EXAMINING A SPORTS MINDSET PROGRAM'S IMPACT ON EXECUTIVE PERFORMANCE IN TWO GLOBAL ORGANISATIONS.

by

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Dedication

The development, design, and writing of this Doctorate Dissertation have been a deep and meaningful experience and completing it has been a lifelong goal.

The hours of time and effort have required enormous sacrifice with leave of absence from family, friends and work colleagues over many months. I want to thank all for their support and patience throughout.

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ABSTRACT

EXAMINING A SPORTS MINDSET PROGRAM'S IMPACT ON EXECUTIVE PERFORMANCE IN TWO GLOBAL ORGANISATIONS.

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An innovative, integrated learning program focused on building more effective mindset skills and modelled on methods and concepts used in elite sports was examined to determine its impact on the performance of a sample of 20 senior leaders in 2 global organisations.

The participants took part in a four-month-long online learning experience set within a unique virtual environment. This learning environment was engineered to help the participants develop their skills to achieve a "high-performance" mindset. A mixed-methods evaluation approach, using both qualitative and quantitative assessment tools, was employed to measure participant's performance before, during and after their virtual learning experience.

The outcome was evident: Participants and their leaders reported that the integrated mindset training improved things significantly at work and home. Surveys comprising four

different metrics and two different sentiment analysis results also showed a positive trend. The researcher also built a new index, the Integrated Mindset Index, which was reviewed by elite sporting coaches from six sporting codes and the organisations leaders; the Index can be used to assess an individual's progress in building an integrated mindset.

At the very least, what happened in this research study sets a good precedent for the use of integrated mindset learning in organisational development strategies, particularly in achieving greater engagement and well-being of staff, both current and future. Fundamental in a competitive business world.

This research study sheds light on how you can take the learning methodologies used in elite sports and adapt them to the world of executive education. It also confirms the vital importance of nurturing a growth-oriented mindset in business leaders if you want them and their teams to perform at peak levels.

Further research is recommended with a larger cohort and control group over an extended period, to assess the impact of integrated mindset learning on organizational productivity, whilst also expanding the application of the Integrated Mindset Index and sentiment analysis.

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CHAPTER I:

INTRODUCTION

1.1 Introduction

Where individual performance in the workplace is measured, it is typically focussed on objectives linked to metrics that have short-term financial benefits to the organisation: revenues, profits, higher volumes, less cost, and increased market share. The development of people to deliver these benefits is typically centred on technical competencies. However, this research study aims to test if a program built on techniques used in elite sports can help individuals achieve greater performance by developing skills linked to a positive mindset, emotional intelligence and more effective communication.

1.2 Research Problem

Many of these concepts have been available for some years but if and when they have been introduced in a business setting, they have typically been in a fragmented and sporadic way rather than in an integrated mindset program. However, elite sports have embraced such techniques much more as they search for the extra edge in winning performances.

The challenge, then, is to demonstrate that there is significant value in offering such a program to individual employees and to create and deliver a program that individual employees and employers are motivated to use in the same vein as elite athletes to help them achieve higher performance levels. Identifying the benefits and tracking improvements by individuals and organisation sponsors are important to offering and using

such a program. This will require measures that managers and individual employees can easily use to track improvements and work towards achieving benefits.

1.3 Purpose of Research

This research study seeks to rigorously explore the impact of an integrated mindset learning program in varied organisational settings.

The insights gained may provide valuable guidance for future programs aimed at enhancing organisational effectiveness through mindset training.

The program will focus on teaching positive and growth mindset skills, building an individual's competency in the subject area and testing and measuring individual participant behaviours and performance changes over a short time frame. It will also seek to identify where environmental conditions impact integrated mindset learning and through this, their impact on performance.

1.4 Significance of the Study

The significance of this research study is multifaceted. Given the practical application of the research study, which was undertaken in two major corporations, it can be relevant and applied in any business setting and also has the potential to be used in full in elite sports.

The Research Study:

- Delivers and measures the application of a new integrated mindset learning program, which uses subject matter utilised at elite levels in sports but not typically in the workplace.

- Introduces a new approach to online learning in any workplace. This is achieved by combining an effective learning pedagogy with virtual reality technologies to deliver fast, accessible, and cost-effective deep learning in the subject matter.
- Confirms participant understanding of content by the nature of the research process applied.
- Links the learning program to demonstrable improvements in individual performance.
- Promotes a set of tools, including a new index that can be utilised to seek individual performance improvement in the workplace as part of a structured or unstructured performance management process.
- Confirms the process and program can benefit current and new employees, demonstrating excellence in employment.

1.5 Research Purpose and Questions

There are several essential questions the research is trying to answer.

- Can positive and growth mindset techniques used in elite sporting environments be transferred into a business setting?
- Is it possible to build an online, engaging, experiential, self-paced learning program that introduces this positive, growth-mindset learning in a business setting?
- Can such a learning program gain commitment and buy-in from leaders and employees?
- Can the impact of such a program be measured from a leader, employee and organisational perspective?

- Can changes be seen in a short time frame?
- Can the approach used in the research study be integrated into the current practices for developing and measuring current employees and attracting new employees?
- Do workplace environmental conditions impact individual performance and the ability to build an integrated mindset?

1.6 Hypothesis

The underlying hypothesis of the research is that employees who participate in an online experiential learning program dedicated to building integrated and growth mindset skills and associated habits will experience a positive and measurable impact on their performance. This performance improvement will benefit them professionally, the organisation they work for, and their personal lives.

This program will take a holistic approach, providing tools and techniques that deliver critical aspects of building an integrated mindset emerging from the evidence and literature, including emotional intelligence, growth mindset, resilience building, decision-making, communication skills, and reflective practice.

1.7 Limitations and Delimitations

Several significant limitations and delimitations must be acknowledged when pursuing the research goals. These are as follows:

Limitations

Sample size:

Two global organisations participated in the research study, and both agreed to provide ten middle to senior managers to engage in the research study fully. This is a small sample

size, not necessarily a statistically valid sample. However, it is considered a highly relevant group size for each organisation, with a deep analysis undertaken on each participant. The organisations also committed to regular and detailed follow-up meetings with a leader from each organisation.

Learning platform:

Assessing the impact of the online learning program built and used compared to other learning options is outside the scope of this research study.

Time constraints:

The research study was undertaken in a short time frame. It observed and engaged the participants and their leaders for over a business quarter. This was done to identify short-time frame shifts and parallel contemporary business expectations of making shifts and improvements from quarter to quarter.

External factors:

The research study was undertaken knowing that several external factors could affect its successful completion. These might have included changing circumstances for personnel, including leaders, participants, and the organisation. Both organisations gained full support from the most senior personnel globally, and both leaders and ten participants could participate and complete the program fully.

Delimitations

Industry specifics:

The participating organisations both operate in global markets but in two very different industries: The first is a private company operating stadiums and arenas with over sixty

thousand staff, and the second is a publicly listed company in the food and beverage industry, producing fast-moving consumer goods, and has over three thousand employees. This mix provides some confidence that the results apply to many other organisations of different sizes in different industries. However, when using the principles and structure of the research study in other settings, specific company nuances may impact the results.

Geographical specifics:

The participating organisations both operate in global organisations. However, most participants were based in Australia. Two outlying participants were working in the Middle East and New Zealand. Both leaders were based in Australia, one with an Oceania focus and the other with a pan-Asia role. Both organisations embrace cultural footprints provided by their global organisations. However, other organisations might identify unique cultural aspects of the Australian centric research study that could detrimentally impact results.

Participant makeup:

The functional roles undertaken by the ten participants from the two organisations were very different. The first was a group of human resource and finance leaders typically working as part of local stadium and arena site executive team. The second was a group of managers with national responsibility for successfully producing, marketing, and distributing the organisation's food products. All participants were senior to middle managers. Organisations considering applying the research study to their local circumstances must consider their role delineation and how this could affect possible results.

Determining long term effects:

The research study's timeframe was short, and the reasons for this have been explained in the limitation section. Whilst this is important to the research study, and there is confidence at the two case study sites that individuals are maintaining their new mindset approach, the long-term effects of the program will not be known. This may limit other organisations' commitment to such an approach.

Learning content:

The doctoral candidate is considered an expert in mindset programs in sports. Whilst the majority of the content delivered to the participants is based on the literature and is evidence-based, other organisations may not be able to access the same content in the same form as the learning program, which could impact performance outcomes.

Online learning platform:

The doctoral candidate has demonstrable experience in building online learning programs using virtual reality technologies. While such technologies are readily available for other organisations, they may decide this approach is unsuitable. Not utilising virtual reality technology as a platform for the learning content may impact performance outcomes.

1.8 Definition of Terms

Several terms are used throughout the research. The definitions emerge mainly from the literature and research on the subject areas. However, several new terms that arise from the research study are also introduced.

AGES: a learning pedagogy that provides the platform for content development. AGES is an acronym for enabling **A**ttention, **G**enerating insights, **E**motional connection, **S**paced learning.

BIS/BAS: **B**ehavioural **I**nhibition **S**ystems and **B**ehavioural **A**ctivation **S**ystems: A self-reporting scale that aims to unearth our disposition for such aspects as drive, fun-seeking, reward and responsiveness anxiety and depression.

EARL: A self-measurement tool to provide a summary of potential areas for individual growth in the areas of **E**motional **A**gility, **R**esilience and **L**eadership.

Growth and Fixed Mindset: A **G**rowth **M**indset believes that our abilities and talents can be improved and developed through more significant learning, effort, hard work, energy and commitment. This provides the opportunity for meaningful learning and development. A fixed mindset is the belief that our abilities and talents are fixed and do not change over time. The implication is that there is little point in trying to overcome mistakes or activities an individual is not good at—a significant impact on personal growth and development. In summary, the distinction between **G**rowth and **F**ixed mindset is an individual's belief in abilities and intelligence.

Human-centred learning: learning development that aims to make systems usable and useful by focusing on the users, their needs and requirements, and applying human factors/ergonomics and usability knowledge and techniques.

IMI: A new measurement tool called the **I**ntegrated **M**indset **I**ndex (IMI) aims to measure changes in individual performance in twelve areas linked to building an integrated mindset through observation and discussion.

Integrated Mindset: The ability to regulate, balance, and build connections between the brain, mind, body, relationships with other people, and the environment, leading to higher levels of emotional intelligence, resilience, and cognitive flexibility, enabling effective goal-setting, decision-making, problem-solving, and better well-being.

IWPQ **I**ndividual **W**ork **P**erformance **Q**uestionnaire: A self-reporting scale that attempts to measure a range of important aspects of Individual Work Performance, including task performance, contextual performance, adaptive performance and counterproductive work behaviour,

Mindsense: A learning program that brings together a range of tools and techniques that can aid improvements in building an integrated and growth mindset.

Opinion mining: Opinion mining extracts and analyses people's opinions about an entity from large amounts of data, typically using computers.

PIMS: **P**erformance **I**mprovement **M**indset **S**olution: A document of specific short-term improvement activities agreed to by an individual, typically shared with a coach.

Sentiment Analysis: The digital text analysis to identify a message's emotional intent, which can be either positive, negative, or neutral.

Virtual World: A computer representation of a world with spatial and physical characteristics where users can connect with multimedia content. (In this research study, the virtual world houses the Integrated Mindset Learning Program (Mindsense)).

CHAPTER II:

REVIEW OF LITERATURE

2.1 Theoretical Framework

There has been growing interest in the impact that building a solid mental state can have on individual performance, particularly in elite sports. Traditionally, the focus of attention for the training and developing high-performing athletes has rested on technical, tactical, and physical development, with little consideration given to emotional or mental training. However, this is fast changing.

This literature review covers several vital areas that confirm the research study's relevance. Firstly, it reflects on the emergence of “mindset” related research. This is followed by considering various “mindset” programs in sports and their possible contribution to improved performance. Next, a review of research on well-being in the business setting with reference to achieving higher levels of performance is explored. A review of the literature is also undertaken on the current needs of individual employees regarding their performance in the business environment, thus providing a parallel perspective of employees and elite athletes.

The literature review then considers aspects that will be critical in ensuring the effective application of the research with the sample of participants. Namely, building an effective learning program, specifically relating to human-centred learning; considering the tools to analyse and measure the success of a learning program, including the measurement of language patterns and finally methods for ensuring participant commitment.

2.2 Assessing Citations for Inclusion

Searching the literature and choosing relevant citations for this research study was one of the doctorate candidate's big challenges. The main search engines utilised throughout the research were Google Scholar, Semantic Scholar, Researchgate, and the National Library of Medicine. Some of the main themes in the research study have large numbers of citations. For example: "Mindset" has over 1.5 million references in Google Scholar. Emotional intelligence has even more (4 million). Reflection has over 1 million references in Semantic Scholar. Hence, many papers needed to be sifted, reviewed, used or discarded. To help determine which citations to use from the literature, Atkinson and colleagues' (Atkinson, 2015) paper on reporting standards was used as a foundation for the searches. Their paper provides some helpful guidance on what to include and exclude.

Their guidelines cover five search strategies: reference database searches, journal and bibliography searches, searches of the reference lists of reports (which we call "backward" searches and are also called ancestry searches or "treeing through the references"), forward or citation, searches, and direct contact searches, of which three varieties are listed.

The research study has several important themes and outcomes, so all citations must be relevant to these key themes. A detailed literature review was undertaken for each aspect to provide substantial evidence to support and reinforce the research study. For primary research, typically, papers that were closely connected to a research theme, highly cited in peer-reviewed papers, and recency regarding publishing date were the priority. However, where research was traced back to being a primary source, for example, Carol Dweck's and Daniel Goleman's work, this was used, too. Secondary sources were used, but usually

where reference was made to primary sources, where primary sources did not exist via search or where the doctorate candidate was aware of the secondary research. Every effort was made to accurately credit each source and deliver the literature's information impartially without bias.

2.3 The Emergence of "Mindset" related research

Several critical strands of research should be considered when defining the elements of any mindset program.

The first relates to Carol Dweck's work on individual mindset (Dweck, 2006). While she has been undertaking research in this field for many years, much of the details of her "fixed-growth mindset model" are presented in her 2006 book. Here, she introduced the notion that those people with a fixed mindset don't see challenges as providing the possibility of improvement, where they don't have the skills to complete a task. On the other hand, someone with a growth mindset believes they can continually improve skills and sees challenges as opportunities for learning (Dweck, 2014).

Dweck (Dweck, 2006) defines a growth mindset as "the simple but powerful belief that intelligence is not fixed, but dynamic, and can develop over time." According to Boyd, (Boyd, 2015) Meyer, Land, & Cousin (Meyer, 2006) call it a *"*Threshold Concept and a transformative and irrevocable way of thinking about something."

Research confirms that building a growth mindset has significant and consistent benefits. In the journal "Education Leadership", Dweck (Dweck, 2010) shares her observations on students who present a growth mindset:

I have seen students with a growth mindset meet difficult problems, ones they could not solve yet, with great relish. Instead of thinking they were failing (as the students with a fixed mindset did), they said things like "I love a challenge," "Mistakes are our friends," and "I was hoping this would be informative!"

It also connects favourably and positively with Konorski's research (Konorski, 1948) on neuroplasticity emerging in neuroscience and recent research from Ng on the neuroscience of growth mindset and intrinsic motivation (Ng, 2018).

As Dweck and colleagues began to build on these models described in the previous paragraph, other research was being undertaken in associated fields. Seligman's early research on "learned helplessness", particularly considering the psychological and behavioural impact of uncontrollable traumatic events, set him on a lifelong course of research in the subject (Seligman, 1972). Seligman's research was further developed in 1976 with Maier (Maier, 1976) and then Abramson and Teasdale (Abramson, 1978). The application of Seligman's research on learned helplessness can be seen clearly in his advisory work to the USA Olympic swimming teams in 1987 in preparation for the 1988 Seoul Olympics (Seligman, 2018). As a test on deciding which swimmers should participate in the US team relays, it was identified that pessimists were negatively affected when told that their previous swim times were slower than required, whilst optimists were not. Optimists improved in the next race, and pessimists were even slower. Not trying and giving up was learned helplessness in full view.

Seligman and colleagues' parallel perspectives with Dweck's research are clear. Once an individual was in the zone of learned helplessness, they would struggle to move forward with any sense of a positive outcome or greater happiness.

Seligman (Seligman, 2002) continued his research into this subject, leading to his seminal works on learned optimism and the pursuit of happiness. The link between his learned optimism models and Dweck's growth mindset model appears very close.

Experiences that induce positive emotion cause negative emotion to dissipate quickly, and authentic happiness comes from identifying and cultivating your most fundamental strengths and using them daily (Seligman, 2002).

Seligman (Seligman, 2006) continued developing his perspectives on learned optimism, even encouraging states and governments to consider the development of well-being indices (Diener, 2004). This connects to his PERMA model of well-being, which has become a significant pillar in positive psychology (Seligman, 2018).

In his work Flourish, Seligman clarifies his perspective regarding the secret to success in life:

Around thirty-five years ago we began to ask the question, what is it about some people that makes them immune from helplessness? And what is it about one-tenth of the people who came to my laboratory who would become helpless at the drop of a hat? It turned out that the key was optimism (Seligman, 2010).

Seligman's inaugural address as the incoming President of the American Psychological Society in 1998 has been seen as the starting point for "Positive Psychology", although it may be that positive psychology can date back to William James and Abraham Maslow's

work (Froh, 2004). What is unquestionable is Seligman drawing attention through his significant scientific work of the need to move our focus from mental illness to studying what is positive and good in life, considering "differences in people's well-being due to social relationships and work enjoyment." (Seligman, 1999).

This research study does not aim to review work in the fields of growth mindset and, learned helplessness and optimism in detail. Instead, it draws attention, refers to them, acknowledges and honours them, and understands their causal links and valuable contributions to building an integrated mindset program.

Another area that should be considered as part of an integrated solution is the research undertaken on emotional intelligence that has emerged since the 1990s. Parallels and connections with the work of Dweck and Seligman are once again evident. Mayer and Salovey were the first to present a framework on emotional intelligence in 1990. They described emotional intelligence as:

> A set of skills hypothesised to contribute to the accurate appraisal and expression of emotion in oneself and others, the effective regulation of emotion in self and others, and the use of feelings to motivate, plan, and achieve in one's life (Salovey, 1990).

Their "Five Aspect" model is now taught and applied worldwide and has become the lynchpin of many training programs.

In Daniel Goleman's (Goleman, 1995) book "Emotional Intelligence", he summarises his model as follows:

- It is knowing one's emotions. Self-awareness: recognising a feeling as it happens is the keystone of emotional intelligence.
- Managing emotions. Handling feelings so they are appropriate is an ability that builds on self-awareness.
- Motivating oneself. Marshalling emotions to service a goal is essential for paying attention, self-motivation, mastery, and creativity.
- Recognising emotions in others. Empathy, another ability that builds on emotional self-awareness, is the fundamental "people skill."
- Handling relationships. The art of relationships is, in large part, a skill in managing others' emotions.

Goleman's research appears significant because it focuses on self-awareness as the first stage in developing emotional intelligence. This fits well in the delivery of any growth mindset program, as greater self-awareness is likely to assist the success of the program. Kelly McGonigal draws attention to this in her Ted talk in 2013, where she references participants of a research study who had an increased risk of death due to stress, only if they perceived stress as harmful! That is, build awareness (McGonigal, 2013).

The following quote from Goleman's same book is also worth noting. It shows the alignment of his work with Dweck and Seligman.

Goleman says:

People who are optimistic see a failure as due to something that can be changed so that they can succeed next time around, while pessimists take the blame for failure, ascribing it to some lasting characteristic they are helpless to change (Goleman, 1995).

Goleman suggests that we need to help young people build character and traits that help them in their personal destinies. Notice the concept of journey and growth rather than fixed skills. Goleman also quotes a research piece by Seligman demonstrating learned optimism regarding the famous Olympic swimmer Matt Biondi. After one loss at the Olympics, he was able to reflect and re-set and then went on to win five more gold medals.

We can look to notable academics like Gardner to draw attention to this further. In his 1983 work, “Frames of Mind,” Gardner identified eight separate intelligences rather than general intellect. He drew attention to the notion that individuals can be highly intelligent in one thing, for example, music, but not necessarily “word smart” (Gardner, 1983).

Another thought leader in the field, Bandura, (Bandura, 1997) added to this in his work on self-efficacy:

People's beliefs about their abilities have a profound effect on those abilities. Ability is not a fixed property; your performance has a huge variability. People who have a sense of self-efficacy bounce back from failures; they approach things in terms of how to handle them rather than worrying about what can go wrong.

A helpful summary of his work can be found in the article by Nickerson on the Simply Psychology website from 2023 (Nickerson, 2022).

A nice addition to Bandura's findings is the clear notion that people who engage in self-affirmation and reflection appear to achieve positive results. A program to improve such skills would do well to include some form of self-affirmation or personal values development. This conclusion was drawn from Cohen's and Sherman's work in 2014:

Events that threaten self-integrity arouse stress and self-protective defences that can hamper performance and growth. However, an intervention known as self-affirmation can curb these negative outcomes (Cohen, 2014) .

Alter and Hershfield's work on individual reflection and self-affirmation observed how people audit life, making significant decisions "as they approach a new decade" (Hershfield, 2014).

One interesting area for consideration is the possible link between personality, growth mindset, emotional intelligence and learned optimism and its impact on business performance. John and Srivastava draw these aspects together in their book on the history of the five personality dimensions, theories, and measurement (John, 1999). Research by Zhao and Seibert also considered this, using the "Big Five Personality Dimensions" to identify any correlation in the area of entrepreneurism (Zhao, 2006). Once again, their work was not directed to specific interventions but intention and performance regarding entrepreneurs. They suggested, "that personality plays a role in the emergence and success of entrepreneurs." In 2018, this connection between personality, mindset, and business transformation was considered again by Caniels and colleagues' work in a Netherlands technology organisation (Caniels, 2018). Similarly, no specific intervention was adopted, nor was a performance measure established or assessed.

These works are particularly significant as they draw attention to the need to reflect on both positive and negative emotions of self and those we connect with. Of course, Dweck sees everything as malleable (Dweck, 2006). Whilst personality plays a part in our everyday life, it doesn't stay static unless we want it to. "in this mindset, the hand you're dealt is just the starting point for development. This growth mindset is based on the belief that your basic qualities are things you can cultivate through your efforts."

Two further significant contributors are worth considering.

Dan Siegel is a neuroscientist and psychiatrist at UCLA and the Mindsight Institute in Los Angeles. His work dovetails into this conversation, mainly as he even raises the notion of "integration" of the Mind in his book "The Mind: A Journey to the heart of being human." Siegel says:

> This integration takes account of who we are and our awareness of ourselves, including our five senses of sight, hearing, touch, taste, and smell; our bodily sixth sense; a seventh relating to our thoughts, feelings, and images; and the eighth sense being our interconnectedness with others.… in your life, the integration of consciousness may seem off balance if you find yourself "lost on the rim" in which a feeling, thought, or memory takes over your sense of who you are, and you lose perspective…When integration is challenged, chaotic or rigid feelings, thoughts or memories may dominate your experience (Siegel, 2017).

The connection with Dweck's work is profound. Siegel references her fixed and growth mindset model in the same work. The significant connection to Goleman's models is in

reference to the eighth sense referenced earlier and the interconnectedness with other people (Goleman references empathy and social skills).

Siegel's methods and models offer a layer of clarity around the mind and indeed provide some simple, practical strategies that can assist any individual in reflecting on performance, such as PART (**P**resence, **A**ttunement, **R**esonance, and **T**rust) and the mindsight "3Os" tripod (**O**penness, **O**bservation, and **O**bjectivity) (Siegel, 2010).

Professor Steve Peters is another commentator who offers considerable perspective into a potential integrated mindset intervention program. Peters is a UK-based psychiatrist who has been one of the few experts who has bridged sports and business. His work with Liverpool FC and the British Olympic team has been regularly referenced. His explanation of how the brain's emotional side is constructed, and works (which he calls "the chimp brain") and the practical solutions to managing behaviour and decision-making have been helpful for coaches, managers, and athletes alike.

The chimp is the emotional machine that we all possess. It thinks independently from us and can make decisions. It offers emotional thoughts and feelings that can be constructive or very destructive. It is not good or bad; it is a chimp (Peters, 2013).

This paragraph shows how the fixed and growth mindset concept still resonates, although Peters connects these thoughts to different aspects of the brain. Fixed is more chimp-like, and Growth is more human-like. In the chimp brain, paranoia, catastrophic thinking, black-and-white thinking, and irrational and emotive judgment are prevalent behaviours. In contrast, the human brain is logical, rational, evidence-based, and can balance judgment.

2.4 Applying Mindset programs in sports and their possible contribution to improved performance

In elite sports, measuring performance is part of the course. The ultimate goal of athletic performance is to achieve a personal best and beat the competition. Both of these are easy to measure—watch the clock or a scorecard! The 2024 Olympics in Paris recently provided an explicit perspective on this. However, to achieve the ultimate measure of performance in terms of winning, measuring performance is a minute-by-minute exercise that is explicit and integrated into every performance, both in competition and training.

Research suggests that athletes and their coaches only effectively recall around 30% of performance. Hence, detailed performance analysis takes care of the additional 70% (Teferi, 2020).

Similar to the work undertaken with participants in this research study, these analytics don't guarantee improved performance, but without them, an athlete would not achieve high performance.

In sports, an athlete's performance is typically measured under four dimensions—skill, strength, endurance, and recovery. Depending on the sport, more detailed analysis could be undertaken to measure accuracy, agility, flexibility, power, reaction time, and speed. The National Strength and Conditioning Association of the USA provides guidelines on the nine measurement areas: Maximum Muscular Strength (Low Speed Strength); Maximum Muscular Power (High Speed Strength); Anaerobic Capacity Local Muscular Endurance; Aerobic Capacity Agility & Body Control Speed Mobility & Flexibility Balance & Stability (NCSA, 2009).

Measuring and modelling an athlete's performance, comparing individual changes, comparing changes to best practice, and regular communication and feedback are fundamental parts of the process both in training and pre- and post-competition. This presents a parallel to this research study. That is, there are no guarantees in achieving the ultimate winning performance, but without consistent hard work towards the ultimate goals, it definitely will not happen.

Here's a telling quote on athlete performance from the California-based athlete training company P360, which parallels many people's working lives in business.

> In the pursuit of our own version of athleticism, I think sometimes we may tend to get a bit caught up in skill sets we enjoy and neglect the ones we may need in order to complete our athletic profile (P360, 2024).

P360 notes that people have control over the nine measurement areas presented by the National Strength and Conditioning Association of the USA. However, the situation, the starting point and the skill set people have will be different and require different levels of work to achieve end goals.

Some of us have differing goals that may include sport or parameter-specific competition, but for the lot of us who wish to reach our true human potential, it's recommended you focus on building all nine parameters to start shaping your complete athletic profile (P360, 2024).

2.5 The impact of mindset related programs on performance in elite sport

Along with the health and well-being attributes required of an athlete, greater interest is now emerging in how the mind can be tuned to deliver higher performance levels. References to some of the critical areas in literature are considered for some of the major areas in building an integrated mindset.

There are approximately 2 million scholarly citations on the link between emotional intelligence and performance, many of which demonstrate the positive correlation between emotional intelligence and performance. Examples include Rapisarda's 2002 paper (Rapisarda, 2002) on EQ and team cohesiveness and Chan and Mallet's (Chan, 2011) research on the impact of emotional intelligence on high-performance coaching.

Kopp and Jekauc's meta-analysis of over 3400 athletes "found a small but significant relationship between EI and sports performance." (Kopp, 2018).

Birwatkar's work at the University of Mumbai confirms the same by stating that "emotional intelligence is a critical factor in determining whether or not an athlete wins, and emotional intelligence often 'makes or breaks' a team." (Birwatkar, 2014).

Laborde, Dosseville and Allen undertook a review of the literature in 2016 and found out of the 36 studies that considered emotional intelligence in a sports context, emotional intelligence related to physical activity levels and positive attitude relating to physical activity. They proposed a tripartite model comprising knowledge, ability and trait (Laborde, 2016).

In 2023, Adam and colleagues created a 32-item sports performance perceptions scale to measure athletes' self-reported and retrospective perceptions of their performance (Adam, 2023). The scale built a picture on five key areas:

- Athlete development: "I complete training that is event or position-specific."
- Mastery and development: "When I am training I am focused on improving my sporting skills."
- Preparedness and strategy: "I am confident making strategic decisions during competition."
- Recovery and Injury Prevention: "I take rest after a big competition to improve recovery."
- Psychological Skills: "I feel like I can manage my emotions in training."

In the sports psychology profession, reflective practice has emerged as a key technique for improving client performance. Cropley and colleagues highlighted its importance in their 2010 paper on the sports science review (Cropley, 2010).

They build on the work of Dewey (Dewey, 1933) describing it "as the kind of thinking that consists in turning a subject over in the mind and giving it serious thought" and "through the notion of reflection, the practice could be seen as being more informed." Edwards also drew attention to reflective practice where it "addresses practical problems, allowing for doubt and perplexity before possible solutions are reached." (Edwards, 1999).

Work also undertaken by Faull and Cropley, particularly relating to a triathlete case study, concluded that "reflective practice can be used to aid athletic performance holistically." Evidence was found to increase self-awareness and evaluative skills, supporting the notion

that reflective practice should be considered a component of athlete development (Faull, 2009).

Another helpful paper that confirms the direct association between reflective practice and elite performance is Richards and colleagues' research into the application of reflection in an elite hockey environment. They conclude, “As a result, team identity was explicitly strengthened in the performance context, enabling players to respond quickly to the high-pressure but varied challenges inherent within international play.” (Richards, 2009).

Whilst it seems evident that communication skills impact individual and team performance in sports, there is little empirical research on communication's effect on individuals and teams in sports. However, the subject is growing as sports leaders and coaches understand implicitly that it matters. For example, in-camera studies were undertaken with Perth Glory football club and the Australian junior soccer team in preparation for the Junior World Cup and were referenced in the Football Coaches Australia learning program on communication (Football Coaches Australia, 2020).

Onag and colleagues’ work on team effectiveness in sports teams, considered communication and cohesion and “reveal that team cohesion, team norms and intra-team communication have significant impacts on team member satisfaction and intent to remain with the team.” (Onag, 2014).

Beauchamp, Maclean and Lothian also acknowledge the significant impact of communication and team dynamics on sports teams (Beauchamp, 2005).

One paper that draws attention to the importance of communication in sports and associated factors is Salcinovic and colleagues' paper in the Sports Medicine Open in 2022. They

conclude that sports teams looking for higher levels of performance need to examine their leadership styles and develop supportive team behaviour, communication, and performance feedback. Significantly, this paper draws attention to the best practice in the business world, recommending its application in sports (Salcinovic, 2022).

A significant area of development in sports over the last two decades has been the recognition of the association between athletes' health and well-being and their performance. This increased interest has also occurred due to several high-profile athlete concerns (Simone Biles, Michael Phelps, and Naomi Osaka) and attention drawn to benchmark abuse cases (Tardelli, 2021).

A 2024 study showed that over 57% of a sample of elite athletes in the USA experienced some form of interpersonal violence (Dallam, 2024).

Therefore, more significant duty of care, support networks, and programs are needed to manage this.

Gould and colleagues (Gould, 2002) drew attention to the impact health and well-being excellence can have on performance in their paper. "Research has found that athlete well-being is associated with athlete success; "successful" athletes often report an ability to cope with anxiety, be mentally resilient, and have strong support networks."

This is particularly important as research also shows that athletes' mental health is typically in a poorer state than the rest of the population (Rice, 2016).

What has been highlighted is that specific programs are emerging in elite sports. Over the period 2019 to 2023, several media commentators began noticing this shift in elite sport, particularly with regard to the Australian soccer environment. Kopittke's (Kopittke, 2023)

article in Smart Company drew attention to the transfer of skills from sport to business. LaFrenz focusses on the impact rest can have on performance (LaFrenz, 2021). Again, transferring activities undertaken in the elite sports arena into business. Rugari's article of 2019 provides one of the first articles in popular media on the link between oxytocin release, impact on physiology and effective performance (Rugari, 2019). More detailed research on their outcomes will be worthwhile. Lewis provides useful insights on the links between the mind of the elite athlete and performance at a major tournament (Lewis, 2022). These and the theoretical frameworks available provide an opportunity to test their validity in a business setting.

Considering and integrating mental skills into sports training is well-documented in the literature. For example:

Zakraisek and colleagues' paper regarding integrating mental skills in the International Coaching Journal (Zakrajsek, 2017).

Blumenstein and Orbach on psychological preparation (Blumenstein, 2020).

Predoiu and colleagues consider the use of specific cognitive techniques in sports (visualisation) (Predoiu, 2020).

Birrer and colleagues' research on Mindfulness and its possible impacts on sports (Birrer, 2012).

Taylor suggests a model for integrating mental strategies to serve athletes' need. (Taylor, 1995).

- understanding the athlete's needs of the athlete,
- knowledge of the sport's demands,

- identify the psychological factors that will affect performance and develop competitive mental preparation strategies for the athlete.

However, Birrer and Morgan's paper confirms little evidence of an integrated approach to mental ("psychological") skills training in elite sports (Birrer, 2010). The reviewed literature showed a lack of convincing evidence and theoretical underpinning concerning traditional psychological skills to enhance performance in HIS(High-Intensity Sports). Their paper introduces and adapts Schnabel's (Schnabel, 2008) helpful model on objective requirements for world-class performance (Figure 1). This demonstrates the theoretical understanding that mental and emotional aspects have a significant role to play.

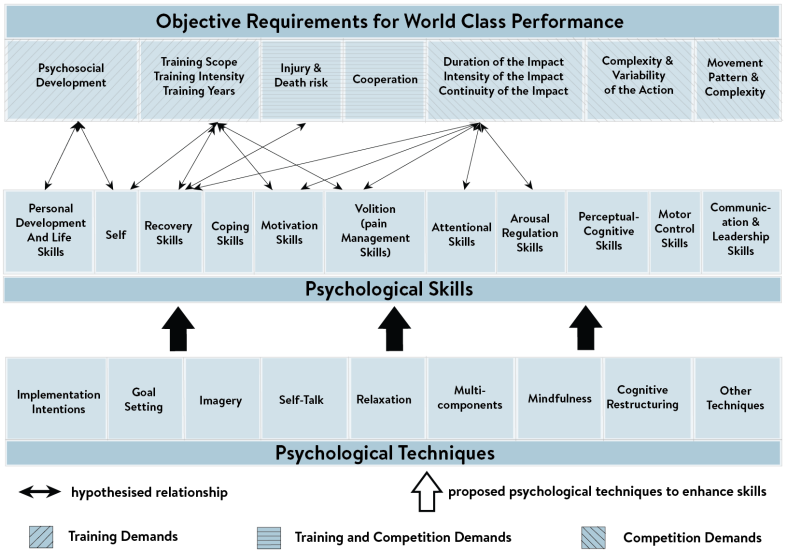


Figure 1 Objective Requirement for World-Class Performance

Integration has remained uncommon since Birrer and colleagues' paper. Bompa and colleagues reference this in their book on combining training methodologies.

Researchers in exercise physiology, sports psychology and the science of nutrition have evolved separately, without considering that their focus should be on those who could benefit from them: the athlete and coach! (Bompa, 2019).

Kusama and colleagues' review of the literature on soccer training in 2024 confirms that more evidence needs to be provided on the holistic use of four components or pillars (technical, tactical, physical, and mental/emotional) (Kusuma, 2024).

One of the few examples of introducing and attempting to apply an integrated mindset program in sports emerged in Sydney in 2016. The coach of the professional soccer team, Sydney FC, Graham Arnold, realised that the traditional pillars did not provide the team with the needed advantage, so they introduced emotional agility, resilience, performance improvement, and leadership intervention into the regular program.

The program at Sydney Football Club appeared to have positive results winning five trophies in three years. The coach was the first in soccer in Australia to embrace mindset coaching for players and staff (Dasey, 2018). Australian national journalist Ray Gatt highlights this in his 2017 article (Gatt, 2017). As does journalist for the Australian Broadcast corporation Mark Douglass (Douglass, 2017).

Following the success at Sydney FC, the coach Graham Arnold went on to have significant success coaching the National team applying the same principles, leading to a best-placed eleventh in the World at the FIFA World Cup in Qatar in 2022. Many of these athletes also made progress in their careers due to winning contracts with bigger clubs around the World (Rugari, 2021).

Also compelling was the mindset work undertaken with several athletes who were part of the Australian Olympic team who had to wait for a further year before participating in the Tokyo Olympics due to the pandemic (Daily Telegraph, 2020).

Similar solutions have also been delivered to the Adelaide 36ers professional basketball team (Adelaide 36ers, 2022) and the Birmingham Phoenix women's cricket team, who play in The Hundred tournament in England and to football coaches in Australia from 2021 to 2023.

The literature presented so far points to a significant connection between building a positive mindset and its impact on performance in a sporting environment. However, less so is the evidence of a fully integrated mindset program linked to specific outcomes in business. Given that sports have begun to embrace such techniques and programs and acknowledge their value, this could be a significant opportunity for businesses to gain a competitive advantage and improve performance by adopting the same.

Due to a background in building and successfully applying such programs in a sports setting, the doctorate candidate is uniquely positioned to test this out.

2.6 The impact of mindset related programs on performance in business

The commentary from economic experts and commentators confirms that global economies are slowing sharply. In January 2023, the World Bank stated that this occurs due to "elevated inflation, higher interest rates, reduced investment, and disruptions caused by Russia's invasion of Ukraine." Their prediction is a slowing of growth to 1.7% from 3% expected six months previously (World Bank, 2023).

United States growth was forecast to fall to 0.5% in 2023, -1.9 percentage points below previous forecasts and the weakest performance outside official recessions since 1970. In 2023, Euro-area growth was expected at zero per cent—a downward revision of 1.9 percentage points. In China, growth was projected at 4.3% in 2023, -0.9 percentage point below previous forecasts (World Bank, 2023).

The OECD economic outlook predicts slow growth in the coming years. Growth is at its lowest since the pandemic, with only a slight uplift in 2024 to 2.7% and 3.0% in 2025, with inflation set for 3.8% in the same year (OECD, 2023).

Paradoxically, the OECD also identifies the growth in incidence and cost of mental ill health with aspects such as absenteeism due to mental ill health affecting productivity. In other words, there is a deep correlation between productivity and the workforce's mindset. Given that the period since the pandemic has been one of the most significant changes organisations and their workforce have ever faced, it poses the question, have people got the mindset to achieve greater performance levels under these new conditions?

The expectations of organisations' people to help win and achieve higher levels of performance in this more competitive market are going to be key factors. As the World moves from a previous bullish market to a more bearish market, major corporations are also readdressing their employees' timeframes and measures of success. Job losses and unemployment are also increasing (Bonhady, 2023). And to add to the challenge, organisations are also experiencing management burnout and job movement, thereby creating a challenge in ensuring the maximisation of employees in these more difficult financial times (Smith, 2023).

In the launch of its Global Financial Stability Report of 2023, the IMF released this statement:

Financial stability risks have increased rapidly as the resilience of the global financial system has faced several tests. Recent turmoil in the banking sector is a powerful reminder of the challenges posed by the interaction between tighter monetary and financial conditions and the build-up of vulnerabilities since the global financial crisis. The emergence of stress in financial markets complicates the task of central banks at a time when inflationary pressures are proving to be more persistent than anticipated. Large emerging markets have so far avoided adverse spillovers, but smaller and riskier economies continue to confront worsening debt sustainability trends (IMF, 2023).

Expectations are as high as ever. The need for immediate responses and results is rife in elite sports, just as in business. Through the most obvious measure of win and loss ratios, weekly and monthly reporting, and the transparency of the never-ending eyes and ears of the media, leaders and teams are primed and driven for short-term success. Perceived failure means that people are regularly moved on, dropped, and dismissed.

Regarding short-term gain or success, the recent detrimental media stories faced by PWC (Tadros, 2023) and Qantas (De Kretser, 2023) in Australia springs to mind. Imagine the pressure to turn the very negative perception of these iconic organisations around into a positive one? Do such organisation's people already have a growth mindset, learned optimism and high levels of emotional intelligence and resilience to do this? If so, then they are more likely to have the chance to get through the current challenges. If people do not already have these skills, are their organisations offering an effective learning program

that will enable continuous improvement despite it all? This seems to be a significant factor in the ability of the organisation to get through tough times and become even stronger.

In 2020, the Association for Investment Management Professionals, the CFA, suggested that taking a short-term view costs S&P 500 companies USD 79 billion annually. McKinsey has also indicated that 70% of executives believed short-term financials would take precedence over long-term goals despite finding that those who did take a long-term perspective would achieve 47% greater cumulative growth (Murray, 2021).

For organisations to succeed in such a climate, their people require greater resilience and capability to push through. Not easy under such circumstances.

When things are not going well, human beings have an inclination to focus on their weaknesses and failures (Greenberg, 1986). This is supported by research from Carol Dweck and colleague Leggett in 1988, which "specifies how individuals' implicit theories orient them toward particular goals and how these goals set up the different patterns." (Dweck, 1988). As an example, if cost cutting and using less to achieve more in shorter time frames, then energy will become focused on this.

This raises questions of how organisations can help their people achieve these higher performance levels, how they can be supported, educated, and trained through the good and bad times? Where programs have been undertaken, the benefits appear to be positive. Johnston's paper in the Strategic HR Review demonstrates that where HR departments work hard to build organisation wide growth mindset, they outperform those organisations' with a fixed mindset (Johnston, 2017). Haddon's research shows that mental

health is a major contributor to productivity not just individually but also for the team as a whole as individuals affect each other (Haddon, 2018).

However, so far, there is little evidence or research on the impact of what an integrated mindset program could have on individual performance in the workplace. In fact, in 2013, the human capital research group Brandon Hall surveyed 329 organisations on their leadership programs and found 75% rated them ineffective. The missing ingredients? The development of mindset and how leaders think, learn, and behave (Gottfredson, 2020).

This presents a big challenge. Commitment to organisational training depends on financial resources, trainer time, and availability. Hence, even in more buoyant economic times, the focus on training is more likely to be on "the competitive business environment and performance and regulatory requirements." (Smith, 2019).

Lake confirms that the largest organisations across the globe do provide significant support for such programs as MBAs and degree programs (Lake, 2023). However, Martin observes that high performers typically take responsibility for their own personal development. "In today's environment, it is critical that every person who aspires for personal success takes responsibility for their own development." (Martin, 2020).

This is further supported by the Society for Human Resource Management research of 2022, which suggests that 57% pursue learning opportunities outside the workplace (Society for Human Resource Management, 2022).

The same report noted that over half of human resource managers see a skills gap in their people. While recruiting and contracting for this gap is a key strategy (49%), over half of the workforce in the study thought they needed training in some description to perform

better (55%). Given current conditions, tight budgets, and priorities set, the opportunity to improve performance significantly is restricted. Hence, developing and delivering a fast mindset program for individuals could provide a personal and professional solution.

This research study starts from the premise that the key to success in such a climate is the development and intervention of an integrated program that will help build a performance improvement mindset that will enable individuals to overcome such challenges.

Over the last decade, scholars and commentators view our modern environment as highly Volatile, Uncertain, Complex and Ambiguous (VUCA). Debas, writing for the UN Chronicle, sees a significant change in our environment. "Never in human history have people of different national and geographic origins been as interdependent as in the twenty-first century." (Debas, 2012).

Bennett and Lemoine's article in the Harvard Business Review references this and provides a model for considering each aspect of VUCA, each requiring four distinct responses (Bennett, 2014). Mack and colleagues believe managers need to have a different mindset in order to deal with this "VUCA" environment. "The VUCA forces present businesses with the need to move from linear modes of thought to problem solving with synthetic and simultaneous thinking." (Mack, 2015).

Organisations need a workforce that performs optimally to thrive in such an environment. To achieve this, they must constantly search for the best solutions.

However, the development and connection between the application of programs aimed at developing such skills and actual measurable outcomes are "less represented in human resource development scholarly literature." (Han, 2020). When reviewing the literature,

there are many offerings of general advice, tips, and hints on the subject rather than referencing specific work programs. For example, Chase's work draws attention to the need for coach education to create and deliver programs but does not elaborate on the program itself (Chase, 2005). Chong sees the need to create and provide effective programs to develop and integrate mindset skills but, again, does not specify the work program needed (Chong, 2020). Dweck demonstrates the importance of continuous learning and development in the subject area but, again, does not specify a structured program (Dweck, 2009).

In Purcell's book "Understanding the people and Performance Link: Unlocking the black box" published by the professional human resource body, the Chartered Institute of Personnel and Development (CIPD), he recognises that employee or people performance is critical to any organisation (Purcell, 2003). High performance shows an excellent job has been achieved and an individual has undertaken work to the best of their ability. On the other end of the continuum, low performance suggests an individual can do better. However, it is not always clear what people's performance is and how it can be measured. Determining or defining what employee performance is could help identify change in individual employee performance.

There is plenty of research and references about productivity, though it can get complicated as productivity can also focus on aspects such as machine and material productivity and employees. Gunter and Gopp's major work in 2022 drew together the many approaches to productivity measurement and found this and other important matters. They demonstrated that when considering productivity measurement, "34 approaches are intended exclusively

for use at the micro level. Of the 34 approaches, 16 use monetary units, 18 physical units and four qualitative indicators." In other words, there are many variations in measuring productivity, including applying quantifiable and qualitative metrics (Gunter, 2022).

A commonly used definition of employee performance is "the result of work in quality and quantity achieved by an employee in carrying out his duties in accordance with the responsibilities given to him." (Robbins, 2007).

Much research follows a similar vein. For example,

Wu and colleagues defined job performance as "workers' total performance in meeting the anticipated worth and achievement of tasks under the procedure and time requirements of the organisation." (Wu, 2011).

Ahmad and Shahzad see employee performance as something to do with the employees' actions and input to the attainment of the organisation's goals and mission (Ahmad, 2011).

The Academy to Innovate in Human Resources in the Netherlands, provides a set of metrics that can be used to measure employee performance depending on the role and environmental context (HR, 2024). (See Figure 2)

Figure 2 Metrics to measure employee performance

Noticeably, many of these metrics are output-related, with only four (1,2,6 and 7) being related in some way to building mindset. This is similar to Gunter and Gopp's research referenced earlier on productivity, where "softer" skills around productivity and performance were rarely seen (Gunter, 2022).

In 2011, Hameed and Waheed undertook a highly cited study on the link between learning categories and individual performance in the workplace. They referred to some of the major classical works on the subject, which observed key areas that impact employee performance.

From this review, they suggest that the link between higher levels of individual performance and organisational effectiveness requires a model comprising several key aspects. Namely, employee learning, skill growth, Self-directed learning, and employee attitude and behaviour. When these aspects are brought together effectively, employee performance improves.

Employee Performance means employee productivity and output as a result of employee development. Employee performance will ultimately affect the organisational effectiveness (Hameed, 2011).

The Integrated mindset learning program and the processes for this research study have taken account of these major aspects.

Tim Perlick's HBR podcast "How companies can profit from a growth mindset" highlights some of the significant benefits of "value potential, capacity, and a passion for learning, " which are closely connected to building a more positive mindset (Perlick, 2014).

Similarly, Morris and colleagues demonstrated the value of introducing growth mindset training to encourage greater innovation (Morris, 2023).

Let's now look at some of the potential topics of an Integrated mindset learning program and consider how these have impacted the business environment.

The link between emotional intelligence and higher performance levels is now well established. Since the early works of Mayer, Salovey, and Goleman, referenced earlier, much literature has emerged to demonstrate the link. This includes Bar-On and colleagues' work with the US and Israeli Air Force staff (Bar-On, 2013). Baksh Baloch and colleagues' review of emotional intelligence in a university setting (Baksh Baloch, 2014). And Matta and Alam's study into emotional intelligence and productivity in the construction industry shares similar results that "emotional intelligence should be considered a crucial factor in determining employees' performance and productivity." (Matta, 2023).

A study at Motorola found their employees 93% more productive following training in emotional intelligence and stress management. In 2014, the Institute for Health and Human Potential (IHHP) attempted to place an ROI on the value of higher levels of emotional intelligence. It calculated that a one-percentage improvement in leader emotional intelligence would provide an incremental human capital value of $2,160. Even if this program cost the organisation $500 per person, the ROI would be 332% (IHHP, 2014).

Other known links between emotional intelligence and business performance include the case of the Whitbread Group restaurants in the UK, where high-emotional intelligence managers were connected with higher guest satisfaction, lower turnover, and 34% greater profit growth (Orme, 2003). Jorfi and colleagues undertook a study of educational

administration staff in Iran to determine if higher levels of EQ would affect performance. Their findings indicated that emotional intelligence had a positive impact on performance levels (Jorfi, 2010).

In one year, the US Air Force invested less than $10,000 in emotional competence testing and saved $2,760,000 in recruitment (Fast Company, 2000).

From a selfish point of view, being more emotionally intelligent can be beneficial. Forbes Magazine referenced a Talent Smart study that showed people with higher levels of emotional intelligence typically earned $29,000 more each year than lower-EQ professionals (Forbes, 2023).

As a final snapshot on emotional intelligence and its link with performance in business, Coronado-Maldonado and colleagues' recent review of emotionally intelligent leaders is helpful as it demonstrates the link with improving behaviours, business results and team performance (Coronado-Maldonado, 2023).

Reflective practice is another significant area where research is emerging on the link between productivity and higher performance levels in business. Undertaking reflective practice can draw attention to improvements that can and should be made and build self-efficacy by underlining the significant skills and competencies individuals have but often don’t realise.

A useful article on the subject was written by a team at Deloitte, which also raised an important reference point regarding the link between performance and reflection:

“When it comes to accelerating performance, there’s a paradox: If we want to have greater impact, faster, we have to slow down enough to reflect on what we’ve done and what we’re going to do.” (Deloitte, 2018).

Their four reflection questions demonstrate the link between reflection and performance.

- Where are we improving most rapidly, and how can we do more of that?
- What can we learn from these results? What are the implications for how we move differently in the future?
- Where is improvement slowing down, and how can we change what we’re doing to improve the trajectory?
- What data do we need to get better faster?

A 2020 study by LeBlanc and colleagues revealed that where an emotional regulation training program delivered to 104 participants included reflective practice aimed at “cultivating resilience, strengthening interpersonal communication, and enhancing emotional intelligence”, there was a noticeable reduction in depressive symptoms and an improvement in overall mental well-being (LeBlanc, 2020).

One of the most significant recent papers that attempts to measure performance improvements by introducing reflective practice is Di Stefano and colleagues’ working paper from Harvard Business School’s NOM Unit (Di Stefano, 2023).

They demonstrated that reflecting on accumulated experience can provide greater benefits than accumulating more experience under certain conditions.

This was achieved by taking groups of people through a range of brain teasers and reviewing processes where people automatically learn by doing and processes where people are consciously reflective and share these thoughts. Results showed that the "reflection and sharing" groups performed around 18 per cent better on the second round of brain teasers than the control group.

The same group reviewed the number of employees in an outsourcing company in India. Over several days, the study divided the employees into two groups, one working a normal workday and the other finishing fifteen minutes before their workday ended and reflecting, "Please write about the main key lessons you learned." The result led to a 22.8 per cent increase in performance. When reassessed a month later, they were still performing higher.

When we stop, reflect, and think about learning, we feel a greater sense of self-efficacy…we are more motivated, and we perform better afterwards (Di Stefano, 2023).

Another interesting piece of research provides practical solutions to connect performance improvement and reflective practice by recommending performance management practices.

Reflective practices foster better outcomes when they are more explicit and targeted through different organisational levels. The role of performance management and measurement is important in connecting reflective practices with performance (Saunila, 2015).

Few would argue against communication being an essential tool for the success of any organisation. It is one of the most critical drivers of productivity. Whatever the interaction, be it employee to customer, employee to supplier, employee to manager, or vice versa,

excellent communication leads to more effective outcomes. In contrast, better communication will likely lead to inefficiencies and better results.

The literature confirms that there is a significant correlation between effective communication processes and performance in organisations.

In contemporary business writing, communication is identified as a significant productivity driver. McKinsey's work in this field has been regularly referenced. A 2012 report written by Chui suggested that effective team communication can lead to a 20–25% productivity increase (Chui, 2012).

A further McKinsey report linked to remote working suggested that people who feel more included in workplace communication are approximately five times more likely to report productivity increases (Alexander, 2021).

Kalogiannidis's study into the relationship between communication and employee performance provides some valuable reflections on the subject, confirming that "effective communication in any business entity has a significant influence on employee performance." The study's results predicted a 42.1% change in employee performance. This was derived from a survey instrument that measured employee perceptions of perceived changes in performance from improvements in horizontal, vertical, and interpersonal communication processes (Kalogiannidis, 2020).

A three-year study in a software company undertaken by Dutta and colleagues from Arizona State University measuring inter-employee communication networks speech patterns in building software concluded "that communication is strongly related to productivity in an organisation." (Dutta, 2021).

Jiang and colleagues draw attention to the significance of communication and its impact on performance regarding knowledge growth and improved motivation (Jiang, 2020).

Olkkonen and colleagues draw attention to the significant impact interpersonal communication processes have on relationships and networks (Olkkonen, 2000)**.**

It's also worth referencing Sandy Pentland's research on verbal and nonverbal communication effectiveness using sociometrics to measure team performance, which emerged from MIT. His work provides insights into the impact of more effective communication on performance (Pentland, 2010)**.**

There is clear evidence of a link between a well-cared-for workforce and performance in terms of health and well-being.

The recent Gallup report on well-being drew attention to the significant impact this had through the Net Thriving Survey Instrument to track suffering and thriving among employees.

The numbers are substantial: USD 322 billion of turnover and lost productivity cost globally due to employee burnout; USD 20 million of additional lost opportunity for every 10,000 workers due to struggling or suffering employees; 15% to 20% of total payroll in voluntary turnover costs, on average, due to burnout (Gallup, 2024).

The World Economic Forum places the global health-related productivity cost loss for employers at $530 billion annually (World Economic Forum, 2023).

The Harvard Business Review 2013 report on engagement connects engagement with a healthy, motivated workforce (Harvard Business Review, 2013).

In 2010, The Work Foundation delivered a report on behalf of Investors in People highlighting the inextricable link between performance and well-being in the workplace. It identified all the aspects of business life that would be impacted by improved health and well-being of its employees. This included reduced sickness, fewer accidents, higher productivity, higher commitment, improved resilience, retention, and brand. The report also drew attention to opportunities beyond the workplace (Bevan, 2010).

There is clear evidence that workers' mental health issues have been growing in recent years. The Mental Health Foundation estimates that 3 in 10 employees will experience a mental health problem in any year (Haddon, 2018). UK figures suggest poor mental health in the workplace costs up to GBP 45 billion annually (World Economic Forum, 2023).

Recent research also shows that where effective support programs and therapy treatments are available, fewer days are lost at work, and people are much more effective (Goetzel, 2002).

As a final glimpse of the evidence demonstrating the value of ensuring workers are well looked after, organisations that have received health, safety, and well-being awards for their programs experienced a 115% growth in earnings per share compared with 27% earnings per share compared to their competitors (Fabius, 2021).

In summary, a literature scan confirms that delivering a program that focuses on building an integrated mindset can deliver demonstrable, measurable benefits.

2.7 Literature for considering the building of an effective learning program

One of the most important aspects of making a lasting impact and change for an individual and an organisation is establishing, setting up, designing and delivering effective learning

programs. For many years, training and education programs have been built with restrictions top of mind. The location. The classroom size. The teacher availability. The tools available. The curricular requirements. The time of day or year. All these aspects say nothing of the learner experience. From these observations and insights, meaningful learning emerges regarding the structure and delivery of training programs.

Human-centred design is an approach to interactive systems development that aims to make systems usable and useful by focusing on the users, their needs and requirements and by applying human factors, ergonomics, and usability knowledge and techniques. This approach enhances effectiveness and efficiency, improves human well-being, user satisfaction, accessibility and sustainability, and counteracts possible adverse effects of use on human health, safety and performance (ISO, 2019).

Making learning human-centred is challenging, particularly in a world where much is online. In this research study, the learning program had to follow the same path: delivering an online learning program, as face-to-face learning would not be possible due to the dispersed nature of participants.

Forbes Magazine drew attention to two surveys that confirmed the lack of a human-centred approach to online learning (Forbes Magazine, 2021). The BNC College 2030 survey found that 44% of students believe the value of college has declined due to the pandemic and are particularly struggling with engagement in online learning (Barnes and Noble College, 2022). McKinsey's survey of teachers in the USA also shows misgivings about the online learning solutions typically delivered. On a ten-point scale, their average online experience was just 3.5 (Chen, 2021).

Often, the challenge of those building online learning is that they try to fit traditionally structured education into an online learning environment. What emerges are often dull "tick box" courses that students dislike instead of connectivity and novelty in learning. When individuals embrace learning, there could be a range of reasons. It may have something to do with a deep connection with a teacher, enjoying the content format and delivery, engagement in the learning environment, having an emotional connection with a subject, and just the fun in learning. From experience in building learning solutions for internal use and client settings at Ernst and Young, Deloitte and Standards Australia, the doctorate candidate learnt to take perceived dry subjects and make them fun using experiential methods. Subjects such as quality management, risk management, health and safety and reengineering. It is down to the planning and execution and, most importantly, keeping the user in mind. In those early days of the doctorate candidate developing programs, Carl Rogers' (Rogers, 1994) five elements of making experiential learning work were applied to test learning assumptions:

- Setting a positive climate for learning.
- Clarifying the purposes of the learner(s).
- Organising and making available learning resources.
- Balancing intellectual and emotional components of learning.
- Sharing feelings and thoughts with learners but not dominating.

The work has also been compared and verified against Kolb's Experiential Learning Model (ELM), which emerged in the 1980s—drawing attention to learning through observing and experiencing in the "here and now" rather than reading a book. Discovery and

experimentation appear to be more successful when experienced rather than hearing or reading about others' experiences. "The process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience." (Kolb, 1984). Other important papers from Kolb include his 2005 paper "Learning Styles and learning spaces", written with his daughter Alice (Kolb, 2005). His 2014 book on experiential learning is also worthy of reference (Kolb, 2014).

A contemporary approach to building effective learning programs has emerged from the work of neuroleadership specialists Dr Lila Davachi, Dr Tobias Kiefer, Dr David Rock, and Lisa Rock. They published a paper on a new **AGES** learning pedagogy in 2010. **AGES** stands for achieving sufficient **A**ttention, **G**enerating a connection to knowledge, **E**motional connection, and information **S**pacing (Davachi, 2010).

The paper published in 2010 by the Neuroleadership Institute in the Neuroleadership Journal builds on neuroscience and organisational learning research, which considers how human brains capture, store and restore information most effectively. Lila Davachi, a Professor of Psychology at New York University, researched this field: "Neuroscientists have discovered that the level of activation of a brain region called the hippocampus during an encoding task plays a significant role in whether people can recall what they learned." (Davachi, 2002).

An illustration of the AGES pedagogy is shown in Figure 3.

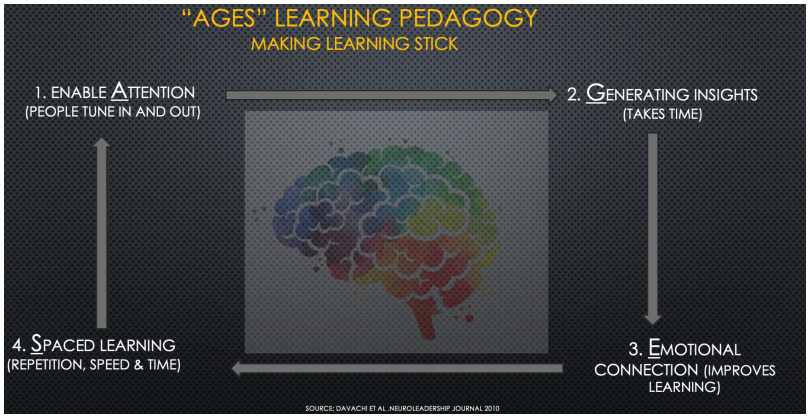


Figure 3 AGES pedagogy overview

Key to this pedagogy is the acknowledgement of developing learning, which encourages focus and attention. The challenge of distraction in the modern world is well understood and experienced. Literature also draws attention to this challenge. Learning must ensure focus and attention for the hippocampus to work effectively. Arnsten and colleagues' work in this area is significant and confirms the negative impact that stress and noise have on brain function, with particular reference to research into monkeys (Arnsten, 1998). In addition to the effective engagement of the hippocampus, neurobiology researchers have identified that the brain also requires essential hormones (dopamine) and norepinephrine (noradrenaline) to maximise focus and attention (Vijayraghavan, 2007).

Further research on the prefrontal cortex by Arnsten and colleagues also demonstrates its sensitivity to its environment and effectiveness and the ways in which hormones modulate cognitive functions (Arnsten, 2002).

Noradrenaline keeps humans alert, and dopamine is typically released when something new and novel is experienced. Combine this with something that connects with someone

personally and emotionally, and then getting close to an effective learning pedagogy is possible.

In his book "Teaching with the Brain in Mind," Jensen confirms that the most critical aspect of ensuring retention is for a subject to feel ownership of the learning content (Jensen, 2005).

McCabe and Peterson's research on what makes narratives memorable is worthy of mention here. Studying almost 300 children's narratives found that those more memorable had more "sensational" content than those that did not. In other words, make the content enjoyable (McCabe, 1990).

An essential aspect of any new learning is that practice and repetition help embed new knowledge, as does learning in bite-size pieces. Repetition is a well-used technique for embedding deeper learning. Research continues to confirm its relevance; for example, Wiggins and colleagues' study of science undergraduates where they report that:

> Repetition was helpful for the mastery of lab techniques, improved their confidence in science abilities, bettered their understanding of conceptual science, and gave opportunities to self-design their learning beyond the designed curriculum (Wiggins, 2021).

Saville confirms the same in the application of repetition in music education, adding that it can be more successful with "accurate and timely feedback." (Saville, 2011). It is also important to acknowledge that how content is structured and delivered impacts the benefits of repetition. Bromage and Mayer draw attention to this in their experiments with undergraduates (Bromage, 1986).

The research undertaken by Van der Meer and colleagues from the University of Otago showed that the vast majority of university students viewed "shorter delivery as better." (Van der Meer, 2015).

Manning and Spicer's paper on bite-sized teaching (BST) in medicine confirms the same. Almost 80% of medical students from a sample of 171 hospital doctors prefer bite-sized learning to achieve higher levels of focus, attention, and retention. "BST positively impacts resident attitudes and immediate knowledge recall compared to case-based teaching." (Manning, 2021).

Based on the literature review, each of these critical aspects was considered in developing and building the research study's learning program and the planned delivery. A review step took place at every stage in the design and build to reflect on the Integrated Learning program's connection with the AGES pedagogy.

The final aspect of building a relevant learning program in the subject area is the economic considerations for any organisation's implementation. Whilst online learning existed pre-COVID, its growth and adoption by organisations was limited. However, since the Pandemic, there has been a significant increase in the development and delivery of online programs. Forbes reports that the number of college students in the USA undertaking online learning "flipped during covid and remain steady." 13.1% online in 2012 to 74.4% in 2020.

Arth's report for Bersin and Associates demonstrates the significance of online learning for organisations (Arth, 2011).

The 2022 report from the World Economic Forum reports that in 2021, Coursera saw 20 million new student registrations. See figure 4 (World Economic Forum Centre for the New Economy and Society, 2022).

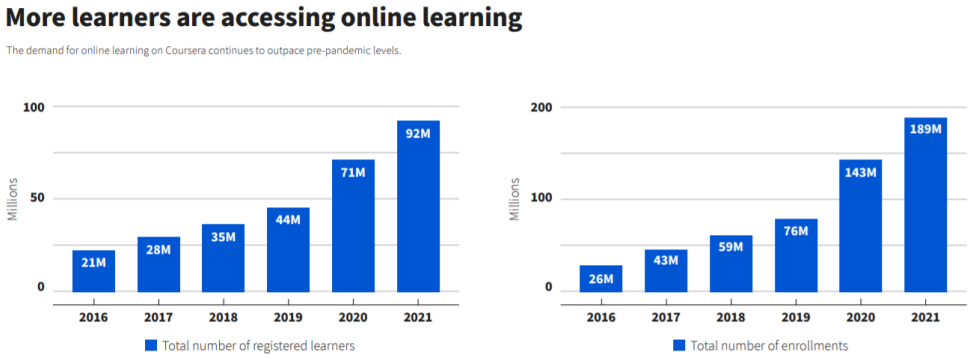


Figure 4 More learners are accessing online learning.

Polaris research estimates that online learning will continue to grow through this decade. Their estimate from 2022-2030 is 20.5% (Polaris, 2022).

Whilst assessing the impact of the online learning option compared to other options is outside the scope of this research study, the changing face of learning identified in this section has enabled the introduction of such an approach. A key to its success is rigorously applying an effective learning pedagogy such as AGES and human-centred learning principles. Building and delivering the learning content to participants on this basis is essential.

Measuring participants' understanding of the research study learning program would be demonstrated not via the traditional method of assessment through written assignments, exams, or multiple-choice questions but rather through conversation and commitment to applying the content principles during and after the research study.

2.8 Literature review for building an effective interview program

The doctorate candidate was aware that the research study timeline would be short and be undertaken with a small number of participants. This was clear from the conversations that took place early in the process with the possible participating organisations. Due to this, a model emerged for how the analysis could be undertaken using mixed methods of both qualitative and quantitative tools. It was decided that undertaking in-depth interviews could be one of the major sources of identifying changes arising from a learning program. As well as identifying a suitable structure for the interviews, an important consideration would be to ensure flexibility as there would be many things unknown at the start of the process and there could be new aspects emerging throughout the research study.

One paper that proved valuable in building the process and helpful in creating a structure for participant interviews was Kallio and colleagues' "Systematic review: developing a framework for a qualitative semi-structured interview guide." (Kallio, 2016).

The framework from Kallio and colleagues' review is provided in Figure 5.

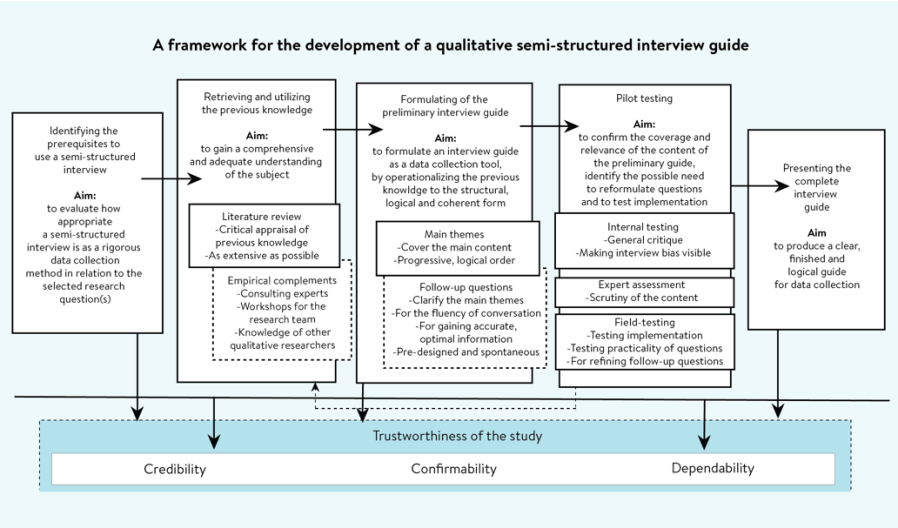


Figure 5 A framework for the development of a qualitative semi-structured interview guide.

The paper draws attention to some outcomes necessary in the qualitative data capture of this research study and all studies. The paper helped enormously in aspects such as the interview guide, process and structure and the development of key questions. The approach also offered important advice on the piloting of an interview process prior to roll-out. Following this process provided greater consistency, credibility, and objectivity.

A search took place on an existing questionnaire, which could be used as a framework for the participant interviews. A thorough search of the research found no such solution. Several surveys touched on the subject. For example, Stanford University's "Growth Mindset Scale" (Stanford University Dept of Psychology, 2018). Poole's "Mindset Survey" (Poole, 2020). Mindworks "Mindset Assessment Profile" (Mindworks, 2020). However, these provided a limited number of potential questions of value and covered some aspects of the more holistic program in this research study. Hence, questions would need to be drawn from the elements of the actual learning program, the experience from interviewing at elite sports, and the 100 Leader program (Australasian Leisure Management, 2015).

Other sources of potential questions were considered, too. This included a short video interview with Dr Carol Dweck on questions to identify growth mindset candidates (YouTube, 2022). An article from the recruitment organisation Indeed, provides eleven growth mindset questions and answers (Indeed, 2023). A further helpful article was Boss and Bova's item from the 2015 Entrepreneur website, featuring five questions that identify growth-minded employees (Boss, 2015).

2.9 Literature review for building a qualitative index to assess change in performance

One of the more difficult tasks of the research project was synthesising any changes emerging from the interviews into a form of meaningful and quantifiable measure. This would be an important aspect of the doctorate candidate's attempt to measure participant mindset changes.

Several research papers provided valuable insights and helpful approaches to building indices around qualitative data. These papers included Hardeman and colleagues' (Hardeman, 2014) work on building the EU Regional Human Development Index and developing indices on quality of life and Ruta and colleagues' (Ruta, 1994) work attempting to measure quality of life.

Two further papers considered included Gjolberg's (Gjolberg, 2009) article on measuring the unmeasurable and Kember's and colleagues' paper on developing an index for reflective thinking (Kember, 2000). These papers helped the doctoral candidate's concerns regarding the qualitative nature of the analysis. These papers also helped set the path for developing a more structured approach to analysing the potential subjectivity of the interviews. A further piece of research that provided valuable insights into undertaking quantitative analysis of qualitative data was Hargreaves and colleagues' work on building a wealth index in rural South Africa (Hargreaves, 2007).

Building an index to measure changes in qualitative information and data can be a complex process that requires careful consideration of various factors. The doctorate candidate has significant experience in building and utilising measurement tools, which provide further

support to the literature review findings. (Examples include: Strategic Alignment in Health, Ernst and Young 1995; Cultural Vitality Surveys, Standards Australia 2000; TMS and Belbin, 2012-present; EARL Measure, XVenture 2016; Communication Survey, XVenture 2022).

2.10 Literature review on the limitations of self-assessment

The research study has emphasised self-assessment as a tool for measuring changes in behaviour and performance. The doctoral candidate is aware that self-assessment has flaws and that an individual's accurate performance measurement can be exaggerated and unrealistic. This is particularly true for low performers whose lack of insight in self-evaluation of their knowledge and lack of awareness of their knowledge deficits can skew early results. However, counter to this is that when an individual undertakes an accurate self-assessment, more accurate feedback is more likely to lead to further improvements in performance (Wiggins, 2012).

The research study has taken this direction, building specific processes to enable self-assessment skills among participants. Brown and Harris see this as important. Rather than self-assessment being just an assessment method, they view it as a skill, developing over time with support and education (Brown, 2014). Their model presented in Figure 6 demonstrates self-assessment as a rich process, providing a rich philosophical foundation for this research study.

Figure 6 Model of Self-Assessment

This also conveys the idea that the goal is knowledge attainment and applying that knowledge rather than just completing the task. This links to Pintrich and Garcia's research (Pintrich, 1994) and Schunk's research on self-regulation and academic motivation. "The intensity of these emotions are important outcomes of self-regulation." (Schunk, 1991).

Participants reflect on their performance, often with a blend of emotions, sometimes with great intensity. Disappointment at mistake making or failing; reflecting on relationships at home and work; pride in their work and their children are all likely to emerge.

They may reflect on their performance and experience a range of emotions (happiness at success, sadness at failure). The quality and intensity of the attributions are important outcomes of self-regulation.

Reflection is an integral element in self-evaluation and fundamental to the focus on improved performance. Considering what has been learned, what has changed, and what more can be done leads to setting new goals.

The learning process then becomes rich and not superficial. As a by-product, individuals noticeably become more honest. Pass or fail is of no interest. This nonjudgmental process gives space for only two things: learning and growth.

This perspective links learning content directly with the process of participant self-assessment and learning. Participants may begin and continue to assess themselves on their persistence, motivation, and achievement toward their own mastery and performance goals, as referenced by Dweck. Through this, their learning journey takes shape.

McMillan and Hearn make the same point in their research of 2008. “Student self-

process in which students self-monitor and self-evaluate to learn, a critical skill that enhances student motivation and achievement.” (McMillan, 2008).

Sargeant and colleagues offer evidence that account needs to be taken of how self-assessment “is informed and its role in self-directed learning and professional self-regulation.” (Sargeant, 2010). A self-assessment process where any participant is informed and understand how the assessment is being undertaken and what it will be used for is very important.

Opportunities to review and improve performance through self-assessment need to be regular, removing the fear of over-stretching and exaggerating performance.

Andrade and Valtcheva suggest that “criteria-referenced self-assessment has been shown to promote achievement.” (Andrade, 2009).

Similarly, there needs to be consideration given for an “accurate measure of content mastery and, thereby, a more accurate assessment of what the student (individual) needs to do to perform satisfactorily.” (Bercher, 2012).

Where criteria and standards are well understood, the outcomes of self-assessment and setting goals to improve performance are easier.

2.11 Literature review on assessing change in communication patterns

The content of the learning program draws attention to several fundamental premises: that the more an individual practices, the better they become; the more an individual focuses on the positive, the more optimistic they become, and vice versa. The references from the work of Seligman, Dweck, and Siegel, which were discussed earlier, confirm this. Additionally, research undertaken by Macleod and colleagues, (MacLeod, 2002) as well as Wadlinger and Isaacowitz, shared findings that training people to focus on the positive, leads to improvements in well-being (Wadlinger, 2006). Working on those areas in people's brains, which are responsible for positive memories, thoughts, and emotions, leads to deeper connections between neurons associated with these processes. This, in turn, impacts how people look at the World and, typically, how they behave.

Dr Julien C Mirivel is a Professor of Applied Communication at the University of Arkansas and describes communication as "oiling the social wheel." It's not just a mode of transmission (Mirivel, 2005).

In an article for the Great Good Magazine, Mirivel provides an example of how communication of the same message can be delivered positively or negatively. He cites the "New Zealand language at work" project, where over 500 emails were studied by researchers from two organisations, one experiencing a hostile environment and the other with a positive culture.

The hostile culture organisation's email would sound like this:

The meeting is at 3:00 p.m.

For a positive culture, the organisation's email would sound like this:

Hi everybody,

I hope you are doing well. Looking forward to seeing you at our meeting on Friday at 3:00 p.m. Have a great week.

Warmly,

John

It has the same content, but the detail impacts the receiver differently.

To quote Mirivel: "What we say, what we do, affects people. It affects who they are at the moment and who they become." (Mirivel, 2021).

Denise Fournier's article in Psychology Today discusses how language use can change how people view life. She uses the example of a simple shift in language, which can provide a different perspective: Instead of saying, "I'm going through something difficult", say, "I'm growing through something difficult." Using "prefer to, want to or choose to" is more empowering than should, must or ought to (Fournier, 2019).

Wayne Dyer's famous quote fits this with idea too. "Change the way you look at things, and the things you look at will change" (Dyer, 2009).

In 2017, Michael Corballis considered the evolution of language and concluded that language is "a device for sharing thoughts and experiences." "What may be distinctive in humans is the means to communicate these mental experiences and knowledge gained from them." (Corballis, 2017).

Training and education expert Dr Erin Klepper also acknowledges this. After experiencing failures in delivering training programs, he realised that *"*Perspective is everything. It isn't our communication style that impacts our perspective; it is our perspective that affects our communication style." (Klepper, 2019).

In his book "The 7 Habits of Highly Effective People", Stephen Covey said,

> Each of us tends to think we see things as they are, that we are objective. But this is not the case. We see the world not as it is but as we are. When we open our mouths to describe what we see, we, in effect, describe ourselves –our perceptions, our paradigms (Covey, 2020).

These aspects are particularly relevant to this research study. Often, it is the case that introducing a specific program dedicated to improvement gives rise to more consideration and reflection, thus leading to greater openness with others, particularly in an athlete and coach relationship. This, in turn, leads to deeper introspection and even greater commitment to performance improvement.

Jowett and Cockerill's work on assessing Olympic athlete and coach relationships, confirmed that when athletes were confident and able to share deep thoughts more openly, actions for improvement were more effective (Jowett, 2003).

Open, honest, and two-way communication makes for more significant progress and creates deeper engagement. If trust in someone or something is more significant, then commitment to that person or something is greater. The "Culture Amp" study analysed data from over 60,000 responses from 150 companies and confirmed the value of honest, open, two-way communication (Crosswell, 2024).

Zeffane and colleagues agree: “We know that trust and commitment do not just happen; they are forged and maintained through effective communication.” (Zeffane, 2011).

2.12 Literature Review on the impact of the environment on language patterns

There is much empirical evidence of a causal link between positive language and changing environmental conditions, e.g. a positive or hostile environment. Pincud's research in 1986 drew attention to the link between communication, job satisfaction, and job performance (Pincud, 1986).

Research undertaken by the Max Plank Institute in 2020 on the (un)likely link between environment and languages, in particular considering what extent climate impacts human behaviour in Papua New Guinea, concluded there “may be an indication that environment does influence the expansion and distribution of languages belonging to the same language family.” (Antunes, 2020).

A significant study was published by the British Medical Journal in 2015. Vickers and colleagues undertook a retrospective analysis of positive and negative words in scientific PubMed abstracts between 1974 and 2014. They identified a relative increase in the use of positive words by 880% in the timeframe and 257% in negative words (Vinkers, 2015). Two significant aspects of the Vinkers and colleagues’ study can add value to this research. First, through analysis and consensus, a list of words commonly identified as positive, negative, and neutral was identified. Second, the study confirmed that shifts in the use of positive and negative words had occurred in scientific publications. The authors also concluded that more positive language is “ probably related to the emergence of a positive outcome bias that currently dominates scientific literature.”

Summarising this, the doctorate candidate has attempted to unearth any shift in participants' language as they progressed through the research study. Positive language is linked to an improving mindset, whilst negative language is connected to a fixed mindset. Several research papers have attempted to address this. Martin and White drew attention to the significance that "linguistic expression of emotion and opinions have on our daily lives (Martin, 2005).

In Taboada's overview of sentiment analysis in the Annual Review of Linguistics, she referenced Descartes, suggesting his famous statement could have been preceded with "I feel, therefore I am." (Taboada, 2016).

2.13 Literature Review on the use of sentiment analysis as a tool for measuring change

An exciting emerging technology in the last couple of decades is the development, design, and application of machine learning to analyse language use.

Identifying and analysing people's thoughts, expressions, impressions and opinions on any subject, topic, service, or product can be extremely valuable for organisations' decision-making. Sentiment analysis or opinion mining uses computers to study opinions, attitudes and emotions, typically undertaken in a review. It usually extracts subjective or objective information from text using natural language processing and text mining.

Wilson and colleagues suggest there are differences between sentiment analysis (SA) and opinion mining (OM): "Opinion mining extracts and analyses people's opinion about an entity while sentiment analysis identifies the sentiment expressed in a text and then

analyses it. Therefore, the target of SA is to find opinions, identify the sentiments they express, and then classify their polarity." (Wilson, 2005).

Operators and researchers are finding a vast array of uses for such techniques, although they need to be undertaken knowing that there are still concerns about accuracy. Whilst progress in using machine learning and artificial intelligence is growing exponentially, it is still in its relative infancy.

Bakliwal, Foster and colleagues undertook an interesting sentiment analysis of 2624 political tweets leading up to the general election in Ireland in 2011. Of note in this research is the acknowledgement of achieving low levels of accuracy (61.6%) (Bakliwal, 2013).

Whilst this has been a common theme, the good news is that improvements are being made where accuracy is improving. Most recently, a major study in Germany achieved much higher levels of accuracy using a transfer learning approach (Hartmann, 2023). Transfer learning uses knowledge from one task to improve performance on another task or a different dataset. This makes sense, but until recently, it was challenging to achieve. Now, several machine learning tools are available for this. Achieving higher levels of accuracy in sentiment analysis using machine learning starts to make it incredibly relevant for research, decision support and decision-making.

Other examples of sentiment analysis use have emerged over the last decade, demonstrating its flexibility as an analytical tool and possible value.

Yu and colleagues used a model to examine emotional words and their intensity, leading to a sentiment classification for stock market news (Yu, 2013) and Rasool and colleagues' research undertaking a sentiment analysis on apparel brands via Twitter (Rasool, 2019).

Abdalla and colleagues performed a sentiment analysis on fast-food companies, analysing hundreds of thousands of tweet datasets of fast-food companies with deep learning models, demonstrating an accuracy of 95.35% (Abdalla, 2021).

According to mainstream business news, many major brands are now using sentiment analysis for various commercial reasons: reputation management at Nike, player reviews and feedback for Electronic Arts games, monitoring of customer sentiments at McDonald's and Delta Airlines, improving product range and website presentation at Techsmith, and customer service at Repustate.

This rich use of sentiment analysis has grown significantly with the mass emergence of social media. Assessment of opinion on Facebook, Instagram, Twitter (X), LinkedIn, and other platforms provides decision-makers and business leaders significant opportunities to access and mine big data. Early examples of sentiment analysis in social media include Neri and colleagues' (Neri, 2012) review in 2012 Venugopalan (Venugopalan, 2015) and Vateekul (Vateekul, 2016) and colleagues' separate research studies on Twitter.

More recent work on sentiment analysis in social media includes Rodriguez-Ibanez and colleagues' (Rodríguez-Ibánez, 2023) review of sentiment analysis on social media platforms in 2023 and specific subject areas in social media, such as mental health safety, by Benrouba and Boudour (Benrouba, 2023).

Medhat and colleagues undertook a landmark on sentiment analysis and its applications in 2014. They highlighted three different levels of sentiment analysis: document-level, sentence-level, and aspect-level (Medhat, 2014).

This work area is growing dramatically but is still “a relatively unexplored subject of study.” (Wankhade, 2022).

This research study provides an opportunity to add a new layer to the emerging sentiment analysis and opinion mining research by utilising some of the available techniques to identify possible patterns and changes in positive and negative sentiment in two distinct areas: the perception of the business environments of the two participating organisations in the media; the positive, negative or neutral language patterns emerging from the participant interviews, which could demonstrate a shift in behaviour or performance.

2.14 Literature Review on gaining commitment for program success

The real test of this research study’s relevance is not only whether there will be a shift in individual performance but, just as importantly, is the commitment to participation and the continued application of the learning after the research study is completed.

For an individual to seriously consider learning, building, adopting and consistently applying the habits necessary for an integrated mindset requires significant commitment. Many people have had good intentions to undertake a new project at home or a new study module. Others do the same regarding learning a musical instrument or a new language or focus on health and fitness—however, the majority fall by the wayside. Chaos Group suggests that only 30 to 40% of IT projects are completed successfully in the business world. McKinsey researchers estimate that 70% of change projects fail (Ewenstein, 2015). Their research tells us that most change efforts fail. Yet change methodologies are stuck in a predigital era. It’s high time to start catching up.

For personal projects, the failure rates may be even higher unless consideration is given from the outset regarding building commitment.

Burgess and Turner's research in 2000 provides an excellent model demonstrating different stages in building and maintaining commitment through a project. Ultimately, the research study aims to build this commitment from the outset and help individuals sustain it after it is finished. They identify three stages and seven commitment factors.

The stages are as follows:

- Before the project starts,
- During the project and
- After the project.

The seven commitment factors vary depending on the project phase. The doctorate candidate's model follows these seven factors and highlights how they connect with the three phases.

- Individuals join of their own free will.
- The role of uncertainty.
- Start small and build up.
- Joining requires individual effort.
- Public acts of commitment.
- Active involvement.
- Clear messages and lines of communication.

The model in Figure 7 summarises these events and their connection to any project.

Key Commitment Factors	Before The Project	During The Project	After The Project
Free Will to Join or Leave	Free will to join	Free will to leave, but not rejoin	Freedom to become committed after the fact
Role of Uncertainty	INCREASING CERTAINTY		
Start Small and Build Up	INCREASING LEVELS OF BUY-IN		
Joining requires an Individual Effort	Creation of elitism based upon individual input	Management of the potential 'them and us' syndrome	System to reintegrate team members after the project
Public Acts of Commitment	Demonstrated commitment from others, especially senior executives	Demonstrated commitment from team members and those that will be affected by change	Recorded commitment and appreciation
Active Involvement	INCREASING SCALE AND SCOPE OF INVOLVEMENT		
Clear Messages and Lines of Communication	Communication of expectations and goals	Open and free communication of ideas, problems and feedback	Feedback and corporate learning

Figure 7 Model for building and maintaining commitment through a project

Burgess and Turner point out that to build commitment, we "need to build a reinforcing cycle of behaviour and attitudes." (Burgess, 2000).

The same aspects can be seen in building commitment in elite sports. This can be traced to models from the early nineties, which are still employed in various forms to ensure that coaches gain commitment from their athletes (Scanlan, 1993).

From this research and work, Professor & Director of the International Center for Talent Development (UCLA) Tara Scanlan and colleagues provide a model that considers important psychosocial aspects that together help to gain commitment to a sport. (Figure 8). Note the positives and negatives next to the five key elements that the researchers suggest will impact sports commitment (high sports enjoyment will result in high sports commitment, while high involvement alternatives will result in low sports commitment). This same principle can be applied in any business setting, too.

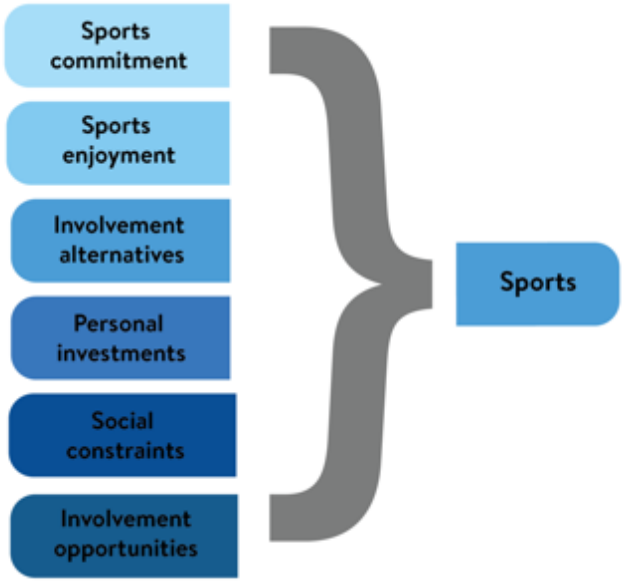


Figure 8 Psychosocial elements affecting commitment to sport

Each of the categories is described as follows:

- Sports commitment: 'a psychological construct representing the desire and resolve to continue sport participation.'
- Sports enjoyment: 'a positive affective response to the sport experience that reflects generalised feelings such as pleasure, liking, and fun.'
- Involvement alternatives: 'the attractiveness of the most preferred alternative(s) to continued participation in the current endeavour.'
- Personal investments: 'personal resources that are put into the activity which cannot be recovered if participation is discontinued.'
- Social constraints: 'social expectations or norms which create feelings of obligation to remain in the activity.'

- Involvement opportunities: 'valued opportunities that are present only through continued involvement.'

Scanlan and colleagues further expanded on the Sport Commitment Model in 2023 with a study of 227 athletes with results that " highlighted the role of enthusiastic commitment as an important psychological construct mediating the relationship between athlete need satisfaction and behavioural outcomes." (Hodge, 2023).

From the two models considered, a range of factors emerge that need to be considered in developing the research study, implementing the program, and ultimately ensuring a successful outcome.

Melanie Tait provides an additional piece of useful research from the education sector on commitment. She assessed the commitment and retention of novice teachers in Ontario to add weight to the debate on building commitment. She identified resilience as a key contributor to ensuring commitment, along with competencies such as effective goal setting, problem-solving, well-being, and general optimism:

> Demonstrating social competence, taking advantage of opportunities to develop personal efficacy, using problem-solving strategies, ability to rebound after a difficult experience and, setting goals for the future, taking care of oneself and maintaining a sense of optimism (Tait, 2008).

A recent paper acknowledges the link between commitment and a genuine positive value outcome. A commitment to change is more likely where perceived benefits and value are understood and desired rather than any sense of obligation or cost minimisation (Harrison, 2022).

Another aspect of achieving more outstanding individual commitment is the connection with job satisfaction. If an individual enjoys their role and senses and sees achievement, then the commitment to undertake that job is heightened. Activities connected with achieving even greater satisfaction are also more likely to be undertaken. Aziz and colleagues' 2021 paper on the relationship between employee commitment and job satisfaction in three private universities supports this view (Aziz, 2021).

We also know that leadership has a major impact on people's commitment. If a leader is encouraging and supportive and displays the competencies they encourage their people to develop, we will likely see much more significant commitment from their followers.

Ribeiro and colleagues' 2020 study of 177 leaders from 26 private small and medium-sized enterprises confirms this. They confirmed that authentic leadership positively impacts "affective commitment and creativity." Moreover, they conclude that organisations can increase employees' commitment and creativity by their managers adopting similar authentic leadership styles (Ribeiro, 2020).

Schaufenbuel thinks similarly.

Employees will respond better to bosses and peers whom they find to be "resonant." Dissonant managers trigger a negative response in the brain, which then categorises them as a foe, leading to distrust and disconnection (Schaufenbuel, 2014).

The work of David Rock and colleagues is also relevant and should be considered. (Rock, 2009) Rock and colleagues' SCARF Model considers five key aspects that can help enhance motivation and individual engagement. All aspects can trigger "primary reward"

or “primary threat” responses in the brain that impact relationships, communication, and intrinsic motivation.

- **S**tatus- a person’s relative importance to others.
- **C**ertainty- the ability to predict the future.
- **A**utonomy- a sense of control over events affecting the individual.
- **R**elatedness- a sense of connection and safety with others.
- **F**airness - the perception of being treated justly.

Fairness and inequity are fundamental in how our brains work. Our response to these is fast and non-cognitive. Our happiness regarding fair and equitable outcomes is well documented. For example, Tamir, Zaki, and Mitchell demonstrated this through their findings on a game of sharing/non-sharing and confirmed that “people place intrinsic value on sharing (information) with others.” (Tamir, 2015).

This is not just for humans. Research into monkeys not receiving fair portions of food compared to other monkeys can have dramatic consequences (Brosnan, 2003).

Brosnan and colleagues conclude that individuals react immediately to unequal distribution of rewards, mainly when effort is equal. However, they are also happy to accept inequality and cooperate, provided there is an expectation that this will equalise over time.

The SCARF Model neatly fits the research study. Although relatively new, it may offer a practical approach to increasing individual commitment.

The association between an excellent individual socio-psychological experience and performance is well documented.

Categorising psychosocial matters draws common conclusions in the literature.

A study in Sweden summarised these factors in two groups: psychological and social resources (social integration, emotional support, perceived control, self-esteem, sense of coherence and trust) and psychological risk factors (cynicism, vital exhaustion, hopelessness, and depressiveness) (Thomas, 2020).

Noticeably, these psycho-social matters affecting individuals and their performance are not just the bastions of the work environment but, critically, the home environment. A study by Susan and colleagues shows the link between effective management of socio-psychological factors and commitment to work (Susan, 2021).

Leaders have an important role in how this plays out. In a fast-paced business environment, does the leader help instil confidence and minimise threats so that individuals can be the best they can be?

Conference papers by Savaneviciene and Girdauskiene confirm that applying a SCARF model can create a positive employee experience (Savaneviciene, 2020). Similarly, Manjaly and colleagues' study in government organisations saw the link between the model's application and greater engagement (Manjaly, 2024).

Applying the model in a different setting, a noticeable increase in motivation and commitment was identified for a sample of students undertaking business classes in the USA. Javadizadeh and colleagues noted that student perception of applying SCARF was positively related to class performance and that instructors' use of SCARF triggered motivation and reward systems (Javadizadeh, 2022).

CHAPTER III:

METHODOLOGY

3.1 Overview of the Research Problem

The pace and rate of change in business has increased in recent years, attributed to several factors including the introduction of new technologies, greater global competition driving supplier costs down and higher expectations from institutions and shareholders to achieve greater levels of growth. This has created expectations for employees to perform at higher levels with a trend for longer hours. CNN Business reported the challenge a decade ago in its article showing 40% of US workers were working more than 50 hours a week (Isidor, 2015). Gallup reported 76% of workers were experiencing burnout (Wigert, 2020). The Australian Institute's Centre for Future Work estimated 13 per cent of employees work very long hours, and above the OECD average (Ferguson, 2023). 20% of Australian employees have accrued an additional 4 weeks leave due to overtime (Sande, 2024). The Harvard Business School Strategy Unit 2020 report confirmed that workers were "swamped" with an average workday increasing by 8.2% since the pandemic (Kost, 2020). This supports the World Health Organisation reporting that nearly a quarter of a million people died from stroke and heart attack as a result of working long hours (World Health Organisation, 2021).

The application of a learning program focused on building an integrated mindset will be tested and analysed as a potential solution for helping individuals achieving higher levels of performance and achieving greater well-being.

The program will aim to teach integrated mindset skills, and test and measure individual participant behaviours and performance changes over a short time frame.

3.2 Operationalization of Theoretical Constructs

Employees' ability to adapt and adopt behaviours to respond to the changing expectations in the workplace is critical for organisational success as well as sustaining individual well-being.

An integrated mindset learning program is considered as a strategy to help employees build more effective behaviours to achieve both these aims.

Operationalization of theoretical constructs requires the defining of variables into measurable factors. For this research study a number of constructs will be operationalised:

Construct 1 Mindset

This construct considers how individuals approach challenges and opportunities with either a growth or fixed mindset. People with a growth mindset are likely to embrace challenges, see failure as an opportunity for continuous improvement, and new abilities being developed through learning, and hard work. People with a fixed mindset often avoid challenges, fear feedback and may be threatened by others success. They believe that ability cannot be changed and is static.

Construct 2 Emotional Intelligence

Emotional Intelligence (EI) is the ability to recognize, understand, and manage individual emotions and the emotions of others. Emotional Intelligence includes: recognizing individual emotions and the impact on thought and behaviour (self-awareness); the ability to manage emotions, control impulses, and adapt to changing circumstances (self-

management); recognising, understanding and responding proactively to the emotions and needs of others (empathy and social skills).

Construct 3 Communication

This incorporates the ability to deliver information clearly, listen actively, and engage in open dialogue. It includes the ability to articulate thoughts and ideas simply and effectively; it includes the practice of concentrating on what is being said rather than passive hearing of messages; and providing constructive feedback to foster growth and development in others.

Construct 4 Motivation

This construct considers intrinsic and extrinsic motivators that influence individuals. Intrinsic motivation relates to activities for personal satisfaction and fulfillment, including autonomy, mastery and purpose. Extrinsic Motivation relates to rewards, recognition, and advancement.

Construct 5 Mindfulness and Reflection

This construct incorporates mindfulness and reflection. Mindfulness focuses on the present moment and maintaining awareness of thoughts, feelings, and surroundings without judgment. Reflection involves the process of considering individual experiences for insight and improvement of future performance taking account of successes, failures, and lessons learned.

Construct 6 Decision-Making

This construct considers the processes used to identify and evaluate options, consider outcomes, and make informed choices. This includes the ability to understand complex

problems and analyse data to make informed decisions; the capability to make decisions based on experience, where not all information is available; involving the right people at the right time in making the right decisions.

Construct 7 Leadership Moments

This construct refers to moments where leadership skills are employed. This may include leadership in challenging situations; undertaking conversations that helps grow and empower others to reach their potential; and inspiring others through delivering goals for the future.

Construct 8 Learning and Development

This construct considers the enthusiasm and commitment of an individual's interest in learning. It provides evidence of an individual's position on a growth-fixed mindset scale and positive attitudes required during major organisation turbulence and change.

Construct 9 Well-being

This construct considers evidence individuals are looking after themselves physically and mentally. When overall well-being is maximized, higher energy levels, higher productivity and less stress and burnout are more likely and, individuals are more likely to be optimistic and happy.

Construct 10 Work performance

This construct considers measurable outcomes of an individual's contribution to the organisation and how effectively they have fulfilled their role and responsibilities. This includes achievement against organisational goals; the level of engagement and productivity measured through satisfaction and any metrics offered by leaders; and the

effectiveness of decision making assessed through outcome tracking and qualitative evaluation.

From this, a structured approach will take place to assess the changes in participants over the research study. The methodology for assessment will include a range of measures and indicators to evaluate each of the constructs. The section on instrumentation provides detail relating to each aspect of the construct.

Criteria for Assessing Constructs

A range of criteria will be employed to assess the constructs. These will be derived from: one-on-one recorded interviews, following a structured interview process, capturing specific changes through reflection and self-assessment; utilising the recorded conversations which can be analysed using sophisticated sentiment analysis technology; undertaking survey instruments on work performance, behaviour change and emotional intelligence, identifying changes pre, during and post research study by analysing participants self-reflection and assessment responses on changes using likert scales; undertaking benchmarking where available and peer group review in the form of 180 degree feedback from organisation's leaders.

A new assessment tool defining integrated mindset competency will also be created and developed with expert validated input and review from World class elite coaches and organisation leaders to measure changes in mindset.

Baseline measures

The research study is longitudinal in design taking place over four months.

Before the research study begins, it is crucial to establish baseline measurements for all constructs. This will involve:

- Administering pre-program surveys to gauge initial mindsets, emotional intelligence, communication skills, and other relevant constructs both with participants and leaders.
- Establishing a baseline on the environmental conditions associated with the participating organisations.

Program Implementation

During the implementation of the integrated mindset program, participants will engage in an eight-hour online learning program of content and activities focused on building an integrated mindset. Follow-up interviews will focus on changes observed.

Immediate Post-Program Assessment

Upon completion of the program, a comprehensive survey will take place to evaluate changes and possible shifts in mindsets, emotional intelligence, communication skills, and other constructs. This post program assessment will aim to identify any perceived change in performance.

Interviews will also be undertaken with leaders regarding observed behavioural changes and improvements in work performance.

At the completion of the research study, the results from both qualitative and quantitative analysis will be integrated providing a comprehensive view of changes observed and experienced in terms of behaviour and work performance, with reference to successful outcomes. From this, conclusions on the implications for individuals and organisations will be made as well as the opportunity for future research.

By defining core constructs, establishing clear assessment criteria, and outlining a comprehensive assessment process, the research study can effectively evaluate the impact of the integrated mindset program. This approach not only facilitates the understanding of individual and organisational growth but also fosters a culture of continuous learning and improvement within the participants and leaders.

3.3 Research Purpose and Questions

The purpose of the study is to evaluate how the Integrated mindset learning program can enhance individual behaviours and performance within the business context. The research addresses questions regarding the effectiveness of mindset training in promoting positive changes among the participants.

In chapter one several research questions were presented. These are presented again here:

- Can positive and growth mindset techniques used in elite sporting environments be transferred into a business setting?
- Is it possible to build an online, engaging, experiential, self-paced learning program that introduces this positive, growth-mindset learning in a business setting?
- Can such a learning program gain commitment and buy-in from leaders and employees?
- Can the impact of such a program be measured from a leader, employee and organisational perspective?
- Can changes be seen in a short time frame?
- Can the approach used in the research study be integrated into the current practices for developing and measuring current employees and attracting new employees?

- Do workplace environmental conditions impact individual performance and the ability to build an integrated mindset?

3.4 Research Design

A fundamental aspect of the research study requires developing an integrated learning program available to participants. Organisation's leaders discussed the learning program's structure, content components, project requirements and planned outcomes with the doctorate candidate.

Both organisations were more interested in higher performance levels combined with a healthier and balanced work environment rather than further efficiencies that would deliver short-term financial gain. This was considered far more relevant in current circumstances, particularly given the push towards agendas such as the four-day working week.

A major theme that emerged was whether the learning program could enable individuals to free up time to be proactive, design, think, communicate, and achieve a more excellent balance of life, or as one of the leaders called it: "do fewer, bigger, better."

Research design aspects relating to content methodology and build aspects identified in the literature review were considered in building the research study's learning program. The literature provides guidance for design and build of the content. and offers a clear perspective on what content and how the content should be delivered to gain commitment and provides clarity on the design of a measurement program. The AGES pedagogy and human-centered learning principles acted as a guide for all content design, development, and delivery format.

The doctorate candidate has significant knowledge of building and delivering experiential learning programs. This includes MBA and undergraduate programs, continuous professional development (CPD) programs for coaches and teachers and tailored programs for business organisations and elite sports teams. This has also included the use of human centered learning methods using virtual reality technologies.

Two examples of learning programs developed and delivered by the doctorate candidate in virtual reality settings are provided here.

Football Coaches Australia Essential skills program https://xvlnk.co/dba-fca

Adelaide 36ers High School Program https://xvlnk.co/dba-schools-xv

Crafting diverse content treatments for a learning program can enrich engagement, cater to varied learning styles, and enhance comprehension. The design of this learning program used various multi-media content delivery formats, including lecture-style videos, human and avatar-based led case studies, infographics and magazines, podcasts, and animations. Each subject was examined, and a treatment determined to maximise the learning experience. Making the program experiential, online and self-paced was important. All the participants would be able to access the program from different locations and at different times. The amount of time available to learn was also considered. In sum, it had to be flexible.

A learning program should aim to develop human qualities and skills, including curiosity, empathy, compassion, building relationships, and taking responsibility. In creating the learning program for this research study, this took place during the design process, using ideation techniques to ensure all program aspects were connected.

Colleagues, associates and the research assistant were used as “crash test dummies” to verify the design and delivery. Continuous review took place in the design and build process to assure the connection with the pedagogy.

Accounts were taken of the time available for participants to undertake the program. The participants all had key roles in their organisations and were time-poor. Completing the whole program for learners would take approximately eight hours, with an additional two hours of completing surveys plus the follow-up monthly interviews. The program comprised seven chapters of content set in a virtual world in bite-sized ten-minute pieces easily accessible for each participant. Participants were shown how to use the platform prior to commencing the program.

The content comprised contemporary perspectives, including growth mindset, positive psychology, emotional intelligence, and mental performance from elite sports, business, and education, including practical tools for improvement.

The Seven Chapters of the Integrated Mindset Learning Program

1. Introduction to growth mindset and positive emotion

Link to sport; Include AGES Pedagogy – How Best We Learn (20 mins)

2. The roots of growth mindset & the cultivation of positive emotion and positive mindset (1 hour)

Carol Dweck – Growth mindset; Martin Seligman- Learned optimism and PERMA; Daniel Goleman – Theories of EQ; Dan Siegel- Mindsightedness; Steve Peters- The chimp brain

3. Who are you? The good, the bad, the ugly & the indifferent (1 hour)

Categorising human emotion; Mind, brain & fear; Measuring you – How am I travelling? EARL and flourishing model; Communication; strengths & values; Decadian memory bank patterns. –Lessons learned: 3 things which worked and didn't; Voices of reason - What your best friends say about you.

4. Improvement insights (3 hours)

Communication; Observing; Goalsetting; Overcoming disappointment; Dealing with uncertainty; Taking responsibility; Motivation; Decision-making; Focus & attention; Principles; Practice makes perfect; Confidence & belief; Leadership inspiration

5. Growth & positive emotion tools (1.5 hours)

Visualisation; Fast track mindfulness; Thankful double-entry bookkeeping; Positive spirit corner! Pattern interruptions & reframing of negative thoughts; Mentorship, 180 and 360 feedback; Humour & storytelling; Rest & sleep.; Reducing technoference; Mental toughness model

6. Growth mindset and positive athlete reflections. Interview clips (x 3 mins) (45 mins)

Ellyse Perry (World's best cricketer); Alex Blackwell (Leading Women's cricket captain); Maty Ryan (Captain of the Australian football team and World Cup leader); Laura Geitz (Captain of World champion netball team); Amy Harrison (former World Cup/Matilda); Steve Waugh (The most successful captain in cricket history); Heather Garriock (former World Cup Matilda and Taekwondo CEO); Leanne Campbell (2 x World champion water skier); Amy Parmenter (GWS Netball); CJ Bruton (Adelaide 36ers basketball coach, former Olympian; Dr Toby Kane (Paralympian Olympic medal-winning skier); Mark Tonga (quadriplegic former rugby player)

7. Performance improvement mindset program (45 mins)

Introduction to elite athlete PIMS solution used by elite sports people, including Australian Socceroos, Olympic athletes, NBL basketball players, International cricketers.

Another important consideration highlighted in the literature review was gaining participants' commitment to the learning program and encouraging continuity after the program finished. Leaders had a significant role in encouraging the participants to do this. It was also important to provide participants with a tool to track and manage their progress throughout the learning program and afterwards. This was provided in the learning program and highlighted above. (Your Performance Improvement Mindset program.)

The literature provides input into the methods to measure and analyse the results of the study. This is referenced in the construct section and discussed in more detail in the instrumentation section in 3.7. A link to the virtual world is also provided here: https://xvlnk.co/dba-mindsense-panel

3.5 Population and Sample

To provide credibility to the study, obtaining interest and support from large global organisations would be significant. Two organisations emerged from two very different industries, providing a wider relevancy and a degree of comparison of results. The introductory sessions between the doctorate candidate and the two organisations' leaders provided an opportunity to consider all the main aspects of the program. This included the nature and focus of the research study, expectations and required commitments, the planned outcomes regarding higher levels of performance and associated improvements in well-being, the program delivery and the time frames.

It also led to a list of significant attributes that would be used and explored.

These conversations also provided input on relevant measures to support individual change. As these emerged, survey instruments were identified as possible methods for analysis. The instruments chosen to measure changes are discussed later in the chapter.

Through this consultation, a sample size of ten executives for each organisation was agreed. This was perceived to be manageable both for the doctorate candidate and the organisation, both operationally and in terms of availability.

A research study timeframe of four months was agreed. This was for three reasons:

- Ensuring that the program wouldn't be too demanding for the participants, given both organisations had referenced that their people were already time-poor.
- The three-month window fitted with the expectations both organisations had in measuring usual performance changes each quarter.
- A short window was considered appropriate for a coach to influence performance in a contemporary elite team setting. For example, in 2017/18, there were 55 coach dismissals in the Big 5 European soccer leagues, typically due to team performance, over a period of two months (Gómez, 2021).

A detailed project plan and structure with time frames was presented, shared and agreed with the organisations including start date, surveys, interviews and research study end date. Through the discussions, it was noted that the organisation's environment and individual circumstances could affect outcomes. This needed to be considered when designing the research.

Leaders discussed their perspectives on the environment and an analysis of each organisation's environment was undertaken to gain a better understanding of potential challenges facing individuals and if these might impact any positive change in performance and behaviour.

Siggelkow and Rivkin's (Siggelkow, 2005) model of organisations facing complexity and turbulence (Figure 9) and Burke and Lewin's Model of Change were used to help build this perspective (Figure 10) (Burke, 1992).

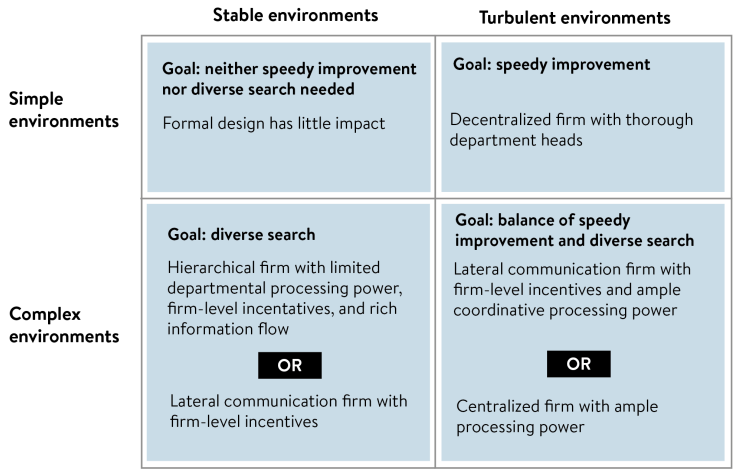


Figure 9 Siggelkow & Rivkin: Model for Assessing an Organisation's Environment

Figure 10 Burke & Lewin's Model of Change

About the Organisations

Organisation A is the World's leading venue management company and producer of live event experiences. Its business is focused on the management and operation of large stadiums and arenas across the Globe. Currently operating over 400 venues with approximately 60 thousand employees. The organisation was organised into local areas that typically had independence to make decisions provided targets were achieved.

The leader of Organisation A assessed the organisational environment as fast-moving but stable. During the data capture period, the organisation announced that a larger group had acquired it. This was perceived by the leader to have little bearing on those involved in the project.

A desktop PESTEL analysis was undertaken for the organisation. (See Figure 11).

Figure 11 Organisation A PESTEL

Organisation B is a global brand leader in the fast-moving consumer goods sector of food and beverage. It operates in 188 countries, has over 2000 brands, and has 300,000 employees.

The leader of Organisation B assessed the organisation's environment as slow, complex and turbulent. During the data capture period, the organisation faced significant global market challenges, which were often very public. Locally, the team had set significant new goals and targets and the integration of a newly acquired business without any increase in headcount. Significantly surrounded by an environment where restructurings and redundancies are taking place with consistent upward pressure to achieve improved short-term market results, much of this pressure is perceived to be occurring outside the control of the individual participants. The research study commenced at the end of the financial year with significant effort focused on additional reporting.

A desktop PESTEL analysis was undertaken for the organisation. (See Figure 12).

Figure 12 Organisation B PESTEL

In addition to the regular monthly meetings with leaders, a weekly review was undertaken of media news obtained online. This formed the basis of the PESTEL analyses and an organisational sentiment analysis for the research study period (December 2023 to April 2024). This sentiment analysis aimed to determine whether there may be a difference between each group's external pressures. The results proved interesting.

Organisation B had almost double the number of news items over the period and a lower ratio of positive words in the news compared to Organisation A (less than half the positive word count ratio). While this analysis doesn't offer any conclusions, it provides some evidence that Organisation B's external environment was facing more challenges.

Several stories of note emerged from the media analysis. For Organisation A, highlighting its potential acquisition, competition for contracts, post pandemic revenue improvement, major Asian based project management and commitment to sustainability. For organisation

B, challenges on share price, rising costs for raw materials and distribution plus customer price pressure and focus on healthier products at a time of economic downturn.

Both leaders agreed fully with the study arrangements, including a 1-hour video interview each month to share any change observations, a post-research study review, and operational support to ensure smooth participation.

3.6 Participant Selection

Time was taken with leaders to discuss the selection of participants for the study. Key considerations for choosing participants included:

- Voluntary, not mandatory participation.
- Commitment to a training session on the learning program.
- Undertake an 8-hour online learning program over a 4-week period.
- Commitment to complete survey instruments taking approximately 1 hour each month for 4 months.
- Commitment to undertake a recorded video interview for up to 1 hour each month for 4 months.

The leaders' access to and knowledge of each participant was also considered important. Therefore, the participants chosen were either direct reports or reports to direct reports.

3.7 Instrumentation

A mixed-method approach blending qualitative and quantitative analytical tools has been adopted. The detailed design of the analytical tools is presented in this section.

Qualitative measurement

The Research study took an integrated approach, gathering qualitative data from two primary sources: participant and leader interviews. The research study relied on insights into behaviour and performance changes from the monthly interviews undertaken with leaders of the organisations and the participants in the research study.

Participant interviews

The interview program, structure and questions were critiqued and pilot tested prior to undertaking interviews. This was undertaken by a colleague with a background in behavioural science plus the leaders of the organisations. The interview structure was one consideration. The capturing and consistent recording of the interview content was important, too, enabling an analysis of the patterns from the interviews.

These items, together with the program content and the new index referenced in the next section, provided the basis for creating a fifty-question construct to be used for interviews. The main themes were reviewed, tested, then verified by the organisation leaders.

Over the research period, participants undertook four interviews with the questions used as a framework and discussion guide. The first interview established a baseline. The following interviews were organised at approximately monthly intervals.

The interviews followed a structured process to identify the key attributes emerging from the learning program. The interviews focused on changing patterns of behaviour and performance.

The interviews took the form of a reflective conversation. Many of the questions would become less relevant in later interviews. For example: “tell me about the work you do and

your current environment?" and "What would you want to change about your work environment?" became "What changes have taken place in your work environment since last we met?" and "what changes have you introduced in your work environment since last we met?"

Each participant was only referenced by a unique ID by the doctorate candidate throughout the research study to ensure consistency in results and anonymity.

The interviews were recorded using the Zoom video software program, then scripts were created, reviewed, and analysed. The interviews were assessed using a newly designed index, the Integrated Mindset Index (IMI) consisting of twelve competency areas emerging from the literature search and the content in the learning program. The following section discusses the development of this index and the competencies.

Creating an integrated mindset index for measuring change

Building an index (Integrated Mindset Index) to capture changes in the interview sessions was a concept emerging from the literature review and provided one of the unique outputs of this research study. The first stage was to identify the main changes being analysed in the research study and map these to sections of the learning program. This led to the creation of twelve "competencies which were then defined and weighted. To give greater confidence and confirmation of competency, relevancy and connection to improved individual performance in organisational settings, citations were identified and mapped across each competency.

To ensure rigor in the index design, the Integrated Mindset Index (IMI) was shared with a panel consisting of six high-profile elite sports coaches from six sports codes and the two leaders from the organisations.

Critical to the panel's involvement was their understanding of the research study, a deep understanding and passion for human development and the possibility of enhancing the Index in the future.

The panel contributed by reviewing competencies and weighting of the Index and committed to further iterations for future research, too.

Through conversation, a solution emerged. Whilst a small number of competencies were deemed slightly more critical than others, at this early stage in the development of the IMI, those involved in reviewing the index deemed all competencies relevant.

In the panel's review of the competencies, definitions, and weights, several important aspects were noted, and modifications were made.

- Several weightings were changed, specifically increasing the weightings for self-awareness, resilience, and reflection.
- A broadening of the "motivation" competency to draw attention to the notion of competitiveness.
- Improving the initial definition of "time management" to include "decision making and prioritisation."
- In sports, building internal competition is seen as a motivator with one of the panel arguing that with internal competition, standards are likely to improve significantly.

Both leaders confirmed that internal competition was an essential human resource strategy utilised in their organisations, too.

The table on the following page provides the Integrated Mindset Index competencies, definitions and weighings.

	Competence	Definition	Weight
1	Self-Awareness	Recognising and understanding emotions, strengths, values and areas needing development is a key step to achieving true self-awareness. People who are self-aware are aware of this and understand what makes them tick.	9
2	Self-Management	Regulating emotions, controlling impulses, managing stress, and adapting to new situations is what the workplace looks for in their team members. These behaviours lead to better decision-making and more effective goal attainment.	9
3	Empathy	To show empathy is to recognise and understand the emotions, views and requirements that others have. When it comes to building relationships, empathy is a key ingredient enabling an individual to relate and respond to someone else's situation.	8
4	Social skills/communication	Building rapport and resolving conflicts in both professional and personal contexts requires good social skills. Working with people even during the toughest of times means having the ability to communicate effectively, listen actively, and deliver messages with clarity and empathy.	9
5	Motivation	Competing at the highest level requires an individual to be always aware and always prepared. Passion, curiosity, and a sense of purpose are obvious in individuals who are intrinsically motivated. So too, is creativity, engagement, and perseverance in reaching goals. Being good with people is likely to help in motivating such a person too.	9
6	Learning and Development	Being on the lookout to seek and pursue opportunities to learn and grow both personally and vocationally. Learning does not stop at any point in your life, nor should it. The more is learnt, the more significant skills and knowledge become.	8

7	Resilience	Resilient people are more capable of recovering from difficulties, setbacks and disappointments and remaining positive in the face of life's tough challenges. They develop the emotional traits that make for a resilient nature. Being resilient does not guarantee that life will be free from pain, problems, or pressure. But it does mean that resilient individuals can weather the storms and emerge on the other side, often better than before.	9
8	Health, Well-being and Balance	Putting emphasis and time into physical, mental, and emotional health through such activities as self-care practices, stress management, work-life balance, and good health habits is critical for sustainable high performance and longevity. Making time each and every day for calm, mindful, and thankful moments.	8
9	Reflection and Feedback	Taking the time to think about ourselves and get feedback is not always easy. But when it comes to reflection, allowing ourselves to make sense of "why I did that," "what was going through my head when I made that decision," or even "what can I learn from the experience" can enhance growth, and continuous improvement.	9
10	Growth Mindset	The power of effort, the value of learning from failures, and the importance of welcoming challenges all define a growth mindset. Individuals with a growth mindset see feedback as valuable and critical, embrace it and adapt to it. They tend to see the whole picture viewing any problems as part of a bigger picture.	9
11	Leadership moments	Those with leadership qualities see leadership moments about personal growth, influence, and positive change. They spot and take opportunities to experience and show leadership, making important decisions, and inspiring people around them. They also know how to follow and encourage others to take the lead when it's the right time.	7
12	Decision making prioritisation and time management	Prioritising, making decisions, organising tasks, and balancing time leads to greater productivity. Time management is so important to achieving this. Not just in our work but in our lives.There is no one path in taking these steps, but each leads to maximising our potential towards goals and outcomes.	7

Table 1 Integrated Mindset Weightings

Building a coding framework for the IMI

Coding performance in sports is now commonplace. In football and basketball, every movement is identified and categorised using software such as Hudl. Catapult is commonly used in cricket to track and analyse the athlete's performance at every moment.

One of the weaknesses of such coding methods is the human factor. The coder can make errors in interpretation, leading to a skewed output. Two activities can help overcome this. Regular use and capture of data leads to a more significant standard. For example, Catapult commenced trading in 2006 in Australia. Initially a research project to optimise physical performance, prevent injuries and improve training regimes by capturing GPS data of athletes for the 2000 Sydney Olympics. Over the years, it introduced new technologies, including video tracking technology. As the program was introduced into live broadcast, the coding standards of activities were set.

Building a network of users who contribute to developing and applying coding is essential. In the early stages of Catapult coding, only a few teams used the company's new program, Catapult Pro Video (Catapult, 2024).

Many conversations occurred about the definitions and weightings employed in the early years. With the program maturing and its use growing, Catapult offered learning programs, conferences, and forums to refresh, reconsider, and share knowledge to further its use.

Coding the interviews was a critical part of building the IMI. Once competencies had been set with weightings agreed, a simple scoring method was established. For every reference made in a participant interview to one of the competencies, a score of 0.5 was allocated. Where there was evidence that the participant consistently applied this competency and

committed to growth in the competency over time in subsequent interviews, a score of 1 was allocated. Where there was evidence that a participant needed more focus on developing and evolving their competency, the score was removed. Once the scores were undertaken, the weightings were used to provide a score for the interview (IMI Score). The outputs of the IMI are discussed in detail in Chapter 4.

The coding of the eighty interviews was reviewed three times to ensure clarity and consistency followed by quality assurance by the research assistant on the methodology, scoring and interview analysis. The research assistant is a qualified educator and football coach with knowledge of sports coding systems and has post-graduate qualifications in neuroscience. The steps outlined in Table 2 summarise the process.

Identify the major elements of the learning program.
Establish these as the key competencies within the Index.
Confirm the citations to support the competencies.
Establish a first draft weighing each competency.
Establish a panel of experts (world-class coaches) to consider the structure of the Index from a competency and weighting perspective.
Refine the Index based on feedback.
Build a scorecard and simple coding system for application in the participant interviews
Testing and quality assuring the coding system.
Applying the system to the interviews
Reviewing and quality assuring the results

Table 2 IMI Process

Sentiment analysis to identify changing patterns observed in interviews

The participants and leaders' interviews could provide valuable insights into how each is dealing with their own world over the research study period.

Through the participant interviews, the process aimed to unearth static and shifting perspectives by analysing an individual's lexicon.

A sentiment analysis of an individual's language needs to consider the context. Earlier in the section "Population and Sample", the changing environmental conditions in each organisation were referenced. Where an environment is positive and buoyant, language used is likely to be aligned. However, when environmental conditions become more complex, a shift to more negative language and weaker job performance may be expected. Hoff's work on socioeconomic status and language demonstrates this (Hoff, 2003). As does Smidts and Pruyn's work on communication and links to organisational reputation (Smidts, 2001). As ecological conditions get more complex, will individuals move towards a more pessimistic outlook and, hence, greater use of negative language?

One of the critical questions the research study attempts to answer and provide conclusions on is whether the learning program can help maintain or improve participants' outlook and performance, irrespective of the environment. It is known there is a correlation between changing environmental conditions and language. A key aspect of the research is looking for shifting patterns in behaviour and communication.

Two methods were used to create a sentiment analysis: An aspect-level analysis, a baseline on positive and negative language was created, and then locally built non-commercial

machine learning software was used to mine the use of positive and negative words in participant interviews and media releases for both organisations.

- A sentence level analysis, using a commercially available machine-based program to mine the sentences of all 80 participant scripts analysing sentence intent.
- For the aspect level analysis, the Harvard General Inquirer database was used with a random search of positive and negative words. Following several iterations, two hundred random positive and negative words were used as this was manageable in the timeframe.

The General Inquirer is a computer program (IBM 7090) developed in the early 1960s to help research problems in behavioural sciences. Stone and colleagues' (Stone, 1962) paper and Hunt's (Hunt, 1963) provide background on the development of the General Inquirer. The General Inquirer is regularly utilised to help identify communication patterns in text. For example, Azar analyses sentiments in financial news (Azar, 2009).

For clarity, the identification and review of positive and negative words in interviews taken from the Harvard General Inquirer were the same two hundred in the sentiment analysis undertaken in the media review as part of the PESTEL assessment described earlier.

The interest in sentiment analysis has been made more accessible with the availability of artificial intelligence technologies. This led to the second method used in the research study:

Gartner Group assessed the major sentiment analysis tools currently on the market. This included Microsoft (Azure text analytics), Lexalytics, IBM (IBM Watson NPL), and

Qualtrics (Qualtrics XM). IBM Watson received a 4.5-star rating and is referenced as "a more reliable solution available in the market." (Gartner, 2024).

IBM Watson was chosen as a sentiment analysis engine to review the scripts at the sentence level. Note the reference to sentiment analysis performance levels in the literature in Chapter 2.

In contemporary sentiment analysis, words and context are typically considered with linguistic structures. However, for this research study, the analysis is limited only by drawing attention to key themes as well as introducing it as a potential new analytical tool for the future.

Analysing leader interviews to establish changes in behaviour and performance

The aim of the leader interviews was to confirm participant perspectives on how life had changed following the introduction and application of the learning program.

In this research study, productivity might be an outcome of changes employees would adopt in applying aspects of the Integrated mindset learning program. However, in the conversations with the leaders of the organisations, productivity was considered too narrow a lens and changes in performance required a much broader perspective.

Both organisation's leaders were asked to consider how they would like to review performance changes throughout the research study. Given that the participant interview structure had already been created, these questions provided a suitable platform for discussion along with the learning program content. More significantly, each leader had detailed knowledge of each participant, so observing noticeable changes in each participant's performance throughout the program was a natural managerial task. The

changes were shared and documented during a verbal and video interview undertaken each month.

In preparing for the interviews, the IMI competency structure was also used, and the leaders' commentary on each participant focused on any shifts observed. This was then documented following each of the interviews, which took place each month prior to the participant interviews.

A summary of the documented leader interviews is shared in the next Chapter under Results.

Quantitative analysis

The previous sections introduced the qualitative tools used to analyse interviews, the development of the IMI and sentiment analysis (which is a hybrid involving qualitative and quantitative methods.) This section considers the quantitative methods used.

Choosing survey instruments

In the literature review, four areas were identified to help choose effective survey instruments for the research study:

- Experience and expectations of individual performance improvements identified from the use of similar programs in elite sport
- The content construct
- Leaders' perspectives from both organisations
- Accessibility to the instruments, historical and evidence-based successful use, availability, ease of use, and cost.

Past sports-focused mindset programs built by the doctorate candidate have been built to achieve specific changes in individual and team performance. These programs have similar structures to the Integrated Mindset Learning Program, therefore provide a level of experience of what to measure. Noticeable shifts in performance can be measured through the team's performances but also by referencing individual aspects such as contract renewals, recruitment to higher-profile teams, and international representation. Proxies for this include team and coach views of individual performance.

The second area is the content construct itself. This emerged from work initially undertaken in elite sports, so there should be little surprise in the areas of focus. A comprehensive list was provided earlier in this chapter under learning content. It is important to emphasise that this construct has little to do with job specifics. If an individual were performing below expectations in their role, then the relevant focus would more likely be on technical training or other methods, including counselling or performance management, rather than a program like the research study learning program. Where the construct is different is when performance is acceptable, but performance can be more consistent or heightened.

The third area emerged through discussions with leaders who are subject matter experts in their organisational context. Leaders of both organisations referenced emotional intelligence, dealing with change, adaptability, flexibility, communication, problem-solving, self-starting, and an optimistic outlook in difficult times as areas to measure A close alignment to the learning content.

The final considerations in choosing survey instruments were accessibility, cost, and track record. Participants would use the surveys at least four times, and leaders could make them available to the whole organisation after the research study. Therefore, instruments needed to be easily accessible and at minimal cost.

This provided the basis for reviewing possible instruments.

Several survey instruments were considered, taking account of the above plus a detailed review of the following aspects:

- Assessing individual work performance improvement
- Measuring change in behaviour
- Measuring changes in emotional intelligence

There is a pivotal point in elite sports. Whether the discussion is about the list of athletes in the learning content or other well-known athletes such as Usain Bolt, Michael Phelps, Lewis Hamilton, Michael Johnson, Roger Federer, Tiger Woods, and Serena Williams. The position remains the same—self-motivation is key (Mallet, 2004). More recent research featuring a series of interviews undertaken with athletes from the USA Olympic team in 2024 confirms the same thing (Self.com, 2024).

This point is critical. The research study aims to put the responsibility of appraising performance in the hands of the participants whilst providing tools and techniques to assist in developing greater reflection and performance improvement built from a deeper awareness of self.

A number of surveys and models for measuring work performance changes were identified. However, these instruments rarely consider individual work performance aspects.

Rotundo and Rotman reference a range of methods for considering work performance. This includes efforts to describe the aspects of job performance, summarising tasks, and what they describe as "organisational citizenship.", though no metrics emerge from this research that could be applied to measure changes in performance (Rotundo, 2002).

Kline and Sulsky's work is worthy of reference as it draws attention to how we measure and how the measures are used. They also mention one of the challenges those being reviewed might face: reviewers are not always well-trained (Kline, 2009).

In this research, any emerging performance matters are not being used to appraise participants in their jobs. Hence, the reviewers' role is minimalised. The results are not being used in any future appraisal. Measures are being undertaken to assess performance changes as part of the research and for participants to gain a deeper understanding of their self-awareness. For this research study, the leaders, the participants, and the doctoral candidate are mainly interested in observing and documenting changes for personal growth and development. Of course, there is an expectation that this will lead to an improvement in work performance. The reflective interviews with leaders aim to cover this.

The literature draws attention to two scales typically used to judge individual work. Behavioural scales consider frequency or quality of action, and "trait" scales judge traits such as creativity and leadership. In this case, a blend of both would be needed and finding a measurement tool related to work performance.

From the outset, it was recognised that where evidence was gathered of a changing mindset, this would not necessarily prove a change in performance. However, the research

demonstrates a link between specific mindset changes and likely improvement in performance.

Four survey instruments emerged as a good fit and presented to the leaders and participants before the commencement of the learning program. All participants would undertake baseline and updated surveys before each interview.

This section provides an overview of each survey instrument and the analytical process.

Individual work performance questionnaire (IWPQ)

The first survey instrument used was the Individual Work Performance Questionnaire (IWPQ). Designed by Koopmans and colleagues in the Netherlands to measure and detect changes in individual work performance, their four-dimensional scale, comprising task performance, contextual performance, adaptive performance and counterproductive work behaviour, is useful for identifying changes in individual work performance. The instrument was first tested on over one thousand Dutch workers, leading to a revised IWPQ using a three-dimensional scale (task; contextual and counterproductive behaviour) and a shorter form questionnaire of 18 questions, making the survey easier to use (Koopmans, 2012).

The IWPQ calculates a mean score for each scale and uses a rating of 0-4 for each of the three scales, with a score of 0 reflecting "seldom" or "never" and a score of 4 meaning "always" or "often".

One downside of the instrument is that the output of the survey instrument is not provided directly to participants and has to be manually calculated. A search on the use of IWPQ shows that it has travelled far and wide and is highly reliable. Platania's (Platania, 2023)

study in Italy; Juariyah in Indonesia (Juariyah, 2023). Copani (Çopani, 2023) in Albania and Yeter in Turkey (Yeter, 2022).

Evidence, therefore, pointed towards this instrument's good fit and relevance to the research study with the potential for a direct connection between the learning program and individual work performance of value. Could the emerging results show that the learning program impacted actual work performance from the participants' perspective?

A sample of the questions in the survey is provided below.

- Task performance scale
    - I managed to plan my work so that it was done on time.
    - I knew how to set the right priorities.
- Contextual Scale
    - I took on extra responsibilities.
    - I came up with creative solutions to new problems.
- Counterproductive work behaviour
    - I talked to colleagues about the negative aspects of my work.
    - I complained about unimportant issues at work.

The survey results will be considered in detail later in the section.

BIS/BAS

While the IWPQ focused on the performance aspects of work, another thought emerged while developing the research proposal. Was there another instrument that could monitor changes and responses to reward, novelty, and the opposite? Could any potential patterns

on fixed and growth mindsets or negative and positive perspectives be identified through a survey instrument during the research period?

Renn and colleagues saw the potential of using a specifically targeted survey "to add value to understanding employee personality, job performance ratings, and withdrawal" (Renn, 2014).

Jeffrey Gray's research on avoidance and approach behaviours are significant in understanding how anxiety occurs and how we respond to factors that either cause anxiety or where anxiety can be managed. His "reinforcement sensitivity theory" draws attention to the different effects a BAS (behavioural activation system) or a BIS (behavioural inhibition system) has when activated. BAS should deliver great motivation and feelings of hope and optimism when there is a move towards something desired. BIS, on the other hand, arouses anxiety and avoidance when people move away from something unpleasant (Gray, 1982).

Gray's work has been connected to the review of patients with high levels of anxiety, including those suffering from bipolar and mood disorders. However, through the work of Carver and White at the University of Miami, the BIS/BAS scales emerged as a valuable assessment of behavioural inhibition and activation.

They built a self-reporting scale to identify people's disposition for such aspects as anxiety and depression (Carver, 1994). (See Figure 13.)

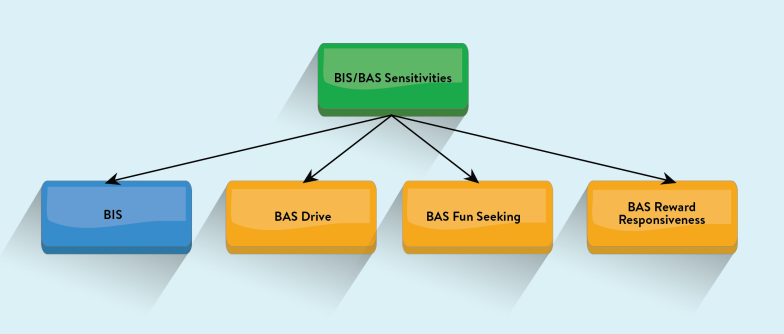


Figure 13 BIS/BAS four-factor model construct

Clavellino and colleagues provide an excellent summary of both BAS and BIS. In simple terms, the Behavioural Activation System (BAS) focussed on rewards and the absence of punishment. It impacts motivation within us and stimulates and reinforces learning and information processing. The "Let's go for it" system reinforces these positive stimuli.

"BAS arousal leads to the experience of hopeful excitement; it drives persistence to achieve the desired goals and a sense of joy when they are attained."

The Behavioural Inhibition System (BIS) is connected with punishment or the emergence or occurrence of adverse events. It provides essential feedback, although negative, suppressing behavioural performance and comparing future possible events to the present. This reduces risk-taking and increases procrastination, hence the connection to increases in anxiety (Merchán-Clavellino, 2019).

Whilst most of the work on BIS and BAS focuses attention on clinical work, the principles of BIS and BAS are fascinating, and some experts have seen the possibility of their application in the workplace.

Furnham recognised the value particularly regarding motivation, where an extravert high on BAS would not find punishment a great motivator. Similarly, an introvert high on BIS

might not find pay and benefits as an effective reward program either! In 2008, Furnham undertook further research confirming the validity and value of the BIS/BAS model as a potential measure of motivation/risk-taking vs. anxiety/risk aversion in the workplace (Furnham, 2008).

The paper by Cooper and colleagues confirms its validity for adults and adolescents. (Cooper, 2007). Franken and colleagues' work validated its application in the Netherlands with students (Franken, 2005). Its use in a community setting in Canberra, Australia, was undertaken by Jorm and colleagues (Jorm, 1998).

The Carver and White BIS/BAS instrument and several papers were reviewed to confirm its suitability for this research study.

Emotional Agility, Resilience and Leadership Measure (EARL)

The EARL measure has a different history, with origins in the development of an emotional intelligence program undertaken at Sydney FC's professional A-League soccer team in 2016. Initial interest emerged from senior staff members who gained insights into Goleman (Goleman, 1995), Mayer and colleagues' (Mayer, 2000), and Bradberry and Greaves's (Bradberry, 2009) work and "bought into" the evidence that higher emotional intelligence and resilience levels impact performance. This was supported by mental health and resilience advice offered by the professional football association players' union (PFA Australia, 2024).

In the literature section on sports, reference was made to coaching, typically focused on technical, tactical, and physical aspects. Interest in emotional intelligence was a shift in thinking and led to a program of work delivered throughout the 2016/17 season. However,

at that stage, there was no measure to identify changes in players' emotional intelligence or resilience.

At the same time, the doctoral candidate was writing and directing a new family TV show in New Zealand and delivering a new essential skills program to high schools. A key question emerging in both pieces of work was how individual changes in emotional intelligence could be measured. Taking account of research undertaken in emotional intelligence and resilience, supported by experience in professional sport, a simple measure was designed featuring 36 questions on the subject area. A five-point Rasch Scale gave any subject choices from "Never" to "Always."

Through conversations with senior staff in business, education, and sports, a further aspect of the initial measure was included: leadership. This is related to an individual's ability to lead in specific moments rather than being a leader of an organisation. This perspective emerged from research and publications such as Cacciope's work in health (Cacioppe, 1997). HBR's (Harvard Business Review, 2014) management article on seizing leadership moments and Bennis and Tomma's crucibles of leadership (Bennis, 2002).

A seven-aspect EARL Model emerged, aiming to build an output of a subject's reflections on themselves: self-awareness, self-management, empathy, social skills, motivation (**EA**), resilience (**R**), and leadership (**L**). These are all relevant to the competencies the sports teams were attempting to build and those being tested in the TV shows and high schools.

The algorithms around the measure were built using actuarial expertise. In piloting and testing the measure, no single aspect of the newly named EARL Measure was perceived to be any more important than the other; hence, the weightings were the same. Most

importantly, the measure's by-product drew attention to emotional intelligence, resilience, and leadership through the questions themselves. An emerging feature of its use became the reflective process undertaken by any participant.

The measure became commonly used in 2018, and since then, several thousand data sets have been obtained from elite sports, business and education.

Similar to the IWPQ, the measure is easily accessible, easy to use, and provides a productive, fast output (XVenture, 2016). The survey questionnaire can be accessed at the following link https://earl.xventure.com.au

An example of an EARL Measure output is provided in Figure 14. This is provided directly to individual participants. It can also be aggregated to create a team perspective.

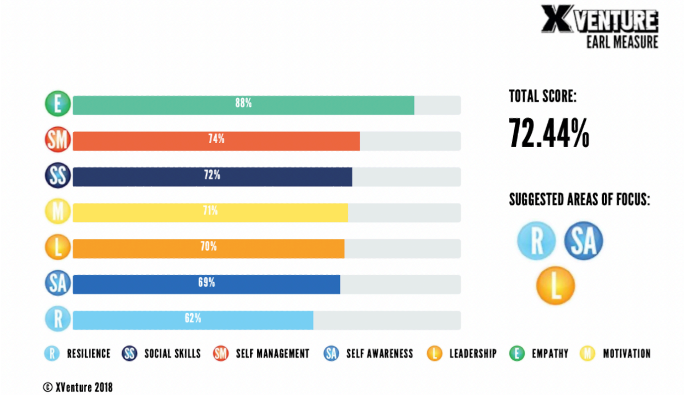


Figure 14 EARL output example

Post Interview Final Participant Survey Instrument

After the interview and survey process, a final survey instrument was designed and delivered to each participant using Sogolytics survey software. The survey comprised thirty-two questions relating to the participants' experience throughout the research study and specific questions regarding perceived individual changes in performance.

Each question provided the participant with four options.

An example is provided in Figure 15.

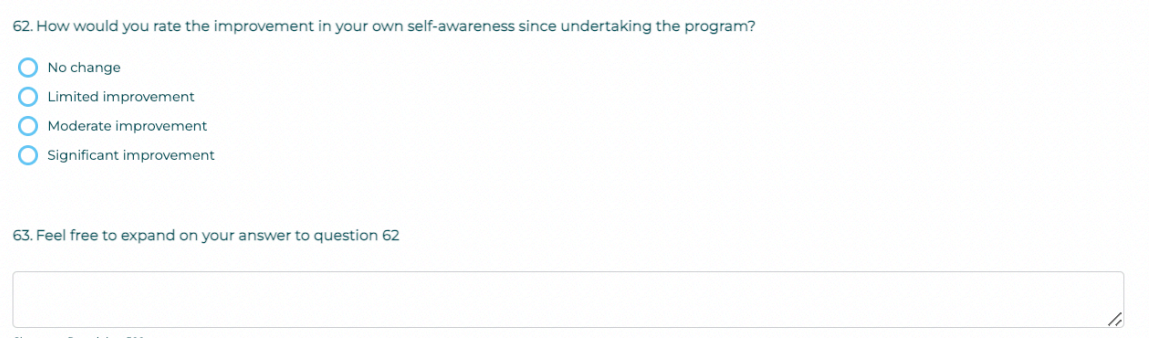


Figure 15 Final Survey Instrument- question example

The answers became particularly relevant for identifying change. To gain feedback and additional confirmation of changes, leaders discussed a summary of the results which are provided in the next chapter.

3.8 Data Collection Procedures

Each participant was given a number and a unique research email address, which they used throughout the research study, thus always ensuring personal confidentiality and minimising bias. This was also important in ensuring the analysis was rigorous. Always using the same reference numbers in analysing the data.

No direct correspondence or communication was undertaken with the participants. The project leaders and, if required, their assistants set up interviews. A Google calendar was sent to the project leader, who shared it and a Zoom link with the participants, enabling them to book their interview time and providing links to connect to survey instruments each month.

Every month for four months (with the first month set as a baseline), each participant was expected to complete the three survey instruments (IWPQ, BIS/BAS, EARL) and attend a recorded virtual interview. After the program, they were asked to complete a final survey. Sogolytics survey software was used as a platform for survey answers via an online link provided to participants. The EARL Measure already had an existing online survey solution and participants completed this online too. The final interview was also developed and designed using the online survey software Sogolytics.

The data for undertaking the sentiment analysis was undertaken by converting the participant video interviews into audio files, removing the interviewer audio (doctorate candidate), converting the files to text and inputting this into a sentiment analysis program. Each month a 180-degree recorded interview would be undertaken with the participants' leader. Observations made on individual participants were noted down, documented and categorised according to the integrated mindset index.

Participants and their project leaders were aware of the recording and its use. Strict terms and conditions regarding the research program were written, shared with all participants and agreed with the organisation's leaders and HR specialists.

The research study's overall goals, structure and project plan were also shared and agreed.

3.9 Data Analysis

Each month, the survey answers were reviewed for all three survey instruments and then input into excel to create graphs and charts which were then analysed for changes.

Each month the interview files were reviewed and assessed against the Integrated Mindset Index, documenting patterns of behaviour and change. A similar approach was taken for each of the leaders' interviews.

Each month any observations made from the leader interviews on individual participants were noted down, documented and categorised according to the integrated mindset index.

A communication sentiment analysis was undertaken using two different analytical tools: Converting the video interviews into audio files, removing the interviewer audio (doctorate candidate) converting the files to text and inputting this into a sentiment analysis program using IBM Watson sentiment analysis to determine sentiment. Excel was then used to create graphical representations of the data. A similar approach was taken comparing the participants interviews to random sentiment words from the Harvard General Inquirer. Excel was then used to create graphical representations of the data. Again, to identify any changing pattern in sentiment.

To document the Integrated Mindset Index, each element (surveys, sentiment analysis, each interview) was fully reviewed and analysed by the doctorate candidate and research assistant, identifying then cross-referencing and verifying changes against the competencies.

Further graphs were created using excel to identify change patterns across all the data captured each month. Noticeable patterns including no change were identified then built into the results section of the Doctorate.

At the end of the research study, all the changes identified from each instrument were summarised and built into the final analysis providing a summary of positive, negative and nil change for the twenty participants.

3.10 Research Design Limitations

The commitment of leaders and individual participants in the research study is critical to the success of any program. Understanding and being sensitive to this is significant. The time frame was limited to take account of availability and commitments.

The leaders of both organisations believed that metrics used to assess changes in work performance and behaviour should be innovative. For example, staff turnover rates, sickness and absence, increase sales and profitability should not be the focus. This took the design of the research in a unique direction, building new analytical tools which arguably provided a richer solution. With no time pressures, a deeper analysis on the use of these tools over a longer period would be interesting and beneficial from a research perspective as well as the impact of the research on traditional business metrics.

The sample size of participants in each organisation was relatively small and arguably not a representative sample. However, the organisation's leaders both believe the study's depth is more relevant and lessons and learning experienced could be easily applied and extended.

3.11 Conclusion

This research study explores the impact of an integrated mindset learning program in two dynamic organisational settings with participants and leaders with heavy workloads. A

rigorous methodology has been established to ensure that all involved have a clear sense of what is required, and the outcomes of the research study remain top of mind.

The insights gained may provide valuable guidance for future programs aimed at enhancing individual and organisational effectiveness.

CHAPTER IV:

RESULTS

4.1 Research Questions

In chaper one, several research questions were identified for this study:

- Can positive and growth mindset techniques used in elite sporting environments be transferred into a business setting?
- Is it possible to build an online, engaging, experiential, self-paced learning program that introduces this positive, growth-mindset learning in a business setting?
- Can such a learning program gain commitment and buy-in from leaders and employees?
- Can the impact of such a program be measured from a leader, employee and organisational perspective?
- Can changes be seen in a short time frame?
- Can the approach used in the research study be integrated into the current practices for developing and measuring current employees and attracting new employees?
- Do workplace environmental conditions impact individual performance and the ability to build an integrated mindset?

This chapter brings together the findings of the research study, followed by a detailed discussion in chapter six to answer each of the research questions.

As a reminder, twenty participants from two organisations, undertook an eight hour online integrated mindset learning program which aimed to help them achieve higher levels of perofmance and positive behaviours leading to greater well-being.

Prior to commencing th elearning program each participant undertook a recorded video interview plus completed three different survey. (IWPQ, BIS/BAS, EARL). The participant's leaders were also interviewed. On completing the online learning program, each participant undertook a recorded video interview and three survey instruments every month for three months. An interview was undertaken each month with the participants' leaders too. All the outputs from these sources were collated and analysed. Much of the data was exported into Excel, which was used to explore and present the data. Other tools were also used, including sentiment analysis software and word mining software designed by the doctorate candidate plus the development of new mindset competency indices.

The major results observed are presented below in sections.

4.2 Summary of Findings

Noting changes in behaviour and performance from particpant interviews using the IMI.

In the previous chapter the integrated mindset index was introduced as an analytical tool to assess changes for each participants over all the constructs . Each of the eighty recorded interviews were analysed in detail cross referenced against the IMI. As a reminder, the interviews were highly structured drawing observations and reflections with examples of behavioural and work changes associated with the competencies.

The research study was only focussed on identifying performance and behavioural changes identified in the interview process and not strengths already existing. This ensured that there was a possible causal link between the learning program and individual changes. The table below provides a summary of changes seen for each participant against the main constructs.

NOTES: ** = Major positive change over the interview series. *= positive change over the interview series NC= no change over the interview series

Participant	Growth mindset	EQ & resilience	Coms	Motivation	Health & Well-being	Mindfulness & reflection	Leadership	Decision making	L&D
1	**	**	**	**	**	*	**	NC	*
2	*	*	*	*	**	NC	*	NC	*
3	*	*	**	*	NC	*	**	**	*
4	*	NC	NC	*	NC	NC	*	*	*
5	NC	NC	NC	NC	*	*	NC	NC	NC
6	*	*	*	NC	*	*	NC	*	*
7	*	*	NC	NC	*	*	*	NC	*
8	*	*	NC	NC	NC	NC	*	NC	*
9	*	*	NC	NC	NC	*	NC	NC	NC
10	*	*	NC	*	*	*	NC	*	*
11	NC	NC	NC	*	NC	NC	*	NC	*
12	**	**	*	*	NC	**	*	*	NC
13	NC	*	*	*	NC	**	NC	**	*
14	NC	*	*	*	**	**	NC	NC	NC
15	*	*	**	NC	*	**	NC	**	*
16	*	NC	NC	*	*	*	*	*	*
17	*	*	NC	NC	NC	*	NC	**	NC
18	**	*	*	NC	**	*	*	**	NC
19	**	*	NC	*	**	**	*	*	*
20	*	*	NC	*	*	*	*	**	*

Table 3 Summary of participant changes in interviews.

Several things of note regarding the coding connected to the IMI:

- A major change was attributed where a large consistent shift across the interviews was identified in a key competency area during the interview process.
- A positive change was noted where there was a shift, but not necessarily considered a marked shift.
- A "no change" was documented where the participant reflected on no real improvement or had already identified the competency as a strength.

To ensure rigour in the analysis, each of the interviews were reviewed three times to ensure coding was undertaken effectively.

In considering the results, there are a number of emerging points of interest that suggest significant change occurring in the cohort of participants.

16/20 participants had an improvement in mindset (growth)

16/20 had an improvement in their EQ

16/20 participants had an improvement in mindfulness and reflection

All of the competencies had more participants demonstrating an improvement and focus on the key IMI competencies other than communication and social skills, where 9/20 emerged with an improved focus following the program

Four of the participants showed little change across the competencies following the learning program.

Figures 16 and 17 provide the aggregate IMI results, drawing together all the competencies emerging from the interviews for both Groups A and B. (Group A is Organisation A, and Group B is Organisation B.)

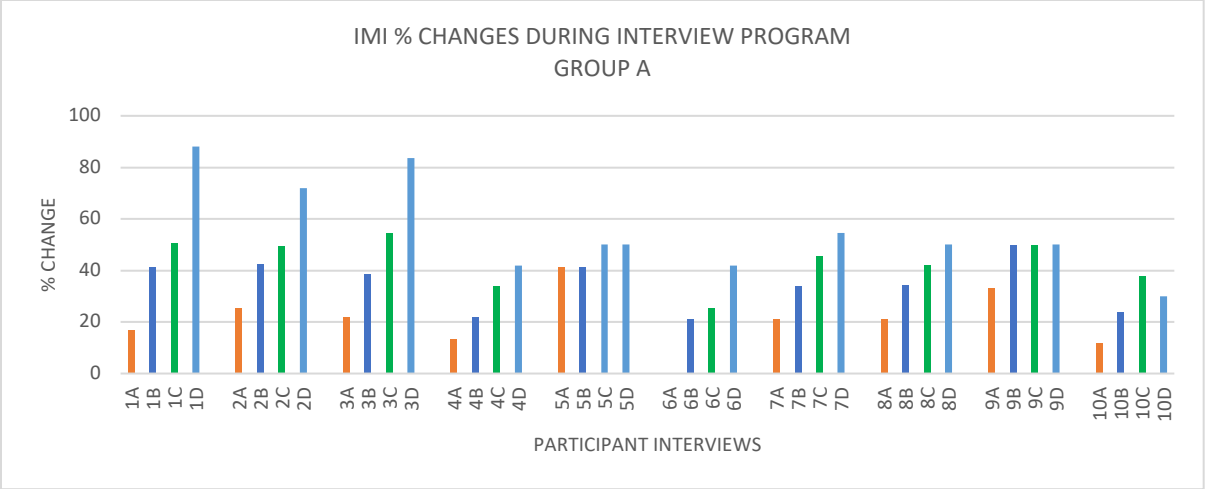


Figure 16 IMI % changes - interview program group A

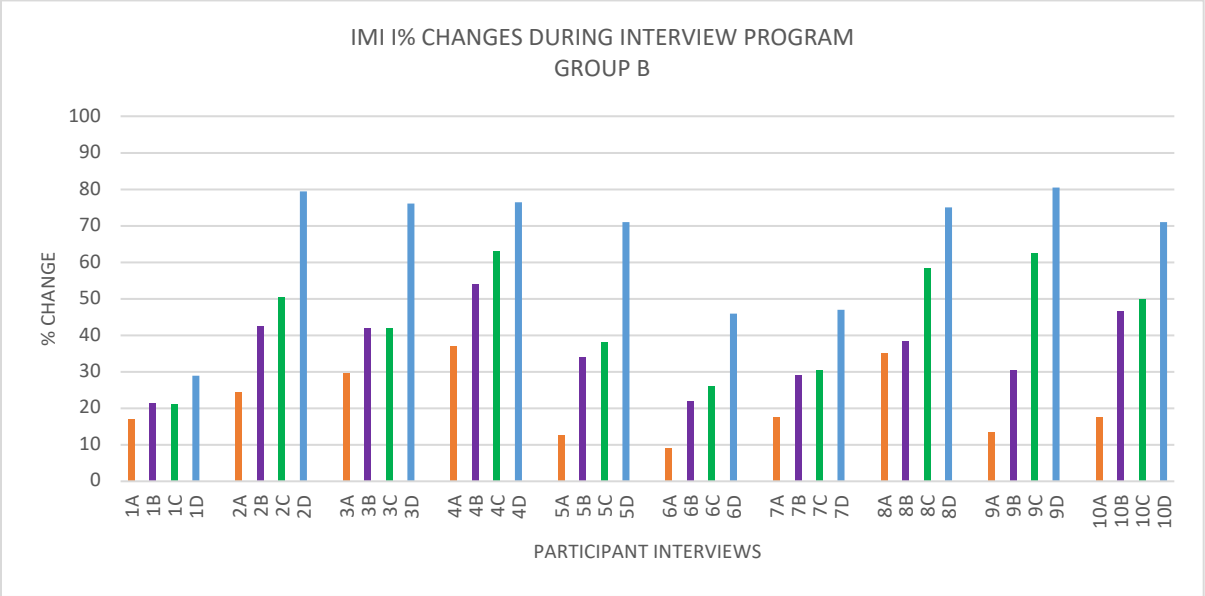


Figure 17 IMI % changes - interview program group B

The Y axis denotes the total IMI percentage. The X-axis = the participant and their interview. E.g. 1 = Participant 1 A the baseline interview. B = First interview after access to the learning program.

The graph in Figure 18 provides every participant's total IMI percentage change over the research period. The Y axis = %age change. The X-axis = each participant. (The participant numbers referenced here do not denote the participant number used in each group.)

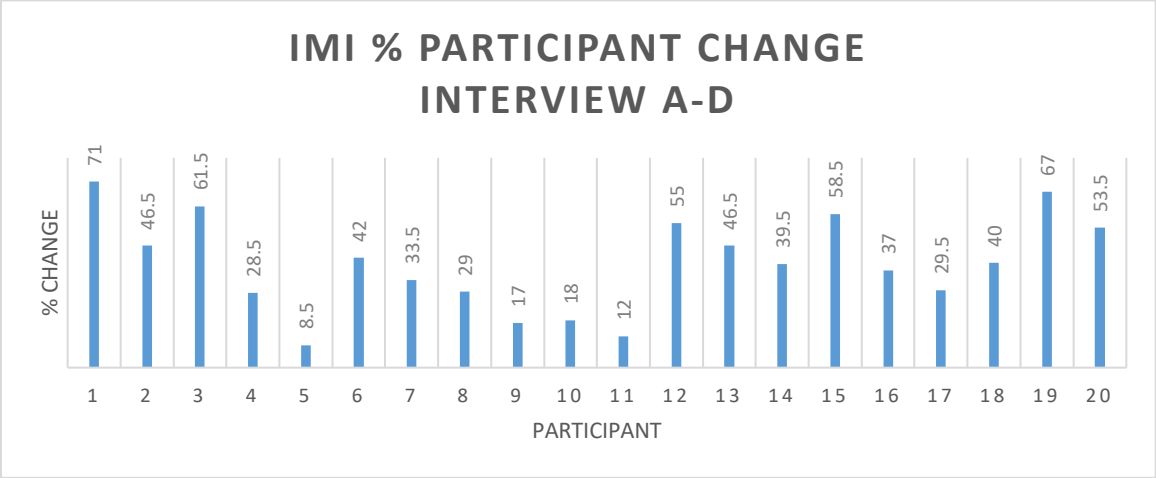


Figure 18 IMI % change Interview A-D

Commentary on IMI results

- All participants experienced increased IMI from the initial baseline interview.
- The average increase in the index for Group A was 56.1%.
- The average increase in Group B was 48.2%.
- The median across both groups was 51.
- 75% of all participants experienced an increase of more than 45% in their IMI index.
- A few participants showed low change levels during the interview process—one outlier in Group A and three in Group B.

- As an observation, removing these four outliers from the cohort would significantly improve the IMI change for Group A and Group B.
- This would have had a significant impact on the standard deviations, too. Group A and Group B.
- Before the coding and analysis commenced, the only expectation was that the program would help to build an integrated mindset. The actual level of improvement was not considered.

One other aspect worth considering is the number of times each participant accessed the learning program during the research study timeframe. Table 4 shows the number of visits undertaken by participants.

PARTICIPANT	GROUP A	GROUP B
1	6	1
2	4	5
3	6	3
4	4	6
5	7	8
6	8	4
7	8	2
8	2	3
9	11	4
10	15	4

Table 4 Number of times participants accessed the learning program.

- The average participant access for each group was as follows.

Group A 7.1 Group B 4.0

Every visit to the learning environment was connected to an average 11.5% improvement in IMI. Logically, one might expect the number of times and time in the virtual world would correlate with a more positive IMI result. Throughout the interviews, participants' engagement in the content was evident through the discussions and was also highlighted in the final surveys with reference to specific content elements deemed valuable to participants.

In analysing the relationship between higher IMI performers and lower performers, there was a noticeable difference in the number of times the virtual world was accessed. The top six IMI performers visited the virtual world five times compared to the bottom six IMI performers, visiting approximately three times. Whilst this does suggest there could be a link, no conclusions are drawn on the correct number of visits nor the time spent by each participant. (The analysis excluded A10, who was found to be undertaking an individual review of the program rather than utilising it for personal development. This is possibly why the number of times accessed by this individual is significantly more than others.)

The mean number of visits for all participants was 4.5 times during the research period. (It is worth noting that prior to the commencement of the research study, the doctorate candidate thought that a visit to the virtual world once a week leading up to the first review interview would be expected (that is, five visits).

Through interview conversations, the Group B cohort spent less time but longer blocks in the virtual world.

Considering participant perspectives to identify changes in mindset, behaviour and performance

The previous section showed the results of the IMI, which coded participants' comments connected to competency and construct categories.

A further review of the interviews took place to identify evidence of any significant changes in thinking, behaviour, and performance for each participant. The interviews demonstrate an overall positive shift in each area of the construct. Although, it has not been the aim of this specific analysis to establish the size of the shift, but rather offer an overall sense of the sentiment.

Here are just a few examples of reflections captured from the interviews.

"I feel there's a big shift in me personally. I just sense a different vibe."

"I really learned that if I'm growing, I want others to grow as well…. I really noticed how much I wanted to share this."

"A lot has changed in the last couple of months, and it's really good. It's really exciting."

"…There's always room for improvement."

"I do see a difference in my mental health… I think I feel more alert. Or able to listen more…I'm making room."

"So many triggers, for me, this program.."

"I'm a completely different person. I'm so much more confident. I'm so much more self-assured, and I've done that because of this."

"I feel there is a shift when I'm presented with a problem. I then tend to see more solutions…It's also tremendously reduced the level of stress."

The full text of every interview for every participant was converted from video to audio and then to Word. These "scripts" were then used to analyse and note any changes while using the IMI referenced earlier. The detailed scripts will remain secure until this research study has been fully completed.

Undertaking a technical sentiment analysis on language usage

Two different analytical approaches were used to try and identify the language sentiment in the participant's interviews. In other words, were the participants leaning towards a more positive or negative outlook following the learning program? The first approach compared a random set of two hundred positive words from the Harvard General Inquirer to the total words in each participant's script. The second approach analysed the scripts using the IBM Watson sentiment analysis program.

Figures 19 and 20 highlight the positive word ratio to total words, using the two hundred random words from the Harvard General Inquirer. The limitation of the analysis is essential to acknowledge. At this stage, there are no benchmarks on the baseline of the analysis, and the research study relies on the effectiveness and value of the 200 random words.

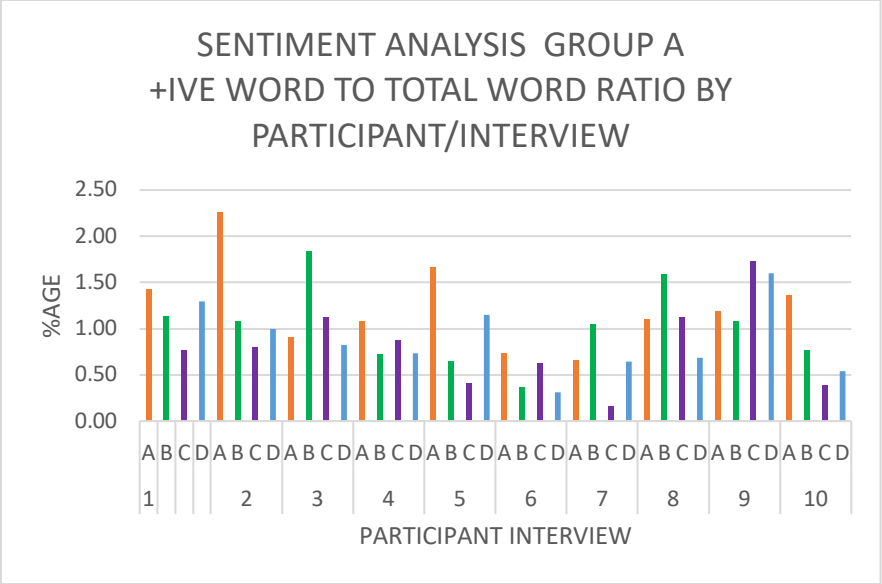


Figure 19 Group A +ive words to total words

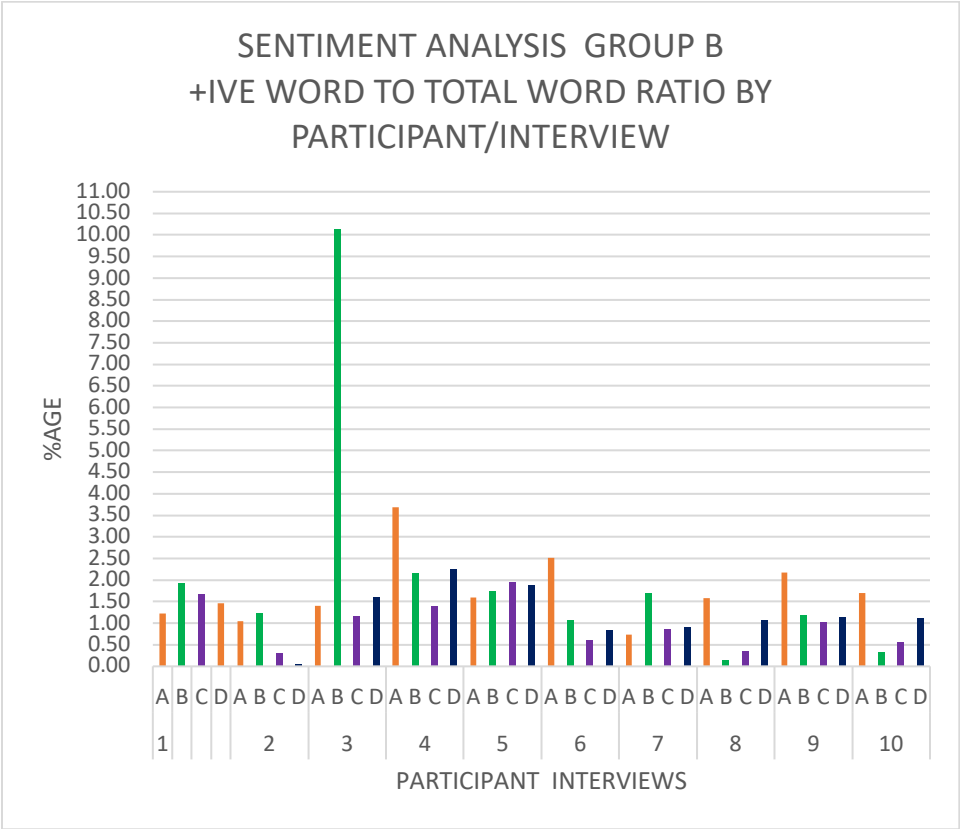


Figure 20 Group B +ive words to total words

Based on the analysis of the two hundred random words, there appears to be little substantial change in positive language patterns for the participants as an aggregate throughout the interview program.

However, a higher percentage of positive word count can be seen in group A (on average approximately 50% higher), which also parallels the higher positive word count identified in the sentiment analysis undertaken on the organisation's media news discussed in the previous chapter. Of important note: Seventy-five per cent of the participants' actual positive word count increased, as did their actual word count from interviews A to B. This could suggest more openness and willingness to communicate and share ideas and reflections.

Due to the high positive work count outside the norm for Participant 3 in Interview B, a detailed analysis was undertaken. This high work count was deemed an aberration and a one-off, mainly due to a false start on the interview plus a highly detailed explanation of a specific project.

Figures 21 and 22 present the percentage ratio between 200 random negative/positive words for each group.

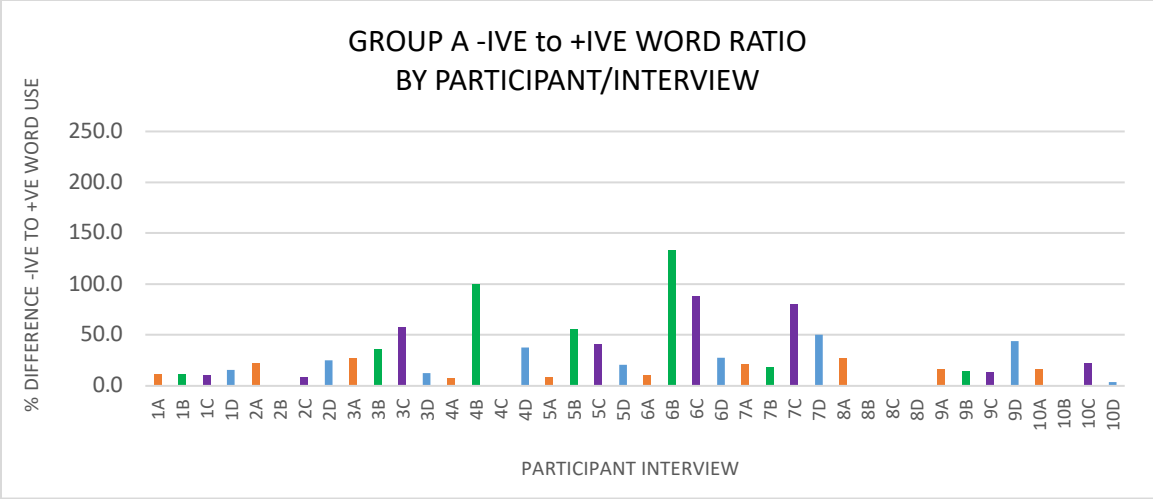


Figure 21 Group A -ive to +ive word ratio

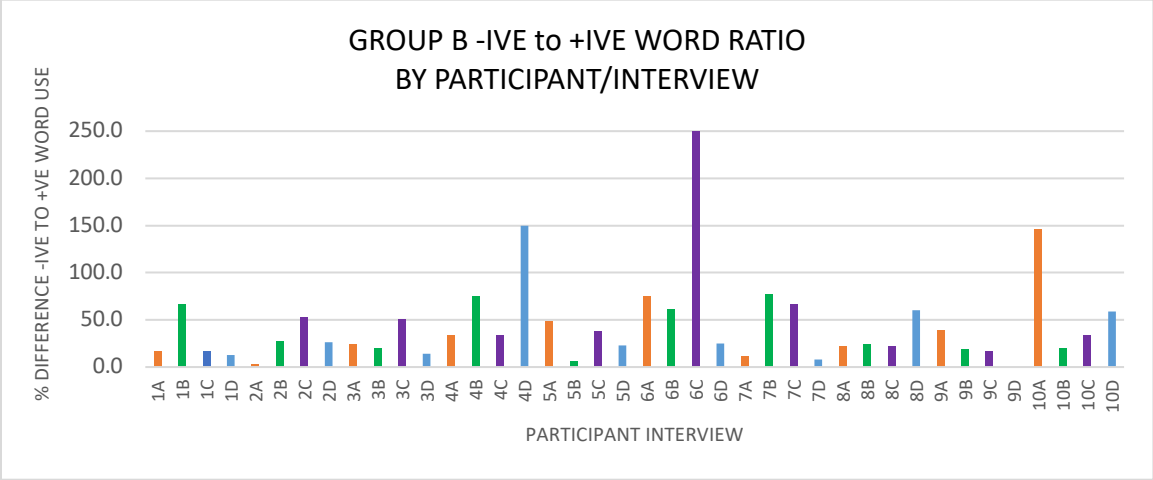


Figure 22 Group B -ive to +ive word ratio

At first glance, most of the patterns for both groups appear the same. The positive word count is higher than the negative word count during the interviews for most participants. (Note that one participant offered neutral language throughout most of the interviews (Group A Participant 8)

Seventy-seven per cent of the interviews for Group A demonstrated more positive words than negative and sixty per cent of the interviews for Group B. This again indicates that

both groups are more positive than negative using this simple analytical tool. Group A is showing more positive language use.

It is also noticeable that virtually all Group A participants increased their positive word count from the first interview to the last (7/10), although some reduced their last count from interviews two and three. For Group B, the picture was somewhat different, with 3/10 improving their positive word count from the first to the last interview.

A further sentiment analysis was undertaken to elaborate on the patterns seen using the Harvard General Inquirer 200 random words. This second approach modelled each interview undertaken, only this time, using the IBM Watson machine learning program to provide a percentage sentiment around positive intent by sentence. The results for each interview for both groups are provided in Figures 23 and 24. The first interview is once again the baseline, undertaken before participants accessed the content.

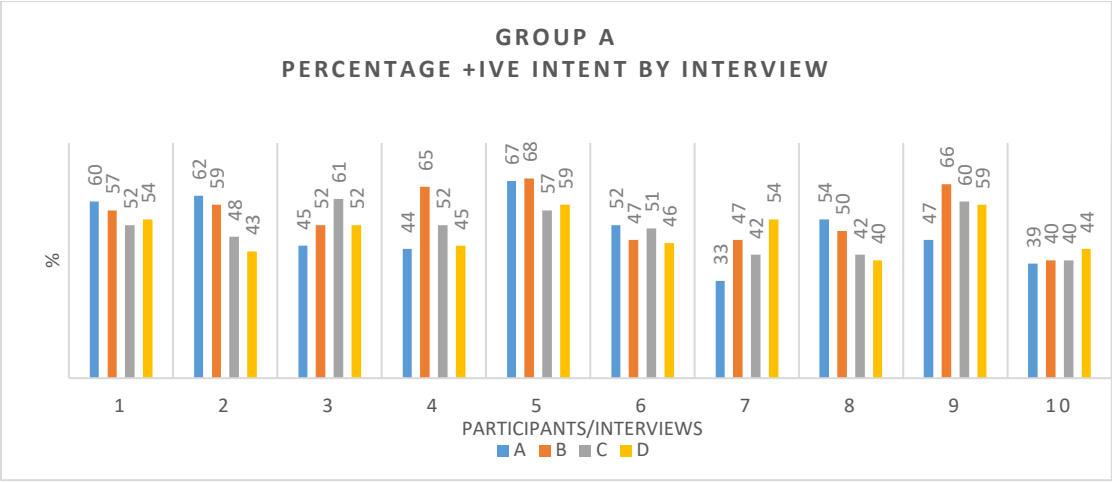


Figure 23 Group A % +ive intent

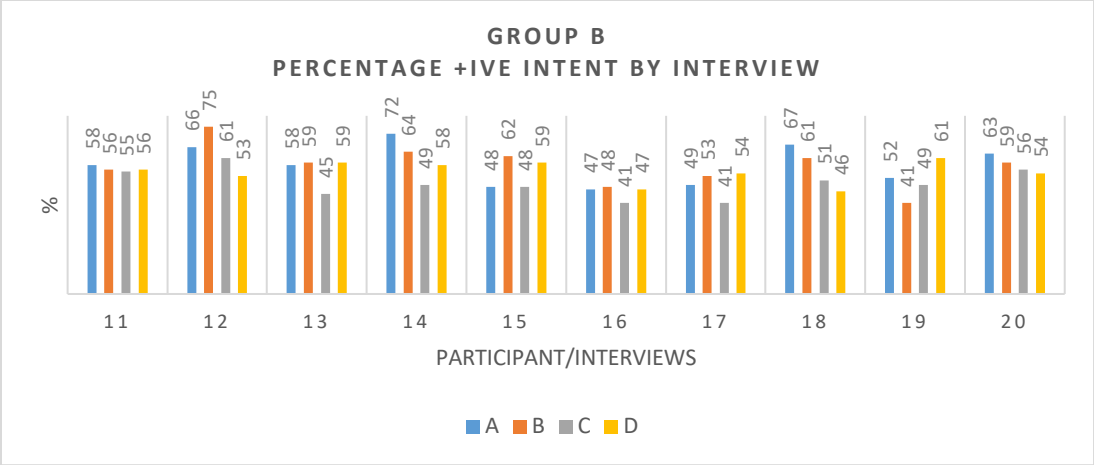


Figure 24 Group B % +ive intent

Several observations from the IBM Watson analysis are worthy of note. In this review, Group A had a lower average positive intent from start to finish but showed a small increase from interview A to D, while Group B had a higher positive intent to start but dropped slightly between interview A and D.

Group A

Average Positive Intent Baseline Interview A: 50.3

Average Positive Intent for Interviews B-D: 51.7

Group B

Average Positive Intent Baseline Interview A: 58.0

Average Positive Intent for Interviews B-D: 54.0

On average, both groups maintained this positive intent position throughout the research study period, meaning that the percentage of negative/neutral language remained lower. (There were several outliers throughout, namely Participants 7 and 10 from Group A and

Participant 16 from Group B, who presented slightly higher negative/neutral language throughout.)

As a whole, Group A increased its positive sentiment from the beginning of the research study; some individuals delivered more positive messages, some remained the same, and others moved towards a negative position.

In discussing each participant with the leaders in the 180-degree interviews, their observations confirmed the results. Overall, the leaders confirmed from the outset that they expected the baseline to be positive for most participants but were also able to identify individuals who typically had more of a fixed mindset or had higher levels of positivity. The results of the sentiment analyses were aligned with these observations. Comparing the individual sentiment scores to the IMI could also shed further light on what was happening for each individual, and this will be considered later in the results section.

Several questions emerged from this. Why was there a marginal shift in Group A sentiment and a reduction in Group B? Was the consistent negative and neutral intent due to more openness and honesty most participants felt they could undertake as they embarked on greater introspection? Were the challenging environmental conditions that Group B was facing impacting participant perspectives? (See Chapter 3 concerning organisation PESTEL) And what of those participants who remained at higher levels of negative and neutral language? Perhaps this suggests that such a program is not enough to influence a change in behaviour for some people; therefore, the choice of who participates may be a key consideration.

180 degree review on participant change

After each participant interview session, a 180-degree interview session was undertaken with each leader on Zoom to reflect on changes in participants. None of the participant interview content was shared with the leader at any point.

Table 5 summarises their reflections of each of their participants as they progressed through the research study. For confidentiality reasons, the Groups are not referenced to ensure individuals are protected.

Participant	Interview A	Interview B	Interview C	Interview D
1	Operational Struggles in the team. Not seen as an authority. Opportunity for big progress.	Major work improvement. Stepping back to allow others to find solutions. Emerging trust which is also enabling greater focus. Calm disposition too.	Now finding solutions by talking to the right people. Not complaining but finding solutions. Great improvement	Big shift in performance. Significant growth. Stepped out of comfort zone. Undertaking open conversations. Learning to negotiate. Taking on a new role
2	Another with an operational role. Also struggles in the team. Not taking authority but has a big opportunity	Noticing a growing level of decisiveness and assertiveness. Now having a view and validated. Seems to have found the permission to fulfil role. Now well prepared for meetings.	Stepped up considerably - achieved a promotion too. Taking self seriously not just in title.	Taken on a new role and new title. Meteoric rise has taken place in terms of leadership and work performance..
3	The most likely to be promoted to GM Very talented. Positive, Pragmatic, collaborative	Already working well at a very high level so no significant shift noticed.	Superb work performance with senior people trusting considerably. Highly confident. Need to manage	Always operates at the highest of performances. No huge change.

			up more effectively.	
4	Rather junior but developing. Though feeling that can do it on own. Doesn't need the bigger group. Blindspot – doesn't see the bigger picture.	A significant improvement in confidence with a positive outlook and language too. Taking themselves more seriously in their role. Their line director is thrilled and amazed with the dramatic progress.	Finding voice and has stepped up. Despite young age is being more assertive.	Steep learning curve and making great progress. Noticed language shift to be more positive. Taking self more seriously professionally
5	Master collaborator. Leads by example. Can be a bit rigid and policy driven. A real reflector.	Noticing some shift in improved delegation. A good operator with a coaching style Typically like to control the environment for fear of making errors.	Enormous agenda and delivering well. Demonstrating bullet proof and showing no vulnerability. May not be a good thing.	Massive shif in performance.. Big team to manage and now delegating rather than controlling. Confident of saying "I don't know.) Understanding the exec role
6	Highly organised. However, can get a bit emotional; if things don't go to plan.	Noticeable shift to be more reflective and future focussed. In the past didn't consider their own needs. Recently: " I have to revisit professional development points and stay current" is a new perspective.	Significant challenges to deal with at home and work but tackling them very well.	Was passive and now assertive leader sharing thoughts and taking responsibility. Crucial to the success of the business. Improved work performance.

7	Hard worker and prepares well. Knows when to step back. Should back herself more.	A shift is happening! Has decided that this year is key for personal growth and decided to write a strategic plan and forwarded to executive which is untypical (usually very operational) Emerging as a contributor.	Natural leader who is managing up really well. Next stage of development is to unearth who and what they are.	Momentum is growing. Always prepared and informed. Can be braver tho new role title will help. Real improvement in work performance
8	A bit uncertain, still learning but give it a go. Often changes times of meetings. Life outside more important. Wants to be seen as smartest person and most capable in room	Noticing improved participation and a shift from trying to have all the answers. Significant. Softening somewhat though still trying to understand the culture as reasonably new.	Emerging as a real driver - shift is occurring behaviourally for this person to be brilliant and excellent.	Still requires greater awareness to accept help and doesn't have to always have answer and be right. WIP. Exec thinks very highly of this individual.
9	A delight. Smart. Collaborative, leader, self-starter and team player. Solution oriented and helpful.	Always enthusiastic but has gone to another level, requesting formal professional development as well with a goal to achieve executive leadership role. This person has flagged the program as a major conduit to the shift	Has clearly stepped up to another level and ready to take on a senior position. Brilliant progress.	Open minded learner ready for next level of responsibility. Fully engaged with huge growth occurring behaviourally and in performance.

10	Chase a silver ball down the street! Low attention span. Fails to consider other priorities and low on detail. But a life-long learner.	Sees learning as an asset for delivering to others and doesn't participate for own growth. Learning a lot but has blind spot-on own development and struggles with feedback.	Not certain this person understands the idea of personal growth. Helps others grow but not self-aware.	Still lacking in awareness. Sees program as a test for others so little personal growth.
11	Direct report, great questioner but can be a bit negative. Requires more open mindedness and optimism.	Whilst a worrier, appears to be less flustered with more light than shade recently.	Consistent performer despite huge resourcing challenges. But not very positive.	Does a good job but a big worrier. Has a lot on plate with managing major change in business. Negative default.
12	Can do .Learner Go getter Needs to simplify, reduce detail and say "no"!	Incredibly stretched in their work and appears to be quite stressed, though the agenda is huge and dealing with others constant mistake making.	Right in the thick of significant operational change. Significant workload in last month but getting it done.	Been very solutions oriented particularly important in the recent period. Performing very well.
13	Technically superb , needs to be more collaborative, simplify. Has a habit of talking over the top. Needs to be more self-aware & understand boundaries.	An excellent performer. However, noticing this person is more positive and open minded, noticing smiling more. Important given the default tends to be darker.	Experienced a rollercoaster of change and for the first time ever had to deal with errors. Big learning experience.	Unflappable and consistent. Proactive and positive. Working consistently well.
14	Strong leadership skills. Seems very together and calm. Strong growth mindset. Not seen weaknesses tho low pressure right now.	Has dealt with some big personal and professional changes, recently moving family from another country. Despite these big changes, dealing with everything calmly	Still dealing with major life change yet unflappable and calm through it. Achieved every deadline presented.	Working well but seems a little overwhelmed possibly due to a major shift in personal life.

		and with resilience.		
15	Super resilient and will go the extra. Top performer and doesn't miss a beat. Confident but polite. Maybe provoke a challenge?	Performing really well, and likely to be promoted. Despite the busy schedule, is very positive and appreciates small things that happen.	Managing a new portfolio and promotion beautifully.	Excellent resilience despite the challenges and extra pressure with low resource base. Very good work performance
16	New, Quiet and almost withdrawn. Not found voice and struggled. Seems to like detail but overwhelmed.	Despite struggling initially, something has definitely changed. Starting to see a smile on the face and exuding more confidence.	From being concerned due to detached and quite approach, is starting to blossom and flowering. A thinker who smiles through the workload.	Taken on extra work and doing a great job. Quiet and just "doe"s with a positive outlook. Seems to have an extra gear.
17	Polite, mature team player. Loves to learn but needs more energy/drive to deliver better performance.	Can imagine will be grabbing the ideas on growth mindset. Is a good leader with presence but needs to grab bull by horns.	Having some significant work challenges with staffing affecting operations significantly. Requires some additional coping mechanisms.	Been struggling emotionally. Sharing their challenges with others though overwhelmed with uncontrollables and personal matters.
18	Mature team player –Learner and keen to learn and good performer.	Quiet achiever and starting to impress and seeing real improvement. Calm and noticing strong mindset.	Whilst junior, is impressing with unflappable approach. Work performance has improved significantly	Very positive, incredible resilience with a light and fun attitude through everything.
19	Very polite. Tech superb but lacks some confidence and doesn't take a leadership role naturally.	A very challenging work environment, despite this is professionally calm. Strong and ambitious but technical skills need building.	Is dealing with a significant workload with new supervisory structure and new portfolio. Could experience pressure due to this. So far coped	Doing well despite facing challenging environment. Doesn't get emotional despite it all and is delivering.

			with major changes well.	
20	Technically excellent and hard worker. More eq needed so doesn't need to do everything. Question leadership skills.	Not had any time to review changes in performance.	Changing personal circumstances have not impacted performance or positive outlook in any way.	Takes a positive approach despite the challenging environment. Always smiling through it.

Table 5 Leaders perspectives of participant change by interview

The following points confirm that the leaders also saw many of the changes identified in the IMI.

- Leaders noticed that many of the participants started to demonstrate a growth mindset from the second interview.
- The participant group were highly motivated, committed to their work and showed significant resilience.
- Many of the participants started to demonstrate reflection skills.
- Many of the participants became more self-aware and exercised techniques in self-management.
- Leaders noticed improvements in social and communication skills.
- Leaders noticed a positive improvement in many of the participants work performance.

- Where there were significant business changes, most participants seemed to be coping with them well. There were a small number who were finding change challenging (4/5 out of 20).

Considering changes in workplace performance using the IWPQ survey

In reviewing the IWPQ survey results undertaken by each participant before the start of the learning program and then each month afterwards, any improvement over the period would be demonstrated by an increase in the task performance scale (TPS) and contextual and adaptive performance scale (CPS) and a reduction in the counter-productive scale (CPPS). The graph in Figure 25 provides the aggregate participant changes by groups A and B prior to each interview. In broad terms, the TPS/CPS scales have improved, and the CPPS scales have significantly reduced. This positive outcome suggests performance improvements and reduces aspects that can negatively affect work culture.

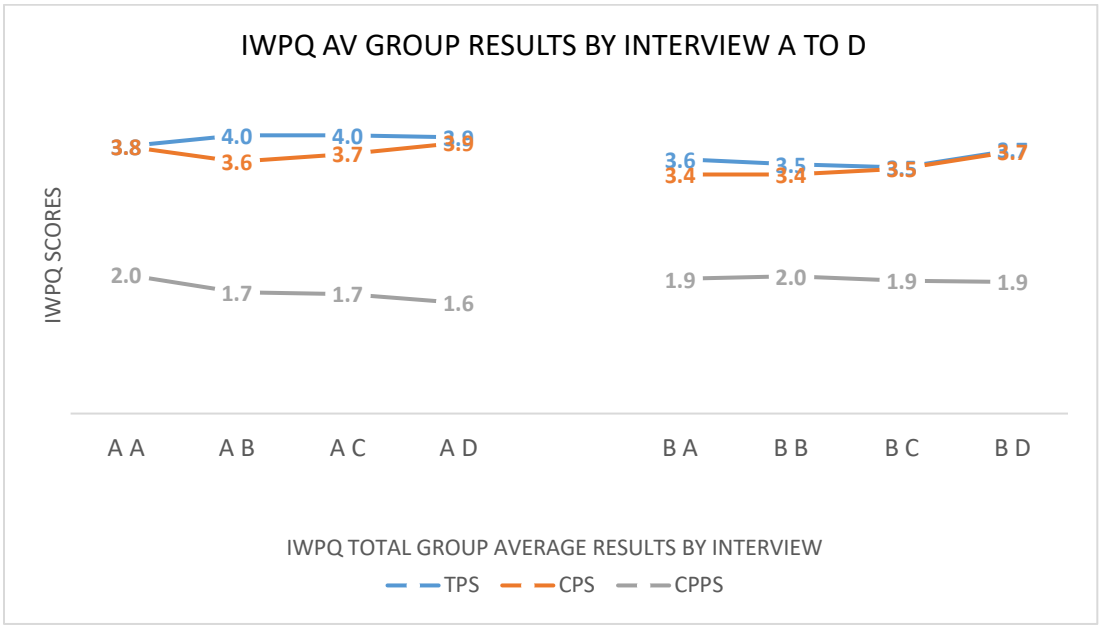


Figure 25 IWPQ Group A and B by interview

Group A saw an improvement in the overall IWPQ scores from the first interview (A) to the last interview (D): TPS from 3.8 to 3.9, CPS from 3.8 to 3.9, and CPPS from 2.0 to 1.6.

Improvements in IWPQ scores were also seen for Group B from the first interview (A) to the last interview (D): TPS 3.6 to 3.7; CPS 3.4 to 3.7 and no change in CPPS: 1.9.

The changes seen in Group B are generally lower than those seen in Group A. However, the Group B baseline scores were lower than those of Group A. It is not known what the reasons for this are. In conversation with the leader of Group B, perhaps the significant organisational changes experienced by participants during the research study timeframe could have impacted responses. It is also worth noting that the largest single score increases emerged in both groups.

Group A CPPS scores reduced significantly during the period, and Group B CPS increased dramatically during the research study period.

The literature led by Koopmans, who was instrumental in creating the IWPQ, suggests that counterproductive behaviour reduction (CPPS) reduces activities such as complaining, misuse of time and resources, work privileges, and poor work quality. In other words, it improves all these aspects (Koopmans, 2011).

Where an increase in CPS scores is seen, the literature suggests that this is due to behaviours related to positive support, influencing others, greater goodwill, and promoting more effective working arrangements (MacKenzie, 1991).

In summary, the changes seen in the survey results indicate that positive performance movement has occurred in both groups, albeit with a different focus for both.

In the chapter three section on participants, organisations, leaders and individuals, an environmental scan of the two organisations, including a reflection from both leaders, is provided. This could demonstrate that these results are even more significant. Typically, one would expect that individuals shift to a more pessimistic perspective as environmental conditions get more complex. In this instance, the IWPQ results show the contrary. Whilst we're not sure, this could be due to the learning the participants have been exposed to in the learning program.

The two graphs provided on the following page (Figures 26 and 27) show the total IWPQ scores for each participant by the group over the duration of the research study. Noticeably, the scores for each participant typically follow a pattern. That is, a low-scoring participant typically remains low-scoring for the duration of the research study, and a higher-scoring participant typically scores high for the duration, too. This could suggest that once a participant has set an individual baseline, then as the research study commenced, surveys typically demonstrated improvements linked to their baseline. (For most participants, the fourth survey generated improved IWPQ scores.)

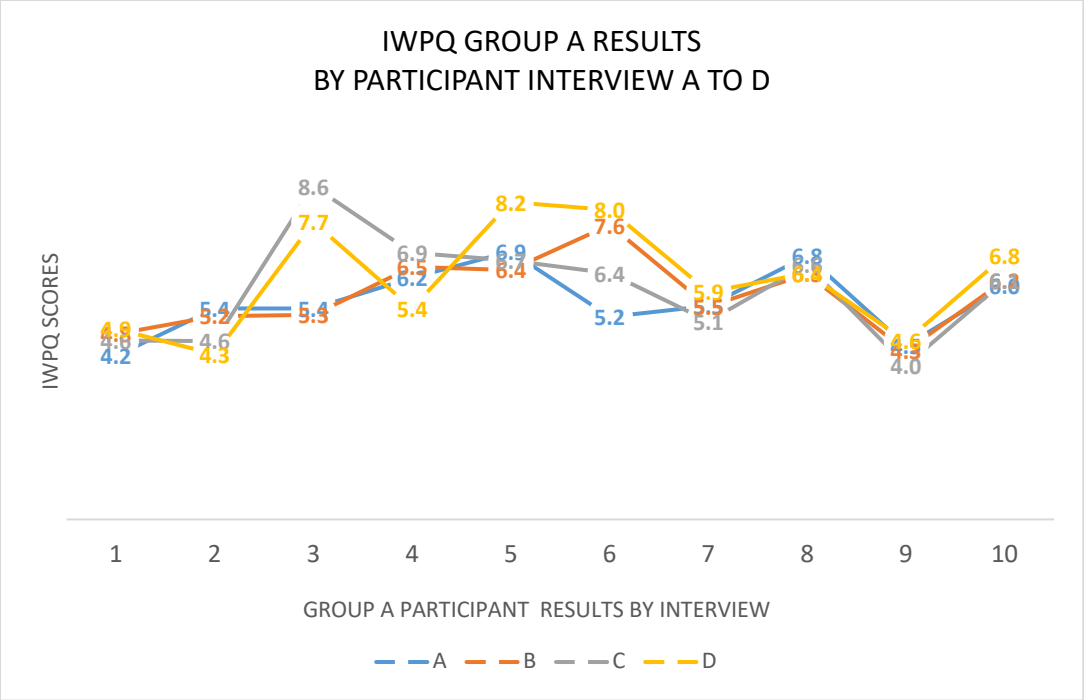


Figure 26 IWPQ Group A results by participant by interview

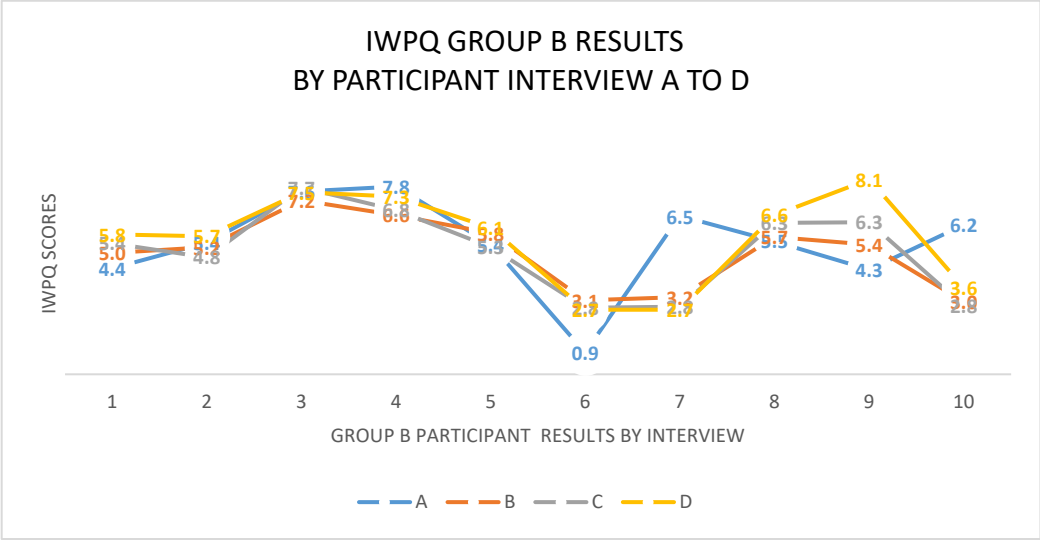


Figure 27 IWPQ Group B results by participant by interview

A further analysis of the participant's responses to specific questions over the period was undertaken. The two graphs below show the results of IWPQ percentage changes for each

participant from baseline to final interviews. These are percentages and not raw IWPQ scores.

Out of the twenty participants, fourteen showed positive improvements in their scores. Three individuals in Group A did show a reduction in their IWPQ scores, although these scores were less of a reduction than the one lower score from Group B. Group A generally showed a larger improvement in scores. This pattern has also been seen in other survey scores and will be discussed later. Figures 28 and 29 show the percentage changes by participant by group over the interview period.

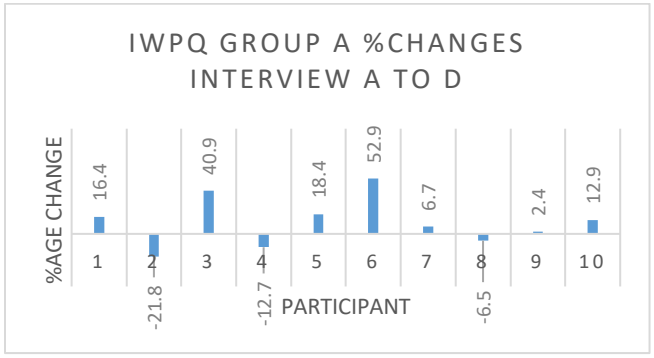


Figure 28 IWPQ Group A % changes. Interviews A to D

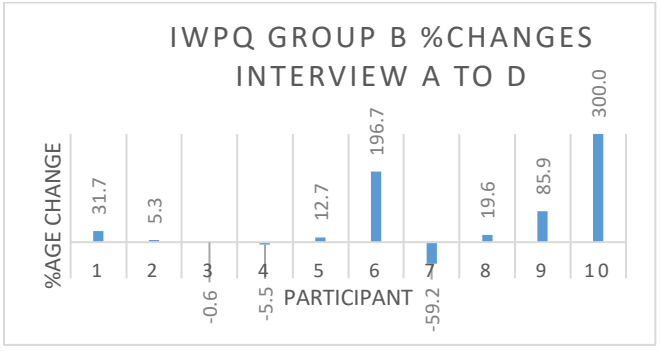


Figure 29 IWPQ Group B % changes. Interviews A to D

From the results, these scores have improved over time, demonstrating higher task and contextual performance and less counterproductive work behaviour.

It is worth mentioning that the approach to using the IWPQ in this research study is novel. It is not typical to use the IWPQ to measure change in this way, nor is it typical to measure the change in such a short period, and it is not usual to consolidate the IWPQ categories to IWPQ number. However, this research study is attempting to develop and deliver outputs that are not only helpful in unearthing improvements in performance but also providing new outputs to the participant organisation's leaders, which has proven enlightening and helpful.

Comparing IWPQ benchmarks

One aspect of the research that could be helpful in understanding whether the participants' results and changes are positive, negative or insignificant is to unearth possible IWPQ benchmarks that could help compare participant results. Several studies provided help in this. Notably, Koopmans and colleagues work on cross-cultural adaptation of the IWPQ with 40 USA workers (Koopmans, 2016).

Figure 30 is an extract that provides some benchmark ranges on using the IWPQ.

Descriptive statistics of the pre-final American-English IWPQ scales				
	Range (0-4)	Mean (SD)	Median	% Floor-effects (score 0)
Task performance	1.40-4	2.79 (0.69)	2.90	0
Contextual performance	1.50-4	2.90 (0.65)	2.88	0
Counterproductive work behavior	0-3.20	1.15 (0.73)	1.10	5

Figure 30 Koopmans et al IWPQ Benchmarks

In a more extensive study referenced earlier, Widyastuti found a further set of benchmarks that could be helpful, which is presented in Figure 31 (Widyastuti, 2018).

	Sample (n)	Scale	Min	Max	Mean	SD
Study 1	231	TP	1.000	4.000	2.727	0.794
		CP	0.750	4.000	2,128	0.719
		CWB	0.000	3.000	0.661	0.548
Study 2	378	TP	0.000	4.000	2,726	0.914
		CP	0.000	4.000	2,395	0.869
		CWB	0.000	3.800	0,833	0.636

Figure 31 Widyastutu IWPQ Benchmarks

A further study that helps in a benchmarking quest is the previously cited paper by Ramos-Villagrasa and colleagues (Ramos-Villagrasa, 2019). This paper presented the results of the IWPQ survey, among others, by 368 employees. These are summarised in Figure 32.

		M	Mdn	SD
1.	IWPQ TP	3.17	3.20	0.63
2.	IWPQ CP	2.53	2.62	0.79
3.	IWPQ CB	1.03	0.80	0.78

Figure 32 Ramos-Villagrasa IWPQ Benchmarks

The results of each of these papers may provide valuable benchmarks for examining the participants' IWPQ surveys.

The mean benchmarks identified from these papers have been compared to the participants' IWPQ results from the first and last interviews and are presented in Figure 33. Both group A and B results have higher baseline and finishing scores than the benchmarks. The reason for this is uncertain at this stage. However, in conversations with organisation leaders, there is a belief that organisations are enormous, complex and fast-moving; hence, this could lead to different results. Indeed, the evidence is that the survey responses of each group indicate the data results are clustered tightly around the mean, so responses are relatively

consistent across the participants. Given the sample was small and the results clearly visible, it was not considered necessary to undertake a standard deviation assessment.

	BM1	BM2	BM3	GROUP A Base	GROUP A Finish	GROUP B Base	GROUP B Finish
CPS	3.17	2.7	2.8	3.8	3.9	4	3.7
TPS	2.53	2.2	2.9	3.8	3.9	3.8	3.7
CPPS	1.03	0.7	1.1	2	1.6	2.1	1.9

Figure 33 Group A and B comparison to Benchmarks

As part of the "checks and balance" review, the high and low participant scores throughout the research study were assessed. The "highs" were considerably higher than the benchmarks, but the "lows" appeared to have a close fit. (Figure 34).

		TPS	CPS	CPPS
GROUP A	HIGH	4.9	4.8	1
	LOW	2.7	2	2.4
GROUP B	HIGH	4.4	4.7	1.1
	LOW	1.9	1.4	3

Figure 34 Group A and B IWPQ outliers

Considering changes in work place performance using the BIS/BAS survey

In reviewing the BIS/BAS survey results undertaken by each participant before the start of the learning program and then each month afterwards, , any improvement over the period should be demonstrated by an increase in BAS scores and/or a reduction in BIS scores. The balancing factor that must be considered is whether the environmental conditions were consistent throughout the period. A no-change BIS/BAS result could be positive if the environmental conditions were worsening.

The graph in figure 35 is provided to summarise the BIS/BAS results for the research study.

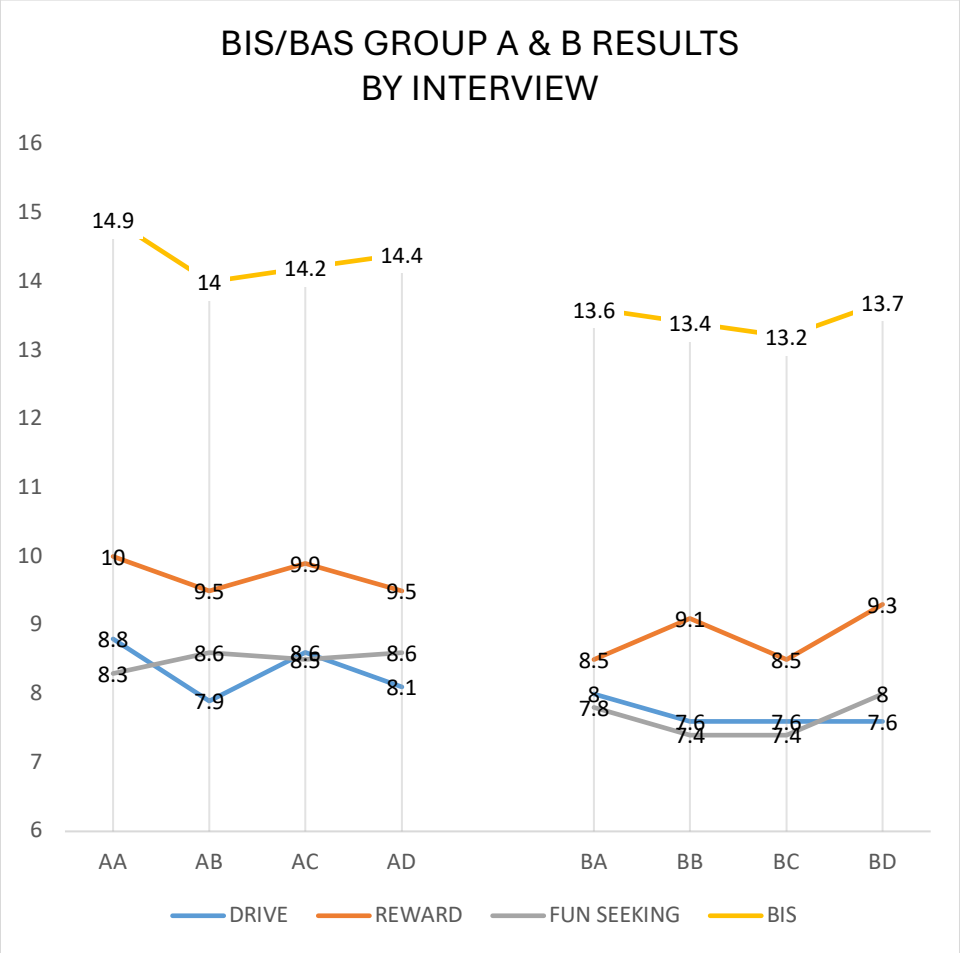


Figure 35 Group A and B BIS/BAS results by interview

This graph provides important information. It shows the BIS and BAS scores of each group by interview. For reference, the BAS comprises of three elements: drive; reward and fun-seeking and each is scored separately. Notably, the creators of the BIS/BAS instrument recommend that the BIS and BAS are not calculated together as they measure different things. (Carver, 1994). Both groups track similarly, although Group A scores for both BIS and BAS elements are slightly higher. Noticeably, there is a slight dip in the Group A overall BAS scores, although the fun-seeking element increases. For Group B, the reward

and fun-seeking elements of BAS increases, whilst drive reduces. It is uncertain why this is, although it is known that Group B had specific and rigorous sales targets to achieve during the study period and bonuses linked to this. Group A had a larger reduction in BIS, whilst Group B had an increase in BIS. This BIS increase might have something to do with the pressures related to additional targets for some individuals. From Carver's work previously referenced on BIS/BAS, positive BIS changes are typically linked to aspects such as anxiety reduction and trust building through mindfulness and reflection training, whereas BAS can often be linked to changes such as the development of skills around goals and rewards.

Changes were noticed when BIS/BAS surveys at the individual level were considered over the study period. The following two figures (Figure 36 and 37) show individual changes in survey results from individuals in A and B. (The BAS scores are consolidated.) Overall, the BIS/BAS results demonstrated consistent positive behaviours from the outset. (i.e. Higher BAS than BIS scores.) 8/20 participants showed a positive change on both BIS and BAS scores. 14/20 participants showed a positive change in either BIS or BAS or both. 9/20 showed a positive BAS change; 9/20 showed a positive BIS change. About half the participants showed a small improvement in one score but a reduction in the other. Where there were individual negative shifts, this could be linked to several things: individual uncertainty around roles; changing environmental conditions and changing responsibilities and restructuring. A greater openness and deeper reflection during the interview process may also have recalibrated individual perspectives.(The "Change" column identifies those

participants who have shown a change in either BIS or BAS with an asterisk and no change with a 0.)

Whilst the learning program had aspects relating to both BIS and BAS at the individual level, participants may have put more emphasis on specific elements due to their particular circumstances. No further work was undertaken on this. However, it could be worth considering this for further research, including using the survey as a conversation piece in coaching.

Overall, the BIS/BAS survey suggested that mindset changes were occurring for many. However, more detailed work is suggested on understanding the application of BIS/BAS in such a context, particularly assessing repeatability, particularly in short time frames.

	BIS RESULTS BY INTERVIEW				BAS RESULTS BY INTERVIEW				CHANGE
GROUP A	A	B	C	D	A	B	C	D	
1	17	18	18	17	33	34	32	31	0
2	12	13	11	12	27	24	24	23	0
3	14	11	10	10	18	16	17	19	*
4	15	11	15	14	27	25	30	29	*
5	15	13	12	14	24	24	25	22	0
6	14	12	14	13	26	25	26	24	0
7	17	19	17	20	29	30	29	31	0
8	16	14	18	19	33	29	33	35	0
9	15	15	13	12	31	32	31	27	*
10	14	14	14	13	24	21	23	21	0

Figure 36 Group A Changes for Interviews A to D

	BIS RESULTS BY INTERVIEW				BAS RESULTS BY INTERVIEW				CHANGE
GROUP B	A	B	C	D	A	B	C	D	
1	17	17	15	14	23	24	26	23	*
2	14	14	14	14	20	24	23	26	*
3	13	14	13	13	23	21	19	22	0
4	11	12	10	11	21	25	19	22	*
5	9	8	9	10	17	19	18	18	0
6	14	12	18	15	25	23	28	24	0
7	14	16	15	21	30	29	28	37	*
8	15	14	13	12	30	25	25	23	0
9	15	14	16	15	30	31	29	29	0
10	14	13	9	12	24	20	20	25	*

Figure 37 Group B Changes for Interviews A to D

The BIS/BAS scale is not typically used in a business setting but has been used often in the health sector. (Individual addiction-related assessments and education, particularly in adolescents). The doctorate candidate was unable to identify helpful external business benchmarks to compare the results. However, the scale may have a future place in business, particularly given the feedback from participants, that the questions were helpful in their reflection.

Considering changes in emotional intelligence and associated competencies using the EARL survey

In reviewing the EARL survey results undertaken by each participant before the start of the learning program, and then each month afterwards to identify shifts in emotional intelligence and associated competencies including motivation, resilience and leadership moments, any improvement over the period will be demonstrated by an increase in the overall percentage score and improvements seen in the seven scales.

Figures 38 and 39 on the following page, provide the aggregate results of participant changes by group.

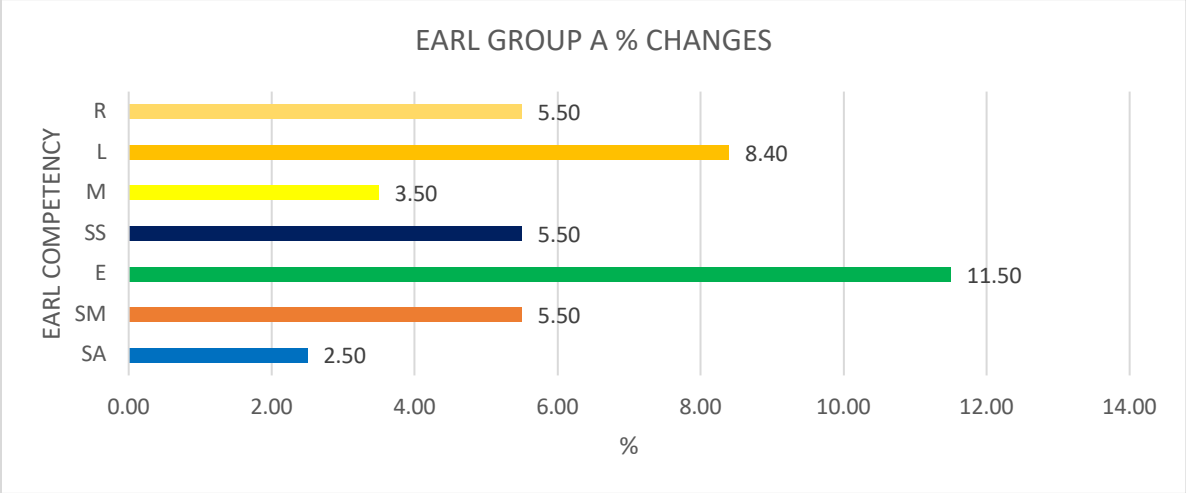


Figure 38 Group A EARL % changes

Group A's EARL results improved over the research study period in each competency segment, with an overall percentage improvement of 6.4%.

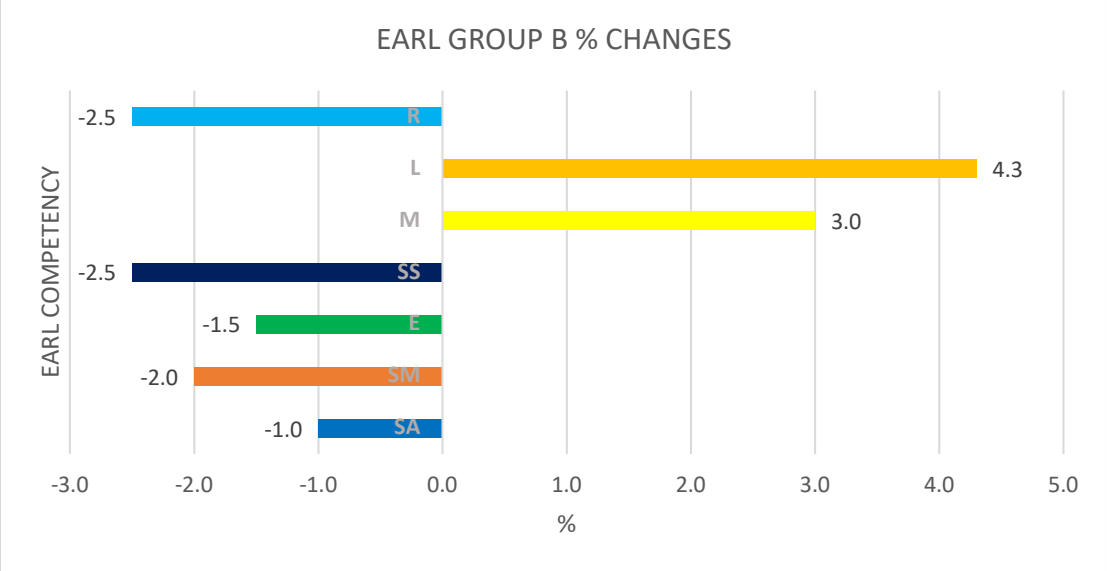


Figure 39 Group B EARL % changes

For Group B, there was a small but noticeable reduction in many of the competency segments (other than leadership and motivation.) Overall, there was a total improvement of just 0.2%, which is very low.

The reasons for this are still being determined; however, analysing the overall scores of Group B further, the resilience scale lagged considerably. The aggregate resilience score was less than 60%, whereas all the other categories were well into 60% and over 70% in most instances. The results seem very similar when the two groups are compared on the final survey. (Figure 40). Out of the twenty participants, fifteen improved their EARL scores in the research study period. However, when we compare the overall results to the EARL benchmarks a little later, the results of Group B are lower than typically in other EARL results.

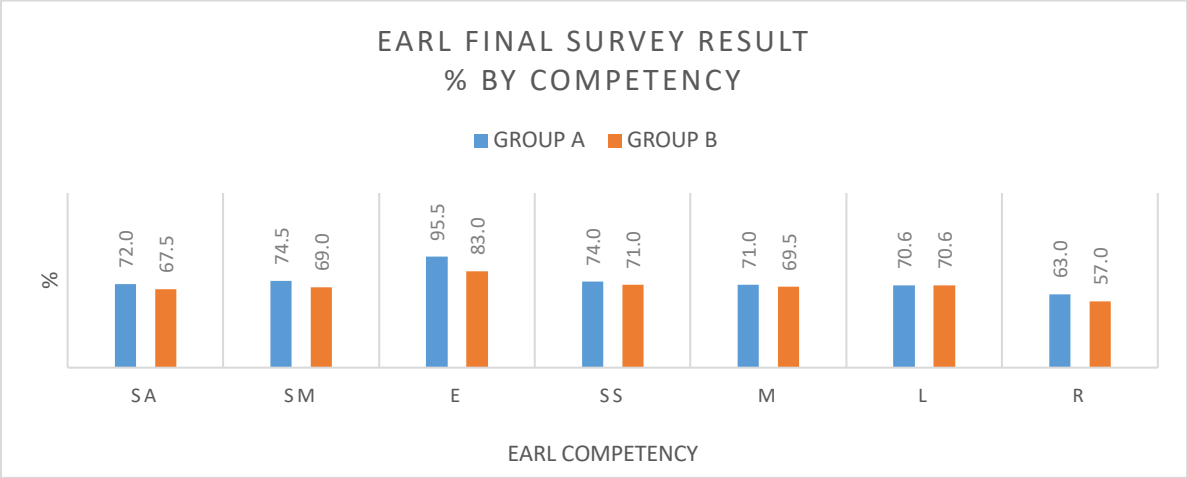


Figure 40 Group A & B EARL Final survey %

It is worth analysing the individual scores in more detail to see if there are outliers that skew these figures. Here, we find part of the solution. One individual in Group B brought

the team score down significantly. Removing this score would have increased Group B's overall participant score by 2%.

This is still low but more appropriate. As referenced in the IWPQ section above, conversations with the leader of Group B drew attention to the significant organisational changes presented to participants in the research study timeframe and the impact it had on certain participants. The doctorate candidate believes this had a considerable bearing on survey instrument scores for Group B. This is considered in more detail in the environmental Scan section. In tandem with this, reviewing the 180-degree interviews with the Group B leader also drew attention to specific challenges affecting individual participants, which would undoubtedly have a bearing on the survey results.

When we look at the final EARL scores for each individual (Figures 41 and 42), it is noted that seven out of ten individuals scored over 70% compared to four scores over seventy for Group B. However, the Group B scores are still in the typical range of 65% other than number 10, where there hasn't been a significant shift from the initial EARL scores. Again, the environmental scan section will highlight likely reasons for the lower Group B scores.

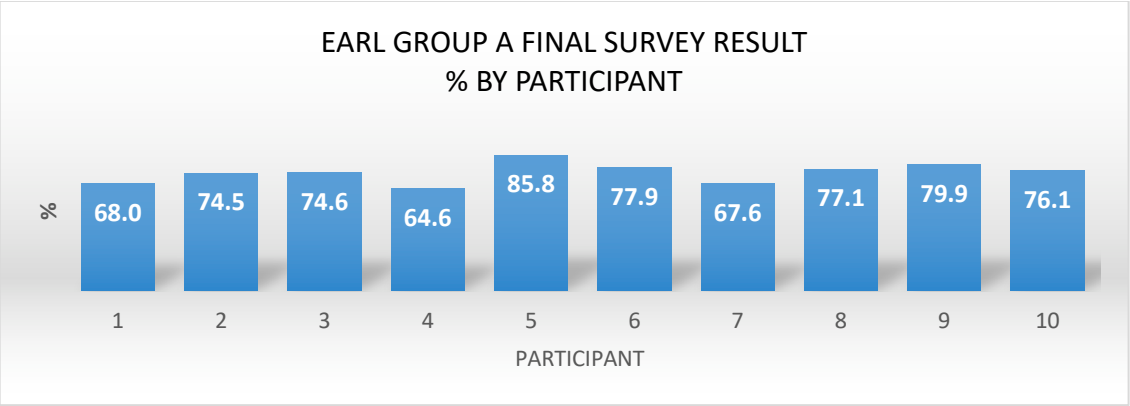


Figure 41 Group A Final % by participant

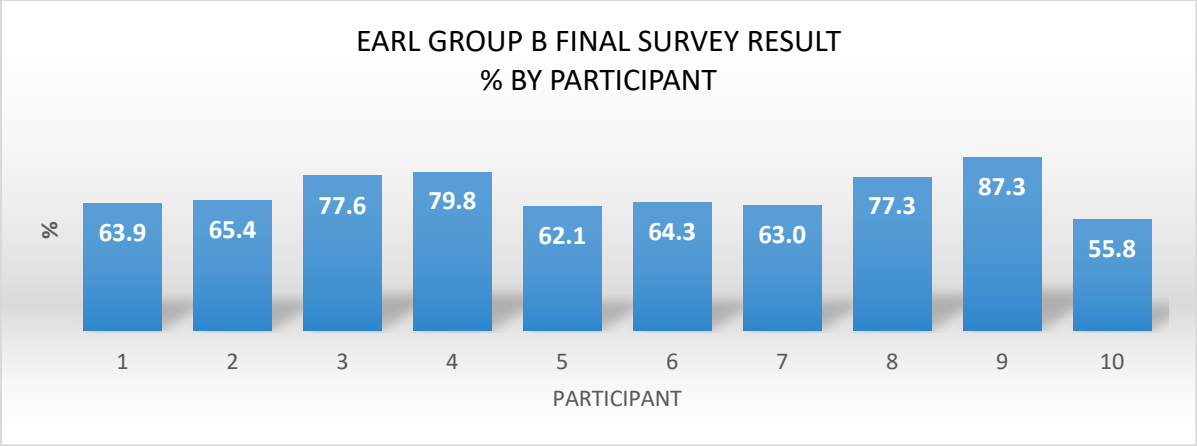
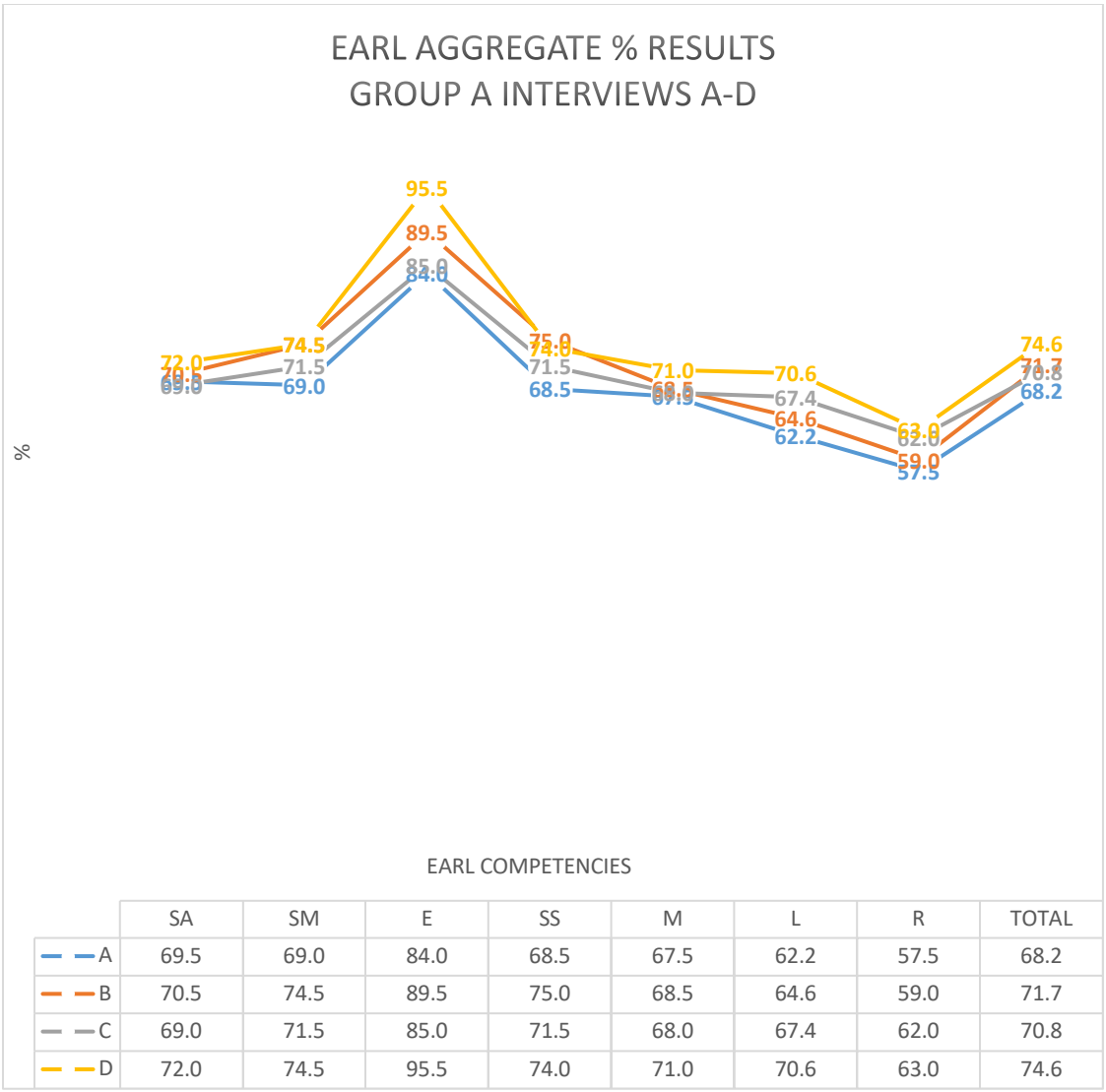


Figure 42 Group B Final % by participant

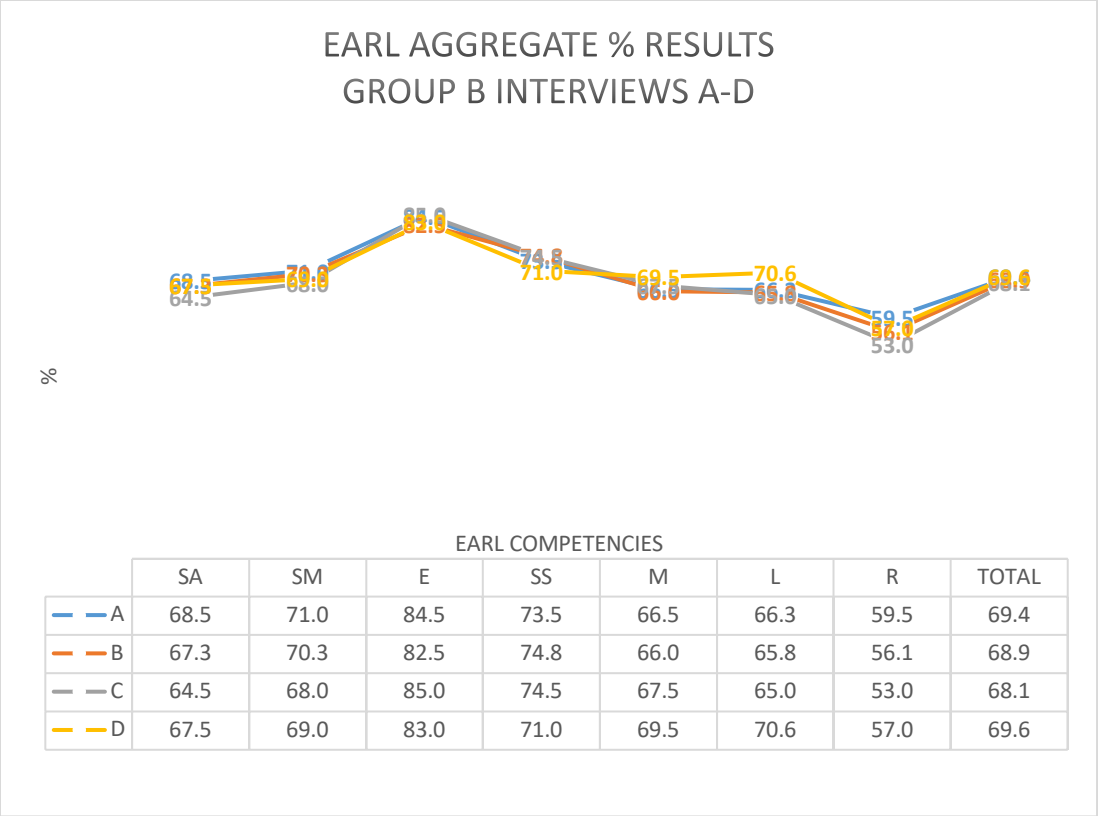
Figures 43 and 44 on the following pages present the changes seen in each group by EARL competency category over the research study period. Several things are worth noting here:

- In Group A, there is consistent improvement across all the categories over the research study period.
- In Group B, most categories have only minor improvements or steady states over the research study period.
- Both groups of participants have the empathy category as their highest-performing category and resilience as their lowest-performing category.
- The main gaps between the two groups are in resilience, followed by self-management and self-awareness. The other categories are similar in both groups.



	SA	SM	E	SS	M	L	R	TOTAL
A	69.5	69.0	84.0	68.5	67.5	62.2	57.5	68.2
B	70.5	74.5	89.5	75.0	68.5	64.6	59.0	71.7
C	69.0	71.5	85.0	71.5	68.0	67.4	62.0	70.8
D	72.0	74.5	95.5	74.0	71.0	70.6	63.0	74.6

Figure 43 Group A EARL aggregate results in Interviews A to D



	SA	SM	E	SS	M	L	R	TOTAL
A	68.5	71.0	84.5	73.5	66.5	66.3	59.5	69.4
B	67.3	70.3	82.5	74.8	66.0	65.8	56.1	68.9
C	64.5	68.0	85.0	74.5	67.5	65.0	53.0	68.1
D	67.5	69.0	83.0	71.0	69.5	70.6	57.0	69.6

Figure 44 Group B EARL aggregate results in Interviews A to D

The results are significant when all the participants' surveys are considered together. Figure 45 demonstrates that most individuals' EARL scores have shifted positively from the initial survey undertaken at the commencement of the program and the final survey undertaken.

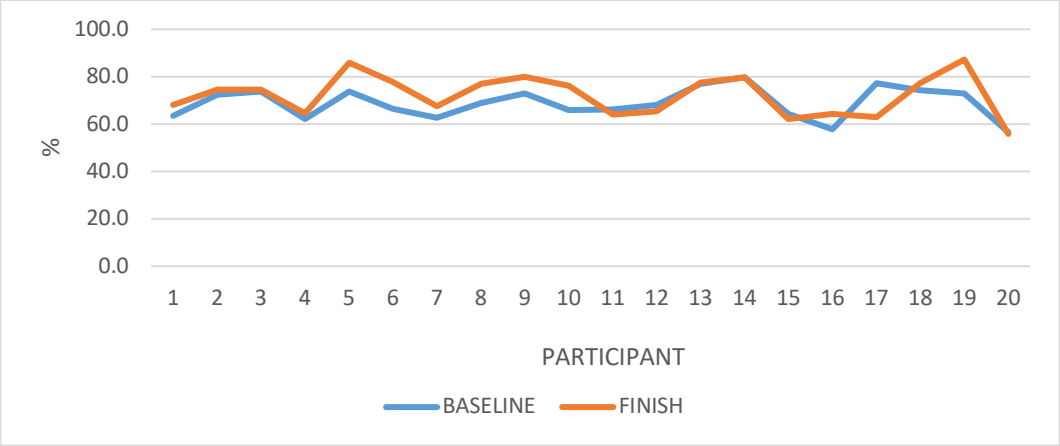


Figure 45 Group A and B participants baseline to final %

The orange line (the final survey) is usually above or the same as the baseline (blue line) (75%). In other words, only 25% of participants in the research study experienced a reduction in their EARL scores over the period.

Responses to individual questions in the EARL survey

When analysing specific responses to the EARL questions, some important themes emerge. These themes can be identified by reviewing all the answers to the thirty-six questions for every participant and noting shifts from negative to positive responses between the first and last surveys. By analysing this, the assumption is made that this demonstrates a pattern of change over the period.

Many participants' baseline answers to the EARL questions were positive in response. This shows that most participating individuals had reasonable levels of emotional agility, intrinsic motivation, resilience, and leadership at the commencement of the research study. This can be seen in the graphs shown earlier. Acknowledging this is important, as any change seen in the EARL survey results during the research study may be marginal.

To explore the real value of any changes in survey results, any shift in response over the total period of the study needs to be considered rather than a change month by month. For this reason, the analysis focuses on changes between baseline and final interviews.

Considering positive changes in EARL survey responses

Many of the thirty-six questions in the EARL survey showed large shifts from negative to positive answers over the research study period. For the purposes of this analysis, a large shift was defined as more than thirty-five per cent of the participants making a sizeable positive shift on any one question, where there was little or no shift to negative answers for the other participants.

Where a participant maintained the same response in their survey answers survey to survey or moved just one point in the EARL Likert scale, this was recorded as a neutral response. Every question led to some shift. However, the questions with the most significant shifts are ranked in Table 6, showing the number of participants who changed from negative responses to positive responses.

RANK	QUESTION	NUMBER OF PARTICIPANTS SHIFTING TO +IVE RESPONSES N=20
1	When I see an injustice I speak up	10
2	I find it hard to prioritise and get distracted easily	9
2	I tend to dwell on things that go wrong	9
4	I don't take time out regularly to reflect on life	8
4	I try to communicate honestly and openly	8
6	I don't eat well, rest and keep healthy	7
6	I naturally help people who are struggling	7
6	I live for today and plan for tomorrow	7
6	I'm known for telling good stories	7

Table 6 Participant negative to positive responses

Considering negative changes in EARL survey responses

In previous uses of the EARL measure, shifts in negative responses can also occur when participants become more self-aware. Self-awareness is a significant platform for building an integrated mindset. For example, following deep reflection, someone might realise they talk more than listen or become more self-aware of how their behaviour affects others. While identifying these specific shifts through reflection in the survey instrument has not been possible, such changes may be identified through the reflective interviews undertaken with each participant each month and the 180-degree leader interviews.

Some specific changes were noted when reviewing negative shifts from the baseline interviews to the final survey responses. From the participant sample of twenty, answering 36 questions, the shift to a negative response appears negligible. Any negative shift between the baseline and final survey is provided in Table 7.

RANK	QUESTION	NUMBER OF PARTICIPANTS SHIFTING TO -IVE RESPONSES N=20
1	I am uncomfortable when meeting new people	3
2	I don't take time out regularly to reflect on life	2
2	I find it hard to prioritise and get distracted easily	2
4	I live for today and plan for tomorrow	1
4	Under pressure I struggle to communicate effectively with those around me	1

Table 7 Participant positive to negative responses

Again, where a participant maintained the same response in their survey answers survey to survey or moved just one point in the EARL Likert scale, this has been recorded as a neutral response.

Comparing EARL benchmarks

Over the past six years, several valuable benchmarks have emerged which can be used to compare participant outputs.

- Changes in EARL measures from baseline to completion of a TV series – winning family.
- Changes in the EARL scores following the completion of a high school essential skills program featuring 50 high school students in Western Sydney.
- Average EARL scores for a group of MBA students.
- Comparison of EARL scores for Australian Olympians pre-Tokyo Olympics.
- Average percentage scores for each EARL segment derived from over one thousand data sets.

National TV Show – Winning Family benchmarks

An eight-part family competition broadcast on TV3 in New Zealand pitted 16 families against each other in various competitive activities. Each family undertook the EARL measure as a baseline before the show started and as they left it. Figures 46 and 47 on the following page show the change in the EARL measure for the winning family, demonstrating an increase of just over 5%.

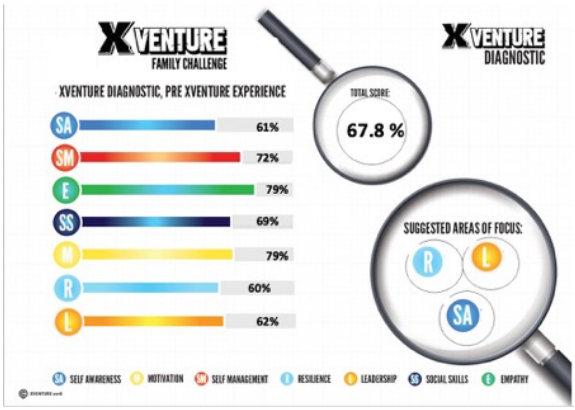


Figure 46 TV Show Winning Family Before Episode 1

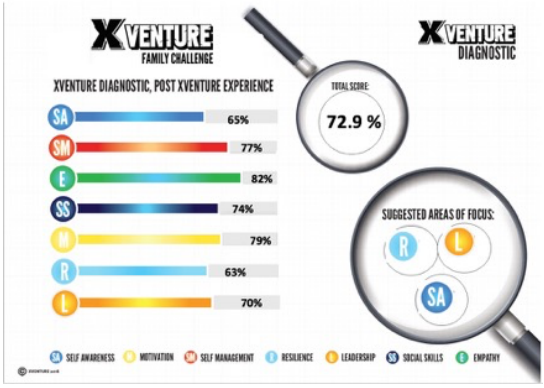


Figure 47 TV Show winning Family After Episode 8

Benchmarking High Schools

In 2018, 8 schools undertook an essential skills program to build emotional intelligence and resilience. Before undertaking the program, all students participating undertook the survey measuring EQ/resilience and did the same on completion. The results from the 199 students participating are shown in Table 8. The changes are not dissimilar to those experienced in the TV show.

School	Pre	Post	Increase	%Increase
1	61.3	65.8	4.5	7
2	67.7	72	4.3	6
3	61.8	64.6	2.8	5
4	56.8	55.6	-1.2	-2
5	58.3	62.8	4.5	8
6	63.4	71.9	8.5	13
7	65.3	70.7	5.4	8
8	65.6	69.3	3.7	6
AV	**62.5**	**66.6**	**4.1**	**6**

Table 8 Benchmarking 8 schools pre and post skills program

Benchmarking a group of Thirty Olympians

As a final comparison, in 2020/21, a group of Olympians completed the EARL measure before participating in a mindset program. The teams included Rugby sevens, sprint cycling, canoeing, hockey, soccer, and water polo. Whilst no follow-up survey was undertaken, this indicates a typical EARL measure output for high-performing people. (Figure 48)

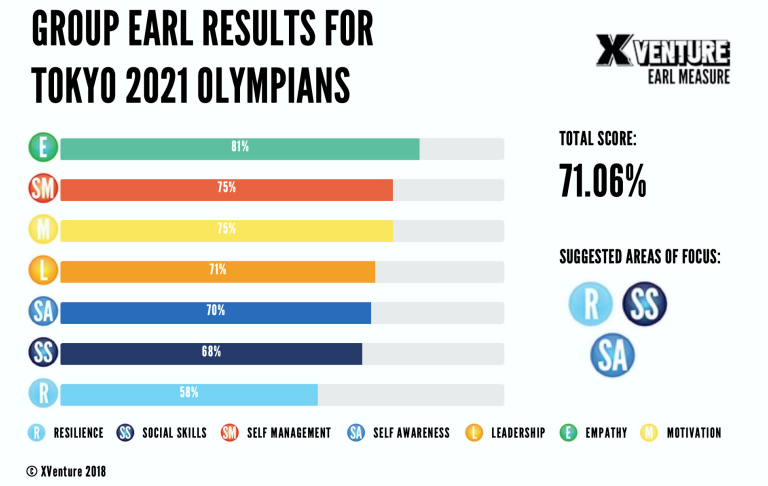


Figure 48 Olympians aggregate EARL score

EARL benchmark sites

When reviewing these benchmarks as possible tools for comparing the EARL results from Groups A and B, two appropriate benchmarks appear worth considering.

The first is the aggregate scores using the EARL measure for ten different group of participants ranging from eight up to one hundred and the average %age change seen in benchmark sites. These can be compared to the two groups in Table 9.

BENCHMARK SITE	AGGREGATE EARL BENCHMARK %	AVERAGE % CHANGE
1	72.9	5
2	65.8	7
3	72.0	6
4	64.6	5
5	55.6	-2
6	62.8	8
7	71.9	13
8	70.7	8
9	69.3	6
10	71.06	5
GROUP A	74.6 (Final)	6.4
GROUP B	69.6 (Final)	0.2

Table 9 EARL Benchmarks

These benchmarks confirm that the EARL results of Groups A and B closely match previous measures undertaken at other sites. Group A's final score is one of the highest aggregate scores seen in the many data sets undertaken, and the 6% improvement also represents a high growth percentage. The percentage change seen in Group B is considerably lower than many other organisations, though reference has already been made to this.

A score of around seventy is seen as “on point” for a good-performing team, and both groups are close to this score.

Post-interview final survey

At the end of the research study, all participants were invited to complete a final survey, which included questions related to each of the main elements of the learning program and the constructs referenced in the research study methodology.

The final survey formed a major reflection step for all participants. Most importantly, it offered some form of quantification of the performance improvement from the group of participants.

The overall results are provided in Figure 49. Noticeably, there was a marked uplift in participants' perceptions of their performance in most categories, with only one category (communication) showing a more considerable neutral/negative change. On reflection, this could be due to the complexity of the subject area and the difficulty of delivering significant change in the time period. Also, see the section on sentiment analysis and the reference to communication.

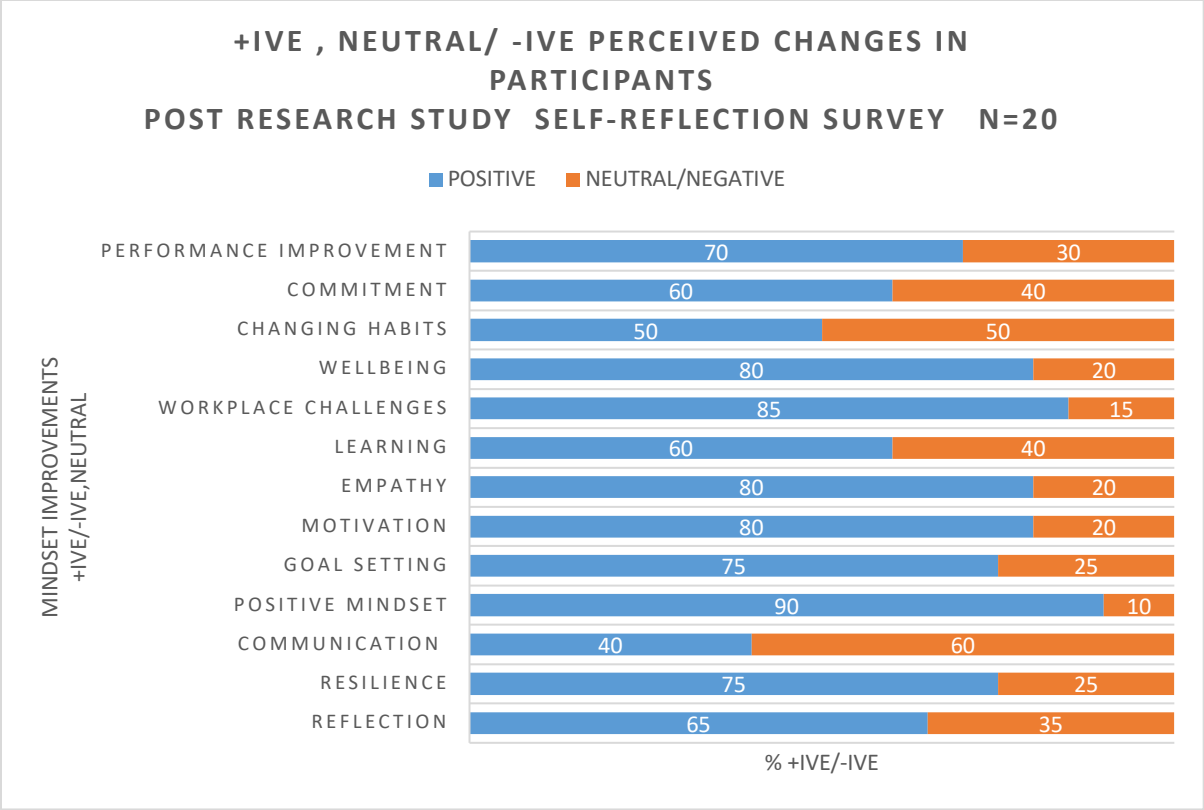


Figure 49 +ive, -ive, neutral participant changes

A further important aspect highlighted in the final survey responses was gaining and maintaining participant commitment. The interviews were a significant method used in the capturing of data in the research study. They were not intended at any stage to be used as part of the learning program. However, in the final survey, most participants identified the interview sessions as an important step in ensuring commitment to the program and accountability for improvement (85%) (See Figure 50 on the following page). Along with leadership support, this cannot be underestimated as a key feature and may need to be considered for any future programs looking to gain similar outcomes.

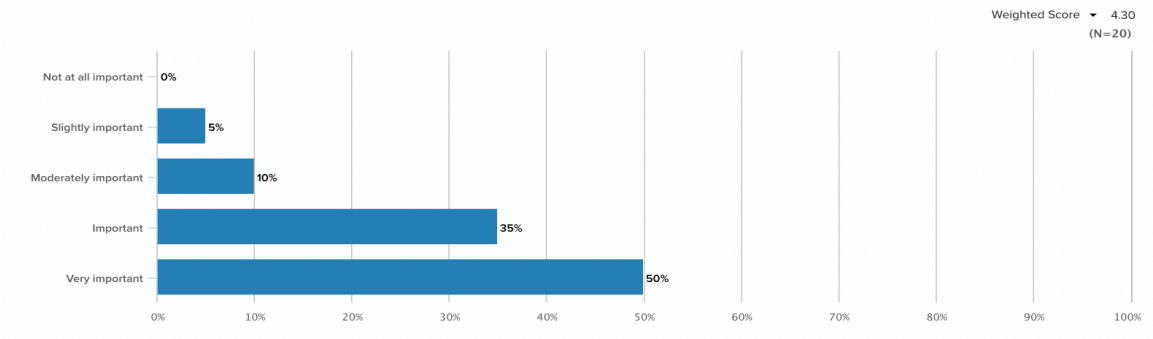


Figure 50 Value of one on one interviews

Similarly, participants saw the value of the survey instruments as particularly useful in reflection and resetting goals. (Figure 51). The EARL and final survey instruments were automated, but the others (IWPQ and BIS/BAS were not. Should they be considered for future research projects or to be applied in a business setting then consideration should be given to automating them.

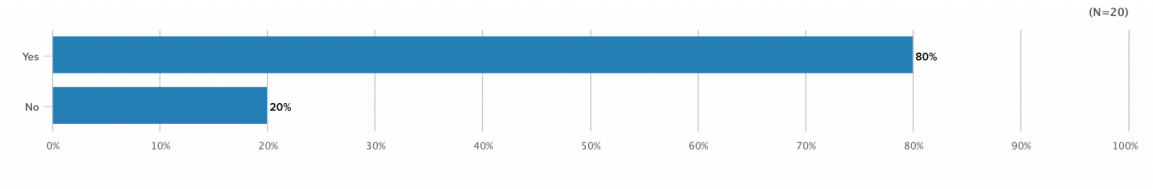


Figure 51 Value of survey instruments

Conclusions

Having considered all the survey results, most of the outputs are unsurprising. As an overview, the evidence shows that, in general, people participating are making changes likely to impact their performance. However, any performance improvement could also be detrimentally affected by obvious factors already highlighted, including environmental conditions and less visible factors. These include any delays in undertaking learning, the time spent in learning, and the time allocated for regular feedback. It is known that Group

B accessed the learning program less than Group, A and the interview process was postponed on two occasions in Group B due to workload. Group B was also consistently slower in completing their surveys than Group A and often completed them quickly (just in time). The benefit of the analysis undertaken in this research study is that many tools have been used to unearth possible changes in participant performance. The downside is that many tools have been used to unearth possible changes in performance! All have their merits, and much is offered to demonstrate change. However, what does this analysis mean? Has there been a change, and by how much?

Table 10 aims to synthesise all the results from each analytical tool used to determine whether there has been individual participant change. At this stage, no weighting has been placed against each of the elements, although this would be worthy of future research. To develop this table, the outputs of each tool were considered, and standardised scales were created. These are discussed below in the table.

	IWPQ	BIS/ BAS	EARL	IMI	SENTIMENT	LEADER	COMMITMENT	OVERALL
A								
1	**	0	*	**	0	**	**	**
2	00	0	*	*	00	**	*	*
3	**	*	*	**	**	*	**	**
4	**	*	*	**	**	**	*	**
5	**	0	**	**	0	**	**	**
6	**	0	**	**	0	*	**	**
7	*	0	*	**	**	*	**	*
8	0	0	**	*	00	0	0	0
9	*	*	*	**	**	**	**	**
10	**	0	**	0	*	00	**	*
B								
1	**	*	0	0	0	0	0	0
2	**	*	0	**	0	0	**	*
3	0	0	*	*	*	*	0	*
4	0	*	*	*	00	*	**	*
5	**	0	0	**	**	**	**	**
6	**	0	**	**	0	*	**	**
7	00	*	0	*	*	0	0	0
8	**	0	*	*	00	**	0	*
9	**	0	**	**	0	*	*	*
10	0	*	0	**	0	*	*	*

Table 10 Synthesised results from mixed method analysis

In simple terms, a scale was created to assist in comparing individual participant outcomes with the use of each analytical tool from baseline survey/interview to final survey/interview. Outcomes were logged as follows: **= highly positive, * = positive, 0 = neutral/negative and 00 = most negative.

For each analytical tool, account was taken of known benchmarks where available, or in the instance of newly developed tools (IMI/Sentiment analysis) and more subjective perspectives (180-degree leader interviews) an expert assessment was made on what levels should be applied in creating the scales.

IWPQ, BIS/BAS, EARL

** = Big change of > 10%; * = Av change of 1-10%;

0 = Av reduction 0-10% ; 00= Big reduction >10%

IMI.

** Significant progress = > 50% change * Progress = 25-50% change

0 No real change = 0-25% change ; 00 Performance challenges = < 0% change

Sentiment Analysis

** Significant progress= >10%; * Progress = 1-10%;

0 No real change = 0-10% ; 00 = Performance challenges >10%

Leader Assessment on Performance

** = Significant progress; * = Progress

0 = No real change ; 00 = Performance challenges

Learning commitment(+)

** = > 1/week; * = Av 1/week

0 = < 1/week ; 00 = Little or no commitment

(+) This "commitment category relates to the participant's engagement with the learning material. (The level of commitment expected from each participant was set prior to the commencement of the program.)

All participants attended all interviews and undertook surveys.

Overall

** = Significant change * = Some Change

0 = Little change 00= No change or negative change

To arrive at an overall view, the results from all the tools were compared, providing an overall “performance change index” for each participant.

A final review was undertaken of patterns of performance identified for each participant. In doing so, this verified the overall results as typically positive outputs seen in the use of one instrument were seen in others, too.

CHAPTER V:

DISCUSSION

5.1 Discussion of Results

At the beginning of this research study, several questions were posed:

- Can positive and growth mindset techniques used in elite sporting environments be transferable into a business setting?
- Is it possible to build an online, engaging, experiential, self-paced learning program that introduces these positive, growth-mindset techniques into a business setting?
- Can such a learning program gain commitment and buy-in from leaders and employees?
- Is it possible to measure the impact of such a learning program from a leader, employee and organisational perspective?
- Can changes be seen in a short time frame? (e.g. one quarter)?
- Can the approach used in the research study be integrated into current practices for developing and measuring current employees and attracting new employees?

The results from the research study provide positive responses to each of these questions. The research study's results demonstrate that the mindset techniques applied in elite sports are transferable.

The research study utilised a number of analytical tools to measure the learning program's impact, and it has demonstrated that even in a short time frame, a change in performance and behaviour has been achieved.

The research study has unearthed behaviour shifts and specific performance changes identified through self-assessment, interviews, surveys, and observations obtained in the 180-degree assessments of organisation leaders. The table in the previous section (Table 10) shows the significant changes made for many of the participants (8/20) and marked change for a further 9/20. Only 3/20 participants showed little or no change in undertaking the program.

The learning program undertaken by participants gained much support from the participants and their leaders. This is evident in the consistent commitment to the sessions and completion of survey instruments on a timely basis, plus the commentary throughout the program via the recorded interviews. The response of both participants and their leaders to the learning solution in an online virtual world has also been positive, demonstrating significant commitment before, during, and after the research study's completion.

The learning program could be easily integrated into current organisational performance management programs by making some minor amendments, particularly regarding participant selection, policy and process mapping, and the possibility of further performance measurement tools.

5.2 Discussion

The research study was undertaken with a small sample of executives in two global organisations (N=20). The learning program design was based on practical work in elite sports and best-practice research on mindset development.

The focus of the research study was observing the sample of participants undertaking the learning program set in a virtual world and its impact on their changing mindset and effect on performance.

Measuring the successful application of the content regarding changes in attitude and performance included quantitative and qualitative methods, such as recorded interviews, existing survey instruments, newly built instruments and deep data sentiment analysis. The research also applied a triangular approach featuring a sample of individuals and their senior managers through 180-degree feedback interviews and demonstrating the learning program's real-world applicability. A panel of experts was also involved in verifying and commenting on methods, survey results, and findings.

The research study provided compelling evidence that individuals who are supported, committed to learning and consistently apply a mindset program's principles can significantly enhance performance. However, there appears to be a caveat to this: an individual's interest, enthusiasm, and intent to learn and grow is required. A performance improvement linked to the learning program is unlikely where this is missing.

Of course, the real value emerges from greater engagement, goodwill and protection of an organisation’s most valuable asset. In a competitive market, this is significant. The financial cost of replacing an employee is typically 1.5 times the salary value when considering recruitment and onboarding programs, without allowing for any loss of organisational know-how. So, in other words, the value is far greater than just placing a dollar value on each hour of discretionary time freed up.

This is where the integrated mindset generates the most benefit, providing organisations with a platform to gain a longer-term competitive advantage and confirm them as employers of choice.

The Integrated mindset learning program can be a strategic tool to minimise this risk and help build a happier, healthier, and more effective workforce that's likely to increase the value of the business as both continue to grow. As a reminder, a highly engaged employee base typically achieves a 17 per cent increase in productivity and a 21 per cent increase in profitability (Gallup, 2024).

So, in other words, it's not just a nice to have. The care and support of an organisation's employees is smart business.

Let's return to leaders' responses regarding the use of time for individual growth. Many years ago, the Brazilian company Semco Partners, led by Ricardo Semler, was an early leader in building the notion of a people-focused organisation. Drawing attention to the similar perspectives of the leaders of our two participating organisations, Semler was and still is committed to giving people at Semco space and balance (Semler, 2007).

At Semco, employees were no longer just faceless drones acting as machines would. By putting more power and decision-making in the hands of their employees, the company became very successful, as it was more efficient and flexible. Workers also reaped the rewards of significantly increased control and decision-making power. This improved their lives financially and personally, as they could better deal with stress (Vanderburg, 2004).

More recently, research has drawn together the same threads and concluded that improvements to employee experience metrics can impact financial metrics.

Gautier and colleagues' 2022 article in the Harvard Business Review, “How Employee Experience Impacts Your Bottom Line,” undertook a sizeable research study reviewing three years of employee and financial data from over 1,000 brick-and-mortar stores across the U.S.

Their work demonstrated the link between greater employee engagement and experience and revenues and profits from those organisations. (Figure 52)

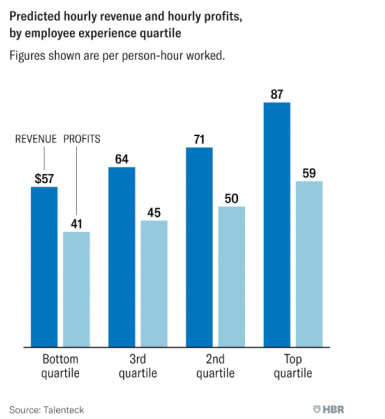


Figure 52 Predicted revenue & profits compared to employee experience

The results: Employee experience drives revenue: the effects we’ve uncovered are large enough to convince executives that they need to recognise their people's impact on customer experience and revenue. They are not simply a cost to be minimized. How much is it worth to your organisation to reduce turnover of top talent by 20%? How about improving employee satisfaction scores by 10%? How much is it costing your organisation not to know these answers? (Gautier, 2022).

Further studies confirm that keeping employees happy and engaged ultimately impacts the bottom line. Saxena and Srivastava's study on the manufacturing sector in India, featuring 1200 workers and 50 HR managers, was published in the International Journal of Management Research and Business Strategy in 2015. They revealed:

The direct connection between employee engagement, organisational culture, and organisational performance. It proves employee engagement is crucial for job satisfaction, loyalty, and retention. It creates a healthy organisational culture, leading to better organisational performance (Saxena, 2015).

Many studies confirm the same thing. Genuinely looking after employees proves that "employees are emotionally attached to their organisation and highly involved in their job with a great enthusiasm for the success of their employer, going the extra mile beyond the employment contractual agreement." (Markos, 2010).

Leaders and participants in the research study have acknowledged the importance of achieving a balance in the employment environment. People work hard but support them, nurture them, and grow them, and the business results will happen. The expert coaching panel review of the IMI said the same. Having a fun experience in an elite setting does give rise to an improved performance. For the Australian football team, required to travel thousands of kilometres for any game on their journey to the World Cup, it was the only way of getting them there.

The environmental scans undertaken for both organisations in Chapter 3 demonstrate the sizeable pressure on employees to deliver targets and quarterly growth in sales and profits. Burnout is a significant issue, so such a learning program can provide solace in a

competitive environment. Just as significant is the investment in building a healthy and happy team culture, where people believe they are cared for, which makes the organisation attractive for recruitment. (Both organisations rate highly as employers on Glassdoor.)

There are many examples of improved performance seen and experienced among participants, and these have been identified and documented through the leader's 180-degree interviews, the hundreds of participant comments from the interviews, the changes seen in the IMI index, and survey instruments utilised in the research study. All of which provide meaningful evidence for the individuals of positive change. However, one of the big challenges emerging in this research study was to quantify a performance improvement. One of the key instruments to help answer this emerged from the final survey, which focused on concrete changes undertaken by participants linked to the learning program. (Figure 53) The average perceived improvement in an average working week was 10 per cent, although some participants saw the shift greater or less than this. None saw a nil shift. This ten per cent increase emerged by providing an average of four hours of discretionary time due to the consistent application of good habits obtained from applying the principles of the Integrated mindset learning program.

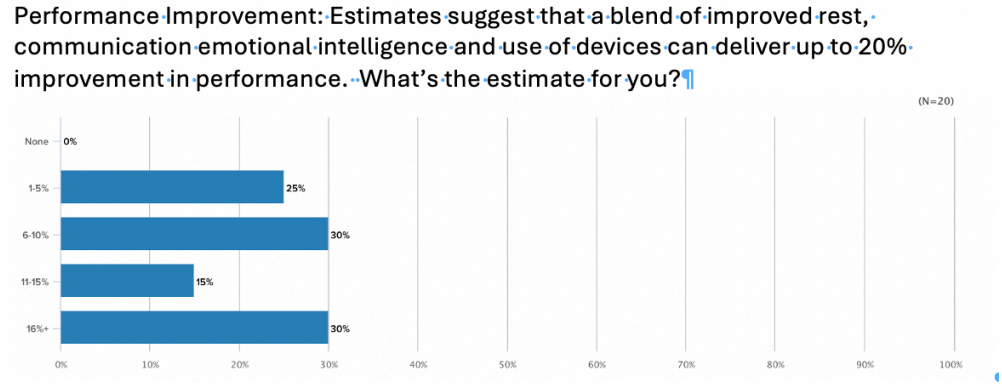


Figure 53 Participant performance improvement assessment in hours

It is worth noting that this specific group of activities became the focus for individual changes made in several elite sports teams, including the Australian National soccer team, the Birmingham Phoenix women's cricket team, the Adelaide 36ers basketball team and the Western Sydney Wanderers football team. Figure 54 was used in the elite sports environment for each of the individuals in teams to focus attention on gaining practical improvements in performance.

Figure 54 Activities for achieving improvements in performance

The identification of this discretionary time due to these changing habits takes no account of the potential improvement of other aspects as reflection and mindfulness had on participant performance, despite clear evidence in the literature that such activities will likely have an even more significant impact when participants embrace and apply them.

Let's assume for one moment that the 10% improvement is reasonable. The next consideration is whether we can rely on individual perception as a reference point to measure real progress accurately.

As Benjamin Franklin put it in his writings in 1750: "There are three things extremely hard: steel, a diamond, and to know one's self." (Franklin, 1750).

Chapter 2 presented the literature on ensuring a robust self-assessment approach.

In this research study, there is strong evidence that the twenty participants were significantly invested in performance improvement and building an integrated mindset. The participants referred to the regular interview sessions as an essential input, which gave them a structured process to reflect and reset. The post-survey results provide evidence of this.

By the research study's fourth interview, participants were more reflective and open to sharing experiences of mistakes and future improvements needed. Hence, they were not overly optimistic in perspective, and this is reflected in the survey results and the sentiment analysis, which provided little evidence of significant positive language change. This may also support the view that their self-assessment was fair and reasonable.

The conclusion is that a 10% improvement in performance using freed-up work time as a proxy for this performance improvement is a reasonable assumption. It could even be more. However, to offer a sensitivity analysis on this may provide further confidence. Even applying the lower levels of performance improvement identified by participants, the freed-up time equates to approximately 5% of a typical working week or approximately two hours.

Further confirmation of the performance change identified was shared with leaders on the research study's conclusion. Both considered the performance improvement outcome to be reasonable. The leaders also shared their perspective of what this improvement could mean for individuals and organisations, with the overwhelming view being to encourage individuals to build an even greater integrated mindset, thus giving them time and space for exploring “fewer, bigger, better.” (Group B leader).

Literature supports the findings that individuals in organisations can make improvements to their regular workday. In 2013, Julian Birkinshaw and Jordan Cohen's article in the HBR showed that 15 executives from different organisations could reduce their focus on low-value tasks by approximately eight hours a week. These tasks were of "no personal satisfaction and could be handled competently by others." (Birkinshaw, 2013).

The challenge is that most individuals probably know they could be more efficient and more effective, but often, the solution to improve the use of time and find space in the day seems hard from a motivational point of view or is made even less attractive as it becomes a directive from senior management providing additional pressure points on workers. What typically is not offered is a learning program such as the one created for this research study, which provides tools and techniques for employees to become motivated and practised learners and feel confident about finding solutions themselves.

A model that can help in understanding this is Duhigg's model of habit: a process well-understood by top athletes. (Figure 55). In applying the program cue, the participant will receive the reward of 2 to 4 hours of free time per week if they can demonstrate an integrated mindset. The IMI provides an early tool to build into performance management systems for managers to assess if the employee is achieving the mindset that delivers the expected impact (Duhigg, 2013).

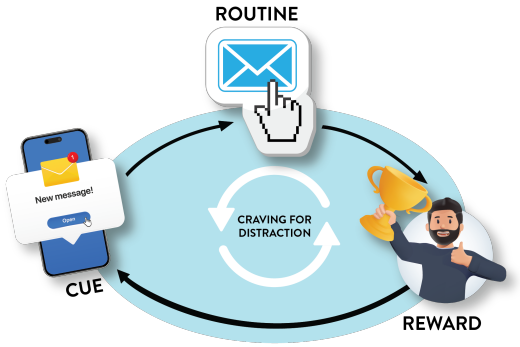


Figure 55 Duhigg Habit Loop

Whatever the reward presented by an organisation interested in encouraging higher levels of performance from its employees, one thing must occur in addition to offering a learning program to assist the cause: the commitment of individuals and leaders in building a routine that ensures good habits in working towards an integrated mindset consistently and continuously. Daily, weekly, and monthly.

The notion of becoming a practised learner and self-regulating improvement is becoming popular in sports. Young and colleagues' study of 2023 refers to a self-directed survey instrument (Young, 2023). This parallels the concept of the PIMS, which is applied in elite sports to help athletes focus on specific actions to improve performance and is now introduced to participants as a tool for helping them become practised learners.

Now that we have identified this opportunity to free up time linked to the Integrated mindset learning program, it's a question of what to do with it.

Birkinshaw and Cohen offer some generic solutions:

- Identify low-value tasks.
- Decide whether to drop, delegate, or redesign.
- Off-load tasks.

- Allocate freed-up time.
- Commit to your plan.

(Birkinshaw, 2013).

However, Professor of Management Practice at London Business School Lynda Gratton supports the view that discretionary time provides a significant opportunity for both employees and organisations. “It’s fundamentally more valuable when employees can engage with what is important to them using the discretionary time they have, their capacity to shape their jobs, and their willingness to make new connections. Smart employers are seeing this and welcoming it.” (Gratton, 2023).

The article by Gratton fits well with the Japanese model “Ikigai”, which illustrates how individuals should strive for balance in life. (Figure 56.) Based on their experience in this research study, all participants and their leaders saw the opportunity to use the hours freed up through the learning program to enhance an individual’s Ikigai.

Figure 56 Ikigai

An important factor for the future success of such a learning program is for individuals and leaders to understand the potential benefits of participating in it. Participants were grateful for the opportunity to learn and be part of a major research study. Providing employees with such a learning program with the reward of four hours of discretionary time a week may be a great motivator.

Both leaders of the organisations who participated in the research study follow this line of thinking. The benefit of improved performance emerging from the research study for both organisations has been very much focussed on the well-being of their team members to achieve higher performance levels. In the 180-degree sessions with leaders, they see the improvements and the freeing up of time as incredibly relevant to resetting the balance in a highly driven competitive environment and maintaining a healthy and motivated workforce.

One thing of note. Based on observations of the two leaders who participated in the research study, authentic leadership styles are key. Their support and encouragement of the participants throughout the research study was explicit in many ways:

- Introducing the research study to their team.
- Being involved in the presentations on the subject.
- Commitment to the process throughout.
- Time is taken to discuss the progress of their people.
- Follow-up involvement to resolve any operational matters throughout.
- Genuine satisfaction to see improvements in their team.
- Enthused about the results of the program.

Similarly, participant feedback throughout the program confirmed the support, time and wisdom the two leaders gave them.

Intriguingly, Rock's SCARF model from neuroscience and Neuro leadership research mirrors the two leaders' approach (Rock, 2009).

The research provided a few firsts as a by-product of the results. The introduction of virtual world online learning for executives and the lessons in its application; the introduction of sentiment analysis as a potential tool for assessing changing attitudes and communication patterns and the possible link to changing mindset; a new index emerged based on the learning program content also emerged (Integrated Mindset Index). An aggregation tool for combining results from different analytical sources is a valuable idea for other applications. This provides enormous possibilities for leaders and coaches in business and sports for recruitment, retention and developing tailored learning programs for individual growth.

It is well known that when there are economic pressures, learning is often the first thing an organisation or individual removes or reduces. This research study demonstrated that even in a short period (one quarter), there is enough evidence to suggest that a learning program that helps people manage and enhance their mindset to cope with challenges at work and home will provide significant benefits both individually and in the longer term for organisations too.

The research study also provided participants with new tools, such as the learning program content and the Performance Improvement Mindset Solution (PIMS), to enable them to continue their integrated mindset journey. The PIMS helped the participants to focus on

the improvements that emerged from self-reflection based on the learning program's themes. These improvements can then be part of a personal plan or form part of a regular discussion with the individual's supervisor, either informally or as part of a performance management program. Ultimately, it must be acknowledged that the improvements found can only be maintained through a commitment of leaders and participants to such a learning program for the long term.

The PIMS tool was made available in the virtual world learning program is available at the following link: https://xvlnk.co/dba-pims

CHAPTER VI:

SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

6.1 Summary

The evidence provided using a mixed blend of qualitative and quantitative analytics of interviews and surveys of participants, leaders, and external reviewers strongly suggests that an Integrated mindset learning program can and will deliver significant individual performance and behavioural improvements.

6.2 Implications

Where organisations have a more profound belief and value system other than short-term bottom-line results, such a learning program will likely deliver significant benefits, which will no doubt include genuine financial benefits over a more extended period.

If an organisation is interested in short-term financial gains, this is not for them. Notwithstanding this, there is no evidence that implementing the learning program had any detrimental impact on the financial results of either organisation. Instead, it gave highly committed and "busy" employees time and breathing space to achieve greater results, and in the final 180-degree interviews with the leaders, both referred to significant results achieved in the time period.

The implications are significant, and organisations are enlightened to embrace a more holistic approach to individual and team performance, where they understand and encourage reflection, emotional agility, building robust mindsets and relationships, excellent health and well-being and genuine work-life balance. The benefits of greater employee engagement and organisational performance will follow. Such a learning

program can offer a cost-effective solution to any organisation. For existing employees, a program consisting of eight to ten hours of self-paced learning and several feedback/accountability sessions throughout the year can integrate with an existing performance management system. For new employees embedded into pre-onboarding, such a learning program provides an exciting and cost-effective introduction to any organisation.

6.3 Recommendations for Future Research

At this stage, the results of the research study do not provide organisations with an actual monetary gain by implementing such a learning program in the short term; however, based on the observations obtained in this research, the analysis undertaken from the various survey instruments used, and considering the evidence in literature reviews, there is a likely medium to long-term opportunity where the improvements identified can offer significant benefits to an organisation as well as the individuals involved. The Microsoft Work Trend Index Report of 2023, presents a direct correlation exists between company stock performance and workforce engagement. A 2022 analysis of over 3 million US stock market employees concluded the same. This should be the basis for further study. (Microsoft, 2024).

Nevertheless, taking the three pieces of evidence, we interpret the findings as suggesting a robust causal effect of a positive impact on productivity.

Further research is also recommended to undertake a similar study over a more extended period and with a larger cohort of participants. (e.g. 12 months and 100 participants.) This will enable more profound observations and refine the instruments used for measurement.

This research study applied a short time frame that paralleled organisational expectations and measurements to achieve improved quarterly performance levels. Similarly, in elite sports, expectations of performance are short-term, too.

Introducing the added element of a control group with no access to the learning program might also be considered, and then changes might be compared against those participants with access. Whilst this would provide a robust research question, the doctoral candidate suggests that the evidence is clear enough that such a learning program delivers positive benefits and impacts performance by reducing time to undertake a normal workload.

Where an organisation explicitly communicates, features, recognises, encourages and provides a platform for people to develop a positive mindset, knowing that by learning and working on developing this, the reward for an individual is more time to spend on things that matter. The knock-on effects of positive indicators around sickness and absence, staff turnover, and brand recognition become apparent, too.

The research study did not attempt to link improvements identified for each participant with specific employee measures used in the organisations, such as the impact on turnover, sickness, absence and productivity. However, this provides an opportunity for further research in the future.

The research has now delivered a possible method for expert assessment of an integrated mindset with the development of the IMI. This could be used in a performance management setting or regular coach-client meetings. The index is in its infancy, and further research and development to explore the use of such an index to measure the

mindset of individuals in business and sport and its uses is encouraged. This should include reviewing categories, definitions, and weightings.

The inclusion of sentiment analysis in the research study has shown to be an exciting adjunct to assessing changes in perspective, behaviours, and performance. Future research suggests further approach development, including more detailed positive/negative language assessments and language intent.

The research study aimed to highlight how various quantitative and qualitative analytical tools could identify change in people. All have their merits and offer value to the research study. An attempt was made to draw the results of these tools together in some form to make sense of them. This consolidation is in an early form, and more research can be done to refine the tools and approach.

The content delivery mechanism for this research study was a highly innovative virtual world solution. The responses provided by the participants showed that this was positively received by the majority but not by all. Further research is recommended to identify the impact of content delivery methods and their fit with different types of participants.

The specific learnings of the content were not assessed in the traditional way of written multiple-choice assessment but rather on the ability to contextualise and demonstrate application. Further research is recommended to compare the value of such an approach in learning.

6.4 Conclusion

The research study set out to identify the link between individuals developing an integrated mindset via an online learning program and its impact on their behaviour and performance.

Using a mixed-method approach to identify change, the results demonstrated a mindset shift for the majority of the cohort of twenty participants following the introduction of the learning program. The results demonstrate a positive change in performance and behaviour has occurred. The results also align with performance improvements leaders were looking for: having a learning program that encourages and influences individuals to free up time to be more efficient and effective, more proactive in designing, thinking, communicating, enjoying work and achieving a better balance of life, or as one of the leaders called it: "do fewer, bigger, better." Demonstrable freed-up time also provides an opportunity for a compelling conversation within organisations on considering new strategies and priorities for improving performance using such a method against a backdrop of recent changes in the workplace, including a return to office and the move to a shorter working week.

REFERENCES

Abdalla, G. a. Ö. F., 2021. Sentiment analysis of fast food companies with deep learning models. *The Computer Journal,* 64(3), pp. 383-390.

Abramson, L. Y. S. M. E. &. T. J. D., 1978. Learned helplessness in humans: Critique and reformulation.. *Journal of Abnormal Psychology,* 87 (1), pp. 49-74.

Adam, M. F. L. M. A. a. K. K., 2023. *The Sport Performance Perceptions Scale (SPPS) Manual.,* s.l.: s.n.

Adelaide 36ers, 2022. *36ers sign new Basketball Department.* https://www.adelaide36ers.com/news/36ers-sign-new-basketball-department

Ahmad, S. a. S. K., 2011. HRM and employee performance: A case of university teachers of Azad Jammu and Kashmir (AJK) in Pakistan.. *African Journal of business management,* 5(13), p. 5249.

Alexander, A. D. A. M. L. M. a. R. D., 2021. What employees are saying about the future of remote work. https://www.mckinsey.com/capabilities/people-and-organizational-performance/our-insights/what-employees-are-saying-about-the-future-of-remote-work

Andrade, H. a. V. A., 2009. Promoting learning and achievement through self-assessment. Theory into practice. *Theory into practice,* 48(1), pp. 12-19.

Antunes, N. S. W. D. F. B. W. E. V. M., 2020. The (un)Likely Link Between Environment & Languages To what extent does climate impact human behavior? *The Max Planck Institute.*

Arnsten, A. a. G.-R. P., 1998. Noise stress impairs prefrontal cortical cognitive function in monkeys: evidence for a hyperdopaminergic mechanism. *Archives of General Psychiatry,* 55(4), pp. 362-368.

Arnsten, A. F. T. &. R. T. W., 2002. Neurochemical modulation of prefrontal cortical function in humans and animals.. In: D. T. S. &. R. T. Knight, ed. *Principles of frontal lobe function.* Oxford: Oxford University Press, pp. 51-84.

Arth, B., 2011. The business impact of next-generation e-learning. https://www.fourthirds.com/wp-content/uploads/2016/11/The-Business-Impact-of-Next-Generation-eLearning.pdf

Atkinson, K. K. A. S. C. M. H. a. C. H., 2015. Reporting standards for literature searches and report inclusion criteria: making research syntheses more transparent and easy to replicate. In: *Research synthesis methods, 6(1),* s.l.:s.n., pp. 87-95.

Australasian Leisure Management, 2015. XVenture launches digital channel to boost leadership learning. https://sportstechnology.ausleisure.com.au/news/xventure-launches-digital-channel-to-boost-leadership-learning/

Azar, P., 2009. Sentiment analysis in financial news. s.l.:Harvard University.

Aziz, H. O. B. G. B. A. S. S. B. I. N. H. P. S. S. A. B. A. G., 2021. Employee Commitment: The Relationship between Employee Commitment And Job Satisfaction. *Journal of Humanities and Education Development,* Volume 3.

Bakliwal, A. F. J. v. d. P. J. O. R. T. L. a. H. M., 2013. Sentiment analysis of political tweets: Towards an accurate classifier. *Association for Computational Linguistics*.

Baksh Baloch, Q. S. M. Z. G. a. F. A., 2014. The Impact of Emotional Intelligence on Employees' Performance. *Journal of Managerial Sciences,* 8(2).

Bandura, A., 1997. *Self-Efficacy: The Exercise of Control.* s.l.:s.n.

Barnes and Noble College, 2022. College 2030™: Transforming the Student Experience. https://www.bncollege.com/insight/college-2030-transforming-the-student-experience/

Bar-On, R. H. R. a. F. S., 2013. The impact of emotional intelligence on performance. In *Linking emotional intelligence and performance at work.* s.l.:Psychology Press.

Beauchamp, M. M. A. a. L. A., 2005. Communication within sports teams: Jungian preferences and group dynamics.. *The Sport Psychologist,* 19(2), pp. 203-220.

Bennett, N. a. L. J., 2014. What VUCA really means for you. *Harvard business review,* 92(1/2).

Bennis, B., a. T. R., 2002. Crucibles of Leadership. https://hbr.org/2002/09/crucibles-of-leadership

Benrouba, F. a. B. R., 2023. Emotional sentiment analysis of social media content for mental health safety. *Social Network Analysis and Mining,* 13(1), p. 17.

Bercher, D., 2012. Self-monitoring tools and student academic success: When perception matches reality. *Journal of College Science Teaching,* 41(5).

Bevan, S., 2010. The business case for employees' health and well-being*,* London: The Work Foundation.

Birkinshaw, J., a. C. J., 2013. Make Time for the Work That Matters. https://hbr.org/2013/09/make-time-for-the-work-that-matters

Birrer, D. a. M. G., 2010. Psychological skills training is a way to enhance an athlete's performance in high-intensity sports. *Scandinavian Journal of Medicine & Science in Sports,* Volume 20, pp. 78-87.

Birrer, D. R. P. a. M. G., 2012. Mindfulness to enhance athletic performance: Theoretical considerations and possible impact mechanisms. *Mindfulness,* 3(3), pp. 235-246.

Birwatkar, V., 2014. Emotional intelligence: The invisible phenomenon in sports.. *European Journal Sports Exercise Science,* 3(19), p. 31.

Blumenstein, B. a. O. I., 2020. Periodization of psychological preparation within the training process. *International Journal of Sport and Exercise Psychology,* 18(1), pp. 13-33.

Bompa, T. B. B. H. J. H. S. a. O. I., 2019. Integrated periodization in sports training & athletic development: Combining training methodology, sports psychology, and nutrition to optimise performance. Meyer & Meyer Sport.

Bonhady, N. a. D. M., 2023. Atlassian and Canva turn screws on staff to survive the downturn. https://www.afr.com/technology/atlassian-and-canva-turn-screws-on-staff-to-survive-the-downturn-20230630-p5dkx0

Boss, J., B. D., 2015. 5 questions that identify growth minded employees. https://www.entrepreneur.com/growing-a-business/5-questions-that-identify-growth-minded-employees/246494

Boyd, D., 2015. The growth mindset approach: A threshold concept in course redesign. *Journal on Centers for Teaching and Learning,* p. 29.

Bradberry, T. a. G. J., 2009. Emotional Intelligence 2.0. s.l.:TalentSmart.

Bromage, B. a. M. R., 1986. Quantitative and qualitative effects of repetition on learning from technical text. *Journal of Educational Psychology,* 78(4), p. 271.

Brosnan, S. a. D. W. F., 2003. Monkeys reject unequal pay. *Nature,* 425 pp. 297-299.

Brown, G. a. H. L., 2014. The future of self-assessment in classroom practice: Reframing self-assessment as a core competency. Auckland: University of Auckland.

Burgess, R. a. T. S., 2000. Seven key features for creating and sustaining commitment. *International Journal of Project Management,* 18(4), pp. 225-233.

Burke, W. a. L. G., 1992. A causal model of organisational performance and change. *Journal of Management,* 18(3), pp. 523-545.

Cacioppe, R., 1997. Leadership moment by moment!. *Leadership & Organization Development Journal,* 18(7), pp. 335-345.

Caniels, M. S. J. R. I., 2018. Mind the mindset! The interaction of proactive personality, transformational leadership, and growth mindset for engagement at work. *Career development international,* 23(1), pp. 48-66.

Carver, C. S. &. W. T. L., 1994. Behavioural inhibition, behavioural activation and affective responses to impending reward and punishment. *Journal of Personality and Social Psychology,* 67(2), pp. 319-333.

Catapult, 2024. Catapult. https://www.catapult.com/solutions/pro-video

Chan, J. a. M. C., 2011. The value of emotional intelligence for high-performance coaching. *Journal of Sports Science & Coaching,* 6(3), pp. 315-328.

Chase, M. F. D. H. S. a. H. T., 2005. Sources of coaching efficacy: The coaches' perspective. *International Journal of Sport and Exercise Psychology*, 3(1), pp. 27-40.

Chen, LK. D. E. S. J. a. W. A., 2021. Teacher survey: Learning loss is global—and significant. https://www.mckinsey.com/industries/education/our-insights/teacher-survey-learning-loss-is-global-and-significant

Chong, B., 2020. A growth versus fixed mindset often means the difference between success and failure. https://www.smartcompany.com.au/startupsmart/advice/growth-mindset-startup-success/

Chui, M. M. J. B. J. D. R. R. C. S. H. S. G. a. W. M., 2012. The social economy: Unlocking value and productivity through social technologies.

https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/the-social-economy

Cohen, G. a. S. D., 2014. The psychology of change: Self-affirmation and social psychological intervention. *Annual review of psychology,* 65(1), pp. 333-371.

Cooper, A. G. R. a. A., 2007. The behavioural inhibition and behavioural approach systems (BIS/BAS) scales: Measurement and structural invariance across adults and adolescents. *Personality and individual difference,* 43(2), pp. 295-305.

Çopani, D. a. K. V., 2023. The Impact of Transformational Leadership on Job Performance in the Aviation Industry of Albania. Bengkulu, Proceedings of the 1st Bengkulu International Conference on Economics, Management, Business and Accounting (BICEM).

Corballis, M., 2017. Language evolution: a changing perspective. *Trends in cognitive sciences,* 21(4), pp. 229-236.

Coronado-Maldonado, I. B.-M. M., 2023. Emotional intelligence, leadership, and work teams: A hybrid literature review. *Heliyon,* 20(9).

Covey, S., 2020. The seven habits of highly effective people. s.l.:Simon & Schuster.

Cropley, B. H. S. M. A. a. N. A., 2010. The value of reflective practice in professional development: An applied sport psychology review. *Sport Science Review,* 19(3-4), p. 179.

Crosswell, L., 2024. How open and honest communication impact employee engagement. https://www.cultureamp.com/blog/open-and-honest-communication

Daily Telegraph, 2020. Right time for paddler to gain extra edge. https://www.dailytelegraph.com.au/subscribe/news/1/?sourceCode=DTWEB_WRE170_a_GGL&dest=https%3A%2F%2Fwww.dailytelegraph.com.au%2Fnewslocal%2Fcentral-coast%2Fsport%2Ftokyo-2021-mind-over-matter-for-paralympic-paddler-dylan-littlehales%2Fnews-story%2F9dbfa4

Dallam, S. O. A. T. C. K. J. a. H. M., 2024. Interpersonal Violence in Elite US Athletes: Prevalence and Mental Health Correlates. *Journal of Aggression, Maltreatment & Trauma,* pp. 1-19.

Dasey, J., 2018. Soccer Corner: Aussie champion uses ‘mind guru’ to chase Asian glory https://www.thejakartapost.com/news/2018/04/13/soccer-corner-aussie-champion-uses-mind-guru-chase-asian-glory.html

Davachi, L. a. W. A., 2002. Hippocampal contributions to episodic encoding: insights from relational and item-based learning. *Journal of Neurophysiology,* 88(2), pp. 982-990.

Davachi, L. K. T. R. D. a. R. L., 2010. The AGES Model can help learning stick. *Neuroleadership Journal.*

De Kretser, A., 2023. Goyder going wouldn’t lift negative overhang: Qantas analysts. https://www.afr.com/companies/transport/goyder-going-wouldn-t-lift-negative-overhang-qantas-analysts-20231002-p5e91b

Debas, H., 2012. Global health: Priority agenda for the 21st century. https://www.un.org/en/chronicle/article/global-health-priority-agenda-21st-century.

Deloitte, 2018. Reflect more to learn faster. https://www2.deloitte.com/xe/en/insights/topics/talent/business-performance-improvement/reflect-on-experiences-learning-faster.html

Dewey, J., 1933. How we think: Reflective practice, journals and learning logs. Boston M.A.: Heath & Co.

Di Stefano, G. G. F. P. G. a. S. B., 2023. Learning by thinking: How reflection can spur progress along the learning curve. *Harvard Business School NOM Unit Working Paper*, 14-093.

Diener, E. a. S. M., 2004. Beyond money: Toward an economy of well-being. *Psychological science in the public interest,* 5(1), pp. 1-31.

Douglass, M., 2017. Graham Arnold has already moved on from Sydney FC's A-League grand final win. https://www.abc.net.au/news/2017-06-09/graham-arnold-already-moved-on-from-sydney-fc-a-league-victory/8598222

Duhigg, C., 2013. Power of Habit: Why we do what we do and how to change. s.l.:Random House.

Dutta, A. S. E. P. J. B. V. B. D. P. S. a. C. S., 2021. Analysing the relationship between productivity and human communication in an organisational setting. *PloS one,* 16(7), p. e0250301.

Dweck, C., 2006. Mindset: The new psychology of success.. s.l.:Random House.

Dweck, C., 2009. Mindsets: Developing talent through a growth mindset.. *Olympic coach,* 21(1), pp. 4-7.

Dweck, C., 2014. Talent: How companies can profit from a growth mindset. *Harvard Business Review,* 92(11), p. 7.

Dweck, C. S. &. L. E. L., 1988. A social-cognitive approach to motivation and personality. *Psychological Review,* 95(2), p. 256.

Dweck, C. S., 2010. Even geniuses work hard why foster a growth mindset? creating a culture of risk-taking building a growth mindset. *Educational Leadership,* 68(1), pp. 16-20.

Dyer, W., 2009. The power of intention: Change the way you look at things, and the things you look at will change. WWW.ReadHowYouWant.com.

Edwards, A., 1999. Reflective practice in sport management. *Sport Management Review,* 2(1), pp. 67-81.

Ewenstein, B. S. W. S. A., 2015. Changing change management. https://www.mckinsey.com/featured-insights/leadership/changing-change-management

Fabius, R. P. S., 2021. Companies That Promote a Culture of Health, Safety, and Wellbeing Outperform in the Marketplace. *Journal of Occupational and Environmental Medicine,* 63(6), pp. 456-461.

Fast Company, 2000. How do you feel. https://www.fastcompany.com/40080/how-do-you-feel

Faull, A. a. C. B., 2009. Reflective learning in sport: A case study of a senior level triathlete. *Reflective Practice,* 10(3), pp. 325-339.

Ferguson, Z. S. K. S. L. L., 2023. Australia has a worse work-life balance than the US. What are we doing wrong*?* c.net.au/news/2023-05-22/why-are-so-many-australians-working-overtime-long-hours/102353176

Football Coaches Australia, 2020. Essential Skills Program - Communication Module. https://footballcoachesaus.org.au/fca-college/

Forbes Magazine, 2021. The worst of times for online education. https://www.forbes.com/sites/dereknewton/2021/03/31/the-worst-of-times-for-online-education/

Forbes, 2023. The Importance of Emotional Intelligence at Work. https://www.forbes.com/councils/forbeshumanresourcescouncil/2023/07/18/the-importance-of-emotional-intelligence-at-work/

Fournier, D., 2019. Change Your Language, Change Your Life. https://www.psychologytoday.com/au/blog/mindfully-present-fully-alive/201902/change-your-language-change-your-life

Franken, I. M. P. a. R. E., 2005. Psychometric properties of the Dutch BIS/BAS scales. *Journal of Psychopathology and Behavioral Assessment,* Volume 27 , pp. 25-30.

Franklin, B., 1750. Poor Richard's Improved Almanack. s.l.:s.n.

Froh, J., 2004. The history of positive psychology: Truth be told. *NYS psychologist,* pp. 18-20.

Furnham, A. a. J. C., 2008. Reinforcement sensitivity in the workplace: BIS/BAS in business. *The reinforcement sensitivity theory of personality,* p. 431.

Gallup, 2024. State of the Global Workplace. https://www.gallup.com/workplace/349484/state-of-the-global-workplace.aspx

Gallup, 2024. Workplace Wellbeing. https://www.gallup.com/workplace/215924/well-being.aspx

Gardner, H., 1983. Frames of Mind: The Theory of Multiple Intelligences. s.l.:s.n.

Gartner, 2024. Sentiment Analysis Tools Reviews and Ratings. https://www.gartner.com/reviews/market/sentiment-analysis-tools

Gatt, R., 2017. New Arnold's Secret https://www.theaustralian.com.au/subscribe/news/1/?sourceCode=TAWEB_WRE170_a_GGL&dest=https%3A%2F%2Fwww.theaustralian.com.au%2Fsport%2Ffootball%2Falea gue-grand-final-sydney-fc-coach-graham-arnold-a-new-man%2Fnews-story%2F6df2fc60b5a5f1bd89883279f88f440f&m

Gautier, K. B. T. C. K. a. M. L., 2022. How employee experience impacts your bottom line. https://hbr.org/2022/03/research-how-employee-experience-impacts-your-bottom-line

Gjolberg, M., 2009. Measuring the immeasurable? Constructing an index of CSR practices and CSR performance in 20 countries. *Scandinavian Journal of management,* 25(1), pp. 10-22.

Goetzel, R. O. R. S. L. a. M. T., 2002. The business case for quality mental health services: why employers should care about the mental health and well-being of their employees. *Journal of Occupational and Environmental Medicine,* 44(4), pp. 320-330.

Goleman, D., 1995. Emotional Intelligence. Why it can matter more than IQ. 1 ed. s.l.:Routledge.

Gómez, M. A. L.-P. C., 2021. Impact of elite soccer coaching change on team performance according to coach- and club-related variables. doi: 10.5114/biolsport.2021.101600

Gottfredson, R. a. R. C., 2020. To be a great leader, you need the right mindset.. *Harvard Business Review,* Issue 17, p. 17.

Gould, D. D. K. M. A., 2002. Psychological characteristics and development in Olympic champions. *J Appl Sport Psychol,* 14(3), pp. 172-204.

Gratton, L., 2023. Flexibility Is Key to Integrating Meaning and Work. https://sloanreview.mit.edu/article/flexibility-is-key-to-integrating-meaning-and-work/

Gray, J. A., 1982. The neuropsychology of anxiety: An enquiry into the function of the septo-hippocampal system.. New York : Oxford University Press.

Greenberg, J. &. P. T., 1986. Persistent high self-focus after failure and low self-focus after success: The depressive self-focusing style. *Journal of Personality and Social Psychology,* 50 (5), p. 1039–1044.

Gunter, A. a. G. E., 2022. Overview and classification of approaches to productivity measurement. *International Journal of Productivity and Performance Management,* 71(4), pp. 1212-1229.

Haddon, J., 2018. The impact of employees' well-being on performance in the workplace. *Strategic HR Review,* 17(2), pp. 72-75.

Hameed, A. a. W. A., 2011. Employee development and its affect on employee performance a conceptual framework. *International journal of business and social science,* 2(13).

Han, S. a. S. V., 2020. Growth mindset for human resource development: A scoping review of the literature with recommended interventions. *Human Resource Development Review,* 19(3), pp. 309-331.

Hardeman, S. a. D. L., 2014. The EU regional human development index and the development of indices on the quality of life. JRC science and policy reports.

Hargreaves, J. M. L. G. J. M. M. P. J. B. J. W. C. K. J. a. P. P., 2007. Hearing the voices of the poor: assigning poverty lines on the basis of local perceptions of poverty. A quantitative analysis of qualitative data from participatory wealth ranking in rural South Africa. *World Development,* 35(2), pp. 212-229.

Harrison, R. C. A. M. A. M. R. a. S. G., 2022. Is gaining affective commitment the missing strategy for successful change management in healthcare? *Journal of Healthcare Leadership,* pp. 1-4.

Hartmann, J. H. M. S. C. a. S. C., 2023. More than a feeling: Accuracy and application of sentiment analysis. *International Journal of Research in Marketing,* 40(1), pp. 75-87.

Harvard Business Review, 2013. Impact of employee Engagement on Performance. https://hbr.org/resources/pdfs/comm/achievers/hbr_achievers_report_sep13.pdf

Harvard Business Review, 2014. Seize your leadership moment. https://www.hbsp.harvard.edu/product/OPFA14-MAG-ENG

Hershfield, A., 2014. People search for meaning when they approach a new decade in chronological age. *Proceedings of the National Academy of Sciences*, pp. 17066-17070.

Hodge, K. C. G. L. M. S. T. a. S. L., 2023. Commitment in sport: Motivational climate, need satisfaction/thwarting and behavioural outcomes. *Asian Journal of Sport and Exercise Psychology,* 3(2), pp. 121-129.

Hoff, E., 2003. The specificity of environmental influence: Socioeconomic status affects early vocabulary development via maternal speech. *Child development,* 74(5), pp. 1368-1378.

HR Academy To Innovate, 2024. 23 Employee Performance Metrics to Track https://aihr.com/blog/employee-performance-metrics/

Hunt, E., 1963. A computer approach to content analysis: studies using the general inquirer system. s.l., Proceedings of the May 21-23, 1963, Spring joint computer conference .

IHHP, 2014. ROI-for-Emotional-Intelligence-an-IHHP-White-Paper. https://www.ihhp.com/wp-content/uploads/2014/05/ROI-for-Emotional-Intelligence-an-IHHP-White-Paper.pdf

IMF, 2023. Safeguarding financial stability amid high inflation and geopolitical risks. https://www.imf.org/en/Publications/GFSR/Issues/2023/04/11/global-financial-stability-report-april-2023

Indeed, 2023. 11 Growth Mindset Interview Questions (With Sample Answers). https://www.indeed.com/career-advice/interviewing/growth-mindset-interview-questions

Isidore, C, . L. T., 2015. Turns out Americans work really hard...but some want to work harder. https://money.cnn.com/2015/07/09/news/economy/americans-work-bush/index.html#:~:text=Adults%20employed%20full%20time%20report%20working%20an%20average,workers%20report%20logging%2050%2B%20hours%20on%20the%20job.

ISO, 2019. ISO 9241-210:2019 Ergonomics of human-system interaction. 2 ed. Geneva: ISO.

Javadizadeh, B. A.-H. M. a. C. M., 2022. Using SCARF as a motivational tool to enhance students′ class performance. *The International Journal of Management Education,* 20(1), p. 100594.

Jensen, E., 2005. Teaching with the brain in mind. s.l.:ASCD.

Jiang, X. D. J. Z. J. &. C. Y., 2020. The Impact of Negative Informal Information Before a Change on Performance: A Within-Person Approach. *International Journal of Environmental Research and Public Health,* 17(2), p. 670.

John, O. P. a. S. S., 1999 . Big five inventory History, Measurement, and Theoretical Perspectives. In: *Handbook of personality: Theory and research.* 2 ed. New York: Guildford.

Johnston, I., 2017. Creating a growth mindset. *Strategic HR Review,* 16(4), pp. 155-160.

Jorfi, H. J. S. a. M. S., 2010. Impact of emotional intelligence on performance of employees. *Postmodern Openings,* 1(4), pp. 63-74.

Jorm, A. C. H. H. A. J. P. K. A. a. R. B., 1998. Using the BIS/BAS scales to measure behavioural inhibition and behavioural activation: Factor structure, validity and norms in a large community sample. *Personality and Individual Differences,* 26(1), pp. 49-58.

Jowett, S. a. C. I., 2003. Olympic medallists' perspective of the athlete–coach relationship. *Psychology of sport and exercise,* 4(4), pp. 313-331.

Juariyah, L. S. P. D. a. S., 2023. Employee Performance in Aviation Industry Based on Koopman's Individual Work Performance Questionnaire (IWPQ). *International Journal of Multidisciplinary Research and Analysis,* 6 (12).

Kallio, H. P. A. J. M. a. K. M., 2016. Systematic methodological review: developing a framework for a qualitative semi-structured interview guide. *Journal of advanced nursing,* 72(12), pp. 2954-2965.

Kalogiannidis, S., 2020. Impact of effective business communication on employee performance. *European Journal of Business and Management Research,* 5(6).

Kember, D. L. D. J. A. L. A. M. J. S. K. T. H. W. C. Y. W. F. W. M. a. Y. E., 2000. Development of a questionnaire to measure the level of reflective thinking. *Assessment & evaluation in higher education,* 25(4), pp. 381-395.

Klepper, E., 2019. If You Want Others to Change Their Perspective, Change Yours First. https://trainingindustry.com/blog/leadership/if-you-want-others-to-change-their-perspective-change-yours-first/

Kline, T. a. S. L., 2009. Measurement and assessment issues in performance appraisal. *Canadian Psychology/Psychologie canadienne,* 50(3), p. 161.

Kolb, A. a. K. D., 2005. Learning styles and learning spaces: Enhancing experiential learning in higher education. *Academy of management learning & education,* 4(2), pp. 193-212.

Kolb, D., 2014. Experiential learning: Experience as the source of learning and development. s.l.:FT press.

Kolb, D. A., 1984. Experiential Learning : Experience as the Source of Learning and Development. Englewood Cliffs, N.J: Prentice-Hall.

Konorski, J., 1948. Conditioned reflexes and neuron organization. s.l.:Cambridge University Press.

Koopmans, L., B. C. H. Y. S. W. B. D. V. H. B. V. d., 2011. Conceptual Frameworks of Individual Work Performance A Systematic Review. *Journal of Occupational and Environmental Medicine,* 53(8), pp. 856-866.

Koopmans, L. B. C. H. V. L. D. d. V. H. a. v. d. B. A., 2016. Cross-cultural adaptation of the individual work performance questionnaire. *Work,* 53(3), pp. 609-619.

Koopmans, L. B. C. H. V. V. B. S. V. d. B. A. a. D. V. H., 2012. Development of an individual work performance questionnaire. *International journal of productivity and performance management,* 62(1), pp. 6-28.

Kopittke, M, . 2023. Socceroos' mindset expert Mike Conway shares his top tips to keep your head in the game. https://www.smartcompany.com.au/people-human-resources/leadership/socceroos-mindset-expert-mike-conway-tips/

Kopp, A., J. D., 2018. The influence of emotional intelligence on performance in competitive sports: A meta-analytical investigation.. *Sports,* 6(4), p. 175.

Kost, D,. 2020. A study of 3 million people confirms what many work-from-home employees already know: We're swamped. https://hbswk.hbs.edu/item/you-re-right-you-are-working-longer-and-attending-more-meetings#:~:text=Work-from-home%20employees%20whose%20days%20seem%20longer%2C%20with%20more,8.2%20percent%E2%80%94or%2048.5%20minutes%E2%80%94during%20the%20pandemic%E2%80%9

Kusuma, I. K. N. L. R. a. P. Y., 2024. The holistic and partial approach in soccer training: Integrating physical, technical, tactical, and mental components: A systematic review. *Retos: nuevas tendencias en educación fisica deporte y recreacion,* Volume 54, pp. 328-337.

Laborde, S. D. F. a. A. M., 2016. Emotional intelligence in sport and exercise: A systematic review.. *Scandinavian journal of medicine & science in sports,* 26(8), pp. 862-874.

LaFrenz, C., 2021. Why Socceroos' mental agility coach says company managers need rest. https://www.afr.com/companies/healthcare-and-fitness/the-socceroos-mental-agility-coach-has-some-tips-for-company-managers-20210519-p57t6e

Lake, S., 2023. These Fortune 500 companies will help pay for employee MBAs. https://fortune.com/education/articles/these-fortune-500-companies-will-help-pay-for-employees-mba/

LeBlanc, S. U. B. A. A. a. M. C., 2020. Validation of an emotion regulation training program on mental well-being. *Psychological Reports,* 123(5), pp. 1518-1536.

Lewis, S., 2022. Socceroos trying to 'bounce back' at Qatar World Cup against Tunisia after French drubbing. https://www.abc.net.au/news/2022-11-25/socceroos-trying-to-bounce-back-against-tunisia-france-world-cup/101699144

MacKenzie, B., P. P. F. R., 1991. Organizational citizenship behavior and objective productivity as determinants of managerial evaluations salespersons' performance. *Organizational Behavior and Human,* Volume 50, pp. 123-150.

Mack, O. K. A. K. A. a. B. T., 2015. *Managing in a VUCA World..* s.l.:Springer.

MacLeod, C. R. E. C. L. E. G. a. H. L., 2002. elective attention and emotional vulnerability: assessing the causal basis of their association through the experimental manipulation of attentional bias. *Journal of abnormal psychology,* Volume 111, p. 107.

Maier, S. F. &. S. M. E., 1976. Learned helplessness: Theory and evidence. *Journal of Experimental Psychology: General,* 105(1), pp. 3-46.

Mallet, CJ. H. S., 2004. Why does the fire burn so brightly? *Psychology of Sport and Exercise,* pp. 183-200.

Manjaly, N. F. V. a. F. D., 2024. Leveraging the SCARF Model For Employee Engagement: An In-Depth Analysis With Special Reference To Government Organisations. *Journal of Economics, Finance and Management Studies,* 7(6).

Manning, KD. S. J. O. G. L. A. M. K. R., 2021. The micro revolution: effect of Bite-Sized Teaching (BST) on learner engagement and learning in postgraduate medical education. https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-021-02496-z

Markos, S. a. S. M., 2010. Employee engagement: The key to improving performance. *International journal of business and management,* 5 (12), p. 89.

Martin, C., 2020. Who is Responsible for Your Personal Growth and Development? https://www.linkedin.com/pulse/who-responsible-your-personal-growth-development-charlie-martin

Martin, JR., W. P., 2005. The Language of Evaluation. New York: Palgrave: Palgrave.

Matta, R. a. A. R., 2023. The impact of emotional intelligence on employees' performance and productivity. *International Journal of Work Innovation,* 4(1), pp. 35-57.

Mayer, J. S. P. a. C. D., 2000. Models of emotional intelligence. Handbook of intelligence. 396-429 ed. s.l.:s.n.

McCabe, A. a. P. C., 1990. What makes a narrative memorable? *Applied Psycholinguistics,* 11(1), pp. 73-82.

McGonigal, K., 2013. How to make stress your friend. https://www.youtube.com/watch?v=RcGyVTAoXEU

McMillan, J. a. H. J., 2008. Student self-assessment: The key to stronger student motivation and higher achievement. *Educational horizons,* 87(1), pp. 40-49.

Medhat, W. H. A. a. K. H., 2014. Sentiment analysis algorithms and applications: A survey. *Ain Shams engineering journal,* 5 (4), pp. 1093-1113.

Merchán-Clavellino, A. A.-B. J. Z. G. A. a. G. R., 2019. The mediating effect of trait emotional intelligence between the behavioural activation system (BAS)/behavioural inhibition system (BIS) and positive and negative affect. *Frontiers in Psychology,* Volume 10, pp. 424-508.

Meyer J., a. L. R., 2006. Overcoming Barriers to student understanding: threshold concepts and troublesome knowledge,. London, and New York: Routledge.

Microsoft, 2024. Work Trend Index. https://www.microsoft.com/en-us/worklab/work-trend-index

Mindworks, 2020. Mindset Assessment Profile. https://www.mindsetworks.com/programs/

Mirivel, JC., 2021. The Six Keys to Positive Communication. Communicating better can help you achieve your goals and deepen your relationships. https://greatergood.berkeley.edu/article/item/the_six_keys_to_positive_communication

Mirivel, J. a. T. K., 2005. Premeeting talk: An organizationally crucial form of talk. *Research on Language and Social Interaction,* 38(1), pp. 1-34.

Morris, S., C. C. K. G. L. J. R. a. T. T., 2023. The impact of growth mindset training on entrepreneurial action among necessity entrepreneurs: Evidence from a randomized control trial. *Strategic Entrepreneurship Journal,* 17(3).

Murray, S., 2021. How to take the long-term view in a short-term world. https://www.ft.com/content/5bc1580d-911e-4fe3-b5b5-d8040f060fe1

NCSA, 2009. NSCA Strength and Conditioning Professional Standards and Guidelines. https://www.nsca.com/globalassets/education/nsca_strength_and_conditioning_professional_standards_and_guidelines.pdf?srsltid=AfmBOoo-7zSUwDTKGVPyyRkmgtcgmRXZAw_1INn6OPMDw5q_RGvGBErl

Neri, F. A. C. C. F. a. C. M., 2012. *Sentiment analysis on social media.* s.l., IEEE/ACM international conference on advances in social networks analysis and mining.

Ng, B., 2018. The neuroscience of growth mindset and intrinsic motivation. *Brain sciences,* 8(2), p. 20.

Nickerson, C., 2022. Albert Bandura's social cognitive theory*: Definition & examples.* https://www.simplypsychology.org/social-cognitive-theory.html

OECD, 2023. *OECD Economic Outlook, Volume 2023 Issue 2.* https://www.oecd.org/en/publications/oecd-economic-outlook/volume-2023/issue-2_7a5f73ce-en.html

Olkkonen, R. T. H. a A. K., 2000. The role of communication in business relationships and networks. *Management Decisions,* 38(6), pp. 403-409.

Onag, Z. a. M. T., 2014. Team effectiveness in sports teams: The effects of team cohesion, intra team communication and team norms on team member satisfaction and intent to remain. *Procedia-Social and Behavioral Sciences,* Volume 150, pp. 420-428.

Orme, G. a. L. S., 2003. Lessons learned from implementing EI programmes-The cutting edge of emotional intelligence interventions. *Competency & Emotional Intelligence Quarterly,* 10(2), pp. 32-39.

P360, 2024. *P360.* https://perform-360.com/

Pentland, A., 2010. Honest signals: how they shape our world. s.l.:MIT press.

Perlick, T., 2014. How companies can profit from a growth mindset. https://hbr.org/2014/11/how-companies-can-profit-from-a-growth-mindset

Peters, S., 2013. The Chimp Paradox: The Mind Management Program to Help You Achieve Success, Confidence, and Happiness. s.l.:Random House.

PFA Australia, 2024. Looking After Your Mental Health. https://www.thepfa.com/players/wellbeing

Pincud, JD., 1986. Communication Satisfaction, Job Satisfaction, and Job Performance. *Human Communication Research,* 12 (3), pp. 395-419.

Pintrich, P. a. G. T., 1994. Self-regulated learning in college students: Knowledge, strategies, and motivation. Student motivation, cognition, and learning: Essays in honor of Wilbert J. McKeachie. s.l.:s.n.

Platania, S. M. M. G. S. a. K. L., 2023. The individual work performance questionnaire: Psychometric properties of the Italian version. *European Journal of Investigation in Health, Psychology and Education,* 14 (1), pp. 49-63.

Polaris, 2022. https://www.polarismarketresearch.com/industry-analysis/e-learning-market

Poole, L., 2020. The Mindset Survey. https://www.scribd.com/document/769741303/The-Mindset-Survey

Predoiu, R. P. A. M. G. F. M. C. G. D. G. a. B. R., 2020. Visualisation techniques in the mental road map for success. *Discobolul-physical education, sport & kinetotherapy journal,* 59(3), pp. 245-256.

Purcell, J., 2003. Understanding the people and performance link: Unlocking the black box. s.l.:CIPD Publishing.

Ramos-Villagrasa, P. B. J. F.-d.-R. E. a. K. L., 2019. We assess job performance using a brief self-report scale, such as the individual work performance questionnaire. *Revista de Psicología del Trabajo y de las Organizacione.*

Rapisarda, B.A., 2002. The impact of emotional intelligence on work team cohesiveness and performance. *The International Journal of Organizational Analysis,* 10(4), pp. 363-379.

Rasool, A. T. R. M. K. a. N. T., 2019. Twitter sentiment analysis: a case study for apparel brands. s.l., Conference Series (Vol. 1176, p. 022015). IOP Publishing.

Renn, R. S. R. a. F. G., 2014. Employee behavioural activation and behavioural inhibition systems, manager ratings of employee job performance, and employee withdrawal. *Human Performance,* 27(4), pp. 347-371.

Ribeiro, N. D. A. F. R. a. T. d. O. R., 2020. How authentic leadership promotes individual creativity: The mediating role of affective commitment. *Journal of Leadership & Organizational Studies,* 27(2), pp. 189-202.

Rice, SM, P. R. D. S. S. M. D. M. P. a. P. A., 2016. The mental health of elite athletes: a narrative systematic review.. *Sports Med.,* 46(9), pp. 1333-53.

Richards, P. M. D. a. C. D., 2009. Implementing reflective practice approaches with elite team athletes: Parameters of success.. *Reflective practice,* 10(3), pp. 353-363.

Robbins, S., 2007. Organizational Behavior. 12th ed. New York: Prentice Hall.

Rock, D., 2009. Managing with the brain in mind.. *Strategy and Business,* Issue 56.

Rodríguez-Ibánez, M. C.-V. A. C.-M. F. a. C.-J. P., 2023. A review on sentiment analysis from social media platforms. *Expert Systems with Applications,* Issue 223, p. 119862.

Rogers, C. a. F. H., 1994. Freedom to learn. s.l.:Merrill/Macmillan College Publishing Co.

Rotundo, M. a. R. J., 2002. Defining and measuring individual level job performance: A review and integration. *Journal of Applied Psychology,* 90 (5), pp. 225-254.

Rugari, V., 2019. Miracle smile: How a science lesson helped Ryan reach new heights. https://www.smh.com.au/sport/soccer/miracle-smile-how-a-science-lesson-helped-ryan-reach-new-heights-20190124-p50t9g.html

Rugari, V., 2021. Is this two-metre-tall Scot the Socceroos' next Premier League star? https://www.smh.com.au/sport/soccer/is-this-two-metre-tall-scot-the-socceroos-next-premier-league-star-20210428-p57n8a.html

Ruta, D. G. A. L. M. R. I. a. M. L., 1994. A new approach to the measurement of quality of life: The Patient-Generated Index. *Medical care,* 32(11), pp. 1109-1126.

Salcinovic, B. D. M. D. P. W. G. a. S. B., 2022. Factors influencing team performance: what can support teams in high-performance sports to learn from other industries? A systematic scoping review. *Sports Medicine-Open,* 8(1), p. 25.

Salovey, P. a. M. J., 1990. Emotional intelligence. *Imagination, cognition, and personality,* 9(3), pp. 185-211.

Sande, L., 2024. Workers Hoarding 160 million days of untaken leave https://bond.edu.au/news/workers-hoarding-160-million-days-of-untaken-leave

Sargeant, J. A. H. C. B. D. T. E. K. H. E. L. J. L. E. M. K. a. v. d. V. C., 2010. The processes and dimensions of informed self-assessment: a conceptual model. *Academic Medicine,* 85(7), pp. 1212-1220.

Saunila, M. a. U. J., 2015. Reflective practice as a determinant of performance outcomes in services. *International Journal of Quality and Service Sciences,* 7(4), pp. 392-403.

Savaneviciene, A. a. G. L., 2020. Leadership in Ensuring Positive Socio-Psychological Experiences of Employees in Human Factors, Business Management and Leadership. s.l., Proceedings of the AHFE 2020 Virtual Conferences on Human Factors.

Saville, K., 2011. Strategies for using repetition as a powerful teaching tool. *Music Educators Journal,* 98(1), pp. 69-75.

Saxena, V. a. S. R., 2015. Impact of employee engagement on employee performance– Case of manufacturing sectors. *International Journal of Management Research and Business Strategy,* 4(2), pp. 139-174.

Scanlan, T. C. P. S. J. S. G. a. K. B., 1993. An introduction to the sport commitment model. *Journal of sport and exercise psychology,* 15(1), pp. 1-15.

Schaufenbuel, K., 2014. The neuroscience of leadership: Practical applications. UNC Executive Development: UNC Kenan Flagler Business School.

Schnabel, G. H. HD. K. J., 2008. Trainingslehre - Trainingswissenschaft:Leistung, Training,Wettkampf. Aachen: Meyer & Meyer.

Schunk, D., 1991. Self-efficacy and academic motivation. *Educational psychologis,* 26(3-4), pp. 207-231.

Self.com, 2024. How team usa finds motivation to train for the olympics and paralympics. https://www.youtube.com/watch?v=dxX_fhPTlq8

Seligman, M., 2018. The Hope Circuit. 1 ed. s.l.:Penguin.

Seligman, M., 2006. Learned optimism: How to change your mind and your life. s.l.:Vantage.

Seligman, M., 1972. Learned helplessness. *Annual review of medicine,* 23(1), pp. 407-412.

Seligman, M., 1999. The President's Address *(Annual Report) 1998.* 559-562, American Psychologist.

Seligman, M., 2002. Authentic happiness: Using the new positive psychology to realize your potential for lasting fulfillment. s.l.:Simon and Schuster.

Seligman, M., 2010. Flourish: Positive psychology and positive interventions.. s.l., The Tanner lectures on human values.

Seligman, M., 2018. PERMA and the building blocks of well-being. *The journal of positive psychology,* 13(13), pp. 333-335.

Semler, R., 2007. Out of this world: Doing things the Semco way. *Global Business and Organizational Excellence,* 26(5), pp. 13-21.

Siegel, D., 2017. Mind: A Journey to the heart of being human. 1 ed. New York, London: Norton.

Siegel, D., 2010, The Mindful Therapist: A Clinician's Guide to Mindsight and Neural Integration. WW Norton & Company.

Siggelkow, N. a. R. J., 2005. Speed and search: Designing organisations for turbulence and complexity. *Organization Science,* 16(2), pp. 101-122.

Smidts, A. P. A. a. V. R. C., 2001. The impact of employee communication and perceived external prestige on organisational identification. *Academy of Management Journal,* 44(5), pp. 1051-1062.

Smith E., 2019. Employer Training in Australia, s.l.: University of Queensland.

Smith, M., 2023. Hiring slowdowns, manager burnout and other trends that will shape U.S. workplaces in 2023, experts say. https://www.cnbc.com/2023/01/26/the-top-work-trends-that-will-dominate-the-us-in-2023.html

Society for Human Resource Management, 2022. 2022 Workplace Learning & Development Trends.https://www.shrm.org/hr-today/trends-and-forecasting/research-and surveys/Documents/2022%20Workplace%20Learning%20and%20Development%20Trends%20Report.pdf

Stanford University Dept of Psychology, 2018. *Growth Mindset Scale.* https://sparqtools.org/mobility-measure/growth-mindset-scale/#all-survey-questions

Stone, P. B. R. N. J. a. O. D., 1962. The general inquirer: A computer system for content analysis and retrieval based on the sentence as a unit of information. *Behavioral Science,* 7(4), p. 484.

Susan, K. K. R. a. V. R., 2021. Socio-Psychological factors on employee turnover: a demystifying perspective. *Organisational Psychology,* 11(3), pp. 168-179.

Taboada, M., 2016. Sentiment analysis: An overview from linguistics. *Annual Review of Linguistics,* 2(1), pp. 325-347.

Tadros, E,. 2023. Many reforms following PwC tax leak scandal ‘already mandated in UK’. https://www.afr.com/companies/professional-services/many-reforms-following-pwc-tax-leak-scandal-already-mandated-in-uk-20231003-p5e9e9

Tait, M., 2008. Resilience as a contributor to novice teacher success, commitment, and retention. *Teacher education quarterly,* 35(4), pp. 57-75.

Tamir, D. Z. J. a. M. J., 2015. Informing others is associated with behavioral and neural signatures of value. *Journal of Experimental Psychology: General,* 144 (6), p. 1114.

Tardelli, V. P. T. CM. J. a. F. T., 2021. Pressure is not a privilege: what we can learn from Simone Biles. *Brazilian Journal of Psychiatry,* pp. 460-46.

Taylor, J., 1995. A conceptual model for integrating athletes' needs and sports demands in developing competitive mental preparation strategies. *The Sport Psychologist,* 9(3), pp. 339-357.

Teferi, G. a. E. D., 2020. Methods of Biomechanical Performance Analyses in Sport: Systematic Review. *American Journal of Sports Science and Medicine,* Issue 8(2), pp. 47-52.

Thomas, K. N. E. F. K. H. P. L. M. L. M. K. M., 2020. Associations of Psychosocial Factors with Multiple Health Behaviors: A Population-Based Study of Middle-Aged Men and Women. *Int J Environ Res Public Health,* 17(4), p. 1239.

Van der Meer, J. B. D. S. J. G. A. a. A. M., 2015. Shorter Is Better: Findings of a Bite-Size Mobile Learning Pilot Project. *Creative Education,* 6(3), p. 273.

Vanderburg, D., 2004. The story of Semco: The company that humanised work. *Bulletin of Science, Technology & SocietY,* 24(5), pp. 430-434.

Vateekul, P. K. T., 2016. A study of sentiment analysis using deep learning techniques on Thai twitter data. s.l., 13th international joint conference on computer science and software engineering.

Venugopalan, M. G. D., 2015. Exploring sentiment analysis on twitter data. s.l., IEEE eighth international conference on contemporary computing.

Vijayraghavan, S. W. M. B. S. W. G. a. A. A., 2007. Inverted-U dopamine D1 receptor actions on prefrontal neurons engaged in working memory. *Nature Neuroscience,* 10(3), pp. 376-384.

Vinkers, C. T. J. a. O. W., 2015. Use of positive and negative words in scientific PubMed abstracts between 1974 and 2014: retrospective analysis. *British Medical Journal,* Volume 351.

Wadlinger, H. a. I. D., 2006. Positive mood broadens visual attention to positive stimuli. Motivation and emotion*,* Volume 30, pp. 87-99. Humanities Research Symposium SoRes.

Wankhade, M. R. A. a. K. C., 2022. A survey on sentiment analysis methods, applications, and challenges. *Artificial Intelligence Review,* 55(7), pp. 5731-5780.

Widyastuti, T. a. H. R., 2018. Adapt the individual work performance questionnaire (IWPQ) to Bahasa Indonesia. *International Journal of Research Studies in Psychology,* 7(2), pp. 101-112.

Wigert B,. 2020. Employee Burnout: The Biggest Myth. https://www.gallup.com/workplace/288539/employee-burnout-biggest-myth.aspx

Wiggins, BL. S-C. H. L. LS. a. D. C., 2021. Repetition is essential to students and their understanding during laboratory courses that include Research. *Journal of Microbiology & Biology Education,* 22(2), pp. 10-1128.

Wiggins, G., 2012. Effective Feedback*.,* s.l.: Educational leadership.

Wilson, T. W. J. H. P., 2005. Recognizing contextual polarity in phrase-level sentiment analysis*.* s.l., HLT/EMNLP.

World Bank, 2023. Sharp, Long-lasting Slowdown to Hit Developing Countries Hard.. https://www.worldbank.org/en/news/press-release/2023/01/10/global-economic-prospects

World Economic Forum Centre for the New Economy and Society, 2022. *2022 Report.* https://www.weforum.org/publications/annual-report-2021-2022/in-full/centre-for-the-new-economy-and-society/

World Economic Forum, 2023. Business benefits of boosting employee health and well being. https://www.weforum.org/agenda/2023/07/business-benefits-of-boosting-employee-health-and-well-being/

World Health Organisation, 2021. Long working hours increasing deaths from heart disease and stroke*: WHO, ILO.* https://www.who.int/news/item/17-05-2021-long-working-hours-increasing-deaths-from-heart-disease-and-stroke-who-ilo

Wu, M. a. L. Y., 2011. The effects of internal marketing, job satisfaction and service attitude on job performance among high-tech firms. *African Journal of Business Management,* 5(32), p. 12551.

XVenture, 2016. Emotional Agility, Resilience & Leadership Measure (EARL). https://earl.xventure.com.au/

Yeter, M. a. K. N., 2022. Effect of leadership behaviour styles on performance a field study on civil aviation ground services. s.l.:s.n.

YouTube, 2022. Prof Carol Dweck on interview questions to identify growth mindset candidates. https://www.youtube.com/watch?v=2NDWkiduINA

Young, BW, W. S. H. S. B. L. S. M. B. J., 2023. On the self-regulation of sport practice: Moving the narrative from theory and assessment toward practice. *Front Psychol,* Volume 14.

Yu, L. W. J. C. P. a. C. H., 2013. Using a contextual entropy model to expand emotion words and their intensity for the sentiment classification of stock market new. *Knowledge Based Systems,* Volume 41, pp. 89-97.

Zakrajsek, R. L. E. a. B. K., 2017. Integrating mental skills and strategies into youth sports training: A tool for coaches. *International Sport Coaching Journal,* 4(1), pp. 76-89.

Zeffane, R. T. S. a. R. J., 2011. Communication, commitment & trust: Exploring the triad. *International Journal of Business and Management,* 6(6), pp. 77-87.

Zhao, H. a. S. SE., 2006. The big five personality dimensions and entrepreneurial status: a meta-analytical review. *Journal of applied psychology,* 91(2), p. 259.