

Lights! Cameras! Action Research! Self-Reg in the Spotlight for Pre-Service Teachers' Wellbeing

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Introduction

Acadia University's School of Education in Mi'kma'ki, Nova Scotia, hosts just over 200 pre-service teachers in the Bachelor of Education program. All of these students take a course (conducted over 10 classes) that invites them to explore the various elements of healthy learning environments. One of these elements is their own well-being as future teachers. The teaching profession is well known for being stressful (Gluschkoff et al., 2016; Simon & Moore Johnson, 2015), additionally being a university student involves navigating many and varied stressors. How do universities prepare future teachers to understand stress, the brain-body response to stress, and personally prepare themselves for this demanding profession?

Acadia's pre-service teachers explore their own personal wellbeing and self-regulation through a mini action research project as part of their Healthy Learning Environments coursework. Students learn about their own self-regulation (management of energy and tension) in preparation for being teachers who have the capacity to effectively coregulate others (students, families, and colleagues). Their action research projects connect the Self-Reg learning from class (Shanker & Hopkins, 2020) to a personally meaningful aspect of their own life; one that might potentially support or improve their wellbeing.

Materials and methods

A prerequisite for conducting the mini action research project is developing students' understanding of the brain-body response to stress. Shanker Self-Reg (Shanker, 2020; Shanker & Hopkins, 2020) provides a rich foundation for this. After conceptualising what stress is and how it can be growth-promoting as well as debilitating, students learn about the Thayer energy and tension matrix (Thayer, 1996), the triune brain (MacLean, 1990), various stress responses (Porges, 2007), 5 domains of stress (biological, emotion, cognitive, social, and prosocial) and 5 Self-Reg practices (reframe, recognize, reduce, reflect, and restore) (Shanker, 2013). Metaphorically, this supports students to develop the lens through which they observe and experience their own (and others') behaviours (Figure 1).

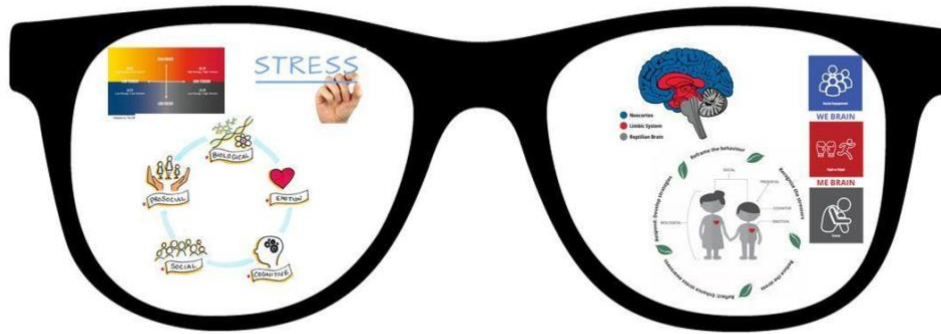


Figure 1. Metaphorical Self-Reg lens

After exploring foundational concepts, step one of the action research process, students engage in designing a personally relevant mini action research project. This process has seven steps:

1. Clarify Self-Reg theories
2. Identify a problem/ issue/ personal area of focus
3. Create a research question
4. Collect data
5. Analyse data
6. Report results
7. Take informed action

Data collection commences once students have a question that reflects their wellbeing focus and connects with Self-Reg theories discussed in class. Many students choose to spend up to a week collecting data before they make any changes, then continue to collect data as they enact some kind of change. Up to 3 weeks of data is collected, then analysed. Students conclude by reporting their results and writing an informed plan of how they want to move forward based on what they learned in their mini action research.

Results

The personal nature of this assignment inspires a rich diversity of topics. Some students know immediately what they want to focus on, others take a while to decide. Sometimes students actively avoid topics (for example: smoking or gaming) as the stress associated with investigating these is too great. One student, who was struggling to think of a focus, came to see me. From our conversation, she identified a time management and productivity problem she was experiencing due to the stressors of university work expectations. She shared, “Every morning I wake up extremely worried about school and because of this, I panic about the amount of work that I’m supposed to do and end up shutting down rather than being able to cope and get work done. I also experience immediate panic and shut down when I don’t understand things.” Her question connected to our learning about the Triune Brain (the red brain was dampening blue brain functions, resulting in a state of freeze and overwhelm). She was curious about organisation (executive functioning) and how it impacted her energy and tension. Other student examples included juggling family responsibilities around university course work expectations, physical wellbeing, nutrition, personal tech use, and sleep.

Students' research questions linked their personal focus to various theories from class. In the following examples theories represented include: the Thayer energy and tension matrix, various domains of stress, coregulation, and Step 5 of Self-Reg – restoration.

- Student A: “Will making a physical calendar lower my stress surrounding school?”
- Student B (mature aged student who is a father of two): “Will a Sunday activity of preparing meals for Tuesday and Thursday nights reduce tension and stress related to coming home late 2 nights a week after classes; and does the meal prepping activity itself function as a stress-reducing activity?”
- Student C: “Will adding ~30 minutes a day of moderate exercise help regulate my feelings of floodedness and dysregulation in the afternoons?”
- Student D: “Will eating a healthy breakfast have an effect on my energy, stress level, and mood?”
- Student E: “Will creating a schedule for my daily phone use help me stay on task (reducing tension), give me more energy, and limit my biological stressors?”
- Student F: “Will unplugging from technology (i.e., for social media, watching shows, phone calls, texting, schoolwork etc.) for 30 minutes to unwind before bed support faster sleep and a higher quality of energy with less tension throughout the next day? Will this, in turn, affect the number of stressors experienced?”

To give an example of a complete action research project, I will summarise Student F's project. Student F's question above derived from the problem she described as follows: “My mind is and has always been constantly in motion. When I lie down at the end of a day, I do not unwind, letting go of daily happenings. Those moments before sleep are frequently spent replaying my days, the good and bad, over again. This seems to be exasperated when I am working directly before sleep or busy on my phone before turning off my light. Sleep either comes slowly (sometimes hours), or when it does come, and I awake the following morning, I have low energy and feel my mind has not been still all night but in continuous motion.”

This student collected 5 days of pre-change data followed by 9 days of data post change. She used the Thayer Matrix and 5 domains of stress for daytime and pre-bed/pre-sleep data as well as the sleep app ‘Pillow’ to collect sleep specific data (see figures 2 and 3).

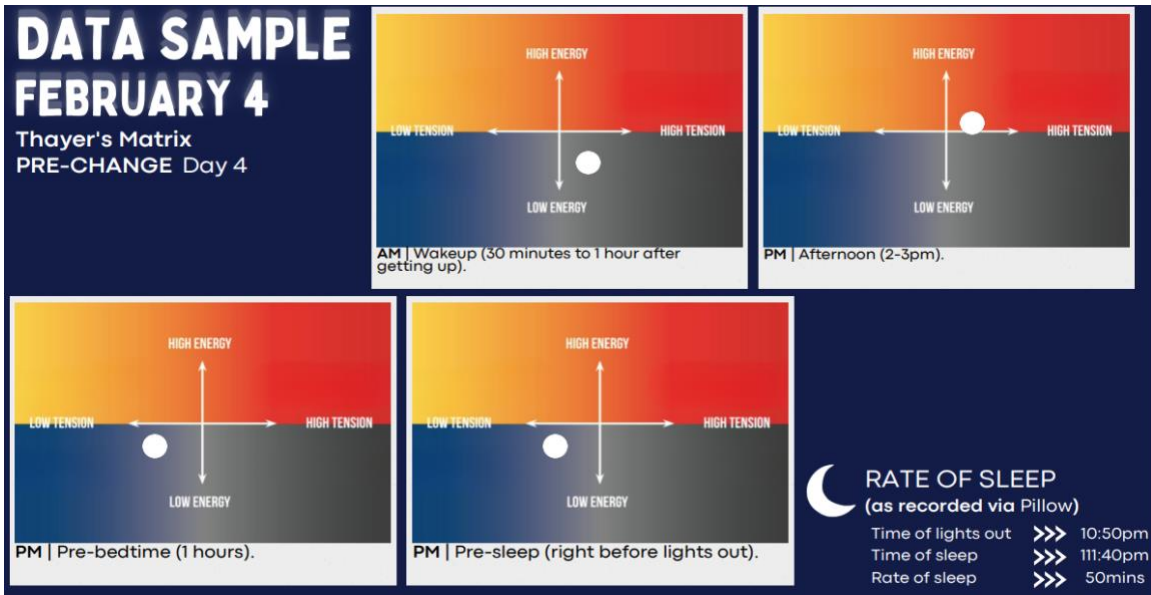


Figure 2. Student F pre-change data sample

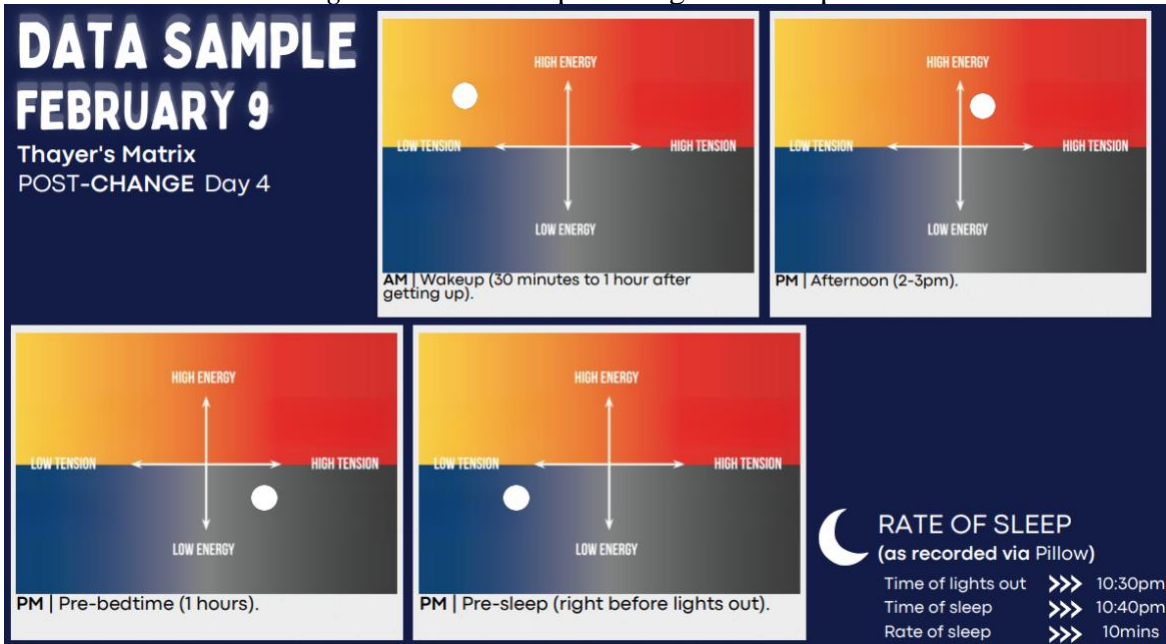


Figure 3. Student F post-change data sample

Data analysis showed a change in rate of sleep and patterns and trends for energy and tension (see figures 4 and 5).

DATA ANALYSIS

Rate of Sleep

This graph shares rate of sleep statistics as gathered during 15 days of recorded data. Rate of sleep was measured through minutes between turning off lights to time actively asleep, being recorded via Pillow. These findings depict a significantly faster rate of sleep following **post-change** and slower prior to **pre-change**.

This statistical information seems to suggest that unwinding and unplugging before bed had a positive impact on the length of time it took to fall asleep once the lights were turned off.

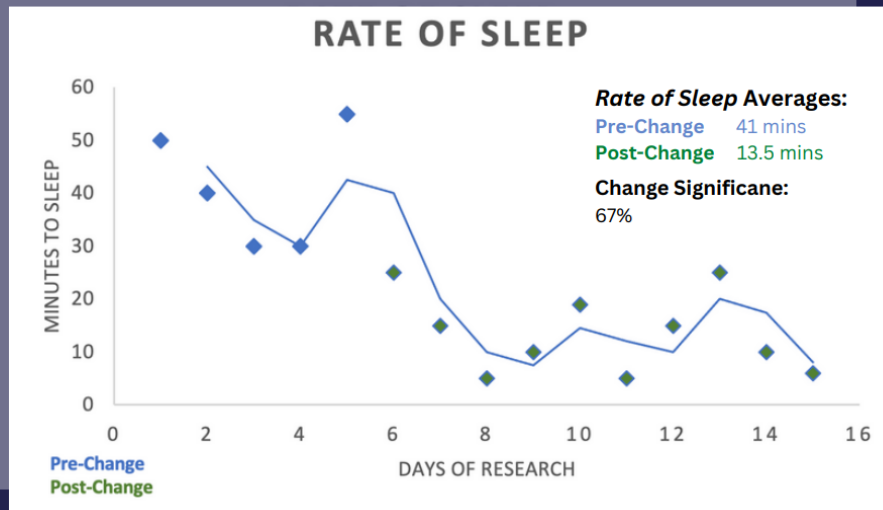


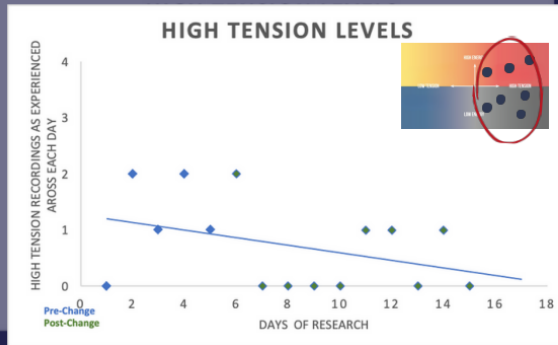
Figure 4. Student F data analysis for rate of sleep

DATA ANALYSIS

Thayer's Matrix High Energy Levels

This graph represents high energy, as experienced across 15 days of recorded data.

These recordings indicate that unwinding and unplugging before sleep resulted in more consistent energy recordings throughout the day (4 recordings were taken using Thayer's Matrix per day), as presented by **post-change** data compared to **pre-change**. A possible explanation for these consistent energy levels **post-change** could be the longer sleep (due to a faster rate of sleep) experienced during this research phase, maintaining my energy levels more consistently in the subsequent day.



Thayer's Matrix High Tension Levels

This graph represents high tension, as experienced across 15 days of recorded data.

Analysis of these recordings indicate that unwinding and unplugging before sleep resulted in fewer high tension recordings throughout the day (4 recordings were taken using Thayer's Matrix per day) as presented by **post-change** data as compared to **pre-change**. A possible explanation for these lower tension level **post-change** could be the faster, and thus longer sleep experienced during this phase of data collection.

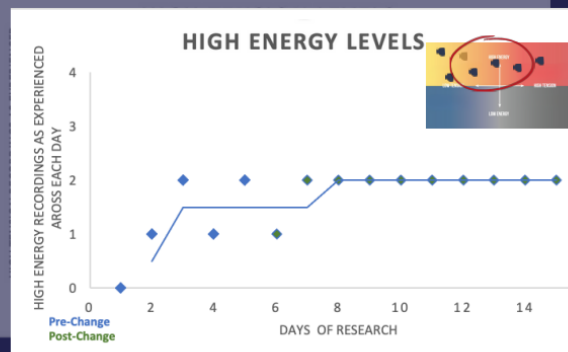


Figure 5: Student F data analysis for energy and tension

Student F's results suggested that unplugging from technology (i.e. social media, watching shows, phone calls, texting, schoolwork) for 30 minutes to unwind before bed supported a faster rate of falling asleep, a higher quality of energy with less tension throughout the next day, a positive change in energy and tension levels from pre-bed to pre-sleep, and fewer stressors across the 5 domains. Based on the data she had collected and analysed, her informed plan indicated an intent to maintain this new practice due to the positive wellbeing outcomes she experienced.

Discussion

Many students experienced similar moments of enlightenment as they collected and analysed their data, like those described by Student F above. They also experienced the stress of making change (sometimes requiring self-control) and how this was easier when in a high energy, low tension state and virtually impossible if in a high tension, low tension state. For a few students, the time frame was too short to see significant change or make possible claims, while for others, this was an insightful research project into their own wellbeing.

Here are the responses from three students for whom the action research project revealed promising practices that supported or improved their wellbeing. Student A, whose research question explored the effects of a physical calendar on university work related stress, concluded: “There is no doubt in my mind that I will be using daily, weekly, and monthly calendars in my future career. Through this week I was more productive, less stressed, and overall, my days were easier and more enjoyable.” Student B reflected: “Having prepared meals helped alleviate stressors in a number of ways: It allowed me to quickly address my children’s biological stressors (feeling hungry);” This student also reported, “It freed up time to allow me to spend time with my children, coregulating to support balancing energy and tension; and, it created time to help them with their homework before they were too tired.”

Student E, who asked, “Will creating a schedule for my daily phone use help me stay on task (reducing tension), give me more energy, and limit my biological stressors?” reported:

“The basic answer to my initial question is yes, reducing my phone use will help limit biological stressors. However, I ended up learning more about the root of my tension and my own preferred Self-Reg strategies than I expected! I want to work on replacing time spent using my phone, with strategies from the Self-Reg toolkit like self-care, relaxation, exercise, visiting friends...)”

While most students gained insights into their questions, some, as indicated above in Student E’s statement, found unexpected learning as well. Embodiment of self-regulation was afforded through the combination of learning about Self-Reg and its underpinning theories and then applying this learning to something of personal significance. Pre-service teachers had an opportunity to experience and reflect on their own states of energy and tension, stressors across various domains, and growth-promoting practices that support restoration. What they learned could be applied immediately to support their wellbeing as university students, but also gave them a foundation for considering the importance of their own wellbeing once they graduate and head into the teaching profession. The literature describes the stress teachers experience every day, so how are we preparing our future teachers to understand and navigate this successfully in their University programs? From my work with pre-service teachers at Acadia university, I have witnessed students learning about and applying Self-Reg through action research and I see it holds great promise for this important work.

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