

# **A COMMISSIONED WHITE PAPER ON THE THINKPLUS JOURNAL FOR SCHOOLS**

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## EXECUTIVE SUMMARY

This commissioned white paper has been prepared by Dr Venesser Fernandes, Monash University in consultation with Dr James Marshall, Swinburne University and Ms Celia Franzè, Principal Educational Consultant at *ThinkPlus*. The findings in this paper have been based on the data collected by *ThinkPlus* at two of its partner schools over 2022 and through focused discussions with James and Celia who have been a part of this project since its inception.

It is anticipated that this white paper will be used as important feedback for future improvements made to the *ThinkPlus How to Grow Your Mind Journal* and the Meta-curriculum approach undertaken by *ThinkPlus* to improve student resilience, metacognition and emotional granularity.

The white paper focuses initially on outlining the Educational Design Research process adopted while developing the *How to Grow Your Mind Journal* from 2020 to 2025. It also focuses on the analysis of the two 2022 surveys conducted to further enhance and improve the journal in its hard-copy book and electronic application versions.



## SECTION A: BACKGROUND

Natural disasters, global conflicts, climate change and the pandemic of recent years have accelerated the need for research, resources and programs addressing the well-being of learners, educators and school leaders. Generational changes and factors affecting 21<sup>st</sup>-century western children such as the use of new technology and social media have given rise to unprecedented rates of depression, youth suicide and a reduction in academic achievement. There are a broad range of generational changes and factors affecting 21st Century western children, such as the use of new technology. These include unprecedented rates of depression, youth suicide and a reduction of academic achievement. ([Twenge, 2023](#)). Research informs us that there has been a substantial increase in the well-being needs of both students and teachers across Australia over the last two decades and especially over the last few years ([Allen et al., 2023](#)). Research also informs us that schools across Australia have greater needs for well-being both at student and staff levels ([AITSL, 2022](#)).

Wellbeing is the complex interplay between internal (subjective well-being) and external factors and how individuals respond to these ([OECD, 2014](#)). Wellbeing is relative to the individual and changes over time depending on their personal circumstances. Improved outcomes in all aspects of student well-being are positively associated with improved outcomes in all other aspects of schooling. Positive psychological characteristics have been linked to various outcomes including academic achievement, fewer risky behaviours, and better physical health in adulthood ([Durlak et al., 2011](#)).

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## SECTION B: OBJECTIVES

The purpose of this white paper is to focus on:

- Outlining the educational design research process adopted while developing the How to Grow Your Mind Journal.
- Conducting a critical analysis of the findings of two 2022 pilot study surveys one for teachers and one for students conducted by Elevo Institute and the implications for future design, implementation and research.

## SECTION C: THE LITERATURE SUPPORTING THE PROJECT

The literature indicates that by strategic positioning of the meta-curriculum concepts of ‘Mindsets and Emotions’ school children are enabled to express emotions, understand their motivations, and apply that knowledge within their social settings. Children develop [Emotional Granularity](#) during their schooling years, which allows them to learn social and emotional competence. Parental and school involvement and positive role modelling are crucial in [building resilience and coping mechanisms](#). Lisa Feldman Barrett explains the [Theory of Constructed Emotions](#) as a framework that proposes that emotions are not universally pre-wired but constructed by the brain based on an individual’s experiences, culture, and context. According to this theory, the brain constructs emotions by integrating core affect (a combination of valence and arousal) with conceptual knowledge and sensory input from the environment ([Barrett, 2009](#), [Barrett, 2017a](#), [Barrett, 2017b](#), [Barrett and Russell, 2015](#), [Barrett, Wilson-Mendenhall & Barsalou, 2014](#)).

Emotional granularity, an essential aspect of the Theory of Constructed Emotions (TCE), refers to the ability to differentiate and describe emotions with precision and specificity. It implies having a rich and nuanced emotional vocabulary that helps individuals better understand and communicate their emotional experiences. Research has shown that higher emotional granularity is associated with better mental health and improved coping skills. In the context of developing resilience, emotional granularity plays a crucial role. Individuals with a more refined understanding of their emotions are better equipped to regulate and manage them in challenging situations. This improved self-awareness allows individuals to choose more adaptive coping strategies and respond more effectively to stressors, promoting resilience in the face of adversity. Moreover, individuals with higher emotional granularity are more likely to recognise and understand the emotions of others, leading to better social functioning and stronger interpersonal relationships. These social connections, in turn, contribute to resilience by providing support and resources during difficult times. The Theory of Constructed Emotions highlights the importance of emotional granularity in developing resilience. By cultivating a rich and nuanced understanding of our emotions, we become more capable of regulating them and responding adaptively to challenges, fostering resilience and overall wellbeing.

During the pandemic, young people needed stability to cope with emerging and fluid contexts. Stay-at-home measures limited social interactions but also inspired creative ways to stay connected. School connectedness and positive relationships were found to be crucial for young people’s resilience. When Covid-19 abruptly reconfigured schooling, young people demonstrated agentic capacities that redefined resilience and pointed towards some of the changes that schools might take into a more desirable future ([Naidoo et al., 2022](#)). Since after the COVID-19 pandemic, research indicates that resilience is a crucial skill for transitioning to life after the pandemic. Traditional definitions of resilience focus on personality traits or processes but often overlook the impact of context and external factors. Michael Ungar offers a socio-ecological description of resilience that considers individual and collective aspects, emphasising the importance of culture, context, and lived experiences ([Ungar, 2006](#)). Neuroplasticity studies suggest that practising resilience-based skills like self-

discipline, empathy, and cooperation can strengthen the underlying circuits in the brain, reinforcing these essential life skills.

Resilience is the capacity of individuals to access resources that support their wellbeing and negotiate for these resources in culturally meaningful ways. Encouraging resilience in children as part of early intervention can help them adapt and thrive in challenging circumstances, potentially mitigating the growing mental health statistics. In Australia, many children and adolescents report challenges to their social and emotional wellbeing or poor mental health. Teaching resilience-based attributes early in life can help children manage stress and navigate life's difficulties adaptively, making it a valuable investment. As exposure to stress and adversity is inevitable, identifying critical indicators for resilience training can be beneficial in targeted interventions ([Tillott et al., 2021](#)).

[Developing resilience takes time](#), diligence, and daily practice, especially for children who have experienced early trauma. Children who develop resilience are less likely to exhibit symptoms of anxiety and depression and more likely to manage adversity and engage in learning. Teaching programs like *ThinkPlus*, which incorporate resilience and social-emotional wellbeing practices, positively impact early neural development, resulting in sustainable outcomes that enhance children's wellbeing.

21<sup>st</sup> century skills refer to core competencies educators believe are critical for students' success ([Scoular et al., 2020](#)). These skills include creativity, collaboration, critical thinking, compassion, resilience, and cultural awareness. The Australian Curriculum includes seven general capabilities: Literacy, Numeracy, Information and Communication Technology (ICT) capability, Critical and Creative thinking, Personal and Social capability, Ethical Understanding, and Intercultural Understanding. According to the World Economic Forum's [Future of Jobs Report 2020](#), 50% of all employees will need reskilling by 2025 as the adoption of technology increases. Critical thinking and problem-solving top the list of skills employers believe will grow in prominence in the next five years. In the last few years, skills in self-management, such as active learning, resilience, stress tolerance, and flexibility, have been included.

## SECTION D: THE PROJECT OVERVIEW & DEVELOPMENT

### *Origins of ThinkPlus*

*ThinkPlus* is an initiative of the Elevo Institute, a not-for-profit organisation dedicated to helping young Australians equip themselves to face the challenges of the 21st Century. The organisation started life as the Australian de Bono Institute in 1996. Its first 16 years was dedicated to conducting Educational Design Research, the findings of which could be used to develop educational innovations.

### Recognising the need to change

In 2013, it broadened its focus to include areas such as developmental psychology and neuroscience. To mark the broader scope, it also changed its name to Elevo Institute. The Institute aims to improve teaching and learning through the development of well-researched and tested innovative methodologies.

### Applying the science, evolving the program

While the foundational theory, research and science were solid, the Institute recognised the application could be improved to more fully engage and change young learners. Using these principles, a Meta-curriculum was developed. Based on a framework and with tools which promote collaboration and co-creation, the program has evolved to provide highly engaging, workable learning and teaching methods and systems for teachers, schools and students.

### The science of growing young minds

ThinkPlus is the only Australian developed, science-based childhood learning program that provides classroom-ready tools, training and support for primary school educators in Australia seeking to improve student engagement and outcomes in learning in an increasingly complex teaching and learning environment. *ThinkPlus* is a Meta-curriculum designed to complement a schools' existing curricula. It is designed to sit alongside a student's existing lessons, growing their emotional resilience, confidence and, as a result, capacity to learn. It has been developed, tested and proven in real life applications from prep through to middle school years, including thousands of students in schools across Australia. Merging design and research, *ThinkPlus* draws on education research and concepts including self-regulation, cognitive science, mindsets, digital learning, pedagogy and neuroscience.

The program has been proven to create a genuine culture of learning, giving students the ability to think about their thinking. This, in turn, helps them meet new experiences and new challenges – in the classroom and in life – with an open mindset. The unique strength of ThinkPlus is its combination of four core elements:

- Neuroplasticity
- Mindsets and Emotions
- The Science of Learning
- Metacognition

## Designing the How To Grow Your Mind Journal

The Elevo Institute's ThinkPlus Meta-curriculum has over time aimed to foster essential (or 21st century) skills in primary students. When the global education landscape found itself in the grip of the COVID-19 pandemic, it underscored the need for adaptability and resilience in pedagogical approaches, incorporating together the science of learning and the mission of growing young minds. Amidst this disruption, the importance of equipping students with 21<sup>st</sup> century skills - such as critical thinking, problem-solving, and communication - became increasingly apparent. As *ThinkPlus* navigated this seismic shift, they sought to leverage this unique opportunity to understand how educators, students, and parents were adapting to these evolving circumstances.

The *How to Grow Your Mind Journal* was designed in collaboration with Swinburne University's School of Design industry partnership program, to create a high-quality, engaging print and digital publication. The Journal's design brief for Swinburne University included Principle-led Design goals. The project involved Dr Andrew Lane, Dr James George Marshall and the Bureau team of Bachelor of Communication Design Honours students over two semesters in 2020 and 2021. The University of Melbourne developed the digital version of the Journal under the guidance of Professor Leon Sterling and Marshall. Academic Research Psychologist and expert in 21<sup>st</sup> Century Skills and Capabilities, Dr Clair Scoular of ACER was also consulted at this stage of the project and Neuroscientist Dr. Jared Cooney Horvath of the University of Melbourne also contributed activities for students.

### The Journal's Design Brief

**“Design a high quality, modern and engaging print and digital publication of a student reflection journal then publish, print, trial and evaluate it with schools”**

Elevo Institute Board, February 2020

The initial three reflective questions used at this stage were:

1. How would the implementation of a student reflection journal impact the development of 21st century skills, engagement, and personal growth in primary students, and inform improvements to the ThinkPlus Meta-curriculum and its integration into various learning contexts?
2. What differences might exist in the implementation strategies, challenges, and outcomes of the ThinkPlus program and resources between novice and experienced primary schools concerning emotional resilience, growth mindset, and learning experiences?
3. How could the Journal be adapted to different contexts and student populations while



maintaining its core objectives, and what essential features were needed in the digital app version to ensure the same engagement and learning outcomes as the hard-bound copy version?

Underpinning the development of the Journal were the principles and learning architecture of the *ThinkPlus* Meta-curriculum (2023), an initiative geared towards nurturing and enhancing students' Essential (or 21<sup>st</sup> century) skills. 21st-century skills refer to core competencies educators believe are critical for students' success ([Scoular et al., 2020](#)). These skills include creativity, collaboration, critical thinking, compassion, resilience, and cultural awareness.

Initially as outlined in Table 1, the alignment between Essential (or 21st century) skills and the *How to Grow Your Mind Journal* activities, were organised under key areas such as: Neuroplasticity, Metacognition, Mindsets, and Emotional Granularity within the Journal design brief.

**Table 1: Essential (or 21st century) skills**

**Alignment with *ThinkPlus* Meta-curriculum and the *How to Grow Your Mind Journal***

Essential (or 21st century) skills	Neuroplasticity	Metacognition	Mindsets	Emotional Granularity
1. Literacy	1.1 Developing neural pathways for reading and language processing	1.2 Reflecting on one's reading strategies and comprehension	1.3 Mindset for learning for improving literacy skills	1.4 Recognising emotions evoked by language and texts
2. Numeracy				
3. Scientific literacy				
4. Critical Thinking	2.1 Strengthening neural connections for mathematical reasoning	2.2 Evaluating one's problem-solving strategies in mathematics	2.3 Mathematical mindset to tackle challenges	2.4 Identifying emotions related to numerical understanding
5. Creativity				
6. Communication				
7. Social and Cultural awareness	3.1 Fostering neural networks for understanding scientific concepts	3.2 Reflecting on one's approach to learning and applying scientific knowledge	3.3 Curious mindset for exploring scientific phenomena	3.4 Recognising emotions related to scientific inquiry
8. Curiosity				
9. Initiative				
10. Persistence	4.1 Strengthening neural pathways for cognitive flexibility	4.2 Evaluating the effectiveness of one's thinking strategies	4.3 Open mindset for considering multiple perspectives	4.4 Distinguishing emotions related to critical evaluation
11. Adaptability				
12. Leadership				

5.1 Fostering new neural networks for creative thinking	5.2 Reflecting on one's creative thought process	5.3 Growth mindset to explore new ideas	5.4 Recognising emotions that inspire creativity
6.1 Enhancing neural connections for effective verbal and non-verbal communication	6.2 Understanding one's communication style and effectiveness	6.3 Open-minded and empathetic mindset for effective communication	6.4 Identifying emotions to convey and interpret messages accurately
7.1 Nurturing neural pathways for empathy and understanding diverse perspectives	7.2 Reflecting on one's social interactions and cultural understanding	7.3 An inclusive mindset to value and respect diversity	7.4 Recognising emotions in self and others to navigate social and cultural contexts
8.1 Building neural networks for exploring new ideas and seeking knowledge	8.2 Awareness of one's curiosity and learning habits	8.3 A curious mindset to engage in lifelong learning	8.4 Identifying emotions that drive curiosity and exploration
9.1 Developing neural connections for proactive behaviour and agency	9.2 Evaluating one's ability to identify opportunities and act on them	9.3 Proactive mindset for seizing opportunities	9.4 Recognising emotions related to taking initiative
10.1 Strengthening neural pathways for resilience and determination	10.2 Reflecting on one's capacity to overcome obstacles and achieve goals	10.3 Growth mindset to persist in the face of challenges	10.4 Acknowledging emotions involved in perseverance
11.1 Enhancing neural connections for flexibility and adjusting to change	11.2 Awareness of one's ability to adapt to new situations and challenges	11.3 A flexible mindset to accept change and adapt	11.4 Recognising emotions related to adaptability and change
12.1 Fostering neural networks for effective decision-making, communication, and people management	12.2 Understanding one's leadership style and impact on others	12.3 Inclusive and visionary mindset for leading others	12.4 Identifying emotions to lead, motivate, and support team members effectively

These skills encompass literacy, numeracy, scientific literacy, critical thinking, creativity, communication, social and cultural awareness, curiosity, initiative, persistence, adaptability, and leadership. Furthermore, these skills were then analysed in line with the Australian Curriculum, and overlaps in the capabilities and

learning areas as defined by the Australian Curriculum that resonated with the Essential (or 21<sup>st</sup> century) skills were identified and mapped out (See Table 1). The Australian Curriculum includes seven general capabilities: Literacy, Numeracy, Information and communication technology (ICT) capability, Critical and creative thinking, Personal and social capability, Ethical understanding, and Intercultural understanding.

Table 1 provides a detailed overview of how the journal activities have aimed to develop these Essential (or 21<sup>st</sup> century) skills through specific approaches such as fostering neural connections, reflective practices, mindset development, and understanding emotions.

Mapping out the Australian Curriculum key capability and learning areas with the Essential (or 21<sup>st</sup> century) skills of the *How to Grow Your Mind Journal*

The Australian Curriculum defines general capabilities, including literacy, numeracy, critical and creative thinking, personal and social capability, ethical understanding, intercultural understanding, and ICT capability. The *How to Grow Your Mind Journal* was designed by linking these capabilities with Essential (or 21<sup>st</sup> century) skills as discussed below.

**Literacy and Numeracy:** These are fundamental skills in the Australian Curriculum, not just as specific learning areas but also integrated across various subjects.

**Critical Thinking and Creativity:** These skills are part of the "Critical and Creative Thinking" general capability in the Australian Curriculum, which is designed to develop students' ability to think deeply and logically, and to apply imaginative and innovative solutions to complex problems.

**Communication:** This skill overlaps with the "Literacy" general capability in the Australian Curriculum, emphasising the importance of effective communication in various modes and contexts.

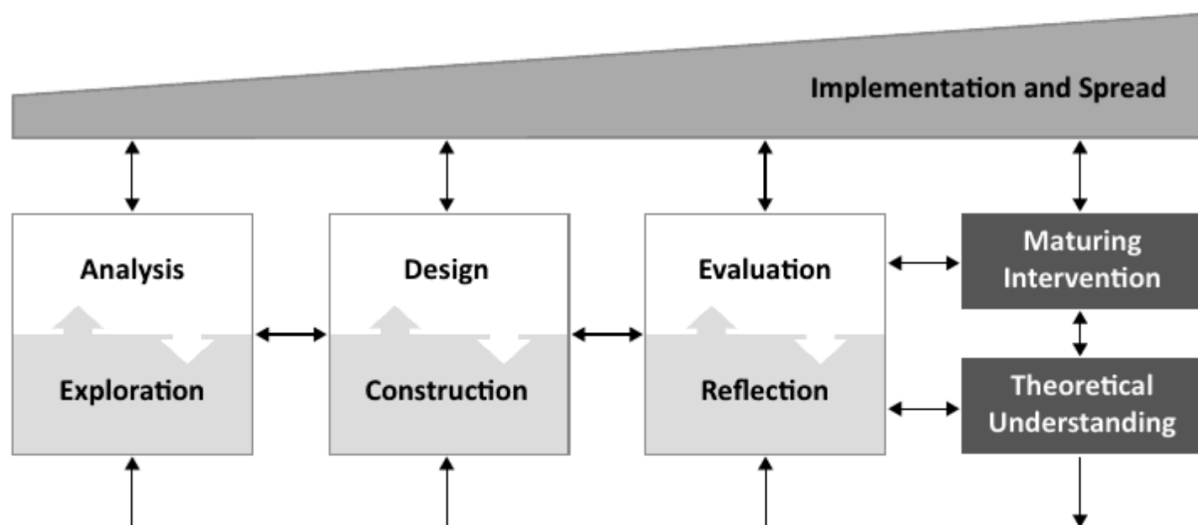
**Social and Cultural Awareness:** This aligns with the "Personal and Social Capability" and "Intercultural Understanding" general capabilities, fostering students' ability to understand and appreciate diverse cultures and societal norms, and to interact respectfully with others.

**Curiosity, Initiative, Persistence, and Adaptability:** These skills are linked to the "Personal and Social Capability" general capability, which involves students managing their own growth, relationships, and learning more effectively, showing resilience and adaptability in the face of challenges.

**Leadership:** While not explicitly named as a general capability, leadership skills can be developed through various aspects of the Australian Curriculum, including collaborative projects and roles within personal and social capability.

### Cycle One – From Initial Thoughts to Journal Version 1.0 (2020)

As an immediate response to the challenges posed by the Covid-19 pandemic, the Elevo Institute commissioned the development of a student well-being journal to support the development of 21<sup>st</sup> century skills in school students aged 10-12 years. Recognising the necessity of this timely inquiry, Elevo Institute engaged in an Educational Design Research (EDR) study ([Lewin and Somekh 2011](#), [Reeves, McKenney et al. 2011](#), [Dunn, Hattie et al. 2019](#), [Marshall 2021](#)) to devise solutions to the real-world problem in educational settings emerging as the pandemic unfolded. Through EDR, they discerned that they needed to explore the practical application of scientific methods drawn from psychology and sociology to predict and control phenomena. This approach provided the scaffolding for their investigation into the design, development and usage of the *How to Grow Your Mind Journal* (2021) and divided this initiative into the core phases of analysis/exploration, design/ construction, and evaluation/reflection (Figure 1).



**Figure 1 Generic model for conducting educational design research (reproduced from McKenney, Susan & Reeves, Thomas C. [2012]. Conducting educational design research. New York, New York: Routledge.)**

Initially an extensive literature review laid a solid foundation of educational theories and evidence-based practices. The importance of 21<sup>st</sup> century skills was underscored, along with the exploration of developing pre-and post-test intervention tools for collecting data. Informed by a robust literature review, an alignment map was developed incorporating Essential (or 21<sup>st</sup> century) skill development and guided by principles that



accounted for the complex interplay of Essential (or 21<sup>st</sup> Century) skills and key learning areas within the *ThinkPlus* Meta-curriculum (See Table 1).

The EDR process began with problem identification through a collaborative design process, identifying a need for developing a targeted approach to enhance Essential (or 21<sup>st</sup> century) skills amongst primary students (See Figure 2 below). Aided by feedback from the Elevo Institute Board of Directors, *ThinkPlus* researchers, academics, designers, teachers, students, parents, and other educational stakeholders, the team realised the necessity of an educational resource that encouraged skills such as critical thinking, creativity, communication, collaboration, and self-regulation.

The resource was built on Marshall's Principle-led Design process that prioritised emotional, functional and quality goals to reflect inclusivity, context-sensitivity, empowerment, collaboration, and adaptability ([Marshall 2021](#)). Dr James Marshall and Professor Leon Sterling worked with the Elevo Institute Board to develop goals for the Journal and *ThinkPlus* Meta-curriculum forming the basis of the journal and reflecting Essential (or 21<sup>st</sup> Century) skills that would be developed in Australian primary school students using this journal.

This led to the creation of a theoretical framework that explained the underlying principles and assumptions guiding the design and development process, included a Principle-Led Design goal elicitation process facilitated by Dr James Marshall that identified critical priorities of access, equity, inclusion and culture for Elevo Institute ([Marshall, 2021](#)). When coupled with other frameworks, Principle-led Design was proven as being grounded in educational theories and empirical evidence and was able to outline and reiterate the intended learning outcomes, instructional strategies, and assessment methods of the case study. Ongoing collaboration and iteration, led to sustained improvements within this project over 2020 culminating with the creation of Journal Version 1.0.

### Cycle Two – From Journal Version 1.0 to Version 3.0 and an e-journal application (2021)

Over Cycle Two the Journal went from Version 1.0 to Version 3.0 of the journal. It was printed as a hard-bound copy available for distribution. A research kit for schools was also developed over this year. In addition to this, through active collaboration with Melbourne University over 2021, an e-Journal App for iPads was also developed to be used in primary schools if needed. Each of these products would now be used over 2022 to pilot and trial in order to further improve the process in which this journal would be integrated and used within Australian primary schools.

**Figure 2 How to Grow Your Mind Journal – Cycles of Iteration & Improvement**

EDR Phase	Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5
Analysis and Exploration	March-May, 2020 Swinburne University's School of Design. Collaborate with ACER Dr Claire Scouler and learn more about 21st century skills.	Late November – Early December, 2021 Version 2 of Journal commenced Revisit Principled Design goals to ensure original brief is still at the forefront. Design Research Kit for Schools	Term 3, 2021 Trialled with a small Year 6 group at Kingswood College. Received feedback.	Terms 1 & 2, 2022 Plan a trial of the e-Journal app with a small group of students at Melbourne Girls Grammar School (MGGS)	Terms 1 & 2, 2024 Develop a White Paper on the project in partnership with Monash University.
Design and Construction	August-October, 2020 Journal V1 and Game A concept explored.	December 2020- February, 2021 Version 3 of Journal is printed and bound as 1st Edition 2021.	Term 4, 2021 Determining the investigative parameters for two schools undertaking a Pilot and Trial in 2022.  Planning for School A Pilot and School B Trial.	Pilot/Trial Terms 3 & 4, 2022 Conducted at School A and School B Total combined Hardbound copy Journals distributed to students in Years 3-6 = 250 copies Launch e-Journal app in June 2022. Conduct e-Journal app trial at MGGS Term 3 2022.	2024 Year long project Explore improvements pedagogy and new curriculum for inclusion in Journal Version 3. Update Meta-curriculum. Design new content for the Journal. Apply new content and update the e-Journal.
Evaluation and Reflection	November, 2020 Version 1 of Journal completed.	2021 Year long project Collaboration with Melbourne University to create an e-Journal App for iPads.	Terms 3 & 4, 2021 Refinement with RMIT Summer Developing Tech Project with Victorian Chamber of Commerce of the e-Journal app.	2023 Year long project Analysis of the data collected from the two Pilot schools A & B.	2025 onwards Research with additional <i>ThinkPlus</i> Schools.

### Cycle Three – Punctuated Processual Improvements (2021)

Using the EDR approach as presented in Figure 2 the process over this cycle remained iterative, with trial phases conducted or planned for 2021-22 with the hard-bound copies of the journal and the e-journal app and punctuated by feedback from stakeholders to refine the approach and to deepen Elevo Institute's insights within this innovative Meta-curriculum project.

By following this methodology, the EDR approach used in this study facilitated the creation and refinement of effective physical and electronic educational resources that could be tailored to the specific needs and context of Australian Primary Schools.

### Cycle Four – Running the Pilot Studies in 2022 & Analysing the data in 2023

In 2022, Elevo Institute piloted the Journal in authentic educational settings within two Australian primary schools over 2022. A comparative lens was used to analyse two distinct Australian primary schools: School A, a newcomer to the *ThinkPlus* initiative, and School B, who has a decade-long association with the program. Both institutions keenly embarked on implementing the Journal, especially amidst pandemic-induced challenges. In these schools, teachers and students from Years 3 to 6 contributed invaluable feedback to an internal study. The aims of this comparative study were determined as:

- a. Investigate alignment with the Essential (or 21st century) skills and the Australian Curriculum
- b. Enhance the *ThinkPlus* Meta-curriculum
- c. Gauge suitability and engagement
- d. Draw insights for subsequent print and digital editions of the Journal

At both these schools, the implementation strategies incorporated collaborative professional learning, feedback and reflection, and differentiated instruction as evidence-based approaches demonstrated to enhance educator skills and student outcomes ([Scoular, Ramalingam et al. 2020](#), [Woods-Groves, Choi et al. 2021](#)). In practice, this created instructional environments where educators could share expertise, reflect upon their practices, and tailor instruction to the diverse needs of their students while using the journal in their classrooms.

Data was collected across the two schools to assess the effectiveness of the resource, particularly focusing on how well it cultivated the desired 21<sup>st</sup> century skills among students and how user-friendly it was from a teacher's perspective. This stage also included gathering crucial feedback to identify potential improvements for the Journal.

The collected data was subsequently analysed, with the researchers reflecting on the resource's effectiveness and areas requiring enhancement. This analysis directly informed the refinement of the *How to Grow Your*

*Mind Journal*, with the team employing an iterative process to ensure that the resource's impact on student learning was maximised. The evaluation assessed the degree to which the Journal resonated with its target demographic and aligned with the *ThinkPlus* Meta-curriculum.

This rich blend of qualitative and quantitative data, ensured a rigorous, transdisciplinary internal inquiry. Review of existing literature (see previous section) led to consultation with experts to gain a comprehensive understanding of best practices, theories, and evidence-based approaches relevant to the identified problem. Expert guidance of various stakeholders - from the Elevo Board, Swinburne University, the University of Melbourne, and ACER to teachers, parents and students was also solicited (See next section for detailed results of the data analysis through these two pilot studies).

In June 2022, the e-journal app was launched and available for distribution within schools. In Term 3 of 2022, the e-journal app was also trialled at a school for further testing and improvement.

### Cycle Five – Running the Pilot Studies in 2022 & Analysing the data in 2023

Through various trials and pilots run over 2021-22, a high degree of confidence was found amongst school teachers, students and parents that the journal activities aligned with and supported the *ThinkPlus* Meta-curriculum objectives, enriching students' learning experiences with Essential (or 21<sup>st</sup> century) skills.

Over 2024 a white paper has been prepared in partnership with Monash University. In addition to this using the EDR approach the team continues to explore pedagogical improvements and new curriculum directions for inclusion in Journal Version 3 while also updating the *ThinkPlus* Meta-curriculum. The team continues to work on designing new content for the Journal and the e-Journal.

In fact, for a thorough continuous improvement cross-check, each point in Table 1 continues being matched with specific content descriptions and elaborations within the relevant learning and capabilities areas of the Australian Curriculum. This detailed matching process while initially planned for the pilot study was impacted by Covid-19 restrictions across Australia. Hence it is now anticipated in being carried out in the future through continuous improvement strategies made to the Journal. The purpose remains to embed continuous improvement insights into the effectiveness of using a student reflection journal in developing Essential (or 21<sup>st</sup> century) skills within school children across Australia.

## SECTION E: DATA ANALYSIS & DISCUSSION OF FINDINGS

Two surveys were administered in 2022 and was used to analyse two distinct Australian primary schools:

1. School A, a newcomer to the *ThinkPlus* initiative, and



2. School B, a school with a decade-long association with the program.

Both institutions keenly embarked on implementing the Journal, especially amidst pandemic-induced challenges. In these schools, teachers and students from Years 3 to 6 contributed invaluable feedback to an internal study.

This section not only discusses the findings from these surveys but also works towards gauging the suitability of the Journal and the degree of engagement of the students and staff with the Journal as identified through survey results by linking the critical discussion with the areas where further alignment with Essential (or 21<sup>st</sup> century) skills and the Australian Curriculum can be further built into the design of this learning tool. Through this critical analysis and discussion, this white paper focuses on further highlighting the need for a co-constructive improvement process being applied in this EDR approach to make the journal a living resource that identifies with the currency of emotions and emotionally intelligent behaviours being developed through its use. The very essence of the journal going through iterative cycles of improvement, provides a strong springboard for the uniqueness of this Journal and what it is currently offering to Australian schools today, post-pandemic while we focus on restorative educational systems of improvement.

### **First Survey: How to Grow Your Mind Journal - A Pre-Questionnaire For Teachers**

The first survey: *How to Grow Your Mind Journal – A Pre-Questionnaire for Teachers* was administered with eight teachers, 4 from School A and 4 from School B. Two teachers from Year 3, two from Year 4, two from Year 5 and two from Year 6 responded to this survey. The findings from this first brief survey indicated the following:

1. As an activity, teachers felt that the journal could be used once or twice weekly in their school settings. Further consideration needs to be given on how to use the journal at home as well as at school? How can the journal bridge learning at school with real life at home and in the community?
2. Teachers hoped that through the use of the journal their students could develop a better growth mindset by understanding themselves better and concepts such as neuroplasticity, growth mindset over a fixed mindset, emotional granularity, self-regulation and re-training their brain to operate with a higher emotional intelligence.
3. It was found that students at School B had a higher understanding of the concepts with the *How to Grow Your Mind Journal* than those at School A (who had been for a shorter period of time in the program). As one teacher said that she would like to see amongst her students, “more understanding of neuroplasticity and how they can re-train their brain to engage more efficiently in learning and social-emotional growth. Cyclic building up of the key concepts within this program so that what’s taught in Grade 4 is further built upon in Grade 5 and then in Grade 6

will assist students in not only understanding the concepts but also thinking more deeply about them and applying them in their own learning process.

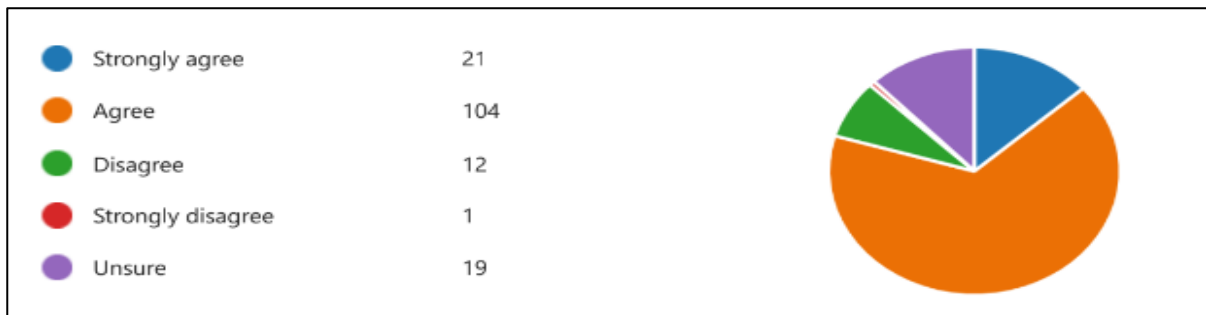
4. Further efforts on explaining the nuances of emotional granularity was needed across all year levels within the *ThinkPlus* Meta-curriculum would further improve the journal. In comparison, students found it easier to discuss what a growth versus fixed mindset is for themselves as a group. Work needs to be done on developing the concept of emotional granularity over three years and mapping it with the Australian curriculum and the ThinkPlus meta-curriculum.
5. At early stages of implementation within schools, more structured assistance in helping these schools' sequence and follow through on the objectives of this educational innovation is required. This might be an area that can be further enhanced within the *Designing a Research Kit for Schools* and the delivery of the program. This research kit would need to clearly map the different Essential (or 21<sup>st</sup> century) learning skills within the *ThinkPlus* Meta-curriculum against the Australian curriculum by coding it thematically. Likewise, the journal also needs to also be coded in sync with the research kit so that students and teachers are clear on the curriculum underpinnings of this learning resource.
6. Students and teachers who had been a part of this journey for a longer period of time were more aware of the concepts discussed so far within the unit. This would mean that at any given school, it would be important to have their new teachers get acquainted with the program and be mentored either by their own experienced staff.

### **Second Survey: How to Grow Your Mind Journal – A Student Questionnaire**

The second survey: *How to Grow Your Mind Journal – A Student Questionnaire* was administered to 157 students in all. Thirty-five students from Year 4, forty-seven students from Year 5 and seventy-five students from Year 6 responded to this anonymous survey. The findings from the student survey have been shared below as nine points of investigation with a critical analysis of the insights that were derived from the data:

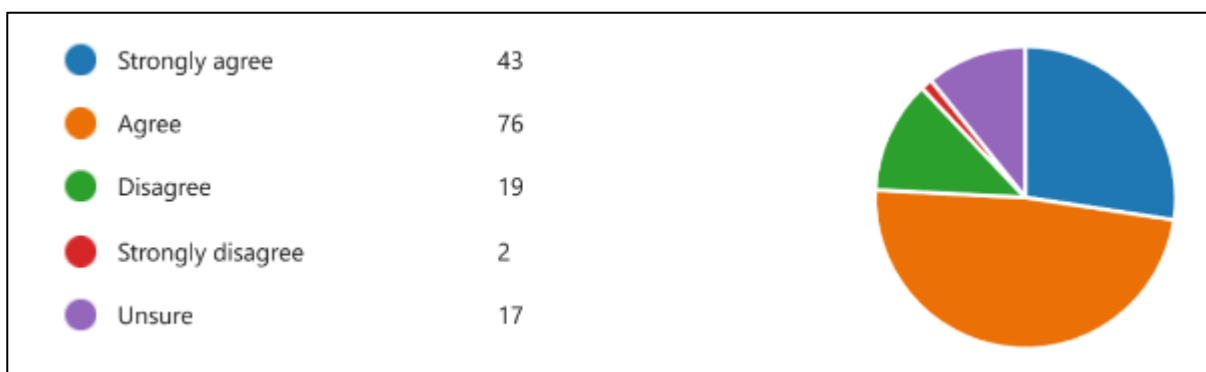
Investigation #1: *ThinkPlus* has helped me understand how my brain works and Neuroplasticity

This clearly indicates that in a cohort of 157, 125 agreed or strongly agreed with this assertion. This finding indicates that students have appreciated being able to learn about their brain and the science behind neuroplasticity and how it helps them to learn about their own learning.



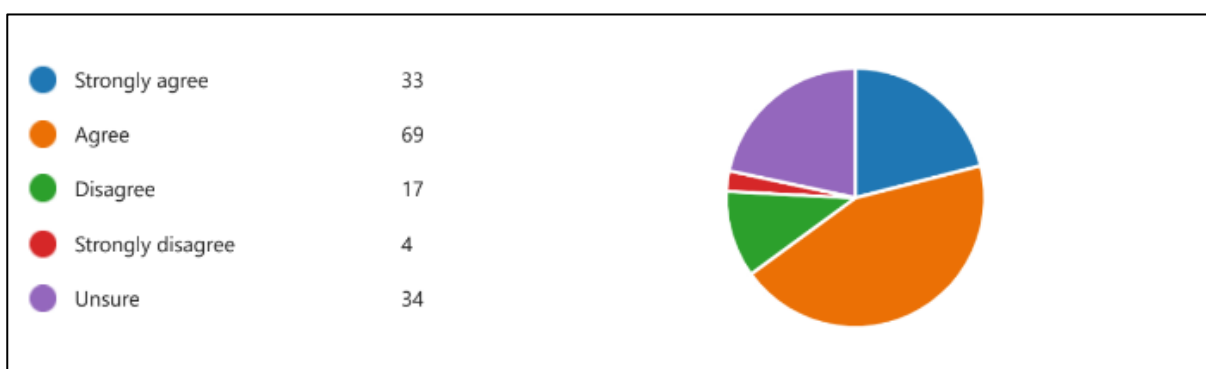
Investigation #2: *ThinkPlus* has helped me understand about Mindsets and Emotions

This clearly indicates that in a cohort of 157, a majority of 119 agreed or strongly agreed with this assertion. Like the previous finding, this statistic also indicates that a high number of students do recognise the need



Investigation #3: *ThinkPlus* has helped me understand about Metacognition (Learning how to learn)

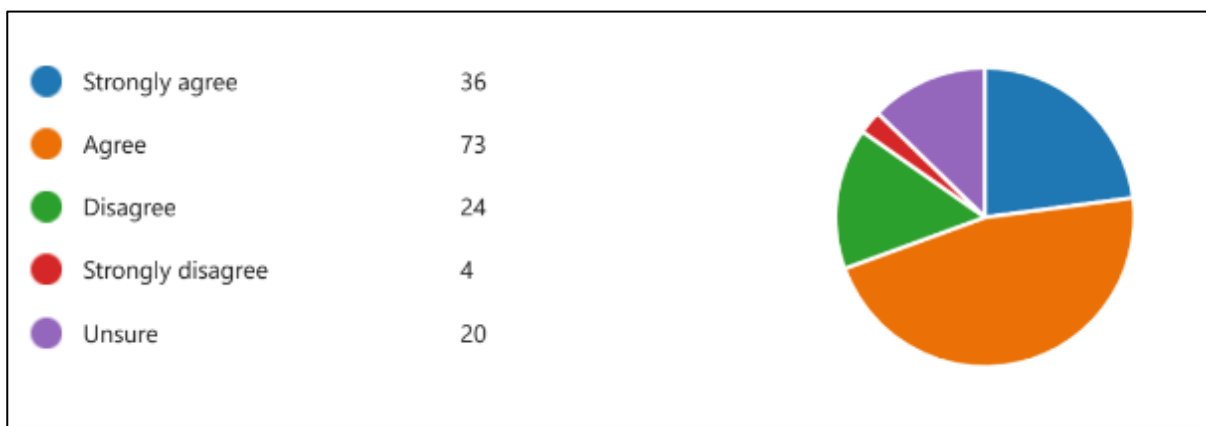
This indicates that in a cohort of 157, a majority of 102 agree or strongly agree with this assertion. This statistic provides evidence that the concept of metacognition has improved through the pedagogical approach taken with this concept through the journal. More integrated work on building up the metacognitive abilities being developed through the journal across the rest of the learning taking place in classroom settings.



Investigation #4: ThinkPlus has helped me become the best learner I can be right now and to know I can also improve more in the future too!

This data set indicates that in a cohort of 157, a majority of 109 agreed or strongly agreed with this assertion. This finding indicates how the journal is developing a positive mindset amongst the students who are using it.

More tracking of students and their learning growth and making that transparent to schools and their parents may be considered in future iterations of this journal.

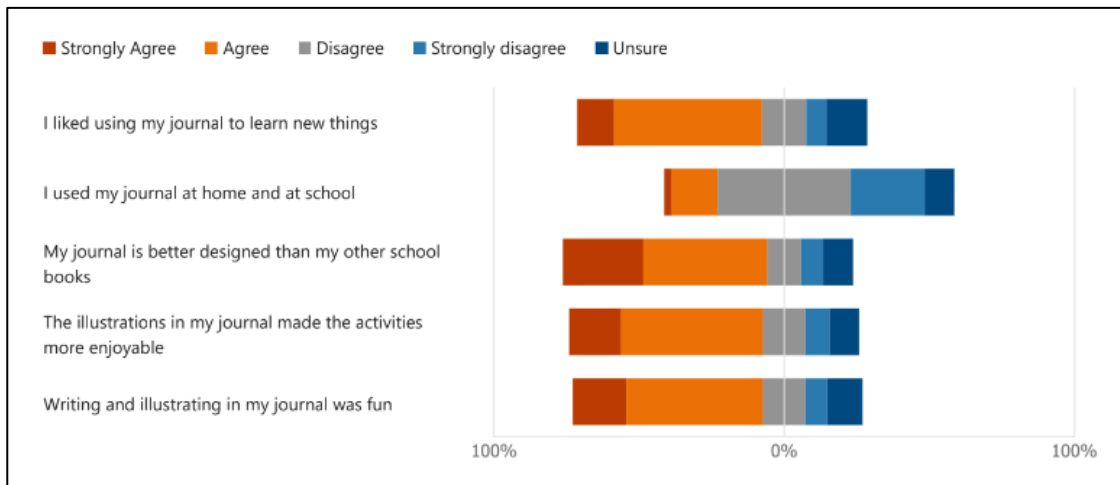


Investigation #5: I liked using my journal to learn new things

This clearly indicates that in a cohort of 157, a majority of 100 agreed or strongly agreed with this assertion. This indicates that the journal has provided a good creative space for primary school students to learn more about metacognition, emotional granularity, resilience and problem-solving skills.

It would be good to further consider how this can be aligned with the *ThinkPlus Meta-curriculum* and the Australian curriculum more closely within a school's curriculum delivery. The emphasis on "new things" needs to be further considered and contained with particular foci over a cyclic process of two years so that students are looking at particular aspects of the the *ThinkPlus Meta-curriculum* within a given year.

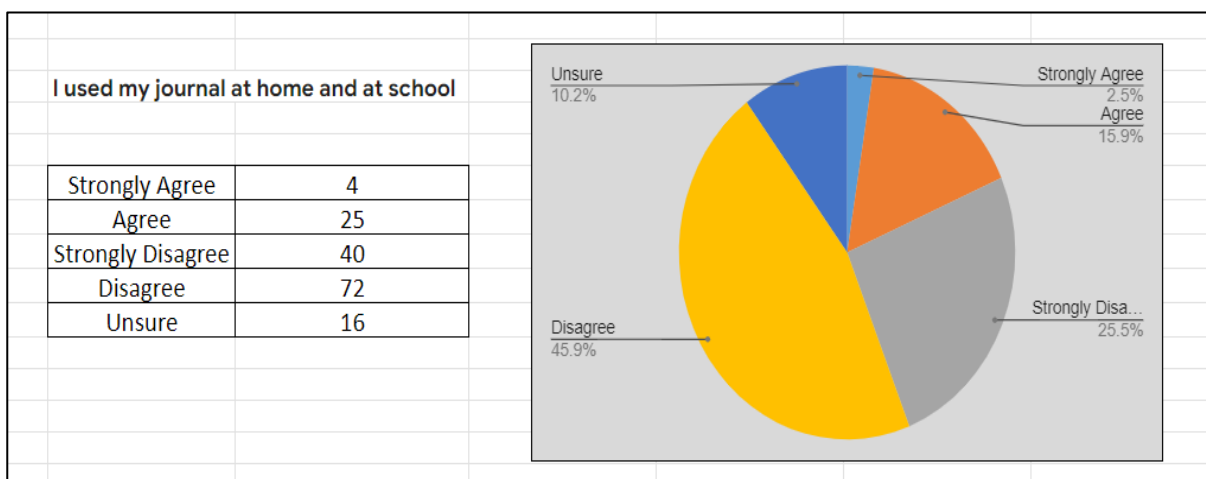




#### Investigation #6: I used my journal at home and at school

This data set indicates that in a cohort of 157, a majority of 112 disagreed or strongly disagreed with this assertion.

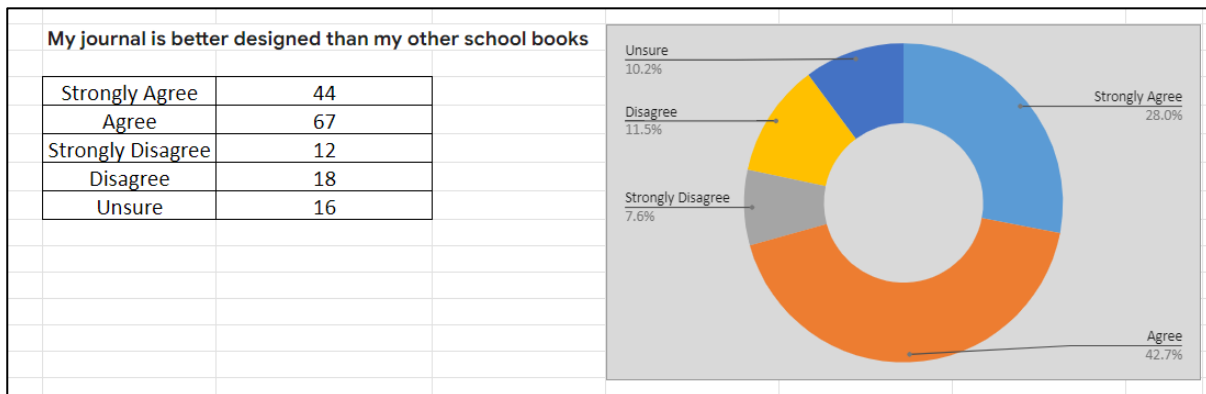
This is a concerning statistic as it indicates that while the student may be working in either one of these spaces. There needs to be more relationship building between home and school so that this journal becomes a good thinking resource used in both spaces. Considerations into how the journal activities can be built so that students are completing some parts of the activities within a school setting and others within a home, neighbourhood, community level may be considered.



#### Investigation #7: My journal is better designed than my other school books

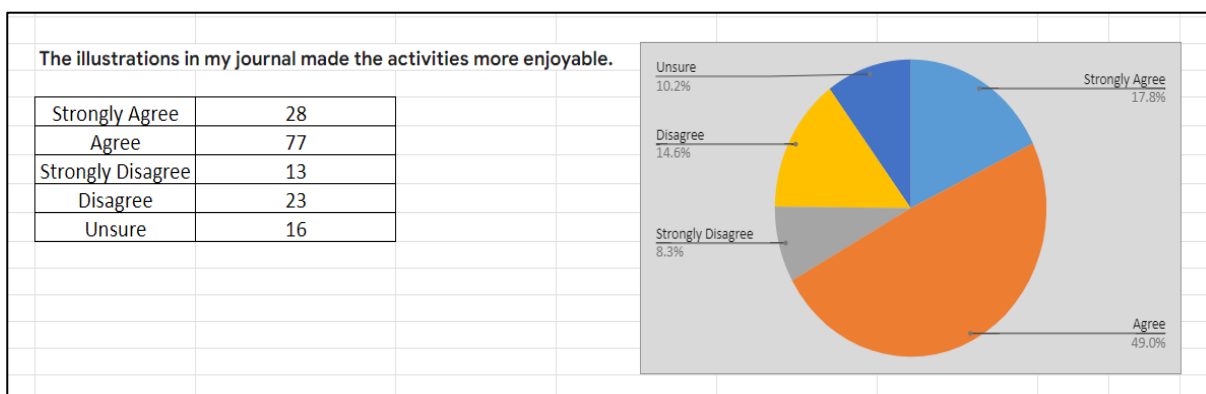
This data set indicates that in a cohort of 157, 30 students disagreed or strongly disagreed with this assertion.

This is almost 20% of the whole group which is a significant statistic and should be considered in future improvements made to the journal. This is a good space where more mapping of the journal aligning the Essential (or 21<sup>st</sup> century) skills with the Australian curriculum in the capabilities and learning areas can be further investigated and considered.



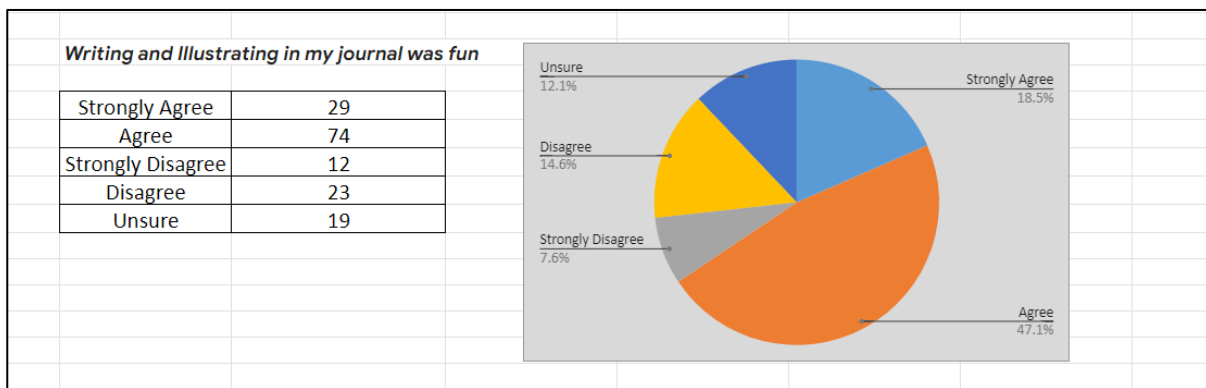
#### Investigation #8: The illustrations in my journal made the activities more enjoyable

This data set indicates that in a cohort of 157, a majority of 105 agreed or strongly agreed with this assertion. It is good to see that the learning activities have been developed as being learner-centric and the aesthetics of the journal has also provided connection points with the students. The use of QR codes leading to real life narratives or stories might be considered in future iterations to further build up on the immersive learning experience within the journal.



Investigation #9: Writing and Illustrating in my journal was fun

This data set indicates that in a cohort of 157, a majority of 103 agreed or strongly agreed with this assertion. This statistic is a good indicator of how using and EDR approach has helped to build up a resilience tool that is for the learner, by the learner and about the learner. Future research studies can incorporate more co-constructive designing with schools, teachers and learners in further building up and mapping the *ThinkPlus* meta-curriculum with the Australian curriculum areas that are being focused upon.



## SECTION F: A CONCLUDING CRITICAL ANALYSIS

### Discussion of the insights derived from the findings

As discussed through the project overview and development and later through the findings from the survey, the *How to Grow Your Mind Journal* has been found to be a useful tool within primary schools. More longitudinal research needs to be done in order to study the long-term impact that the *ThinkPlus* meta-curriculum is having on the affective domain of the students who are working through this journal.

The current findings support the EDR approach that makes use of cycles of feedback and continuous improvement that needs to be conducted. While the journal is available physically and electronically, it is anticipated that in future iterations the journal will also make use of VR and AI platforms to further enhance what the journal is offering and to make visible connections between student learning and immersive learning experiences. Likewise, it is suggested that this journal retains an online space for creative innovation by its users and builds that back into the educational design research approach that was undertaken from the onset of this project.

More work needs to be done to ensure that the online and hard-bound copy versions of the design approach is compatible with each other and clearly marked and mapped with the Essential (or 21<sup>st</sup> century) skills of the *ThinkPlus* Meta-curriculum and the School Research Kit developed for this project.

A larger longitudinal study (see Table 1) with 20 or more schools across Australia in both regional and urban settings using both electronic and hard-bound versions of the journal needs to be undertaken in order to study the actual impact the journal has had on students using it over Grades 4 to 6 in Australian Primary Schools.



## SECTION G: Future Recommendations For Improving The Journal

The following recommendations emerged from the findings of the two 2022 school surveys:

1. **Enhance Digital Integration and Gamification:** Given the increasing role of technology in education, further development of the digital/app version of the Journal could enhance accessibility and engagement, catering to diverse learning preferences and situations. *Further developing Journal capability that uses Virtual Reality (VR) and Artificial Intelligence (AI)-enhanced platforms would increase engagement amongst students in Grades 3 to 6 in Australian primary schools.*
2. **Expand Teacher Resources:** Providing more comprehensive resources and training for teachers on how to effectively integrate the Journal into their existing curriculum could enhance its effectiveness and ease of adoption. *Developing Reflexive teaching tools for teachers before, during and after conducting a lesson would help to further identify how well teachers are able to encourage and embed the Essential (or 21<sup>st</sup> century) skills within students learning and pedagogical processes.*
3. **Iterative Feedback Loops:** Establishing a structured feedback mechanism from students and teachers could provide continuous insights for improving the Journal's content and design. *Developing stronger feedback loops that are iterative and intuitive so that the journal can contextualise itself within a particular school's environment and address.*
4. **Customisation and Flexibility:** Allowing for greater customisation of the Journal's content to cater to different year levels and learning needs could enhance its relevance and impact across a broader range of students. *Making use of AI-enhanced customization can provide learners opportunities to immerse themselves into the situations within which they are working out their own thinking. The adaptation of learner-based customisations through learning management systems embedded into the online e-Journal so that teachers, parents and students can identify emotional growth within students and see where growth/no-growth is taking place and investigate why.*
5. **Research and Collaboration:** Continued collaboration with educational researchers and institutions could provide evidence-based insights for refining the Journal and exploring new areas for curriculum development. *The involvement of more than 20 schools in a longitudinal study of the use of this journal within primary schools in both hard-bound copies and e-Journals needs to be considered as a long-term impact study on this innovation within schools.*

6. **Community and Parent Engagement:** Involving parents and the wider community in the learning process could enrich the learning experience and provide additional support for students using the Journal. *The inclusion of parents and community members as voices within a student's journal will provide a powerful medium of not one but many voices that make up a child's identity. By introducing activities that involve the closest community members and parents of a student to co-create self/collective-narratives of resilience with the student, each student can go deeper in their personal journey towards resilience and emotional intelligence.*

By addressing these recommendations, the Elevo Institute can further the Journal's impact as a pivotal educational tool, thereby contributing significantly to the development of future-ready learners equipped with Essential (or 21<sup>st</sup> century) skills.

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