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Testing a Mobile Application to Support Integrated Mindset Development: An Exploratory Eight-Week Pre-Post Evaluation

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Abstract

A research study in 2025 demonstrated that a mindset program built on high-performance techniques from elite sports, impacted the performance and overall wellbeing of 20 senior leaders across two global organisations [1]. The program was facilitator-led and comprised a unique online mindset learning program built in a virtual world, monthly recorded behavioural video interviews with the researcher, quantitative survey instruments and communication sentiment analysis. A key element of the research was the development and application of a 12-category diagnostic framework named the Integrated Mindset Index (IMI) based on the literature and supported by deep professional expertise. This paper presents the outcomes of taking the IMI framework, building it into a mobile app and assessing its impact without any live facilitation support. To achieve this, 30 professionals from a range of backgrounds (**Appendix B**) took part in a single group pre-post eight-week study. People from the researcher's global network were invited to participate, the aim being to recruit a group of 50:50 male/female and ranging across many skills and professions. Participants completed self-assessments across the 12 IMI categories using the app, followed by building their Performance Improvement Mindset plan (PIMS) setting out their personal goals, actions, and timelines. A weekly email prompt was the only contact from the researcher. Support was provided in the form of a built-in text-based coach, accessible throughout. By the end of the study, the retention rate was high with 21 participants (70%) completing both the pre and post surveys and connecting with the app at least once a week. Across this cohort, average aggregate IMI scores rose from 7.28 out of 10 at the start to 7.86 by Week 8, showing an 8.0% improvement. The biggest change observed was in the Reflection & Feedback category, with a 21% increase followed by improvements in Social Skills & Communication, Self-Management, and Learning & Development. The par-

ticipants who did not complete the program (n = 9) had a lower aggregate baseline score (6.31 v 7.28). As their Week 8 outcomes were missing, the results are for completers. At the commencement of the program, 48% of participants set and tracked personal goals. By Week 8, 95% of respondents were actively building goals and working towards them. Participants most often credited the app with helping build deeper self-awareness, helping build consistent daily habits, and a more proactive approach to their own personal development. These preliminary findings suggest that the app may support self-reported consistent positive change in mindset for those who use it over a short period. Controlled studies with longer follow-up should be undertaken to test whether these changes last and their cost benefit.

Keywords

Integrated Mindset Index, Goal Setting, Digital Coaching, Mindset Development, Self-Directed Learning, Leadership Development, Mobile Intervention

1. Introduction

Organisations continue to invest heavily in professional development, yet a big portion of the training and investment is lost almost immediately after the training is completed. People go back to workplace and very little is actively applied or even remembered. Work by Ebbinghaus tells us that around 2/3rds of material is lost within a day [2].

It is well researched that human-centric, facilitator-led programs are typically more effective than online solutions and may last longer where a skilled learning design specialist can keep the learner engaged and interested [3] [4]. Research also confirms that where a learner has a personal connection to any form of content, understanding and retention are much higher [5]. The challenge with achieving both these aspects is complex and isn't easy [6] [7].

The problem though, often comes down to scale and cost. A facilitator can only split their time over a handful of people. Giving learners space to choose their own learning path can lead to multitudinous variations of programs, again potentially very expensive. In 2024, Gunawardena and colleagues [7] provided a model which demonstrates the complexity of personal learning from the complex and chaotic to the complicated and simple. Some known whilst much unknown. So, organisations really needing cultural transformation are often the least equipped to bankroll such activities across their whole workforce.

To start addressing this challenge and make a change at the personal level visible and quantifiable, the author built the Integrated Mindset Index in 2023, based on the research with a review process undertaken by six international coaches and the two leaders of the organisations taking part. The IMI was first used in a doctoral research program with a cohort of 20 senior executives from two global cor-

porations in 2024/25. The IMI results relied on data the researcher gathered through monthly behavioural interviews over a four-month period. The results indicated the value of the index as a way of mapping personal change. This paper takes the index a stage further, exploring whether participants who take personal responsibility for their development supported by the IMI app, weekly prompts by email and a chat based AI coach report change over a short period in their self-reported IMI ratings.

2. Background: The Original Research

The Integrated Mindset Index (IMI) commenced life as the foundation for the author's doctoral research. That study was testing out whether the high-performance mindset techniques typically used by elite athletes, many which had been seen and applied by the author in his work in elite sport could be applied to the business world. 20 senior and middle managers from Nestlé and ASM Global (now part of Legends Global) undertook a four-month program, consisting of an 8- hour online mindset learning program set in a virtual world, monthly survey instruments measuring such aspects as workplace interactions, emotional intelligence plus a recorded behavioural interview which all helped to build the IMI picture and a sentiment analysis on changing communication patterns. This research was defended via an academic panel and published through a peer-review process [1]. A snapshot of the original study's design is provided in Table 1.

Table 1. The original study at a glance. Source: Conway [1].

Feature	Detail
Participants	20 senior and middle executives from two global organisations (Australia and New Zealand)
Duration and format	Four months; self-paced online program in a virtual environment, plus monthly one-hour behavioural interviews
Measures	Individual Work Performance Questionnaire (IWPQ); Emotional Agility, Resilience and Leadership measure (EARL); BIS/BAS scales; Integrated Mindset Index scored from interviews; sentiment analysis of interview language (IBM Watson and Harvard General Inquirer); monthly leader interviews; 32-item post-program survey
Other training	None. Both organisations agreed not to run any other training during the study period
Key results	Average IMI improvement of about 40%; 17 of 20 participants showed real change; average self-reported performance gain of 10%, equal to about four hours freed per week; no turnover, sickness or absence; several promotions
Review	Doctoral thesis defended before a panel of three academics; article externally peer reviewed and published [1]

The original study demonstrated that the program worked best in a stable work environment where participants felt supported by their leader. Both cohorts involved had very supporting leaders, but one organisation was facing more business turbulence. The data also showed the IMI was a practical tool for mapping

personal growth over time. This brings the research to its next stage of evolution: can individuals use the IMI to guide their own development, delivered entirely through a smartphone app without the presence of a facilitator? To develop the 12 distinct IMI categories, the author drew heavily from established literature on growth mindset, emotional intelligence, and performance psychology including Dweck [8], Goleman [9] and Siegel [10]. International coaches from six different sports and the leaders of both cohorts reviewed and stress-tested the IMI to ensure real-world relevance. The IMI became the foundation for the new app and for both pre and post surveys in this new study (Table 2).

Table 2. The twelve IMI categories and the self-rating question for each.

Category	Question (rated 1 - 10)
Self-Awareness	How well do you understand your emotions, strengths and weaknesses?
Self-Management	How effectively do you manage your emotions, impulses and actions under pressure?
Empathy	How well do you understand and respond to the needs and feelings of others?
Social Skills & Communication	How effectively do you communicate, influence and build relationships?
Motivation	How driven are you to achieve meaningful goals right now?
Learning & Development	How actively are you seeking to grow your knowledge and skills?
Resilience	How well do you bounce back from setbacks, stress or adversity?
Health, Wellbeing & Balance	How well are you maintaining your physical and mental health alongside your work demands?
Reflection & Feedback	How regularly and honestly do you reflect on your behaviour and seek feedback?
Growth Mindset	How strongly do you believe your abilities can be developed through effort and learning?
Leadership Moments	How effectively are you stepping up in moments that require you to lead?
Decision-Making	How confident and clear are you in the quality of your decisions?

3. The Importance of Goal Setting

The mobile application has taken all the aspects of the IMI and enables any user to get a simple snapshot of their own index, without judgement, without fear. The IMI app provides an opportunity to review an individual's present situation, identify areas of growth, set goals and targets, and build a regular review and feedback loop. Critically, it all hinges on goal setting which is at the heart of using the IMI app and for making progress. This section sets out some of the literature supporting this approach, alongside the specific aspects required to automating this within a self-directed digital environment.

3.1. What the Evidence Says

Goal setting theory has a highly empirical foundation. Working on creating clear objectives channels individual focus toward high-impact priorities, identifies ef-

fort required, helps build, builds mental toughness, and directs individuals to find more effective operational strategies [11]. This isn't just theoretical intuition. A meta-analysis of 141 randomised controlled trials showed that setting a goal acts as a catalyst for behavioural transformation, independent of supplementary training modules [12].

Identifying and naming goals is just the starting point. A meta-analysis of 138 experiments and nearly 20,000 subjects demonstrated that actively tracking progress through specific milestones improves goal attainment, even more so when progress was either documented or shared with someone else [13]. The gap between planning to do something and doing it, reduces dramatically when individuals truly formalise the when, where, and how of their actions [14].

Such benefits also go far beyond metrics or standard organisational tasks. For example, students who committed to focused time to writing down and reflect on personal ambitions went on to achieve higher academic marks compared to control groups [15]. In the business world goal-oriented frameworks form the absolute bedrock of modern, evidence-based workplace coaching [16].

A further input to the discussion is the meta-analysis on corporate coaching environments which found huge benefits across individual performance, emotional wellbeing, psychological coping mechanisms, career attitudes, and self-regulation [17]. One thing of real note is that in building goals the evidence also suggests that not one size fits all [18]. Goals need to be personally connected to the individual: "develop goal setting programs that place a strong emphasis on the characteristics, needs, preferences, and goal setting styles of individual athletes." [19]

3.2. Building a Self-Directed App

From this research, four important behavioural Science principles emerged as the foundation for building the app, how it would work and how the results would be interpreted (See **Table 3**).

- **Feedback must be action oriented.** It is known that evaluation improves output yet across approximately a third of historical studies, it degraded performance. This can occur when feedback makes the individual hyper focused on personal self-worth rather than tactical execution [20]. To avoid this, the IMI app translates numeric scores straight into steps for action instead of making a judgement or a grade.
- **Logging and auditing milestones is part of the actual cure.** Written, milestones offer a massive advantage over vague, unwritten ambitions [21] [22]. Hence, checking in on the app is much more than a data-collection exercise as it keeps the personal objectives active in a user's mind.
- **Neurological rewiring requires time!** Lally *et al.* [23] found a new daily habit took on average 66 days to become automatic with a wide individual variation. An eight-week study is therefore considered long enough to identify early change for some participants but not to establish whether new habits are sustained. This is addressed in section 8.

- **Individual and environmental context remains a key variable.** Professional development sticks more effectively smoothly when there is a positive and encouraging culture. This is especially critical for complex "open skills" such as leadership, which has significant unpredictability [24]. This mirrors the original 2025 study's findings where organisational stability and manager buy-in was critical for the intervention's success.

Table 3. Goal-setting principles and how the IMI App applies them.

Principle	Research	In the IMI App
Know where you stand	Feedback helps when it is specific and task-focused [20]	Assess: a twelve-dimension profile shows strengths and the areas with most room to grow
Set specific personal goals	Specific goals direct attention and effort [11] [12]	Build: the PIMS process turns chosen dimensions into concrete personal actions
Plan when and how to act	Action plans close the intention-behaviour gap [14]	Apply: the AI coach suggests practical ways to put actions into daily work and life
Record and review progress	Monitoring helps most when progress is recorded [13]	Re-assess: repeat check-ins show movement against the baseline
Keep it in view	Prompts support engagement in self-guided programs [25]	Weekly nudge emails remind people of their goals without a facilitator

4. The MindZen IMI App

Before the start of the study, the researcher recommended to participants using the app for ten minutes twice a week. Participant onboarding began with a self-assessment against the twelve IMI categories, which then provided a visual of their personal IMI and potential growth areas. The app guides on the building a Performance Improvement Mindset plan (PIMS) which is essentially a set of personalised goals and actions mapping straight to the exact dimensions they are aiming to improve with an AI coach made available to assist the user in operationalizing these strategies with targeted suggestions and structural advice. A user can complete a new IMI assessment at any time and visually monitor how their IMI has shifted over time. This can help to redesign their next set of actions. The only interaction between researcher and user throughout the study was via a single, automated email delivered each week. **Figure 1** provides graphical images of the app stages shared with potential participants prior to onboarding.

5. Method

5.1. Design and Participants

The study was designed to run for an eight-week period for a single-group, pre-post design, with the pre survey in July 2026, and a post survey in September 2026. Both surveys combined numeric ratings and open-ended questions.

Participants were recruited through the researcher's professional network and XVenture client and alumni over the last decade. The researcher targeted 30 par-

ticipants, 50:50 male /female from Countries worldwide. 30 participants enrolled. No two participants worked for the same organisation. The researcher was specifically looking for people who had some interest in personal development. The eligibility criteria included being over 18, owning a smart phone, executive or supervisory positions or elite sport level and be willing to commit to up to ten minutes a week, twice a week with no prior knowledge of the IMI app. Participation was voluntary and unpaid. **Appendix B** provides the breakdown of the cohort.

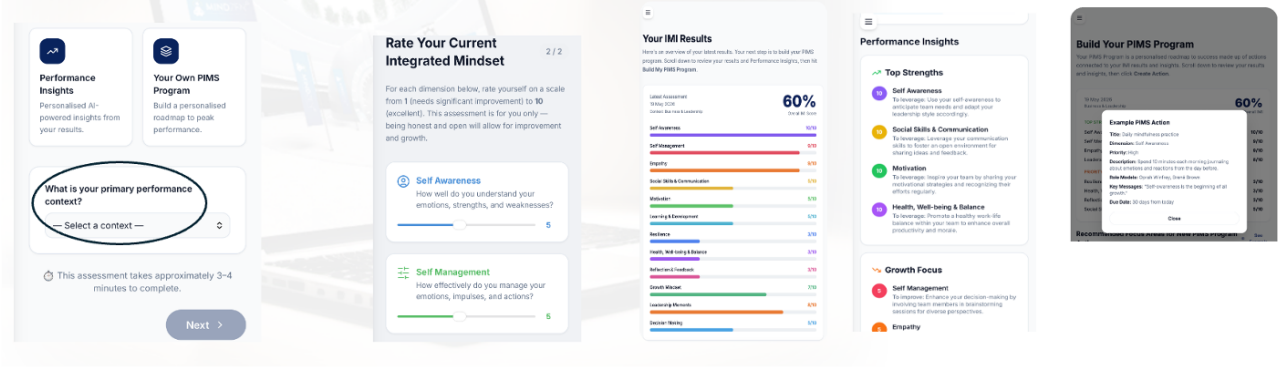


Figure 1. IMI app overview.

Measures

The pre survey and post survey presented twelve-item self-rating indices to track IMI changes on a scale of 1 - 10. The additional behavioural items in the two surveys were worded differently: the pre-survey asked about usual practice. (e.g. "I set specific goals for my personal and professional improvement and track them.") the post-survey asked about behaviour in the past week (e.g. I have taken actions this week aligned with my personal and professional goals.) A 1 - 5 scale was used for this. The pre survey also obtained some contextual data on an individual's previous experiences of similar digital apps and a question seeking individuals to define peak personal performance. The Week 8 post-survey asked thirteen different questions relating to contemporary workplace behaviour along with four questions evaluating app usability and usage frequency.

Users were also asked to identify five key improvements from twenty choices, ranking these in order relating to individual impact. They were also asked to provide a written explanation for their choices. The final section of the survey asked participants to describe their largest personal shift and to rate how likely they would be to recommend the app (0 - 10).

5.2. Analysis

Individual entries of pre- and post-survey datasets were paired using corresponding email identifiers. To ensure anonymity, all participants were discussed exclusively via alphanumeric markers (P01-P21). Participant changes were measured from week 1 to 8 and several tools were used to evaluate their significance and effect sizes effect sizes including Cohen's d for paired configurations using the

benchmark framework where 0.2 was a minor effect, 0.5 represented a moderate effect, and 0.8 signified a significant effect [26].

Looking at 12 different metrics at the same time, the more things you test, the easier it is to accidentally find a false alarm. As twelve category scores were tested at the same time, the Holm-Bonferroni correction [27] was applied to manage the risk of false positives across the 12 tests. The analyses focussed on the 21 completed surveys.

In treating the qualitative fields, all commentaries were reviewed thoroughly and linked to corresponding IMI categories and themes.

6. Results

6.1. App Usage over the 8 Weeks

From the original group of 30, 21 completed both the pre and post surveys, which is a 70% retention rate. This compares favourably with self-reported digital interventions. Fleming and colleagues' review of digital self-help interventions reported users ranging from 0.5% to 28.6% [28]. A meta-analysis by Torous and colleagues on mobile phone apps on symptoms of depression reported a range between 26.2% and 47.8% [29]. Eysenbach's work [30] clearly shows that over time the law of attrition is likely to apply for eHealth interventions. A further study of consumer mental health platforms reported a retention rate of 3.3% for users logging into an app 30 days after installation [31]. This study focussed on public downloads rather than a structured research study so should be considered with caution. However, it does highlight the challenge in achieving long-term engagement particularly with self-directed programs. The researchers believe that there were several reasons for the high retention rate: the work that took place to identify the participants, the manageable size of the cohort, the type of participant targeted, specifically with an interest in personal development and the detailed briefing undertaken including reference to the 8-week commitment. Setting out and communicating all the aspects of the 8-week program was critical and was obtained early and despite this, there was still a 30% dropout.

For 17 of the 21 active users, the study was their very first experience of being involved in a mindset or psychological tracking tool.

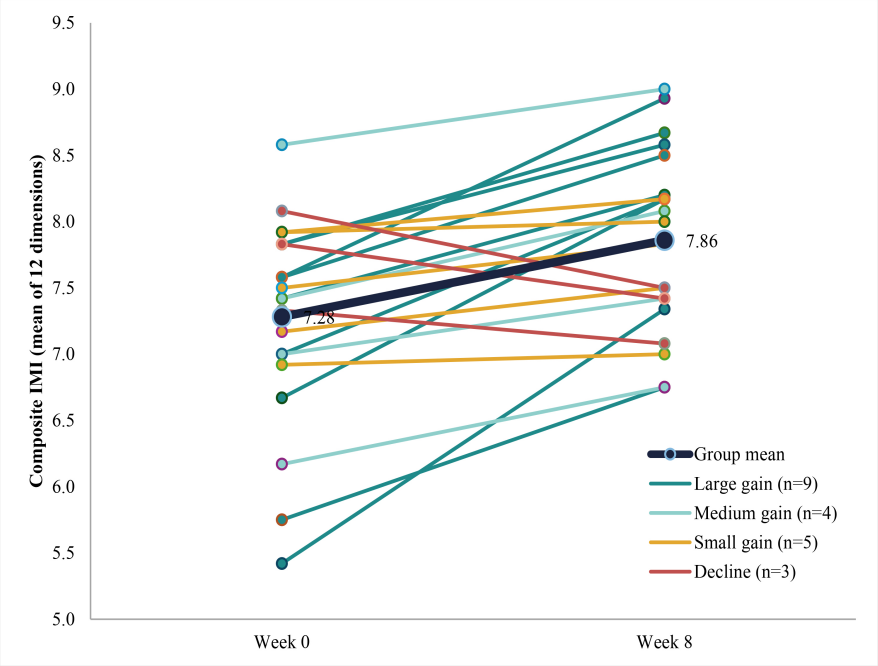
Based on the participants own estimates, 12 people logged into the application roughly once a week, 5 used the app twice or more each week, while 4 used it less than once a week.

The 12 core IMI questions demonstrated good internal consistency, demonstrating that the items in the IMI are inter-related. (Cronbach's alpha of 0.81 at baseline and 0.87 by Week 8) [32].

6.2. Overall Change

The aggregate IMI metric, calculated as the mean across all twelve measured categories, increased from 7.28 to 7.86, an increase of 0.58 points (8.0%), which was statistically significant. Looked at individually, 18 of the 21 participants registered growth. Within this group, 9 users improved by 0.70 points or higher, 4 improved

from 0.40 and 0.69 points, 5 recorded minor progress, and 3 individuals experienced a decline. Figure 2 presents the scores from pre to post survey.



Each line is one participant, coloured by size of change. The heavy line shows the group mean.

Figure 2. Individual composite IMI scores at Week 0 and Week 8 (n = 21).

The data suggests that participants with lower initial baselines achieved the most improvement though the patterns should be interpreted cautiously. Participants with low initial scores would be expected to move closer to the average on re-testing and without a control group this can't be separated from any effect of the app. Those starting above the median averaged 0.42 points. It's worth noting that the single largest individual improvement (+1.92 points) was by a participant who recorded the lowest starting score in the study.

6.3. Change by Dimension

Individual metrics showed that eleven of the twelve categories improved, with the largest shift in Reflection & Feedback, which improved by 1.29 points (21%) and saw 14 individual users improve. Social Skills & Communication improved by 0.76 points with no reduction for any participant. Other positives included: Self-Awareness, Self-Management, and Learning & Development. Metrics for Decision-Making, Resilience, and Empathy each improved by around 0.6 points. Growth Mindset was the only category that did not improve with a starting mean of 9.10 out of 10, this may be explained by a ceiling effect. After Holm correction, social skills and communication remain statistically significant while the changes in other categories including reflection and feedback should be seen as indicative (Table 4 and Figure 3).

Table 4. IMI dimension scores at Week 0 and Week 8 (n = 21).

Dimension	Week 0 mean (SD)	Week 8 mean (SD)	Change	% change	Up/same/down
Self-Awareness	7.33 (1.11)	7.95 (0.81)	+0.62	+8.4%	10/9/2
Self-Management	6.57 (1.17)	7.29 (1.01)	+0.71	+10.9%	12/7/2
Empathy	7.10 (1.34)	7.67 (1.28)	+0.57	+8.1%	11/5/5
Social Skills & Communication	6.81 (1.33)	7.57 (1.33)	+0.76	+11.2%	13/8/0
Motivation	8.05 (1.47)	8.29 (1.01)	+0.24	+3.0%	11/3/7
Learning & Development	7.62 (1.69)	8.38 (1.16)	+0.76	+10.0%	9/9/3
Resilience	7.29 (1.49)	7.90 (0.94)	+0.62	+8.5%	10/6/5
Health, Wellbeing & Balance	7.00 (1.67)	7.48 (1.29)	+0.48	+6.8%	9/7/5
Reflection & Feedback	6.14 (1.71)	7.43 (1.33)	+1.29	+20.9%	14/3/4
Growth Mindset	9.10 (0.89)	9.00 (0.95)	−0.10	−1.0%	6/8/7
Leadership Moments	7.38 (1.75)	7.71 (1.27)	+0.33	+4.5%	7/11/3
Decision-Making	6.95 (1.36)	7.62 (1.16)	+0.67	+9.6%	9/7/5
Aggregate IMI	**7.28 (0.78)**	**7.86 (0.73)**	**+0.58**	**+8.0%**	**18/0/3**

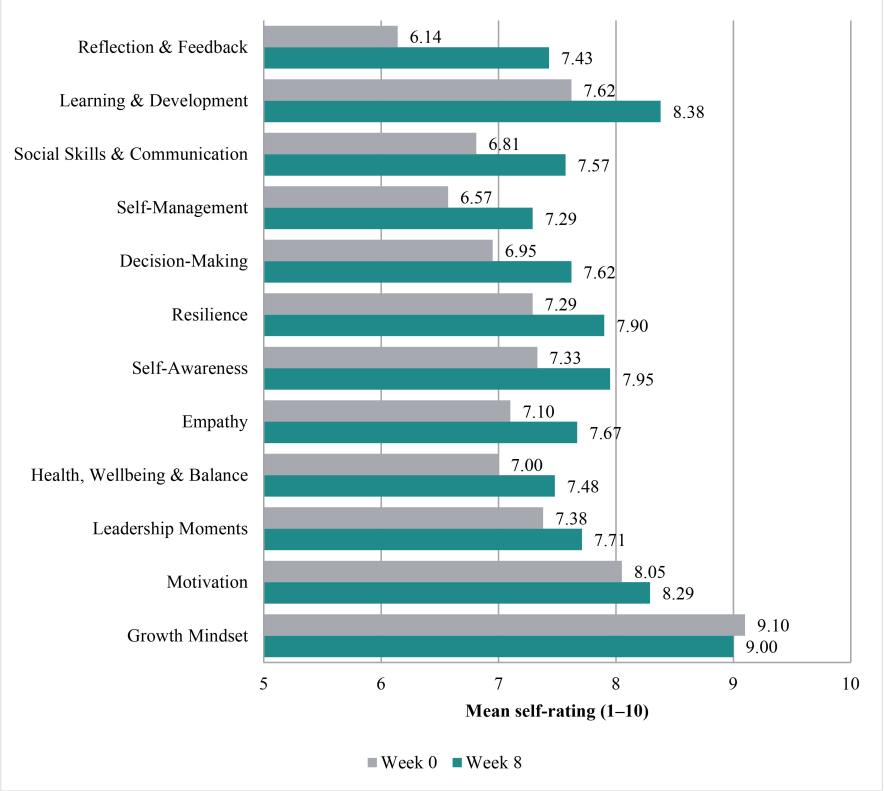
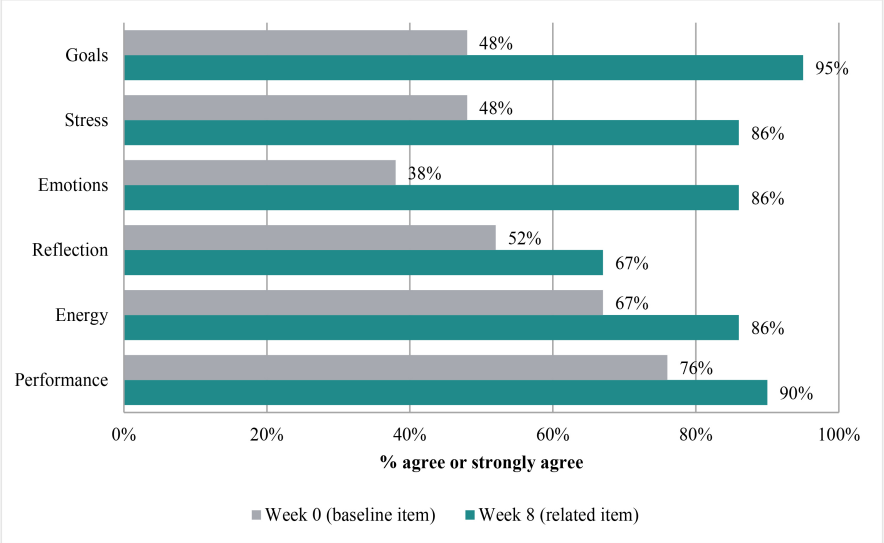


Figure 3. Mean rating on each IMI dimension at Week 0 and Week 8, ordered by size of change.

6.4. Goals and Everyday Behaviour

At the beginning of the study, the pre-survey showed that goal setting was not common practice for most individuals, with less than half (48%) actively building and tracking personal objective and less than 40% had anything in place when they felt stressed, overwhelmed or stuck. By Week 8, when participants were asked about noticeable changes in behaviour over the last week, with 20 of the 21 participants (95%) reported taking real action aligned to personal and professional goals and 86% reported noticing and managing their emotional reactions more effectively. e.g. Goal setting, Emotional regulation and stress management had improved between 40 and 50% and their self assessment of their own performance had improved by 14% (See Table 5).

Figure 4 shows agreement with each pair of related but not identical statements at week 0 and week 8.



Week 8 focussed on previous week behaviours. Week 0 focussed on typical behaviours.

Figure 4. Agreement with related statements at Week 0 and Week 8 (n = 21).

Table 5. Examples of participant reflections at Week 8.

Goals	'I set specific goals for my personal and professional improvement and track them'/'I have taken actions this week aligned with my personal or professional goals.'
Stress	'I am managing stress effectively'/'I experience a manageable level of stress in my work.'
Emotions	'I have clear strategies I use when I feel stressed, overwhelmed or stuck'/'I have noticed and managed my emotional reactions more effectively.'
Reflection	'I regularly take time to reflect on my mindset and performance'/'I have sought feedback or reflected on my performance or behaviour.
Energy	'I feel energised and purposeful in my work'/'I feel motivated and engaged in my work.' Performance: 'I am performing at a high level in my primary role right now'/'I feel confident in my ability to perform well in my current role.'

Other outputs from the post survey provided a similar picture, with 90% of respondents having deeper confidence in executing their duties while 86% reported feeling driven and engaged. 86% characterised their overall state of well-being as solid, and another 86% felt sharp and focused. The lowest score emerged around sleep and health, where only 57% felt rested and energised. This links with the smaller improvements seen in the Health, Wellbeing & Balance category of the IMI index.

6.5. How Participants Rated the App

For most of the active participants the app was seen as a real conduit for self-reflection. 86% agreed that the app helped increase their day-to-day awareness of mindset, emotions, and behaviours, while 81% saw the app helping to identify areas needing development.

71% also believed the PIMS goal-mapping provided a highly practical solution needed to take real-world action.

Participants view on the built-in AI coach, were more ambivalent; 5 individuals didn't use the AI functionality at all, and for those who did interact with it, a 50/50 split emerged between those who found it helpful and those who remained neutral. Post survey ratings of the IMI app are provided in Figure 5.

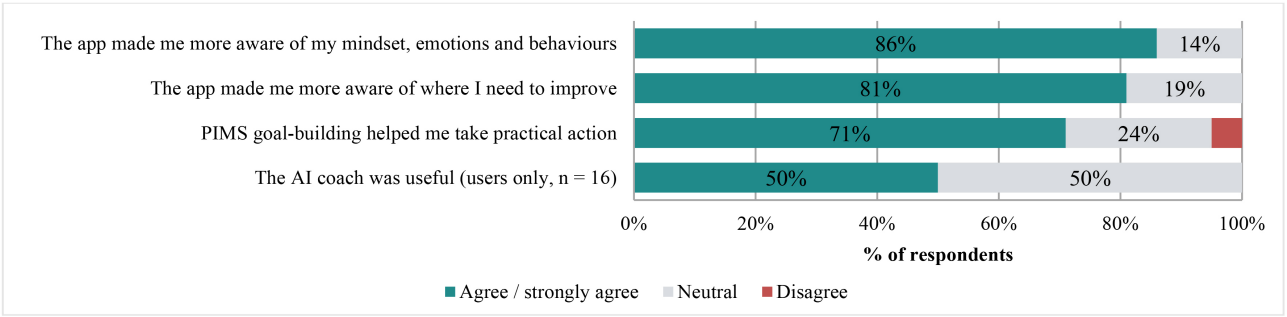


Figure 5. Participant ratings of the IMI app post survey.

Participants were asked to choose five behavioural improvements that supported their 8-week journey. For many a deeper sense of self-awareness topped the list (67%), followed closely by structured daily habits and routines (62%), and greater interest in their own personal development (48%). Other leading indicators included improved confidence in strategic decision-making and more effective communication skills which each got 38% approval (Figure 6). Overall, satisfaction with the app was high: 18of the 21 active users (86%) would be recommending the tool at a 7 or higher out of 10, with seven of those scores 9 out of 10.

More frequent use was not associated with larger gains that participants described. Those who reported an average use of the app about once a week (n = 12) reported improvements by an average of 0.73 points, those using the app less than once a week (n = 4) by 0.56 and those using it twice or more a week (n = 5) by

0.24. The groups are small and usage is self-estimated so further research will be useful to identify the optimal participant use.

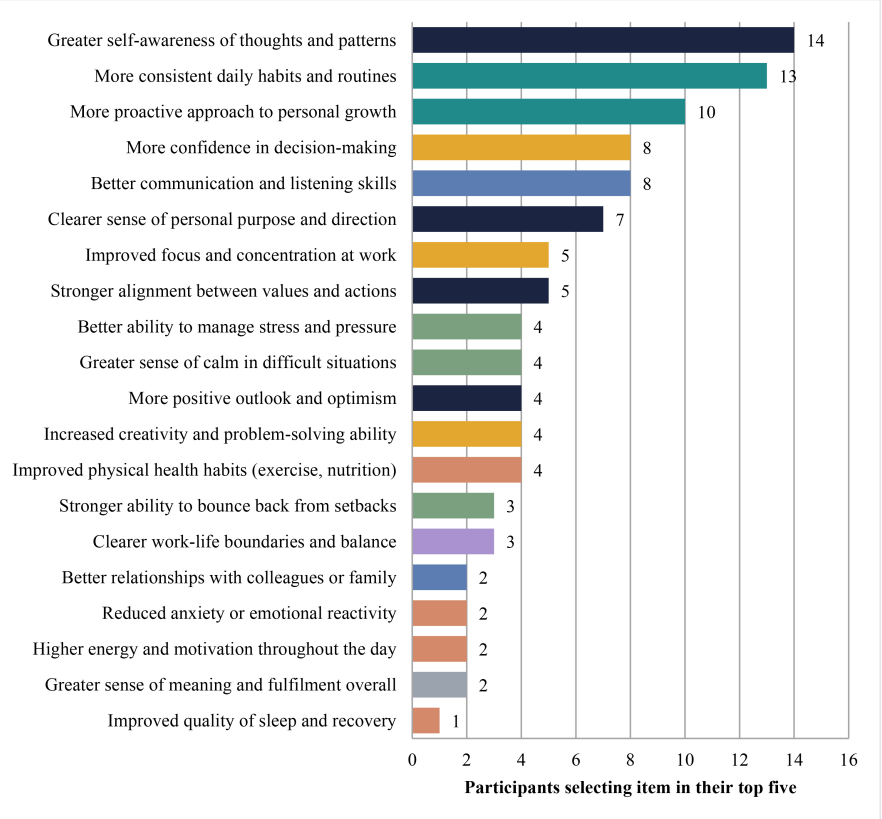


Figure 6. Improvements participants chose as most reflecting their experience.

6.6. In participants' Own Words

The qualitative, open-ended responses collected at the end of the study add context to the quantitative findings. When analysing the users' testimonies, four distinct themes materialised (Table 6).

Table 6. Main themes in participants' comments.

Theme	What participants said
Goals kept in view changed what people noticed	"Knowing I had set PIMS actions helped me take leadership opportunities that I would otherwise miss and not be so conscious of." "I wasn't a big user of the app or even the goal setting tools but having them set up and recorded did make a difference to my mindset throughout the course of the week."
Being specific made the difference	"I often just work on improving myself in a more generalised way. With the app I tried to be specific about what I wanted to work on, and I used the results from the assessment to plan the changes." "Consciously noting and tracking a practice or behaviour definitely helped me engage with it more deliberately."

Continued

Reflection became a routine	"The routine of self-reflection and the weekly email nudge brought my personal goals to the forefront of my thinking." "Whilst I have not used the app much, the structured approach to self-reflection has helped me manage myself better."
Planning led to better decisions and outcomes	"The process meant that I actually spend time considering my week and making a plan as opposed to ad hoc tasking and completion, improving my outcomes." "I now notice that I doubt myself less and trust my own judgement more."
Clarity and commitment objectives	"So much more conscious of my objectives. It's been empowering to know being aware and clear for myself has made a huge difference. I guess the app has created more accountability too, even though it's self-led and doesn't take long."

7. Discussion

7.1. The App Maintained the Essence of the Original Program

The 2025 research program blended four months of digital learning, one-hour monthly recorded behavioural interviews, monthly leaders' reviews and a range of surveys throughout. The app use took a fraction of that time for both administrators and participants: ten minutes for each session at a time to suit, in half the time (8 weeks v 4 months) delivering many similar benefits and no live facilitator to arrange. Cost effectiveness wasn't measured explicitly, but this will be tested in future research.

In comparing the two studies outcomes, there is one important caveat. The methods for evaluation differed significantly. In the first study in 2025 there were researcher-scored qualitative interviews and in this study, user self-assessments were the data source. As a result, comparisons are structurally inappropriate even though both approaches provide a similar conclusion, in that most participants experienced improvements in both their professional environments and their personal daily routines. Table 7 provides a comparison between the original program and the latest study using the app.

Table 7. The original program and the IMI App compared.

	Original program	IMI App study (2026)
Delivery	Online program in a virtual environment, plus monthly one-hour interviews	Self-directed phone app, plus weekly nudge email
Duration	Four months	Eight weeks
Participants	20 senior leaders, two organisations, Australia and New Zealand	30 enrolled from varied professions and countries; 21 completed
Time asked of participants	About two hours a month (interview plus surveys), plus program content	About ten minutes a session; most used it weekly
How the IMI was scored	By the researcher, from behavioural interviews	By participants, as self-ratings

Continued

Participants improving	17 of 20	18 of 21
IMI change	About 40% average improvement	+8.0% composite; large effect (dz = 0.90)
Largest areas of change	Adaptability under pressure, active listening, empathy, decision-making, collaboration	Reflection & Feedback, Social Skills & Communication, Self-Management, Learning & Development
Performance and wellbeing	10% average self-reported performance gain; about four hours freed per week	90% confident performing well; 86% manageable stress; 86% good overall wellbeing
Completion	100%	70%
Role of environment	Bigger gains in the stable organisation and with committed leaders	Participants in chaotic periods used the app less

7.2. The Role of Goal Setting

The outcomes align with established literature on goal-setting behaviours. The largest improvement seen was in the Reflection & Feedback category. This is the category most directly prompted by the app's assess and adjust loop. Changes mentioned by participants, such as improved self-awareness, more effective daily habits, and a proactive growth attitude, align well with goal-setting theory. The change on goal setting from week 1 to week 8 was dramatic. At the start of the study, fewer than half of the participants reported goal setting and tracking. By week 8 almost all participants completing the program reported taking goal related actions in the previous week. When reviewing actual weekly data captured in the app, it demonstrated this was occurring for most users (n = 21) every week.

Several participants explained that formalising and recording plans acted as a mental anchor that ensured goals were front of mind throughout the week, even when they weren't using the app. This is consistent from research that shows recording of goals and progress towards goals influences behaviour in between actual monitoring [13]. This raises the possibility that short weekly check-ins may be enough for some people particularly those with demanding schedules. It was outside the scope of this study to test this. But should be considered for a larger sample.

One other thing worth drawing to attention here. The researcher has been applying Rock and Davachi AGES principles of learning in building learning programs for over a decade. Whilst a detailed review of the participants actual learning processes hasn't been analysed for this study, they appear to fit well with the model: Attention, Generation, emotion, Spacing [5].

7.3. Environment and Leadership Still Matter

The initial 2025 investigation indicated that improvements in mindset thrives best within a highly stable culture supported by a dedicated, encouraging manager. Although this study did not recruit participants through a centralised organisa-

tion structure, and not two of them worked in the same place, the findings and comments regarding this aspect were very similar at the individual level. Participants who reported challenging or stressful situations were typically among the least active users over the study period. One of the three individuals who registered a reduction in overall scores noted that the study period collided specifically with personal extended summer holidays. Despite the dip, that same participant noted that the actions they set up at the beginning of the study remained valuable and intended to use them in the future.

This is aligned to research that confirms professional development translates into changing behaviour far more successfully in supportive environments [24]. For organisations looking to integrate the study's approach, there are some practical considerations: identify individuals who have real appetite for improvement, will commit to the time required and have the capability to deal with the ups and downs of life reasonably well; plan and optimise the timing of the rollout and ensure genuine and visible advocacy from leaders. It may well be that during challenging operational periods employees will need some form of support rather than just leaving them to navigate the app in isolation.

7.4. What Can Be Improved

Participants feedback on their experience was both practical and actionable. For example, one individual suggested making automated push reminders to display active goals on a device home screen, rather than having to manually copy and paste action plans into a mobile notepad. As referenced earlier, participant engagement with the built-in AI coach was sporadic with five participants skipping the feature. This suggested that onboarding procedures at the beginning of the study could have been more effective in introducing this functionality. As the lowest scoring subjects across the study related to sleep quality and physical vitality future app development should introduce actions relating to wellbeing-focus and this could be highlighted in the core PIMS menu.

8. Limitations and Next Steps

This was a small study and should be read with some limitations in mind. It used a single group pre-post design with no control group with all outcomes self-reported. Participants who completed the study reported improvements, which they attributed to the app. However, there was no direct comparison against no intervention. Participants who completed all eight-weeks began the study with higher initial IMI baselines than those who dropped out (7.28 versus 6.31). This creates a risk of attrition bias as week 8 outcomes of the 9 non completers are missing. The results, therefore, might overstate change for the total group.

Future research phases may expand upon this through the following additions:

- **Introduce a control mechanism:** Establishing a formal control group would allow researchers to track variances between non users of the app prior to participants commence using the app. Recording reasons for withdrawal and col-

lecting Week 8 data from participants who stop using the app, would also help assess attrition bias.

- **Integrate multi-source feedback:** Consider including managers or close peer evaluations on participant improvements would help to validate the self-reported gains against genuine observable workplace behaviour. This would align well to the approach taken in the original 2025 live study.
- **Track retention of long-term habits:** Consider a six-month longitudinal follow-up studies would help test whether any newly formed habits continue over time.
- **Undertake objective usage of app:** Analysing actual interaction logs from the app's database which could enhance the participant estimates with real-time data.
- **Test the app with larger organisational groups:** Undertaking the study in larger groups in organisations would enable the measurement of the effects on workplace stability and executive buy-in as well as personal improvement.
- **Onboarding redesign:** Several participants couldn't commit fully and dropped out early. Work on helping increase the retention from 70% upwards is worth investigating.
- **Connect the IMI to personal learning:** Several of the participants asked if they could be directed to specific learning programs to support their personal IMI categories and PIMS plans. This specific aspect is now being reviewed.

9. Conclusions

The Integrated Mindset Index started its existence as a researcher-scored diagnostic built on the major elements emerging from the research and used in a facilitator-led research initiative. It was reviewed by a panel of international sports coaches and by senior leadership who observed improvements in executive performance and mental wellbeing. This short study extends the work: assessing if the use of the IMI index delivered through a mobile app without live facilitation can impact individual behavioural change and performance improvement in a short time frame based on self-ratings.

Over an eight-week period, the group mean average rose by 8%, with 18 out of the 21 completers recording an increase. The biggest improvements concentrated in important professional categories: self-reflection, interpersonal communication, self-management, and proactive skill acquisition. Almost all those who completed the 8-week study recorded change including actively building documented milestones and personally connected learning which was a real contrast to the beginning of the study, where fewer than half set or tracked goals and targets and few had a clear picture of where their learning and development should go next. As the items measures different behaviours, this is a prescriptive contrast.

These results are consistent with the view that a structured goal setting program and process including setting a baseline, targets, milestones and regular reviews, can have an impact on self-directed development with light interaction from a user.

The 2025 research emphasizes that the context in which any participant operates, remains a critical variable, particularly enhanced with a supportive supervisor or leader. Where participants experienced stressful and anxious periods, they tended to use the app less. In this study, all participants were supported by weekly emails and an optional 24-hour text-based AI coach.

The two studies suggest the IMI app is a promising, practical and scalable approach towards self-directed mindset development.

Declaration

The researcher designed both the Integrated Mindset Index and the MindZen IMI App in addition to founding XVenture, the entity which has plans to distribute the application. At the time of the research the app was not available commercially. All quantitative and qualitative survey responses were compiled using Sogolytics software and evaluated in a fully anonymized format.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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Appendices

Appendices A. Cronbach Scale

A Cronbach's alpha of 0.81 at baseline moving up to 0.87 by Week 8. Both these values suggest that the measurement scale has good internal consistency reliability, and its items are cohesive and dependable over the course of the study. Ratings tended to move together. However, a factor analysis would need to take place to demonstrate that the twelve categories measure a single construct. This would require another study over a larger sample. A score above 0.80 is universally classified as good, and higher than the standard research benchmark of 0.70.

Appendices B. Participants Make Up

30 participants took part in the study.

Male Female split. 50:50

From 6 countries: Australia, New Zealand, USA, UK, France, Netherlands

Participant professional backgrounds

Business C suite x 12

Business Supervisory x 7

Elite Sport x 5

Education x 3

Clinical x 3