BRICKS activities as intervention for fostering resilience, enhancing learning engagement and school attendance in the aftermath of COVID-19 lockdown in the Bay of Plenty-Waiariki region.

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PRESENTERS:
ALFRED DU PLESSIS & AINSLIE HOWIE

Introduction

- BRICKS activities were introduced to MOE in the Bay of Plenty Waiariki region in early 2018
- Modified delivery model, inspired by practitioners using Lego® as therapeutic medium
- BRICKS activities were adapted to suit various educational needs in this region
- Differs from the conventional therapy model in that its focus is to reach learners on a larger school wide scale and not only individuals with Autism Spectrum Disorder (ASD)
- Interagency initiative to develop transferable skills through in-class learning support
- Complements He Pikorua as practice framework / collaborative work between MOE learning support and RTLB

Purpose

- To describe the ways in which schools found value (or not) in using BRICKS activities in the aftermath of COVID-19 lockdown as learners transitioned back to school
- Open up discussion related to similar initiatives
- Reflection on the future research and implementations of BRICKS activities

Concepts

- **RESILIENCE**

A dynamic process involving positive adaptation in the face of significant adversity or trauma

Not only dependent on the individual, but also the environment and context (Unger, 2011)

- **BRICKS ACTIVITIES**

Refers to activities initiated by the school which included any form of BRICKS (often includes Lego®, yet also other forms of brick-like building material)

COVID-19 / LOCKDOWN

- The coronavirus disease 2019 (COVID-19) was declared a public health emergency and global pandemic in January 2020
- It causes severe acute respiratory challenges and leads to common symptoms including fever, shortness of breath and a dry cough
- COVID-19 Lockdown period 18 May to 31 October 2020

Theoretical Understanding

- Transactional Theory of Stress and Coping (Lazarus & Folkman, 1987)
- Ecological Systems Theory (Bronfenbrenner, 1986)
- Resilience theory (Ungar, 2011)

NZ Resilience Need / Context

- New Zealand is generally considered to have managed prevention of community transmission of the virus successfully
- This did not prevent higher levels of post-lockdown psychological distress which are consistent with international findings on the negative effects on population wellbeing through added stress
- Stress has negative effects within education and learning environments, and learners have been described as the true victims of COVID-19

Theoretical Implications For Resilience

- Interacting systems may facilitate resilience and coping in order to problem solve and engage to alter the source of stress
- On an intra or interpersonal level, cognitive strategies supported through BRICKS activities such as planning, suppression of competing demands, showing restraint, seeking of social support, mastery of movement, attitude towards others, self-efficacy and mindfulness may be employed to cope with adversities
- This directly relates to perceived learner resilience

- Increased resilience may enhance neurocognitive performance and enhance learning
- Cognition and learning are therefore important to consider in understanding the relationship between stress, adversity and resilience
- Resilience facilitates cognitive engagement, while excessive stress may inhibit it
- Resilient individuals are likely to experience less cognitive impairments during a pandemic

Bricks Rationale

- Empower schools to have a practical, cost effective and wide-reaching intervention
- Supporting learners in developing prosocial skills and to build resilience
- Especially after the COVID-19 lockdown, with increased stress levels within families and the community, schools were challenged with implementing strategies to keep learners engaged at school, academically and socially
- During this time, there has been an influx in referrals for behavioural support from schools, who do not always have the internal skills and capacity to support learners with such specific behavioural intervention programmes
- Currently New Zealand has a skills shortage of Psychologists, thus the need for a practical, school-based intervention to empower schools to support these learners was identified as a priority
- BRICKS activities at schools are believed to have complemented aspects of a familiar home environment. Its play-based and non-threatening nature are likely a buffer for stress during the transition back to school after COVID-19 lockdown

Research Methodology & Context

- Instrumental case study
- Draws on anecdotal information from interviews, field observations and reflective questionnaires from teachers, parents and other BRICKS facilitators across three pilot schools as part of BRICKS implementations, in Rotorua in October 2020
- Information was also collated from two additional schools who used BRICKS as part of therapy and large group implementations
- Demographically, the pilot schools consisted of one Decile 5, religion-base primary school with a roll of 434 learners, one Decile 3 full primary country school (Years 0 to 8) with a roll of 124 learners, and one Decile 4 school with a roll of 519 learners
- Additional schools were one large town school and one small, full-primary country school

Ethical Practice / Limitations

- Informed consent was gained by participating schools
- Data collection and analysis reflected the teachers' code of ethics and values, where due care was taken and confidentiality was at the forefront (NZEI, 2008) and where a high standard of professionalism and integrity was paramount (Teaching Council of Aotearoa New Zealand, 2020)
- Data collection and analysis reflected the psychologists' code of ethics in that informed consent was obtained from participating schools before presentation of our findings. It was considered important to demonstrate the upholding of peoples' dignity (The New Zealand Psychological Society et. al, 2012)
- In line with the above ethical standards, it was therefore decided that specific identifying detail of the participants will be withheld in order to ensure their anonymity

Findings & Discussion

- From these data threads, five main themes became apparent: Cognition and Learning, Social Skills Development, Emotional Development, Behaviour Management and Fun

Cognition & Learning

- The benefits identified in this category were improvement in learner outcomes in the areas of literacy and numeracy; more specifically colour identification, knowledge of syllables, knowledge of phonological awareness and literacy skills
- Perceptual skills showed significant improvement in learners fine and gross motor skills and balance
- Tactile engagement and development were also identified by teachers and enhanced memory was strongly represented in this research
- There were also clear indicators that learners further developed their problem solving, imaginative, creative and reflective thinking skills

Cognition & Learning

- Descriptive language in BRICKS Therapy and 6 BRICKS refers to size, shape, colour, numerical value and directionality. Specific terminology means learners can communicate with familiar and consistent language, enhancing the opportunity for success
- By following the set roles of e.g. engineer, builder or supplier, learners used different language and ways of communicating, that were practised over time which then transferred into the classroom
- Free play within BRICKS also allows for learning through trial and error and encourages communication between learners in order to create a build or complete a challenge

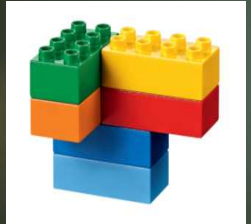
Cognition & Learning

- Presenting learners with non-threatening tasks, that encouraged easy ways to explore ideas and gain new knowledge in the aftermath of COVID-19, helped ease learners back into schooling
- By reducing the pressure of demanding learning tasks using traditional methods, learners knew they were in a safe learning environment, where they could take learning risks without fear of failure, which in turn strengthened their resilience
- Learning engagement was enhanced because of the practical nature of the tool. Using a hands-on approach allowed learners to express ideas in different ways and supported retention of knowledge. It was a tool that learners enjoyed using.

Social Skills Development

- Through BRICKS learners' ability to participate and learn through cooperative learning, specifically teamwork and collaboration was enhanced. Teams of learners worked together to complete a task within a structure
- BRICKS activities allowed students to participate equally through specific roles and interact simultaneously
- Communication and listening skills were also increased through the expectation to follow instructions. Effective communication is receptive and expressive in nature, demanding joint attention and symbol use when relating to other people. Bricks facilitates effective communication

Social Skills Development



- BRICKS provided structures for learning that were familiar and routine, which gave learners a feeling of security. The structures supported the development of collaboration and teamwork, and this style of learning also fostered resilience
- Through teamwork, learners supported one another in their learning tasks, demonstrating both individual and group accountability. The development of resilience requires interaction and communication with other learners, and concentration on tasks (Tocino-Smith, 2020)
- BRICKS provided learners with structure, safety, and a sense of familiarity which seemed to buffer anxiety and facilitated positive social skills development

Emotional Development

- The main themes demonstrating positive outcomes for learners consisted of motivational value, coping and emotional awareness
- Emotional awareness can be broken down into the sub-categories of emotional exploration, emotional literacy, self-regulation and reflection on emotions
- Understanding emotions and ways to regulate behaviour is crucial for learners so that emotions do not become overpowering and that they are able to relate appropriately to others and the environment (Winner, 2011)
- The relationship with emotional awareness and BRICKS was clearly identified by participants

"6 BRICKS provided an opportunity to engage learners in emotional literacy discussion. By identifying how they feel in one moment will change throughout the day, and negative feelings especially do not last forever. Then the learner is part of the process to support others who are feeling out of sorts. Learners are calm and open to learning."

Emotional Development

- On returning to the on-site school learning environment, learners were anxious and demonstrated a range of emotions to cope with the changes in routine and environments both in and out of lockdown
- Using BRICKS, schools were able to promote emotional literacy and support self-regulation. Reflection, using BRICKS as a tool, allowed for discussion of emotions, the acknowledgement that everyone has emotions, and the positive ways to manage these
- Some teachers linked BRICKS activities with existing emotional regulation strategies such as the well-known Zones of Regulation. Zones of Regulation refers to "a curriculum designed to foster self-regulation and emotional control (Kuypers, 2011)."

Behaviour Management

- The second largest identified benefit of BRICKS during the aftermath of Covid-19 was behaviour management
- Examples of evidence-based behaviour management strategies used by teachers are attention, engagement, building of self esteem, communication, play, cooperation and collaboration, labelled praise and encouragement
- BRICKS encompasses all of these areas and evidence supports that there was an increase in positive behaviour and a reduction in negative behaviour during the transition back into normal school routine after Covid-19

Behaviour Management

- BRICKS activities seemed to assist in the de-escalation, redirection and overall improvement of behaviour (increased occurrence of positive behaviours)
- BRICKS reportedly decreased behavioural issues in the class or playground and limited the escalation of negative behaviour by slowing it down and through the modelling of appropriate behaviours
- Attentive focus highlighted how BRICKS improved focus and concentration and lengthened the attention span of children and in effect, increased learning engagement. Increased engagement was a recognised trend

Behaviour Management

- Learning through play allows learners to problem solve, trial new ideas and contextualise learning in fun, playful ways (Ministry of Education, 2019)
- In a time of heightened anxiety and insecurity, BRICKS as a tool may reduce the prevalence of negative behaviour, allowing flexibility in learning and demonstration of knowledge by providing supports that benefit most learners

Fun

- The most significant trend, and the one that produced the most positive outcomes for learners was fun
- Use of BRICKS in a range of forms made learning enjoyable which in turn had a positive effect on all other identified areas: cognition and learning, social skills development, emotional development and behaviour management
- The sub-categories identified in this area were self-directed learning, hands-on learning, errorless learning, play-based learning and that BRICKS was adaptable and versatile

Fun

- The Lego Foundation (2018) highlights that learning through play occurs when tasks are cooperative, allow for repetition of skills or knowledge, provide meaning, promote engagement and are fun
- BRICKS is an interactive tool that made learning fun for learners on re-entry to school after lockdown
- BRICKS engaged learners and made attendance at school fun, which in turn created positive learner outcomes in both learning and behaviour

Conclusion

- Research participants valued BRICKS activities as a tool to foster learner resilience and enhance learning engagement. It can be derived that in these ways BRICKS were likely to have supported school attendance in children returning to school after the COVID-19 lockdown period
- Versatility and adaptability of BRICKS were clearly noted as key in supporting these aspects
- Using an enjoyable and multi-faceted educational tool to support learners in individual, small group and whole class contexts was as paramount in creating positive outcomes for learning

Conclusion

- BRICKS further enhanced positive behaviour and social skills development during stressful and unfamiliar times
- As a practical, play-based, systemic response to COVID-19 related challenges, stress and anxiety were decreased and BRICKS activities paved the way towards successful transitioning back to school after lockdown
- The apparent familiarity and predictability associated with BRICKS activities likely contributed to decreased anxiety. Findings supported the notion that, through BRICKS activities, learners presented with heightened feelings of emotional safety

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