

# Does Mindfulness Practice Influence the Well-Being of Chemistry Students?



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## Introduction

The concept of mindfulness, as a secular contemplative practice, has gained traction in many sectors of society, in higher education we are seeing it take the form of contemplative pedagogy.<sup>1,2</sup> Mindfulness is still a relatively new concept in universities and mostly found in medical schools. Mindfulness is “the awareness that arises from paying attention on purpose in the present moment, non-judgmentally.” Contemplation practices provide a powerful pedagogy towards a present mind<sup>3</sup>, foundational academic competencies<sup>4</sup>, and have been seen to benefit wellbeing, social and emotional growth, performance, character development, and insight<sup>5</sup>. Mindfulness practice may support a learning culture by intentionally creating a space in which to see learning in its full context — scientific, cultural, political and personal.<sup>6</sup> Hence, create a learning culture in higher education by teaching to the whole student. This research project presents results on how mindfulness practice enhances student well-being in chemistry in higher education.

## 1. Method

- 6 week taught mindfulness course: 6 x 1hr session per week
- Pre and post course questionnaires for both participants and control group of chemistry students.
- Semi - structured interviews with 2 course participants.
- Statistical data analysis: Mann-Whitney U Test and Wilcoxon Sign-Rank Test.
- A coding process, and reflecting on the data as a whole, developed themes from extended questionnaire answers and interview transcripts.

## 2. Statistical Results

**Table 1:** Stress levels of all subjects: comparing control group and participants before participation in the mindfulness course.

Subjects	N	Mean Rank	Sum of Ranks	U critical	15.0
Participants	8	11.1	88.5	U calculated	19.5
Control	9	6.8	61.5	p	0.05
Total	17				

A Mann-Whitney U Test indicated no significant difference in academic stress levels between the control group and participants before the mindfulness course,  $U_{(calculated)} 19.5 > U_{(critical)} 15.0$ .

**Table 2:** Stress levels control group “before” and “after” the mindfulness course

	N	Mean Rank	Sum of Ranks	W critical	6.00
Negative Ranks	6	4.25	25.50	W calculated	10.50
Positive Ranks	2	5.25	10.50	p	0.05
Ties	1				
Total	9				

A Wilcoxon Sign-Rank Test indicated no significant difference in academic stress levels for the control group,  $W_{(calculated)} 10.50 > W_{(critical)} 6.00$ .

**Table 3:** Effect of mindfulness course on stress levels of participants

	N	Mean Rank	Sum of Ranks	W critical	4.0
Negative Ranks	1	1.0	1.0	W calculated	1.0
Positive Ranks	4	3.5	14.0	p	0.05
Ties	3				
Total	8				

A Wilcoxon Sign-Rank Test indicated an effect of participating in the mindfulness course, showing a significant decrease in academic stress levels of participant,  $W_{(calculated)} 1 < W_{(critical)} 4$ .

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## 3. Qualitative Results

Themes developed from the post course questionnaires of the participants, and interview transcripts.

“Find myself calmer in situations.”

“I noticed when I was wondering off in class. This made me more focussed overall”.

Helpful New Skill

Improved Personal Life

Improved Studying and Concentration

“I learnt how to ground myself, which was helpful, outside of studying. This had a knock-on effect allowing me to have more time for uni work.”

“I found it hard to express what I thought or experienced from an [mindfulness] exercise”.

Group Interaction

“[the course] helped me deal with stress and I was able to look at the workload differently, learning to take a few steps back and come back to it”.

## 4. Conclusion

The study indicates that mindfulness practice influences the well-being of chemistry students in higher education.

A significant decrease in stress levels was found after participation in the mindfulness course. The coding process developed themes of Helpful New Skill, Personal Development, Improved Studying and Concentration, as well as challenges in relation to Group Interaction.

## References

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