowledge the need to intentionally take breaks from study. Design reviews were identified as a particular trigger for stress, with resilience in the face of criticism and subsequent self-criticism being an important skill to develop.

Participants discussed the **competitiveness nature of the course**, acknowledging that this can lead to negative self-judgment which promote unhealthy work habits and form part of the barrier toward better self-care. Participants reported being highly judgemental and hyper-critical about their own design work and performance, and to a lesser extent they extended this judgment to their peers. Frequency of **being judgemental**, as reported in the surveys, showed a **very significant decrease** after MBSR training. Along with stress reduction and focus this was the most pronounced change in pre-post mindfulness survey responses of all the variables being studied. Several participants expressed a newly acquired awareness of their self-critical habits, and in response started feeling more compassionate toward themselves and being more understanding and attentive toward their peers. The **group discussion context** of the MBSR training programme facilitated a therapeutic sense of compassion and shared understanding amongst participants.

In the pre-training survey, the majority of students reported finding it difficult to stay focussed in lectures, and to a lesser extent in design studio. Self-reported **ability to focus improved significantly** after MBSR training, affirming the principle that by repeatedly training the mind to stay focused on an object of attention in the present moment (for example the breath, sensory experiences, thoughts, feelings) mindfulness meditation can improve focus and decrease mind-wandering. Several participants discussed how they were able to focus more on work and non-work tasks, and thus complete them in less time and more effectively. Focus itself was not, however, highlighted as often as stress or compassion in participant discussions. Participants also reported being able to manage time better and to feel 'not as rushed' following mindfulness training.

This pilot study showed that **finding the time to fully engage with mindfulness practices** was very difficult for all participants. Developing strategies to encourage consistent and regular engagement with mindfulness practice is an important consideration if the full benefits of mindfulness training are to be realised. Most participants completed some of the regular practices, or shortened versions of the full daily practice. Attendance at the weekly training group sessions was good but dropped at times of peak workload (design reviews). Barriers to engaging with the training, both in terms of the 8 x 2hr weekly sessions and the home practice, were common. Perceived lack of time was the main barrier identified, as well as a need to **learn to 'give permission' to dedicate time to self-care**. Having scheduled face-to face group sessions and short practices are helpful. Using mindful awareness to notice whether non-stop study is actually productive or not (i.e. identifying presenteeism) proved helpful in some cases.

How does mindfulness training influence the way students conceptualise & experience architecture & architectural practice?

Spatial awareness, including an awareness of one's own body and its sensory perceptions of the environment, for example noticing points of contact with the seat and floor when in a sitting meditation, is one component of mindfulness training. Spatial awareness, in the form of embodied awareness and attentiveness to space and place, is a relevant quality / practice for architectural designers. Mindfulness also been linked to increased creativity – an obvious 'skill' for designers, as it can enable 'divergent thinking' and the insight that can emerge from adopting a curious and attentive attitude.

Participants reported high levels of spatial awareness pre-training, and to a slightly lesser extent bodily awareness, with immediate post-mindfulness training showing additional slight increases. A small number of students spoke about their enhanced experiences of space following training, and some reported noticing their bodily sensations more (i.e. sore neck from computer based work). Results similarly showed pre-mindfulness training levels of creativity and curiosity amongst participants were already strong, and that these increased slightly following training.

Overall, participants were not as forthcoming with comments about spatial awareness, creativity or curiosity compared to their strongly expressed views about stress reduction and compassion. This suggests that **spatial awareness, creativity and curiosity outcomes were not as pronounced as expected**.

An adapted form of mindfulness training that incorporated exercises to focus on space and creativity – not stress reduction per se – would be valuable to explore the potential relationship between mindfulness and design practice more directly. An 'applied mindfulness' (Hassed and Chambers, 2015) approach, similar to other course/ activity specific mindfulness applications (for medical students, for sportspeople etc.) could be developed to test this theory.

Overall, participants, as well as the MBSR trainer conducting the pilot, recommended that mindfulness training, along with other wellbeing measures**, should be made available to all architecture students**, but that engaging in mindfulness training should be the voluntary choice of each student.

Recommendations

1 Offer voluntary MBSR training on campus for architecture students to equip them to manage stress and improve mental health

Formal MBSR training with a qualified trainer can demonstrably assist architecture students to reduce the high levels of stress they experience during study and to generally improve their mental health, wellbeing and performance, even when they engage in group training and only 'occasionally' complete daily mindfulness meditation practices. Providing full 8-week MBSR programmes would require significant investment, both from students investing the time in their own self-care, and Universities investing additional resources to deliver such programmes. The benefits of face to face group training, as opposed to using existing low-cost / free online mindfulness training and apps, make this worthwhile. Students are more likely to engage in the training when the obligation and routine of a weekly session is established, and the peer-to-peer learning and 'shared experience' of group discussions and practice adds value to the training.

Strategies for making mindfulness training and practice more convenient and effective include offering a choice of shorter meditation practices, running group sessions in the morning not the afternoon, and offering casual follow-up training and sessions. While MBSR should be made available to all architecture students, engaging in mindfulness training should be the voluntary choice of each student, and must be accompanied by other support mechanisms and services.

When implementing an MBSR programme, a system of evaluation should be established, for example self-reporting by participants, to gauge its ongoing effects. Over the long term, measuring quantitative metrics such as academic attainment and course drop-out rates would also be a valuable means of evidencing MBSR outcomes.

2 Develop and pilot a Mindfulness-based Architecture Intervention (MBArchI) tailored specifically to enhance architecture students' skills development

As well as addressing ment health and wellbeing through existing MBSR training as recommended above, mindfulness training has the potential to further enhance skills particularly applicable to architectural design such as creativity and spatial awareness; 'applied' or more 'integrated' mindfulness exercises could more fully engage these specific traits in relation to architectural study. Directing mindful awareness toward specific tasks e.g. observing a space using all one's senses in the present moment, for example, would expand the application of mindfulness while still delivering the wellbeing improvements from existing meditations and exercises. The potential exists to embed mindful activities within the design studio itself as a form of pedagogy. An adapted MBSR programme or activities of this kind would require the same level of professionally qualified trainer input, and should be evaluated robustly to gauge its outcomes.

3 Embed a mindfulness offering within a wider culture shift of wellbeing including students and staff

The participants in this MBSR pilot affirmed that mindfulness training increased their wellbeing and resilience, but at the same time they acknowledged that a wider culture of stress and judgmental attitudes within the academy / architecture school were at odds with mindful self-care. MBSR / MBArchI should form part of a comprehensive approach toward sustainable positive work habits and skills development, such as policies on giving and receiving constructive criticism and training in effective time management and work-life balance. Staff as well as students need to be part of such a shift.

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Appendices

Appendix 1: Architects Mental Wellbeing toolkit (extract 'caring for students in practice') link to full toolkit here

ARCHITECTS' MENTAL WELLBEING TOOLKIT

CARING FOR STUDENTS IN PRACTICE

Given the nature of the British architectural education system, it is inevitable that at some point, almost all practices will employ students. An increased number of universities including Sheffield, Cardiff, Oxford Brookes and Birmingham are offering courses which allow for paid work and study to take place in parallel, and we have recently seen the emergence of architectural apprenticeships, offering combined 'Part 2' and 'Part 3' equivalent.

Studying architecture itself can be a stressful process, which takes place at a point in life when we are particularly vulnerable to mental health issues. Recent student surveys by the Architects' Journal and others have confirmed this, finding mental health a major concern. When combined with (often full time) work, this can increase stress further - we therefore believe employers should focus on making this work-study balance as easy as possible for students to achieve.

TIPS FOR PRACTICES

- Create a written policy setting out the approach to student welfare
- If possible, provide extra study days for students on top of holiday allowance - students who use annual leave to complete assignments are at greater risk of burnout (not to mention lower quality work)
- Liaise with universities and students to understand what is required of them
- Create a mentor system for students - not only will mentors be able to help and advise with studies, but they will be well placed to monitor how students are coping
- Ensure that students' line managers and teams are aware of key study dates and deadlines, and are able to take these into consideration when resourcing projects

TIPS FOR INDIVIDUALS

- Before joining a company or starting a course, make it clear to your employer what will be required of you in your studies
- Ask your practice for a written agreement, which clearly sets out issues such as study allowance, key dates etc
- Communicate important study dates to your line manager and those around you
- Be aware that studying and working in parallel can be intense - the best way to manage this is to be well organised and very disciplined with your time
- Find a routine that works for you, and allows you to successfully balance your work and university responsibilities

ARCHITECTS' MENTAL WELLBEING TOOLKIT

USEFUL REFERENCES

Mental Wellbeing and the Architecture Student - Melissa Kirkpatrick: docs.wixstatic.com/ugd/fb9118_7b9c47672580642bb8835d7ff3b61d524a.pdf

FLUID Diversity Mentoring Programme: www.buildbyuss.org.uk/fluid

RIBA Mentoring Guidance: www.architecture.com/knowledge-and-resources/resources-landing-page/mentoring-guidance

Archisoup - packed with useful resources for students: www.archisoup.com

First in Architecture - helpful student resources: www.firstinarchitecture.co.uk

Young Architect - a blog aimed at helping young architects: youngarchitect.com

ARCHITECTS' MENTAL WELLBEING TOOLKIT

Appendix 2: RECRUITMENT MESSAGE inviting potential participants

Email subject: Mindful architects – a research project invitation

Dear architecture students

I am writing to let you know about a research project that is being conducted in the Department of Architecture and Built Environment, and to extend an invitation to participate if this interests you. The research project is titled ***Mindful architects: increasing health and wellbeing in the student architectural community.*** It is funded by the Royal Institute of British Architects (RIBA), and is led by Dr Nicole Porter.

What is the research about?
The research will investigate whether mindfulness training can help architecture students increase their individual health and wellbeing, and explore whether it informs their skills development as design practitioners. A 2016 study revealed that over half of 450 UK architecture students surveyed 'expressed concerns about their mental health', exposing the need for further investigation into student health and ways to improve it. Mindfulness, defined as 'paying attention to what's happening in the present moment in the mind, body and external environment, with an attitude of curiosity and kindness', is an approach to everyday activities and a formalised set of meditation-based practices which has been proven to improve health in various contexts, including higher education.

What will participants do?
We are seeking up to 24 architecture students, at any year level in the Department, to participate in an 8 week mindfulness based stress reduction (MBSR) course. The course will run from February – April 2018, with a 2 hour training session every week (as well as mindful 'homework' for participants to practice in between training sessions.) The small group training sessions will be conducted on campus by a qualified trainer. Participants will be asked to complete three anonymous questionnaires – before and after the training course – and will also be invited to participate in a research focus group discussion if they wish. Participation is free, it is voluntary, and participants can withdraw at any time.

How can I find out more about participating?
If you would like to know more about this project and register your interest in participating please come along to one of two no-obligation mindfulness introduction sessions, where mindfulness trainer Mel Wraight will conduct a short 'taster' mindfulness practice. Dr Porter will also be available at these introductory sessions to explain the project in more detail, answer questions, and provide registration forms. The sessions are held as follows:

Thursday 30 November 1 – 2 pm OR **Wed 6 December 11.30 – 12.30am**

Both conducted in A18 south, Lenton Firs building (ground floor, just off the main entrance lobby)

For more information about health and wellbeing:

For anyone wanting to know more about mindfulness and other health and wellbeing related information you may wish to look at these resources offered by the University:

Mindfulness podcast: https://mediaspace.nottingham.ac.uk/media/mindfulness/1_gxikhn4z HeathyU wellbeing links: http://www.nottingham.ac.uk/currentstudents/healthyu/mental-health/bodymind.aspx

If you have any questions about this research project, please feel free to email me at nicole.porter@nottingham.ac.uk. There will also be opportunities to ask questions at the information 'taster' sessions.

Appendix 3: Project questionnaire text

Questionnaire 1 – ex-ante (pre-training)

Part 1 – Your engagement with mindfulness

1. How would you describe mindfulness (your understanding or definition)
   (open field for text)

2. How confident did you feel about describing what mindfulness means in the previous question?
   Very confident / confident / slightly unsure / unsure

3. Does mindfulness play a part in your daily life?
   Yes regularly / yes but not regularly, Sometimes / No

4. In what ways are you using mindfulness in your daily life? (if you answered 'no' at #3 above please skip this question)
   (open field for text)

Part 2 – Your experiences, thoughts and feelings about studying architecture

Please rate each of the following statements using the scale provided. Choose the answer that best describes your own opinion of what is generally true for you at this point in time.

5. When I am in lectures I find it difficult to stay focussed. My mind wanders off an I am easily distracted
   (never or very rarely true / rarely true / sometimes true / often true / very often or always true)

6. When I am in design studio I find it difficult to stay focussed. My mind wanders off an I am easily distracted
   (never or very rarely true / rarely true / sometimes true / often true / very often or always true)

7. During studio or tutorials (in class activities), I make judgments about whether my thoughts, statements or questions are good or bad
   (never or very rarely true / rarely true / sometimes true / often true / very often or always true)

8. During design studio, I make judgments about whether my work is good or bad
   (never or very rarely true / rarely true / sometimes true / often true / very often or always true)

9. During design studio, I make judgments about whether other people's work is good or bad (for example when doing group work or during design reviews / crits)
   (never or very rarely true / rarely true / sometimes true / often true / very often or always true)

10. I find design reviews / crits enjoyable
    (never or very rarely true / rarely true / sometimes true / often true / very often or always true)

11. I am physically affected by anxiety before design reviews / crits (for example stomach upset, heart beat increase, sweaty, generally 'feeling nervous')
(never or very rarely true / rarely true / sometimes true / often true / very often or always true)

12. Studying architecture allows me to be creative
(never or very rarely true / rarely true / sometimes true / often true / very often or always true)

13. I am able to manage my time well; I am not rushed or left feeling behind in my study
(never or very rarely true / rarely true / sometimes true / often true / very often or always true)

14. I experience high levels of stress in relation to my architectural study
(never or very rarely true / rarely true / sometimes true / often true / very often or always true)

15. I find it easy to work with others, even though different people can have different approaches to working (for example in student groups)
(never or very rarely true / rarely true / sometimes true / often true / very often or always true)

16. I approach my design studio work with curiosity
(never or very rarely true / rarely true / sometimes true / often true / very often or always true)

17. I am aware of the spaces and places around me
(never or very rarely true / rarely true / sometimes true / often true / very often or always true)

18. I am aware of how my body is feeling (for example my sensations, breathing, posture)
(never or very rarely true / rarely true / sometimes true / often true / very often or always true)

19. Overall I am happy when engaging with architecture
(never or very rarely true / rarely true / sometimes true / often true / very often or always true)

20. If you would like to elaborate on any of the previous questions please feel free to add comments here
(open field for text)

Part 3 – your opinions about being an architect

Again please rate each of the following statements using the scale provided. Choose the answer that best describes your own opinion of what is generally true for you at this point in time.

1. Being a successful architect (student or professional) requires creativity
(strongly agree / agree / neutral / disagree / strongly disagree)

2. Being a successful architect (student or professional) requires compassion for others
(strongly agree / agree / neutral / disagree / strongly disagree)

3. Architecture is extremely demanding and takes up all of a students or professional's time
(strongly agree / agree / neutral / disagree / strongly disagree)

4. Being a successful architect (student or professional) requires curiosity
(strongly agree / agree / neutral / disagree / strongly disagree)

5. Being a successful architect (student or professional) requires excellent time management
(strongly agree / agree / neutral / disagree / strongly disagree)

6. Architecture is a stressful profession
(strongly agree / agree / neutral / disagree / strongly disagree)

7. Being a successful architect (student or professional) requires being very aware of space
(strongly agree / agree / neutral / disagree / strongly disagree)

8. Being a successful architect (student or professional) requires being aware of your own body
(strongly agree / agree / neutral / disagree / strongly disagree)

9. Architects need to be judgemental
(strongly agree / agree / neutral / disagree / strongly disagree)

Part 4 – WEMWBS Warwick Edinburgh Mental Wellbeing Scale

Below are some statements about feelings and thoughts. Please tick the box that best describes your experience of each over the last 2 weeks:

STATEMENTS	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	1	2	3	4	5
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

Questionnaire 2 – ex-post training evaluation (immediately after course)

Part 1 – Your engagement with mindfulness

Please remember all answers are anonymous…

10. How many of the weekly mindfulness training sessions did you attend?
    1,2,3,4,5,6,7,8

11. How often did you undertake the home practices that were set each week
    Every day as prescribed / most days, not skipping or shortening many / some days, but not sometimes only briefly / only occasionally / very occasionally or never

12. Were there any obstacles / hindrances / reasons that prevented you from participating (PLEASE DESCRIBE)
    (open field for text)

13. Did you enjoy the training?
    Yes all the time / yes but not regularly/ Sometimes / No

14. What did you find most useful about the training?
    (open field for text)

15. Has the mindfulness training influenced your life in certain areas? If so, how?
    (open field for text)

16. Was this training relevant to your architecture course? If so, how?
    (open field for text)

17. Does mindfulness play a part in your daily life?
    Yes regularly / yes but not regularly, Sometimes / No

18. Are you planning to continue using mindfulness in the future?
    Yes all the time / yes but not regularly/ Sometimes / No

Part 2 – Your experiences, thoughts and feelings about studying architecture

This will repeat the same 'part 2' questions as in questionnaire 1.

Part 3 – your opinions about being an architect

This will repeat the same 'part 3' questions as in questionnaire 1.

Part 4 - WEMWBS

This will repeat the same 'part 4' questions as in questionnaire 1.

Questionnaire 3 – ex-post training evaluation (6 months after course)

Part 1 – Your engagement with mindfulness

1. Does mindfulness play a part in your daily life?
   Yes regularly / yes but not regularly, Sometimes / No

2. Please describe what aspects of mindfulness you have continued with since the course (if answering 'no' above please skip to the next section)
   (open field for text)

Part 2 – Your experiences, thoughts and feelings about studying or practicing architecture

This will repeat the same 'part 2' questions as in questionnaire 1. Note – where a student has graduated, they may substitute the word 'study / student' for 'practice / practitioner.

Part 3 – your opinions about being an architect

This will repeat the same 'part 3' questions as in questionnaire 1.

1. Open question – are there any other comments you would like to make about mindfulness and architecture? Please comment here
   (open field for text)

Part 4 - WEMWBS

This will repeat the same 'part 4' questions as in questionnaire 1.

Appendix 4: student-led wellbeing initiatives

University of Nottingham Tongue + Groove (T+G) architecture student society poster showing a student-led initiative to include mindfulness provision as part of student wellbeing promotion (Buddhist and Meditation Society workshop) in 2018