

Lab Learners, Lasting Confidence: Boosting Self-efficacy Where it Matters

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1 Introduction

Self-efficacy is defined as the belief in one’s ability to perform a specific task (Bandura, 1978). Research has shown that higher self-efficacy is both directly and indirectly linked to higher academic performance, higher retention and increased student satisfaction (Doménech-Betoret, et al. 2017). This is thought to be linked to improved self-regulatory skills, increased motivation, increased task initiation (and therefore, less procrastination) and persistence (Trautner & Schwinger, 2020).

RESEARCH QUESTIONS

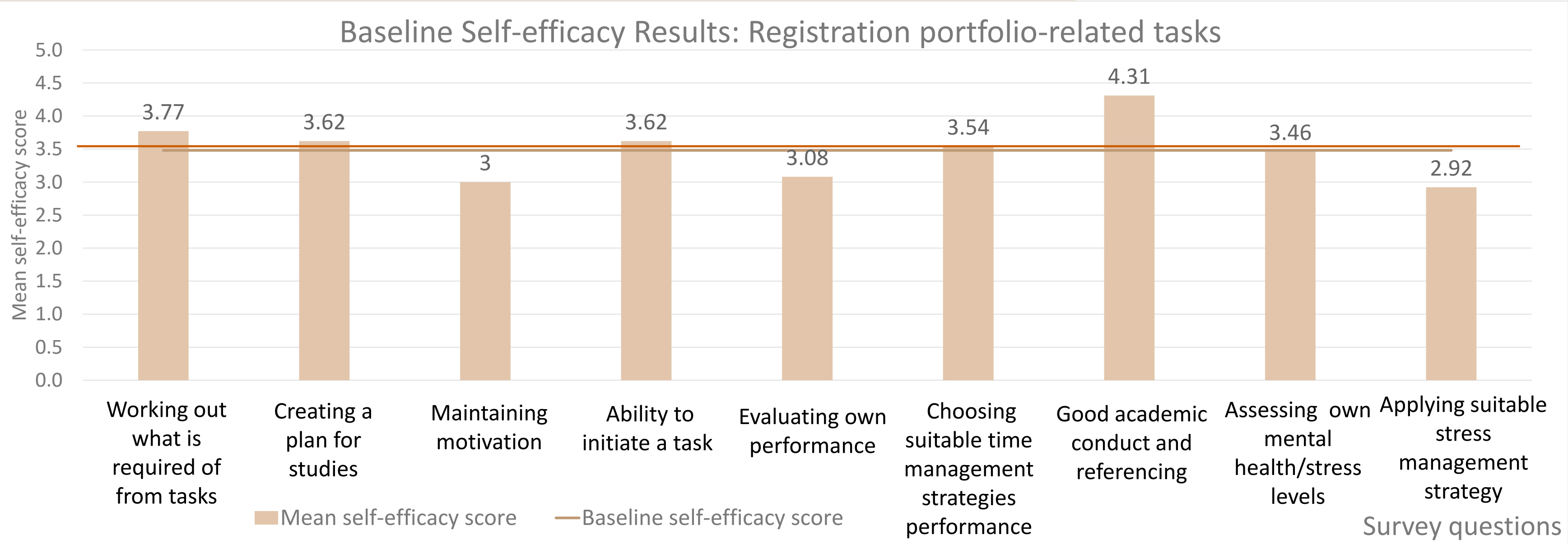
- Can the baseline self-efficacy across a range of tasks be measured in a pilot group of lab learners?
- Can specific areas where learners feel less confident in their studies be identified?
- Can the delivery of tailored training improve self-efficacy within the workplace?

North Midlands and Cheshire Pathology Service (NMCPs) Haematology & Blood Transfusion laboratories host staff studying a range of qualifications. Training is recognised to be essential for recruitment and retention and aligns with the Institute of Biomedical Science’s (IBMS) response to the NHS England workforce plan, which references the provision of targeted training to address workforce shortages (IBMS, 2025). It is thought that by increasing self-efficacy within the workplace, staff will be better placed to complete qualifications and successfully, and confidently, continue their chosen career pathways.

3 Baseline Self-efficacy Results

Baseline self-efficacy: n=13, mean = 3.48. Task mean self-efficacy varied, low areas included motivation, evaluating performance, stress management.

Trend: Areas of low confidence (<3.48)

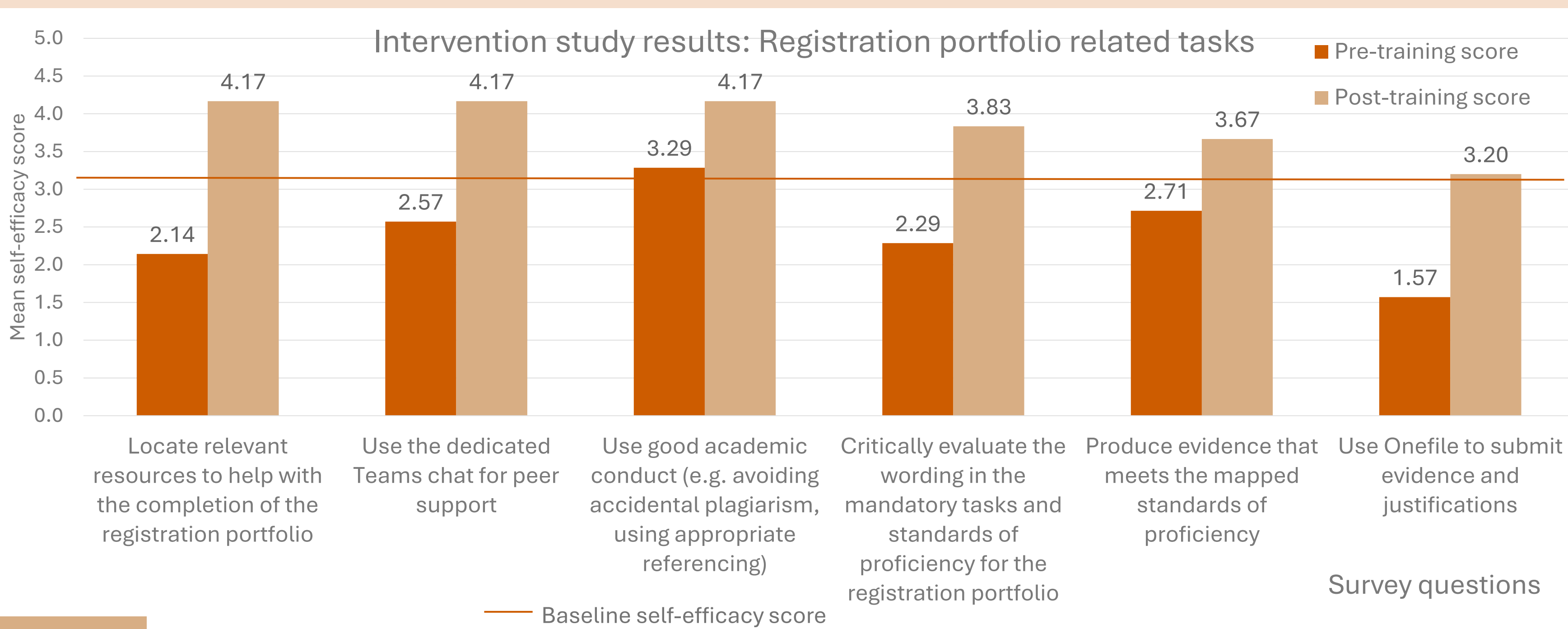


4 Post Micro-teaching Self-efficacy Results

Post-intervention: n=7, mean = 3.12. An increase in mean self-efficacy scores were demonstrated for all identified tasks compared to pre-intervention scores.

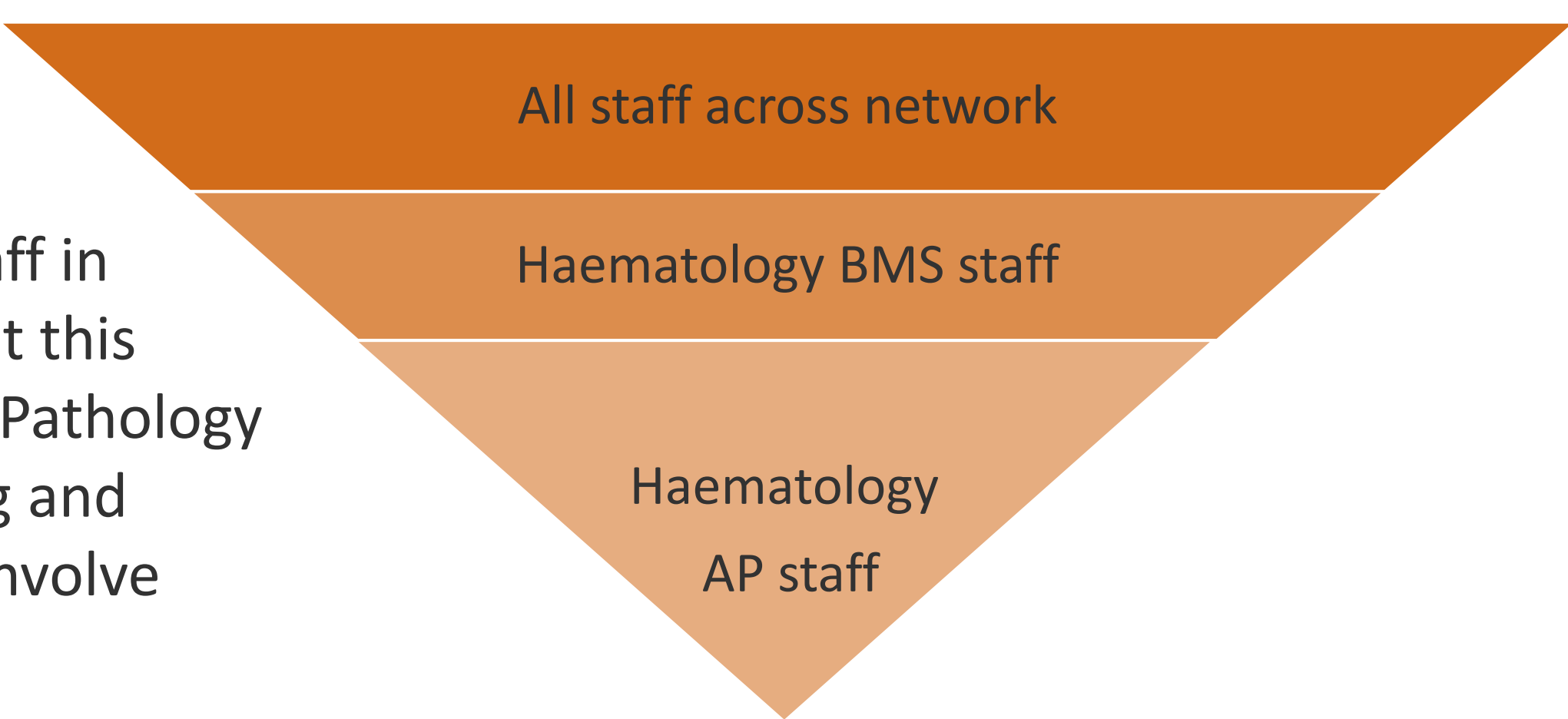
Statistical analysis: p = <0.0001

Trend: Significant improvement in self-efficacy following intervention for specific tailored tasks



7 Scalability and impact

Positive self-efficacy outcomes justify the future project of scaling tailored micro-teaching sessions from the pilot AP staff group to the biomedical scientist (BMS) staff in Haematology. There is also scope to roll out this strategy across all departments within the Pathology Network, with the view to improve training and confidence. Future topics for training will involve haematology theory and staff well-being.



2 Methodology

1. A constructivist research approach was taken, as research participants are actively adding to their own learning by engaging with the data collection tools and steering the tailored training towards topics that are most needed. An interpretivist approach was taken, as opposed to positivist, as self-efficacy is a cognitive construct, and as such relies on the participant to construct their own understanding of their own self-efficacy.
2. Baseline self-efficacy was measured using Microsoft Forms (MF) surveys. Key tasks within the laboratory were identified and incorporated into the survey. Emoji-based Likert scales were used so participants could quantify their self-efficacy level for each task. Thematic trends from these results were used to identify areas of low self-efficacy. Tasks related to completion of the registration portfolio were chosen as a focus for the research. The total mean self-efficacy score was calculated across all questions to give the baseline self-efficacy score. Task-specific means were the calculated and compared to the baseline.
3. Targeted micro-teach sessions were developed in response to areas with scores lower than the baseline. Participants completed MF surveys with Likert emoji-based scales before and after the micro-teaching sessions to measure changes in perceived self-efficacy for the tasks.
4. Mean self-efficacy scores were then calculated to evaluate the effectiveness of the exercise.

- **Participants:** Pilot study voluntary and anonymous group of Associate Practitioners (AP) staff undergoing formal learning (IBMS pre-registration qualifications). n=13 baseline questionnaire/n=6 intervention questionnaire.
- **Materials/Instruments:** MF survey using emoji-based Likert scales. Microsoft Excel (ME) to export survey data for analysis.
- **Procedure:** Voluntary baseline survey completion. Tailored micro-teach sessions created and delivered. Follow up surveys carried out to assess success of intervention.
- **Data Analysis:** Emoji ratings coded to numerical scale. Mean baseline calculated vs. Task specific scores. Pre/post intervention comparison of survey responses to test effectiveness and improvements in self-efficacy.



Example survey



5 Discussion

Baseline efficacy was quantified and facilitated identification of tasks associated with comparatively low self-efficacy. The completion of the registration portfolio was chosen to be the focus of the research due to the large number of AP staff currently completing the portfolio. Results allowed targeted design of micro-teach sessions aiming to improve self-efficacy regarding completion of the portfolio. Self-efficacy levels improved significantly following the targeted training sessions. Using emoji-based Likert scales in MF was efficient, accessible and well-received. The mode of training improved engagement and provided a time-effective way of delivering training and development.

This pilot highlights the importance and utility of a targeted approach to workplace training to build learners confidence and lead to improved efficacy. The targeted approach allows for time and effort to be spent developing training in the most relevant areas for staff.

Whilst results are promising, the small sample size and voluntary participation in this study may limit generalisability. Expanding the scope of the research to include topics outside of the registration portfolio would improve understanding of areas of training requiring additional attention.

6 Conclusion

- Tailored micro-teaching sessions improved self-efficacy among AP staff in Haematology and Blood Transfusion within NMCPs.
- Positive findings justify scaling a micro-teaching approach to BMS staff and beyond.
- Enhancing self-efficacy through workplace learning has the potential to support qualification completion, staff retention and workforce development in line with NHS workforce strategy.

References and acknowledgements

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