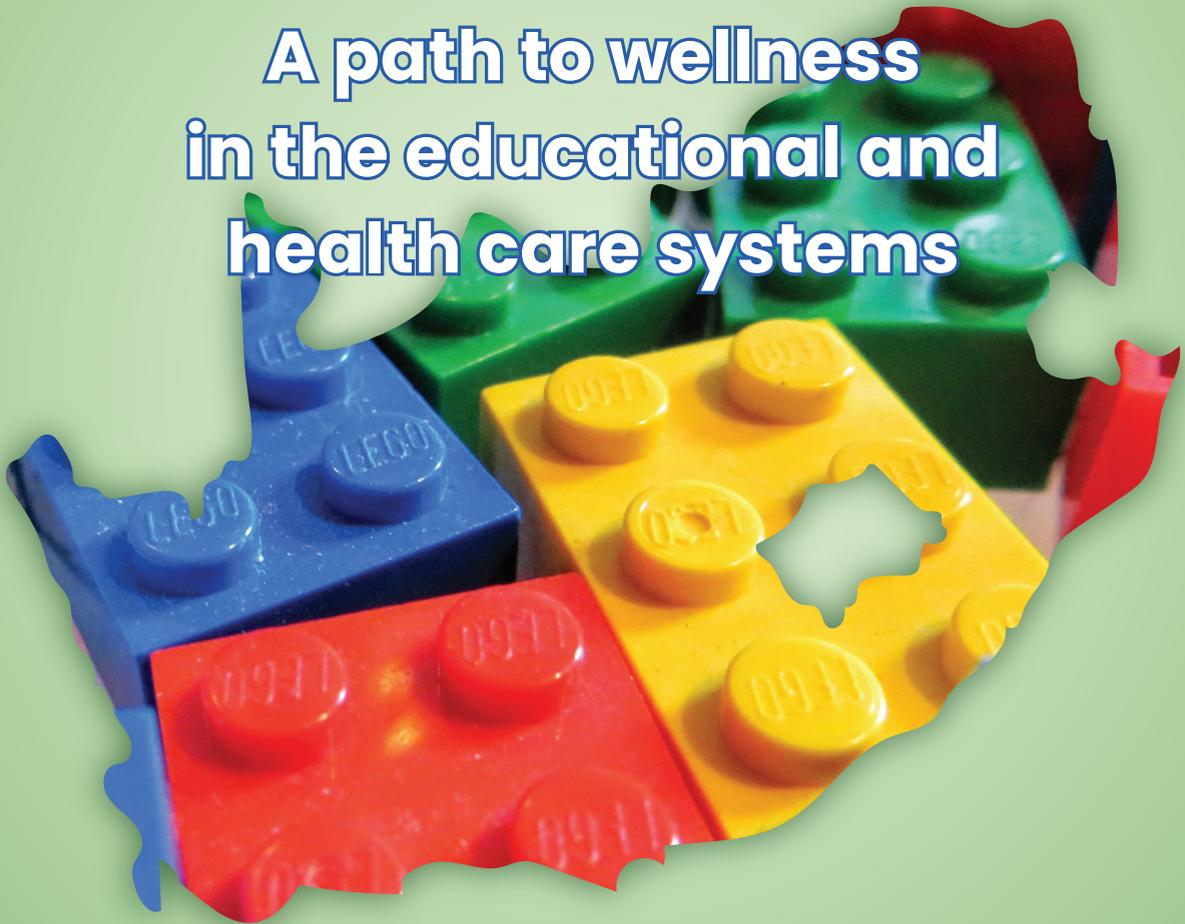


SIX BRICKS[®]

A path to wellness
in the educational and
health care systems



EDITED BY
Lynn Preston & Wanda van der Merwe

Six Bricks®

A path to wellness in the educational
and health care systems



AOSIS

Published by AOSIS Books, an imprint of AOSIS Scholarly Books, a division of AOSIS.

AOSIS Publishing

15 Oxford Street, Durbanville, 7550, Cape Town, South Africa
Postnet Suite 110, Private Bag X19, Durbanville, 7551, Cape Town, South Africa
Tel: +27 21 975 2602
Website: <https://www.aosis.co.za>

Copyright © Lynn Preston & Wanda van der Merwe (eds.). Licensee: AOSIS (Pty) Ltd
The moral right of the editors and authors has been asserted.

Cover image: This cover design was created by Natascha Olivier/Coco Design with the use of a photograph by Clovis Cheminot {1124010}, obtained from Pixabay, titled 'Lego, Multicolored, Bricks image', available from <https://pixabay.com/photos/lego-multicolored-bricks-game-1124010/>, copyright-free under the Pixabay licensing terms.

Published in 2023
Impression: 1

ISBN: 978-1-77995-293-6 (print)
ISBN: 978-1-77995-294-3 (epub)
ISBN: 978-1-77995-295-0 (pdf) 

DOI: <https://doi.org/10.4102/aosis.2023.BK427>

How to cite this work: Preston, L & Van der Merwe, W (eds.), 2023, *Six Bricks*: A path to wellness in the educational and health systems*, AOSIS Books, Cape Town.

Printed and bound in South Africa.

Listed in OAPEN (<http://www.oapen.org>), DOAB (<http://www.doabooks.org/>) and indexed by Google Scholar. Some rights reserved.

This is an open-access publication. Except where otherwise noted, this work is distributed under the terms of a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License (CC BY-NC-ND 4.0). A copy of this is available at <https://creativecommons.org/licenses/by-nc-nd/4.0/>. Enquiries outside the terms of the Creative Commons license should be sent to the AOSIS Rights Department at the above address or to publishing@aosis.co.za.



The publisher accepts no responsibility for any statement made or opinion expressed in this publication. Consequently, the publishers and copyright holder will not be liable for any loss or damage sustained by any reader as a result of their action upon any statement or opinion in this work. Links by third-party websites are provided by AOSIS in good faith and for information only. AOSIS disclaims any responsibility for the materials contained in any third-party website referenced in this work.

Every effort has been made to protect the interest of copyright holders. Should any infringement have occurred inadvertently, the publisher apologises and undertakes to amend the omission in the event of a reprint.

Six Bricks®

A path to wellness in the educational
and health care systems

Edited by
Lynn Preston
Wanda van der Merwe



Social Sciences, Humanities, Education and Business Management domain editorial board at AOSIS

Chief Commissioning Editor: Scholarly Books

Andries G van Aarde, MA, DD, PhD, D Litt, South Africa

Board members

Anthony Turton, Professor in the Centre for Environmental Management and Director TouchStone Resources (Pty) Ltd, University of the Free State, South Africa

Charles O'Neill, Associate Professor in the Department of Business Administration, The British University in Egypt, El Sherouk, Cairo Governorate, Egypt

Cheryl A Potgieter, Professor and Head of the Research and Doctoral Leadership Academy (RADLA) and Head of the GenderJustice, Health and Human Development research niche, Durban University of Technology, South Africa

Christi van der Westhuizen, Associate Professor and Head of the Centre for the Advancement of Non-Racialism and Democracy (CANRAD) research programme, Nelson Mandela University, South Africa

Emmanuel O Adu, Professor of Teacher Education and Curriculum Studies, Faculty of Education, University of Fort Hare, South Africa

Elphinah N Cisse, Professor of Nedbank Research Chair, Department of Continuing Professional Teacher Development, Faculty of Educational Sciences, Walter Sisulu University, South Africa

Jayaluxmi Naidoo, Associate Professor of Mathematics and Computer Science Education, College of Humanities, University of KwaZulu-Natal, South Africa

Johann Tempelhoff, Professor and Lead of the Cultural Dynamics of Water (CuDyWat) research niche and Head of the South African Water History Archival Repository, School of Basic Sciences, North-West University, South Africa

Llewellyn Leonard, Professor of Environmental Management and Chair of the Centre for Excellence (CoE) (Adaptation and Resilience), School of Ecological and Human Sustainability, University of South Africa, South Africa

Piet Naudé, Professor of Ethics related to Politics, Lead of the MBA programme in Business in Society and Leadership Development and Director of the University of Stellenbosch Business School, University of Stellenbosch Business School, South Africa

Reina-Marie Loader, Programme Lead of the MA programme in Producing Film and Television and Lecturer in Film Production, Faculty of Media and Communication, Bournemouth University, United Kingdom

Siphamandla Zondi, Professor of Politics and International Relations, Faculty of Humanities, University of Johannesburg, South Africa

Stanley Murairwa, Professor and Head of the Department of Business Sciences, College of Business, Peace, Leadership and Governance, Africa University, Zimbabwe

Tembi Tichaawa, Associate Professor and Head of the Department of Tourism, School of Tourism and Hospitality, University of Johannesburg, South Africa

Vusiwana C Babane, Department of Educational Psychology, Faculty of Education, University of the Western Cape, South Africa

Zilungile Sosibo, Professor of Education, Faculty of Education, Cape Peninsula University of Technology, South Africa

Peer-review declaration

The publisher (AOSIS) endorses the South African 'National Scholarly Book Publishers Forum Best Practice for Peer-Review of Scholarly Books'. The book proposal form was evaluated by our Social Sciences, Humanities, Education and Business Management editorial board. The manuscript underwent an evaluation to compare the level of originality with other published works and was subjected to rigorous two-step peer-review before publication by two technical expert reviewers who did not include the volume editor(s) and were independent of the volume editor(s), with the identities of the reviewers not revealed to the editor(s) or author(s). The reviewers were independent of the publisher, editor(s) and author(s). The publisher shared feedback on the similarity report and the reviewers' inputs with the manuscript's editor(s) or author(s) to improve the manuscript. Where the reviewers recommended revisions and improvements, the editor(s) or author(s) responded adequately to such recommendations. The reviewers commented positively on the scholarly merits of the manuscript and recommended that the book be published.

Research justification

This manuscript will inform the reader about the journey the Six Bricks® initiative took from being ‘born’ and ‘developed’ in South Africa to being exported and landing on the shores of various other countries. The Six Bricks® initiative is a teaching and learning method that encourages focused engagement in the classroom by all learners, from the Foundation Phase to adults. By using these six simple, colourful DUPLO® bricks, an element of play is introduced into a situation that inevitably leads to all individuals focusing and interacting. This is one of the major contributions to all teaching and learning (educational and wellness) disciplines and promoting the audience to learn with enjoyment, enthusiasm and concentration is a magical way to continue within the 21st century. Along with this, communication is promoted, sparking unimaginable creativity and creation. This situation enables all participants to concretely create their ideas, while solving problems and having the opportunity to build and rebuild ideas without being reminded of what works, what does not and what is right or wrong. In short, all 21st-century soft skills are vitally required. This new world provides opportunities for everyone to communicate, build self-confidence and ultimately be free to explore.

This book will provide the reader with an alternative focus to the original educational application of the Six Bricks® activities. This Six Bricks® initiative focuses on the therapeutic application and processes in communities, schools and within individuals themselves. As each author has had an intimate connection with the Six Bricks® initiative, they are all more than qualified to provide their autoethnographic reflections on this initiative, which holds so much promise and excitement, learning and teaching. Therefore, each author’s contributions were original and personalised, providing a new field in the avenues of research in the South African context, as South Africa does not have – as yet – much research on this topic. The methodology used in this qualitative research study was primarily from each author’s perspective; thus, their self-reflection and anecdotal personal experiences form the core of these chapters. Therefore, this autoethnographic is a self-reflective form of writing which involves self-observation and reflective investigation in the context of ethnographic fieldwork and writing. With this, each researcher’s personal experience describes and critiques various aspects of the Six Bricks® initiative. As a result of this very methodological approach, we declare that this book represents original work and that iThenticate was used to check each chapter for similarity and overlap to ensure that no plagiarism is evident before being published.

In conclusion, this book has been written to spark the passion and excitement of scholars who have participated in this initiative and who hope to pass this on to other scholars who are interested and willing to continue this legacy. *Six Bricks®: A path to wellness in the educational and health care systems* aims to relate the simple facts of needing very few resources to achieve vast amounts of teaching and learning, which will undoubtedly promote wellness in families, schools, individuals and spiral out even further within communities.

Please note that all illustrations in this book are original drawings, used with permission from the illustrator, and permission was granted by all authors to use the artwork inserted in the various chapters.

Lynn Preston, School of Psycho-Social Education, Faculty of Education, North-West University, Potchefstroom, South Africa; and Research Out of Entity, Faculty of Education, North-West University, Potchefstroom, South Africa.

Wanda van der Merwe, School of Psycho-Social Education, Faculty of Education, North-West University, Potchefstroom, South Africa; and Research Out of Entity, Faculty of Education, North-West University, Potchefstroom, South Africa.



FROM THE COMMON AND GARDEN

Source: The editors of this book conceptualised and commissioned this illustration. The illustration was created by Laura Steyn, published here with appropriate permission from Laura Steyn.

Contents

Abbreviations and acronyms, figures and tables appearing in the text and notes	xix
List of abbreviations and acronyms	xix
List of figures	xx
List of tables	xxiii
Notes on contributors	xxv

Part 1: Theoretical perspectives that underpin the concept of LEGO® and the Six Bricks® initiatives that embrace education and wellness

Chapter 1: LEGO® - from South Africa to New Zealand: The narrative of the theory, methodology and the ‘noise of fun’	3
<i>Lynn Preston & Jaco van der Merwe</i>	
Abstract	3
Introduction	4
Problem statement	4
Aims and objectives	5
Background	5
LEGO Foundation®	5
LEGO® embraces education	6
LEGO® embraces workplace wellness	6
Care for Education	7
Six Bricks®	7
LEGO®-therapy-based learning, and Six Bricks® initiatives in New Zealand	8
Six Bricks® within the South African context	9
Six Bricks® in the North West province	9
Six Bricks® in Educational Psychology: A mental health tool	10
Six Bricks® in Educational Psychology: A community engagement tool	12
Six Bricks® in the higher education curriculum: An additional tool for teachers	13
Six Bricks® within an academic framework	14
Theoretical framework	14
Activity theory	14
The activity theory	16

Play as an activity type	16
Looking at the Six Bricks® initiative through the lens of the activity theory	17
Step 1	17
Step 2	17
Step 3	18
Autoethnographic narrative as a research method	18
Conclusion	19

Part 2: Initiatives in the South African educational and health care contexts

Chapter 2: LEGO® Six Bricks® rethinks promoting 21st-century wellness skills for teaching and learning in children	23
<i>Wanda van der Merwe, Villera le Roux & Tarien Breytenbach</i>	
Abstract	24
Introduction	24
Problem statement	24
Research question	27
Aims and objectives	27
The theoretical and conceptual framework	28
Theoretical framework	28
Activity theory	28
Vygotsky’s socio-cultural theory of cognitive development	29
Play-based learning	29
Conceptual framework	30
LEGO® and Six Bricks®	30
Teaching and learning	31
The 4 C’s of 21st-century skills	31
Promotion of wellness	31
Empirical investigation	32
Qualitative approach	32
Constructivism as the philosophical orientation	32
Autoethnography as a research strategy	32
Communication skills	35
Activity 1: Listen, copy and build	36
How it improves communication skills	36
Skills that can be improved with the activity	36
Activity 2: Twitter-Twitter	37

How it improves communication skills	38
Skills that can be improved with the activity	38
Collaboration skills	38
Activity 3: <i>Simunye</i> [We are one]	38
Collaboration skills	38
Skills that can be improved with the activity	39
Activity 4: Teamwork stacking	39
Differentiating the teamwork stacking	40
Collaboration skills	40
Skills that can be improved with the activity	40
Critical thinking skills	40
Activity 5: LEGO® ‘tick-brick-toe’	40
Critical thinking skills	40
Skills that can be improved with the activity	40
Activity 6: LEGO® elimination	42
Critical thinking skills	42
Skills that can be improved with the activity	42
Creative skills	42
Activity 7: What is this?	42
Creative skills	42
Skills that can be improved with the activity	43
Activity 8: Invention for a problem in South Africa	43
Creative skills	44
Skills that can be improved with the activity	44
Reflecting on the research question	45
Reflection on the process of collaborative autoethnography	45
Conclusion	46
Chapter 3: The use of Six Bricks® in optimising engaged teaching and learning to promote wellness for Foundation Phase learners	47
<i>Jaco van der Merwe</i>	
Abstract	47
Introduction	48
Problem statement	48
Aims and objectives	49
Concept clarification	50
What is engaged teaching and learning and why is it so important?	50
Learner engagement	50

Educator engagement	52
Mindfulness practices	52
LEGO®-based therapy	54
Six Bricks®	55
A short history of the interventions implemented in the New Zealand context	56
The original New Zealand BRICKS club, Bay of Plenty	58
Six Bricks® activities within the New Zealand contexts and replicated in South Africa to bring change in the classroom	59
Activity theory	59
Conclusion	61
Chapter 4: Encompassing LEGO® and Six Bricks® in traditional African games as a psychoeducational intervention	63
<i>Wanda van der Merwe</i>	
Abstract	63
Introduction	64
Background	65
The importance of psychoeducation to promote health	65
Traditional African games	67
LEGO®, Six Bricks® and play	69
Research question	70
Aims and objectives	70
The theoretical and conceptual framework for the chapter	70
Theoretical framework	70
Conceptual framework	72
Psychoeducational interventions	72
Traditional games	73
Promotion of mental health	73
Play	73
Method	74
Research methodology	74
Philosophical orientation	74
Autoethnography	75
Autoethnography: Data collection and data analysis	75
Autoethnography: Quality control	75
Autoethnography: Ethics	76
Utilising autoethnography for the psychoeducational intervention of traditional games with LEGO® and Six Bricks® to promote mental health	76

Theme 1: Need for mental health – crisis and deficient resources	77
Theme 2: Traditional games	78
Theme 3: Adaptable for LEGO® and Six Bricks® for the promotion of mental health	81
Adaptation of the traditional game ‘ <i>Name, vanne, diere en dorpe</i> ’ with LEGO® and Six Bricks®	81
General instructions	81
The elements of ‘ <i>Vind jouself deur name, vanne, diere en dorpe</i> ’ [‘Find yourself through names, surnames, animals and towns’]	82
Procedure for ‘ <i>Vind jouself deur name, vanne, diere en dorpe</i> ’	83
Adaptation of the traditional ‘ <i>Diketo catch yourself</i> ’ game with LEGO® and Six Bricks®	85
‘ <i>Diketo catch yourself</i> ’ game	87
General information	87
Procedure for the ‘ <i>Diketo catch yourself</i> ’ game	88
Autoethnographic reflection	90
Conclusion	92
Chapter 5: LEGO® to enhance narrative career counselling and promoting mental wellness among adolescents with diverse needs	93
<i>Elmaré Mong</i>	
Abstract	93
Introduction	94
Problem statement	95
Aims and objectives	95
Research questions	95
Research design	96
Conceptual framework	97
LEGO®	97
Narrative career counselling	97
Wellness	97
Adolescents	98
Adolescents with diverse career needs	98
Neurodivergent individuals	98
Theoretical framework	99
Unpacking the ‘suitcase’: Discussion and reflection	100
21st-century skills	101
Positive psychology, character strengths and mental wellness	101
Narrative career counselling	102

LEGO® as a narrative tool	104
The outcome of the activity theory	106
Conclusion	107

Chapter 6: A South African perspective of health and well-being complexities in children: The Six Bricks® initiative 109

Petra Bester, Christelle Liversage & Christi Niesing

Abstract	109
Introduction	110
Problem statement	111
Aims and objectives	111
Clarification of concepts	111
Health and well-being	111
Realities of South African health and well-being	113
Social determinants of child health defined	114
A multilevel framework of child health, wellness and education	116
The complexities of health and well-being in South Africa	117
The situation of children in South Africa	118
The world around the South African child	119
The world at large: South African societies and communities	119
LEGO®-based and Six Bricks® initiatives	120
A realistic application of the Six Bricks® initiative to health and well-being complexities in children within the South African context	122
World of the child	122
The world around the child	124
The world at large	124
Conclusion	125

Part 3: LEGO® initiatives in the South African community context and beyond

Chapter 7: Africa Unit for Transdisciplinary Health Research (AUTCHeR): A Six Bricks® Social Greenhouse® innovation 129

Christi Niesing, Petra Bester & Christelle Liversage

Abstract	130
Introduction	130
Problem statement	130

Aims and objectives	131
Background	131
Concept clarification	132
Africa Unit for Transdisciplinary Health Research	132
The core message and services provided by the Africa Unit for Transdisciplinary Health Research	132
Support office to facilitate the Social Greenhouse® innovation process of the Six Bricks® initiative	134
Background to the Social Greenhouse® innovative process	134
Methodological approach to the development of the Social Greenhouse®	134
Methodological approach to the development of the Social Greenhouse® process: Intervention mapping	136
Defining the term ‘community’ in relation to the Social Greenhouse® process and the Six Bricks® initiative	138
Achieving sustainability and sustainable goals	139
Phase 1: Overview of the needs-solution matrix of the Social Greenhouse® process	140
Six Bricks® Workshop 1: The needs-solution matrix: Description of the first workshop which will be carried out with the identified community (Foundation Phase teachers)	142
Six Bricks® Workshop 2: The needs-solution matrix: Application: Description of the second workshop, which will be carried out with the identified community (Foundation Phase teachers)	143
Phase 2: Overview of the participative design process of the Social Greenhouse® process	143
Six Bricks® Workshop 1: Application of the participative design process: First workshop that will be carried out with the identified community (Foundation Phase teachers and other school stakeholders)	145
Six Bricks® Workshop 2: Description of the implementation of innovation in other settings: Second workshop that will be carried out with the identified community (Foundation Phase teachers)	146
Six Bricks® Workshop 3: The implementation of innovation in other settings: Third workshop that will be carried out with the identified community (Foundation Phase teachers) using a focus group	146
Phase 3: Application of the implementation of innovation in other settings	147
Phase 4: The monitoring and evaluation of innovation	147
Six Bricks® Workshop 1: The description of the monitoring and evaluation	149

Phase 5: Description of sustainable impact	150
Six Bricks® Workshop 1: Description and application of sustainable impact	150
Conclusion	151

Chapter 8: Six Bricks® for community wellness: Empowering role players in supporting children in communities 153

Elmari Fouché

Abstract	153
Introduction	154
Problem statement	155
Aims and objectives	155
Background	156
Concept clarification	157
Six Bricks®	157
Play-based learning	158
Community wellness	159
Empowering the teacher to support the child	160
Empowering the parent or caretaker to support the child	160
Supporting children in communities	161
Theoretical framework	162
Maslow’s hierarchical theory is seen as a meta-theory	162
The activity theory is seen as a working theory	163
Integrating the hierarchy of needs with the activity theory	163
Methodology	164
Autoethnographic narrative as a research method	164
Autoethnographic methods used	165
Collaboration and positive relationships	166
Positive emotions	167
Obtaining a shared outcome: A sense of purpose	167
Conclusion	167

Chapter 9: A Six Bricks® transdisciplinary community engagement initiative promoting wellness at the special school 171

Kedibone J Ramadie

Abstract	171
Introduction	172

Problem statement	172
Aims and objectives	173
Concept clarification	174
Six Bricks®	174
Transdisciplinary	174
Community engagement	174
Community engagement initiative	175
Wellness	175
A special school in the rural Ngaka Modiri Molema district in the North West province	176
Research design and methodology	176
Research approach	176
Research design	179
Methodology	179
Data generation	179
Data analysis	179
Ethical considerations	180
An overview of the Six Bricks® transdisciplinary community engagement initiative at a special school in the rural Ngaka Modiri Molema district in the North West province	180
Introduction to the follow-up classroom visits in the various grades	182
In the Grade 1 classroom	183
In the Grade 3 classroom	184
In the Grade 4 classroom	185
Reflections from an educator's perspective	186
Personal reflections and comments from the author	186
Conclusion	187
Chapter 10: Promoting LEGO®'s planet promise: Encouraging sustainable education and wellness in South Africa	191
<i>Lynn Preston</i>	
Abstract	191
Introduction	192
Problem statement	192
Aims and objectives	193
Background	193
Concept clarification	193
LEGO®'s planet promise	193

Contents

Sustainable society	194
Wellness development	195
South African context	196
Developing sustainable wellness within the South African context	196
Sustainability and a sustainable future	197
Theoretical framework	198
Methodology	198
Children	199
People	200
Environment	200
Conclusion	202
References	205
Index	227

Abbreviations and acronyms, figures and tables appearing in the text and notes

List of abbreviations and acronyms

AARE	Association for Active Researchers in Education
ADHD	attention deficit hyperactivity disorder
ASCHP	Association for Supportive Counsellors & Holistic Practitioners
ASD	autism spectrum disorder
AT	activity theory
AUTHeR	Africa Unit for Transdisciplinary Health Research
BoP	Bay of Plenty
CANRAD	Centre for the Advancement of Non-Racialism and Democracy
CAPS	<i>Curriculum and Assessment Policy Statement</i>
CCT	career construction theory
CIP	career interest profile
CIR	community integrated research
CIRL	Community Integrated Research Laboratory
COMBER	Community-Based Educational Research
CRPD	Convention on the Rights of Persons with Disabilities
CSTL	Care and Support for Teaching and Learning
DBE	Department of Basic Education
DoH	Department of Health
EELC	Equal Education Law Center
EI	emotional intelligence
FPI	Foundation Phase Initiative
HRQOL	health-related quality of life
HWSETA	Health and Welfare Sector Education and Training Authority
IJHI	<i>International Journal of Humanities and Innovation</i>
ISHP	Integrated School Health Programme
LDC	life design counselling
MAPP	MA in Positive Psychology
MHQ	mental health quotient

MoE	Ministry of Education
NDP	National Development Plan
NGO	non-governmental organisation
NMMDM	Ngaka Modiri Molema District Municipality
NPOs	non-profit organisations
NWU	North-West University
PAR	participatory action research
PHC	primary health care
PLC	Professional Learning Community
POS	positive organisational scholarship
RADLA	Research and Doctoral Leadership Academy
RTLb	Resource Teacher Learning and Behaviour
SDH	social determinants of health
SIAS	screening, identification, assessment and support
StatsSA	Statistics South Africa
TSG	traditional sports and games
UK	United Kingdom
UNICEF	United Nations Children's Fund
UP	University of Pretoria
VIA	values in action
WHO	World Health Organization
ZPD	zone of proximal development

List of figures

Figure 1.1:	Educational Psychology Subject Group training in Six Bricks®.	11
Figure 1.2:	Educational Psychology Subject Group training the BEd Hons in Educational Psychology students.	12
Figure 1.3:	Educational Psychology Subject Group training a primary school with Six Bricks®.	13
Figure 1.4:	The two basic processes in the activity theory.	16
Figure 1.5:	The core of an activity.	17
Figure 2.1:	The 4 Cs of learning and innovation that form the core of 21st-century skills.	25
Figure 2.2:	The theoretical and conceptual framework for the chapter.	28
Figure 2.3:	Educators utilising LEGO® and Six Bricks® to promote 21st-century skills, according to activity theory.	29

Figure 2.4: Multi-author thinking on the 4 Cs in teaching and learning as part of the data collection and data analysis process.	34
Figure 2.5: The authors' mind map on the 4 Cs.	35
Figure 2.6: Listen, copy and build the activity.	36
Figure 2.7: Twitter-Twitter activity.	37
Figure 2.8: Teamwork stacking.	39
Figure 2.9: LEGO® 'Tick-brick-toe'.	41
Figure 2.10: What is this?	43
Figure 2.11: Invention for a problem in South Africa: A solar-chargeable hairdryer for load shedding created by multi-authors.	44
Figure 3.1: Barriers that impede learner engagement.	51
Figure 3.2: Visual representation of the triad to have learners actively engaging with their learning.	60
Figure 4.1: Mental health quotient score scale.	66
Figure 4.2: The conceptual and theoretical framework for the chapter.	71
Figure 4.3: Activity theory - promotion of mental health of children utilising traditional games with LEGO® and Six Bricks®.	72
Figure 4.4: An overview of the three broad themes and sub-themes that were generated from the data collected.	76
Figure 4.5: A visual depiction of the crisis of children ending their own lives, 'one every eleven minutes'.	78
Figure 4.6: Witrand Hospital in the North-West province of South Africa is one of the two mental health specialised hospitals in this province.	79
Figure 4.7: A poem: 'The mind of a child'.	80
Figure 4.8: The six colour elements of the Six Bricks®, adapted to suit the game, ' <i>Vind jouself deur name, vanne, diere en dorpe</i> '.	83
Figure 4.9: The yellow element for the adapted game, ' <i>Vind jouself deur name, vanne, diere en dorpe</i> '.	84
Figure 4.10: The red element for the adapted game, ' <i>Vind jouself deur name, vanne, diere en dorpe</i> '.	85
Figure 4.11: The green element for the adapted game, ' <i>Vind jouself deur name, vanne, diere en dorpe</i> '.	86
Figure 4.12: The orange element for the adapted game, ' <i>Vind jouself deur name, vanne, diere en dorpe</i> '.	87
Figure 4.13: The two blue bricks are considered 'wild bricks' and are included in the adapted game, ' <i>Vind jouself deur name, vanne, diere en dorpe</i> '.	88

Figure 4.14: The four elements of strengths, weaknesses, opportunities and threats of the new traditional game, 'Diketo catch yourself', adapted with LEGO®.	89
Figure 4.15: Playing the game: 'Diketo catch yourself'.	90
Figure 4.16: Placing the LEGO® bricks under a category.	91
Figure 5.1: Author's application of the activity theory.	100
Figure 5.2: North-West University Educational Psychology lecturers and Honours students being trained in narrative counselling.	106
Figure 5.3: Activity theory outcome: Researcher's reflection.	107
Figure 6.1: Negative influences on the health and wellness of people across their lifespan.	114
Figure 6.2: Adapted from UNICEF's 2020 multilevel framework of child wellness.	117
Figure 6.3: The South African context of the multilevel framework of child wellness.	121
Figure 6.4: UNICEF's 2020 multilevel framework of child wellness applied to the Six Bricks® initiative.	123
Figure 7.1: Support offices facilitating the Social Greenhouse® innovation process, which are available for the Six Bricks® initiative.	135
Figure 7.2: Flow diagram of the transdisciplinary approach applied by Africa Unit for Transdisciplinary Health Research for developing the Social Greenhouse® in the real-world context.	137
Figure 7.3: An overview of the Social Greenhouse® process.	139
Figure 7.4: An overview of the Social Greenhouse® process: Phase 1: The needs-solution matrix.	141
Figure 7.5: An example of the application of the needs-solution matrix within a Foundation Phase school community.	144
Figure 7.6: An overview of the Social Greenhouse® process: Phase 2: Participative design process.	145
Figure 7.7: An overview of the Social Greenhouse® process: Phase 3: Implementation of innovation in other settings.	148
Figure 7.8: An overview of the Social Greenhouse® process: Phase 4: The monitoring and evaluation.	148
Figure 7.9: An overview of the Social Greenhouse® process: Phase 5: Sustainable impact.	150

Figure 8.1: Overview of using Six Bricks® for community wellness to empower teachers, parents and guardians in supporting children in communities.	157
Figure 8.2: Six Bricks®: A three-dimensional presentation.	158
Figure 8.3: Maslow’s hierarchy of needs: Meeting the psychological need for belongingness.	163
Figure 8.4: The core of the activity theory.	164
Figure 8.5: A graphical presentation of the process.	165
Figure 8.6: The promotion of healthy and happy relationships.	166
Figure 8.7: The willingness to collaborate to achieve a shared outcome.	167
Figure 8.8: Happy feelings of joy and contentment.	168
Figure 8.9: Positive effect of a shared outcome.	168
Figure 8.10: Positive effect of a shared learning experience.	169
Figure 8.11: Pathways to wellness.	170
Figure 9.1: Linking Six Bricks® and the North-West University to The Special School.	173
Figure 9.2: The position of The Special School in the rural Ngaka Modiri Molema district, Mahikeng, in the North West province, South Africa.	177
Figure 9.3: The vision and mission of The Special School.	178
Figure 9.4: The entrance to The Special School.	178
Figure 9.5: The author becoming a ‘6BRICK-er’.	181
Figure 9.6: Six Bricks®-sets donated to The Special School.	182
Figure 9.7: A Six Bricks® transdisciplinary community engagement initiative that promoted wellness at The Special School in the rural Ngaka Modiri Molema district in the North West province, South Africa.	188
Figure 10.1: A visual representation of the LEGO® promise.	202

List of tables

Table 4.1: The current ratio of psychiatric specialists to the population breakdown per province.	67
Table 5.1: Values in action.	102

Notes on contributors

Christelle Liversage

Africa Unit for Transdisciplinary Health Sciences (AUTHeR),
Faculty of Health Sciences, North-West University,
Potchefstroom, South Africa
Email: christelle.liversage@nwu.ac.za
ORCID: <https://orcid.org/0000-0003-4272-7892>

Christelle Liversage is a senior lecturer and programme chair in the subject group Positive Psychology, within the Africa Unit for Transdisciplinary Health Research at North-West University (NWU), Potchefstroom Campus, South Africa. Liversage's qualifications include a PhD in Health Sciences with Positive Psychology and a MA in Positive Psychology (MAPP) (Cum Laude) from NWU. She has extensive leadership and management experience in Africa and the United Kingdom (UK). Liversage has managed and presented learning and development interventions on the promotion of well-being in the UK, South Africa, Zimbabwe, Zambia, Mozambique, Ethiopia, Uganda, Rwanda, Cameroon, Kenya, Congo and Tanzania. Furthermore, she initiated the establishment of the Foundation for Economic and Business Development in the North West province and was part of the team who conducted research on the value of experiential training in outcomes-based education, specifically in rural areas. Liversage's current research focus is the understanding and promotion of psycho-social well-being and strengths in the context of psycho-social health. This entails the exploration of patterns of psychological well-being, goals, meaning and relational well-being, as well as the prevalence of levels of mental health and its association with socio-demographic factors with a view to inform well-being promotion and intervention strategies. Her area of expertise lies in how these factors apply in the work context.

Christi Niesing

Africa Unit for Transdisciplinary Health Sciences (AUTHeR),
Faculty of Health Sciences, North-West University,
Potchefstroom, South Africa
Email: christi.niesing@nwu.ac.za
ORCID: <https://orcid.org/0000-0003-2226-0439>

Christi Niesing is a senior lecturer at AUTHeR in the Faculty of Health Sciences, NWU, Potchefstroom Campus, South Africa. Niesing received her PhD in Business Administration in 2017 with a research focus on sustainable community development. Her innovations, co-created with the AUTHeR team, are reflected in the Social Greenhouse® Social Innovation Process and the formation of the Community Integrated Research Office. Niesing's experience includes implementing various health care promotion interventions in communities and developing research platforms towards

an engaged scholarship approach. Stakeholder relationship management from a Quadruple Helix approach guides her in consultation with national and international stakeholders. Niesing's student supervision focuses on providing study guidance to postgraduate students across disciplines interested in participatory research methods.

Elmaré Mong^{a,b}

^aSchool of Psycho-social Education, Subject Group Educational Psychology, Faculty of Education, North-West University, Potchefstroom, South Africa

^bResearch Out of Entities Unit (ROE), North-West University,

Potchefstroom, South Africa

Email: elmare.mong@nwu.ac.za

ORCID: <https://orcid.org/0000-0001-9497-636X>

Elmaré Mong is a lecturer at the Educational Psychology subject group in the Faculty of Education, NWU. In addition to Mong's academic role, she has a private practice specialising in assessments (various learning barrier assessments and career counselling). She has more than fourteen years of experience as a psychometrist and has been a registered counsellor since 2015 (HPCSA). Mong has experience teaching at a secondary school and has been a lecturer for the past four years. Her qualifications are as follows: MEd Educational Psychology (NWU); Hons Educational Psychology (NWU – *cum laude*); Hons Industrial Psychology (UFS); PGCE (UFS); and BCom Human Resources (UFS). Mong is also trained in LEGO® (Six Bricks®) and integrates this tool into her areas of interest. She is part of various community projects which the subject group is driving. Her research focus centres on the overall mental well-being of learners, parents and teachers and narrative career counselling for youths. Looking ahead, Elmaré is currently busy with her PhD studies, further advancing her knowledge and contributions to her field.

Elmari Fouché^{a,b}

^aSchool of Psycho-Social Education, Subject Group Educational Psychology, Faculty of Education, North-West University, Potchefstroom, South Africa

^bCommunity-based Educational Research (COMBER), Faculty of Education, North-West University, Potchefstroom, South Africa

Email: elmari.fouche@nwu.ac.za

ORCID: <http://orcid.org/0000-0001-6257-8615>

Elmari Fouché is a dedicated academic with a passion for the well-being of educators in South Africa. Fouché is committed to quality service delivery for students and delivering high-impact research that speaks to a global audience. She is strongly task-orientated and committed to her institution as well as her personal objectives. Fouché furthermore hails from a corporate environment and has had exposure working in different settings,

namely that of a Chemical Engineering Company, AECl (three years), the South African Police Service Psychological Services (two years), an agricultural environment, SENWES (five years), as well as in private practice, running her own practice for six years. Currently, she finds herself in academics for the last twelve-plus years, teaching in both contact and distance modes. Fouché's extensive experience also includes being SBET manager for the School-Based Education Training Programme for three years and working for the student counselling services at NWU. She also acted as programme leader for the ADE as well as the ACE distance programs at the UODL NWU for two years. Fouché gained valuable experience in different work environments which highlighted her ability to adapt successfully and efficiently in diverse settings and contribute in specific and valuable ways. She is an Industrial Psychologist (PhD in Industrial Psychology), holding an ADT/PGCE qualification (Advanced Diploma in Teaching). Fouché further received international exposure and was invited to present her research findings in her PhD at Imperial College, London, UK, in September of 2018.

Jaco van der Merwe^{a,b}

^aSchool of Psycho-Social Education,
Faculty of Education, North-West University,
Potchefstroom, South Africa

^bResearch Out of Entity,
Faculty of Education, North-West University,
Potchefstroom, South Africa

Email: vandermerwe.jaco@nwu.ac.za

ORCID: <http://orcid.org/0000-0002-2960-4671>

Jaco van der Merwe is a lecturer at NWU Educational Psychology Department. Van der Merwe has local and international experience working in both the private and governmental sectors as an educational psychologist. He practised in New Zealand, where he started a LEGO®-based intervention in the Bay of Plenty region, which has grown and was subsequently adopted by other regions within New Zealand. Van der Merwe specialises in play-based and LEGO®-based interventions with ten years of experience working with children and families. He has been registered with the HPCSA since 2014 as an educational psychologist. Van der Merwe has a MA degree in Educational Psychology from the University of Pretoria (UP) and two honours degrees – one in Clinical Psychology from the University of South Africa [Unisa] and the other in Educational Psychology from UP. He also has a BSocSci degree (UP). Van der Merwe is a part of various community engagement projects and works closely with the Department of Education and other stakeholders in the North West province. His research focuses on learner engagement and the enhancement of mental health in both learners and educators. He is currently busy with his PhD with the aim of completing it in 2023. Van der Merwe firmly believes that his greatest accomplishments are his two amazing children and the fact that he got his wife to marry him.

Kedibone J Ramadie^{a,b}

^aSchool of Psycho-Social Education, Subject Group Educational Psychology, Faculty of Education, North-West University, Mahikeng, South Africa

^bResearch Out of Entity (ROE), Faculty of Education, North-West University, Mahikeng, South Africa

Email: 16601467@nwu.ac.za

ORCID: <https://orcid.org/0000-0002-2604-1383>

Kedibone J Ramadie is presently a lecturer in the Subject Group Educational Psychology at NWU, Mahikeng campus, South Africa. Ramadie is a qualified and registered wellness counsellor with the Association for Supportive Counsellors & Holistic Practitioners (ASCHP). She has a private practice that mainly entails community engagement, where she presents mental health issues that prevail in different schools and departments. Ramadie's qualifications include a PhD from NWU in Research Psychology, which focused on exploring aspects of bullying behaviour, well-being and mental health among school-going Grade 12 adolescents in the Ngaka Modiri Molema district in Mahikeng, North West. She also has an MSS in Psychology. Ramadie has presented and lectured broadly in the field of psychology regarding mental health and supporting patients, families and communities in the local hospitals where she resides. Furthermore, Ramadie is involved in presenting psychological modules within the academic environment at the undergraduate level. Psychological well-being, mental health and counselling are her areas of expertise.

Lynn Preston^{a,b}

^aSchool of Psycho-Social Education, Faculty of Education, North-West University, Potchefstroom, South Africa

^bResearch Out of Entity, Faculty of Education, North-West University, Potchefstroom, South Africa

Email: lynn.preston@nwu.ac.za

ORCID: <https://orcid.org/0000-0001-9594-7069>

Lynn Preston is a senior lecturer in the Subject Group Educational Psychology at NWU, Potchefstroom campus, South Africa. Preston is a qualified, registered educational psychologist of fifteen years, with many of those years dedicated to private medical practice and community engagement. Her qualifications include a PhD in Psychology of Education from Unisa, with an additional MA in Transdisciplinary Health Promotion from NWU. Preston has presented and lectured widely in the medical field regarding psychoeducation in supporting patients, families and communities. Furthermore, she has been involved in the psychoeducational training of medical personnel as well as presenting psychological modules within the academic environment at postgraduate and undergraduate levels. Trauma and community psycho-education are her areas of

specialisation, with a special focus on sustainable education within these environments with the aim of sustainable human empowerment through education. Preston has published in this field and various other fields regarding inclusion, teacher training, psychology and trauma interventions.

Petra Bester

Africa Unit for Transdisciplinary Health Research (AUTHeR),
Faculty of Health Sciences, North-West University,
Potchefstroom, South Africa
Email: petra.bester@nwu.ac.za
ORCID: <https://orcid.org/0000-0002-8440-7638>

Petra Bester is currently a professor and director of the Africa Unit for Transdisciplinary Health Research (AUTHeR), a research entity in the Faculty of Health Sciences at NWU. Bester's research focuses on the utilisation of qualitative research methodologies to optimise situational awareness amongst health professionals. This forms part of her lifelong passion for supporting the South African (public) health care system through creative qualitative methodologies. Bester holds a PhD in Nursing, where she generated a middle-range theory to develop authentic leadership embedded in social capital. She obtained a clinical MA in Community Psychiatric Nursing. She is a professional nurse (general, community and psychiatry) and midwife, a health science educator and a health service manager. Bester's collaboration with Educational Psychology, LEGO® and Six Bricks® is through a research supervisor in the MHSc-degree in Transdisciplinary Health Promotion. Steering through South Africa's Social Determinants of Health and health care complexities requires close collaboration between health care and education.

Tarien Breytenbach^{a,b}

^aSchool of Psycho-social Education, Subject Group Educational Psychology,
Faculty of Education, North-West University,
Potchefstroom, South Africa
^bResearch Out of Entities Unit (ROE), North-West University,
Potchefstroom, South Africa
Email: tarienbreytenbach@icloud.com
ORCID: <https://orcid.org/0000-0002-2653-2326>

Tarien Breytenbach is currently a temporary lecturer in the Subject Group Educational Psychology within the Faculty of Education at NWU, Potchefstroom campus, South Africa. Breytenbach is also a part-time MA student at NWU. Her studies focus on the field of Special Needs Education, with a special focus on pedagogy, LEGO® and Six Bricks®. In her thesis, she aims to improve the pedagogy of pre-service teachers by utilising LEGO® and Six Bricks® in their work-integrated learning period. In this way, Breytenbach is promoting the concept of Six Bricks® learner engagement via training and equipping pre-service teachers with these skills. Furthermore, after successfully being the Research Assistant for the

Subject Group Educational Psychology, she has now been given the position of Research Assistant for Community-Based Educational Research (COMBER). Her qualifications include a BEd in the Intermediate Phase with Mathematics, Technology, and Science from NWU and a BEd Honours in Special Needs Education. Along with these qualifications, Breytenbach is also trained in LEGO® (Six Bricks®). In addition, she is also a qualified and registered Specialist Wellness Counsellor with the ASCHP.

Villera le Roux^{a,b}

^aSchool of Psycho-social Education, Subject Group Learner Support, Faculty of Education, North-West University, Potchefstroom, South Africa

^bCommunity-based Educational Research (COMBER), Faculty of Education, North-West University, Potchefstroom, South Africa
Email: villera.leroux@nwu.ac.za
ORCID: <https://orcid.org/0000-0002-7070-4930>

Villera le Roux is a lecturer at the NWU Faculty of Education, specialising in Learner Support. With over ten years of experience in Foundation Phase teaching, Le Roux has developed extensive expertise in assisting learners with barriers. Over the past seven years, her focus has shifted towards lecturing various subjects in Educational Psychology and Learner Support at a higher educational level. Le Roux holds an MEd in Educational Psychology from NWU. Prior to that, she completed a BEd Hons in both Educational Psychology and Learner Support at the same institution. Le Roux's research interests revolve around health promotion within schools, particularly in the areas of school culture and employing multisensory approaches to address specific learning barriers. She is also fully trained in LEGO® (Six Bricks®), which she implements in her field of interest. Beyond her academic pursuits, Le Roux actively engages in community service initiatives aimed at supporting learners facing scholastic challenges.

Wanda van der Merwe^{a,b}

^aSchool of Psycho-Social Education, Faculty of Education, North-West University, Potchefstroom, South Africa

^bResearch Out of Entity, Faculty of Education, North-West University, Potchefstroom, South Africa
Email: wanda.vandermerwe@nwu.ac.za
ORCID: <https://orcid.org/0000-0002-1155-5111>

Wanda van der Merwe is a qualified educational psychologist in private practice and holds a PhD in Psychology of Education from Unisa. Van der Merwe is a lecturer in Educational Psychology at the School of Psycho-Social Education, Faculty of Education, NWU, Potchefstroom Campus, South Africa. As a lecturer, Van der Merwe teaches various Educational Psychology modules at undergraduate and postgraduate levels. She has

presented and lectured on various psychoeducational interventions, with a focus on the promotion of wellness in communities. She is trained in LEGO® (Six Bricks®) and integrates this tool in various psychoeducational interventions in diverse communities. Van der Merwe's fields of interest are expressive therapies, especially phototherapy regarding multicultural and cross-cultural therapeutic support, as well as focusing on women and children.

PART 1

**Theoretical perspectives
that underpin the concept
of LEGO® and the Six Bricks®
initiatives that embrace
education and wellness**

LEGO® – from South Africa to New Zealand: The narrative of the theory, methodology and the ‘noise of fun’

Lynn Preston^{a,b}

^aSchool of Psycho-Social Education,
Faculty of Education, North-West University,
Potchefstroom, South Africa

^bResearch Out of Entity,
Faculty of Education, North-West University,
Potchefstroom, South Africa

Jaco van der Merwe^{a,b}

^aSchool of Psycho-Social Education,
Faculty of Education, North-West University,
Potchefstroom, South Africa

^bResearch Out of Entity,
Faculty of Education, North-West University,
Potchefstroom, South Africa

■ Abstract

New Zealand is one of the leaders in play-based teaching and child-centred teaching approaches in the world. Their Foundation Phase education curriculum is focused on the holistic development of learners through a variety of developmentally appropriate activities. They utilise different

How to cite: Preston, L & Van der Merwe, J 2023, 'LEGO® – From South Africa to New Zealand: The narrative of the theory, methodology and the “noise of fun”', in L Preston & W van der Merwe (eds.), *Six Bricks®: A path to wellness in the educational and health systems*, AOSIS Books, Cape Town, pp. 3–20. <https://doi.org/10.4102/aosis.2023.BK427.01>

tools like LEGO® toy bricks to not only enhance the learning of their students but also to support them in developing appropriate social skills needed for future success and general mental and physical wellness. New Zealand identified that schools should prepare learners not only for academic success but also to one day be positive, well-mannered and socially vibrant citizens who will contribute to the positive development of the country. South Africa has now followed suit with the rollout of the LEGO® Foundation Six Bricks® initiative with the non-governmental organisation (NGO) Care for Education, which is based in Johannesburg, South Africa.

This chapter relates to the path that LEGO®, through Six Bricks®, have taken from their origins in South Africa to New Zealand and back from New Zealand to South Africa in promoting teaching and learning in the educational and health care systems by looking through the lens of the 'activity theory' (AT). We pose the question: *What was the educational and wellness path that LEGO® took from New Zealand to South Africa?* We will utilise an autoethnography approach as a framework with a literature study to obtain data and anchor the chapter in the current academic and higher education environment. This chapter will reflect on the past, present and future of this teaching and learning wellness tool in the South African context.

■ Introduction

We live in an age where everything gets thrown away, from disposable cameras to disposable diapers (Smith 2021). Thus, very few products marketed to consumers are made to last in our 'throw-away' world. Creating products that are not meant to last is a very viable business strategy, resulting in consumers needing to buy replacement products (Smith 2021). However, the LEGO® toy is a 'survivor' and has come a long way over the past 90-plus years (LEGO® 2022). This simple toy has not only survived but has been, and still is, growing and thriving. After being named toy of the century twice (LEGO® 2022), the essence of this toy has remained constant, with the traditional LEGO® brick and its well-known interlocking studs (LEGO® 2022) promoting unlimited creative possibilities that can only be limited by the individual's own creative expressions. It is with this 'toy' that the story of the South African chapter of the international LEGO® initiative will be told.

■ Problem statement

South Africa has one of the most unequal school systems in the world (Teach with Africa 2021). In this system, 27% of students who have attended school for six years cannot read, and after five years of schooling, only about half of the learners are up to standard regarding Mathematics (Teach with Africa 2021). Furthermore, only 37% of those starting school will go on

to finish matric, with just 4% of these learners obtaining university entrance (Teach with Africa 2021). And as noted, teaching is at the core of this crisis, with educators not having adequate training or not having a good enough education (Teaching with Africa 2021). This lack of a solid teaching foundation creates a situation where educators are mostly trained to deliver outmoded 'chalk and talk' rote learning classes (Teaching with Africa 2021).

Thus, considering this situation, it is suggested that an alternative way of teaching must be implemented that can accommodate most of these educational challenges and provide a solid base for up-and-coming generations. Thus, the LEGO® initiative taken from New Zealand being combined with the South African Six Bricks® programme seems to be a favourable alternative for education in South Africa.

■ Aims and objectives

This chapter aims to introduce the South African reader to the innovative Six Bricks® programme that has been rolled out within the South African educational system.

To introduce the reader to this initiative the objectives will cover aspects such as providing a background regarding the history of LEGO® and the South African Six Bricks® programme and how these initiatives are used in education, workplace wellness, mental health and health promotion environments.

■ Background

■ LEGO Foundation®

The LEGO Foundation® was established in 1986 and can be described as the humanitarian department of the LEGO Corporation® (Giddings 2017, p. 437). The LEGO Foundation® has a 25% stake in the LEGO Corporation® and uses its profits from its shares to fund and implement charity work globally (LEGO Foundation® 2022). The LEGO Foundation® aims to develop a worldwide play-based education system to support the learning of all learners, regardless of their demographic and socio-economic status (Giddings 2017, p. 437). Furthermore, the LEGO® Foundation® believes that every child has the right to education, and they support the development of education in numerous under-resourced countries (LEGO® Foundation 2017). The LEGO Foundation® is involved in various projects within South Africa, partnering with the South African Department of Basic Education (DBE) (E³ national initiative, which commenced in 2018, discussed later in this chapter) and various NGOs and non-profit organisations (NPOs). One of the LEGO Foundation®'s biggest partners in South Africa and globally is Care for Education, whose staff are the global

leaders in Six Bricks® training and development (DBE 2022; LEGO Foundation® 2022). The CEO of Care for Education, Brent Hutcheson, has been accredited for inventing the Six Bricks® concept (Harn 2018, p. 1).

■ LEGO® embraces education

The LEGO Corporation® is more diverse than most people realise. Most people know about the commercial side of the LEGO Corporation®, as many have bought their sets in stores across the world. However, LEGO® has a variety of subsections within its corporation. Two of these are important to note when it comes to education and the development of learners.

The first subsection of LEGO® is called LEGO Education®, where LEGO® has developed tools aimed at educators and child development (LEGO® Foundation 2017). These LEGO® sets are designed for educational purposes, to be implemented in a classroom or learning setting, for example, some of the LEGO® products include robotic sets (LEGO® Foundation 2017).

The second subsection is the LEGO Foundation®, which can be described as the humanitarian side of the LEGO Corporation® (LEGO Foundation® 2022). The LEGO Foundation® works in conjunction with United Nations Children's Fund (UNICEF) and other worldwide partners to enhance the learning and development of children from developing and war-torn countries (LEGO Foundation® 2022). They aim to grant all children the opportunity to learn and develop to their full potential through education initiatives like Six Bricks®. Therefore, at their core, the LEGO Corporation® has a focus on child development and education, which they actively pursue through these two subsections (LEGO® Foundation 2017).

■ LEGO® embraces workplace wellness

Learning and being playful do not stop when you grow up. To be truly successful you need to be a lifelong learner and retain your child-like curiosity, your open mind, and your sense of wonder. (Shuster 2018, n.p.)

LEGO® Group Chief People Officer, Loren I Shuster, carried out a pilot experiment to investigate the impact of play in the workplace. In collaboration with Goldsmiths at the University of London, different kinds of physical, emotional, social and cognitive skills were measured from a sample of employees (Shuster 2018). Three days of data collection were earmarked for the employees, with two days spent engaged in normal work and the third day of play placed between the two workdays. Results revealed that participants reported that there were higher levels of competencies in all five skill areas, with increased engagement and happiness offering evidence of play having a residual benefit to workers in achieving calmness and well-being (Shuster 2018). Thus, the LEGO® tasks

that were used in playful activities posed challenges to the individual's autonomy and competency and created opportunities that determined, encouraged and enhanced self-esteem and wellness.

Furthermore, an endorsement of this phenomenon came from the Director of Innovation at Goldsmiths, University of London, Chris Brauer (Bauer 2018, cited in Shuster 2018):

While this represents a research method in its infancy, testing a small sample size, we have learned that the introduction of bespoke, relevant play activities could boost both engagement and employee well-being. (n.p.)

In alignment with Shuster (2018), we strongly believe and endorse that adding a bit of play into the workday can help nurture all colleague's innate curiosity and desire to learn, ameliorate the stress generated in daily functioning, and in general, make the workplace environment a happier and more inviting space for everyone.

■ Care for Education

Care for Education is an NGO in South Africa. The company was started by Brent Hutcheson, who developed the Six Bricks® programme. They have one of the oldest partnerships with the LEGO Foundation® and have done numerous charitable works for the LEGO Foundation® in South Africa (Care for Education 2019). They are also the main trainers for Six Bricks® in South Africa and are a key part of the entrepreneurship, employability and education (E³) and Foundation Phase Initiative (FPI), initiatives currently being rolled out by the DBE (DBE 2022; LEGO Foundation® 2022).

■ Six Bricks®

Six Bricks® was developed by Brent Hutcheson, utilising six Multicoloured DUPLO® bricks (CPD College 2022; Harn 2018, p. 1). The bricks are made up of six 4 × 2-stud DUPLO® bricks in six different colours: red, orange, yellow, green, dark blue and light blue (Harn 2018, p. 1; Harn & Hsiao 2018, p. 65). Brent aimed to support the diverse learning needs of learners within the South African context by producing a practical, tactile tool which would develop the fundamental learning skills needed for academic learning and achievement (Care for Education 2019). Thus, the fundamental foundations were laid for the Six Bricks® initiative. The Six Bricks® concept was deemed to be such an amazing resource that the LEGO Foundation® decided to acquire the rights for it from Brent Hutcheson (Care for Education 2019). Originally, the South African Six Bricks® programme was statically used exclusively for educational purposes; however, as Six Bricks® has developed and evolved over the years this all changed. The focus of this book's Six Bricks® programmes has been adapted into various therapeutic contexts

(Psychology, Occupational therapy, speech and language therapy) as well as employee development and team building under the success cube initiative (Care for Education 2019; Harn 2018, p. 2; Harn & Hsiao 2018, p. 65; Jemutai & Webb 2019). Six Bricks® has numerous applications and is a versatile tool that, in its simplicity, can be utilised and adapted to almost any situation (Care for Education 2019).

■ **LEGO®-therapy-based learning, and Six Bricks® initiatives in New Zealand**

As the Six Bricks® concept was such an incredible resource (Care for Education 2019), the initiative quickly grew, and New Zealand was quick to pick up on this initiative. In 2018, the co-author of this chapter moved to Rotorua, New Zealand, from Pretoria, South Africa, to join the Ministry of Education of New Zealand as an educational psychologist. While working in various schools with educators and learners, he aimed to develop behavioural and learning goals through educator training initiatives, learner support programmes and interventions. The initial support focused on utilising a LEGO®-Based Therapeutic (LBT) approach to develop academic, social, language and physical skills in learners to enable them to cope in class (Legoff et al. 2014, p. 9, 11, 14). The intervention incorporated the 'Resource Teacher Learning and Behaviour (RTL) to facilitate LBT group sessions with identified learners as an intervention strategy during the school day. Therefore, identified learners were referred by their teachers to the Ministry of Education (MoE) and RTL for intervention and support. There were two challenges that this system created: firstly, learners who went for interventions missed out on classes and academic teaching time, and secondly, only identified learners were involved. Therefore, the system needed improvement, which came with the Six Bricks® initiative, as it could be done in the classroom with all learners and as part of the curriculum.

Thus, building upon the initial success of the BRICKS Club intervention, Brent Hutcheson (Care for Education) and Ollie Bray (LEGO Foundation®) were invited to New Zealand with the purpose of starting a Bay of Plenty (BoP)-wide Six Bricks® intervention in schools. After the launch of the programme in the BoP in 2019, the Six Bricks® initiative became the first partnership between the MoE (regional - limited to the BoP), RTL, Care for Education and the LEGO Foundation®.

1. The Resource Teacher Learning and Behaviour (RTL) are specialist teachers in New Zealand. These RTL have an Hons in learner support and are seen as specialists to intervene and support learners who have learning barriers. They implement support programmes within schools and work collaboratively with teachers to ensure students stay engaged and well behaved (Ministry of Education 2022).

Presently, this New Zealand initiative has grown steadily and moved into different regions. Year by year, the initiative continues to reach more schools and support more learners within New Zealand.

■ Six Bricks® within the South African context

Care for Education, with their incredible concept of Six Bricks®, in partnership with the LEGO Foundation®, UNICEF and the DBE, implemented a national Learning Through Play strategy, termed the FPI. This FPI is Care for Education's biggest project within the South African context. This programme focused on the implementation of manipulatives, like LEGO® and DUPLO® bricks, in Grades R to 3 to improve and enrich the *Curriculum and Assessment Policy Statement* (CAPS) curriculum in South African schools. Within the classrooms, the Six Bricks® activities were used as playful teaching and learning tools within South African Foundation Phase classrooms, supporting teaching practice and how children learn (Care for Education 2019).

The outcomes of this initiative supported teachers and learners, improving learning within the Foundation Phase. These Six Bricks® inclusive activities, regardless of the learner's socio-economic status, ability, or competence, facilitated all learners to a similar experience in hands-on learning involvement. Through Care for Education's efforts (Care for Education 2019), Six Bricks® has grown within the South African education system, with this NGO having trained numerous teachers in various schools and provinces across the country, assisting the continuous development and support of both educators and learners.

In their most recent achievement, Care for Education have partnered with the DBE in South Africa and Six Bricks® was earmarked for a national rollout (DBE 2022). The E³ programme can be described as the DBE's goal to reduce future youth unemployment (DBE 2022). Because of this national partnership, it is foreseen that Six Bricks® will be available in all government schools' Foundation Phase classrooms in the future to support learners (Care for Education 2019). Presently, the Six Bricks® initiative has been successfully rolled out in three of South Africa's provinces, namely Gauteng, Free State and Eastern Cape.

■ Six Bricks® in the North West province

With this success already achieved, it was inevitable that a national rollout would begin. This process was sped up with the co-author returning to South Africa from New Zealand and accepting a position at North-West University (NWU) within the Educational Psychology department. With this immense resource in conjunction with the North West Department of Education,

Six Bricks® was implemented in a semi-rural school in a small town called Stilfontein. This initiative made the North West province the fourth province nationwide to introduce Six Bricks®. However, this rollout was different, with NWU taking a leading role in the implementation and supporting the school and the North West Department of Education, providing exceptional drive and direction, which resulted in further initiatives.

To start the rollout, the staff members within the subject group of Educational Psychology were all trained by Care for Education to fully understand Six Bricks® concepts and use and to become facilitators and trainers of Six Bricks® (see Figure 1.1 and Figure 1.2). Hereafter, the Six Bricks® programme was embedded in the BEd Hons in Educational Psychology programme along with LBT programmes. The focus of the training was to utilise Six Bricks® as a learner support tool to improve learners' mental health and learning. Therefore, empowering the BEd Hons in Educational Psychology students with the Six Bricks® training as a therapeutic and teaching tool has raised the level of this programme to a unique and individualised programme, making this the only one of its kind in a higher education environment to date. Furthermore, the students, after their training, were used as facilitators of Six Bricks®. This led to the support and training of other teachers in the Six Bricks® activities, which further supported learners in the classroom. The school and teachers embraced the idea and enjoyed having a new learning tool at their disposal. The power of Six Bricks® within the classroom uplifted both the learners' and the teachers' morale.

■ Six Bricks® in Educational Psychology: A mental health tool

The BEd Hons in Educational Psychology at NWU is a programme that is affiliated with the Association for Supportive Counsellors and Holistic Practitioners (ASCHP). Through this affiliation, the BEd Hons programme has a practical component that requires students to have supervised therapeutic counselling sessions with clients. To achieve the 100 practical hours, students work in an under-resourced primary school in the North West province, supporting learners and parents therapeutically. Thus, we train already qualified teachers by adding to their professional educational skills the skills of therapeutic counselling and assessment of learning barriers. These students are then seen as wellness counsellors who can perform educational and therapeutic interventions within their scope as educators and wellness counsellors, assisting individuals with educational and mental health issues. Thus, the focus of the BEd Hons programme encompasses academic aspects, as well as the professional development



Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe and the photographed individuals.

FIGURE 1.1: Educational Psychology Subject Group training in Six Bricks®.



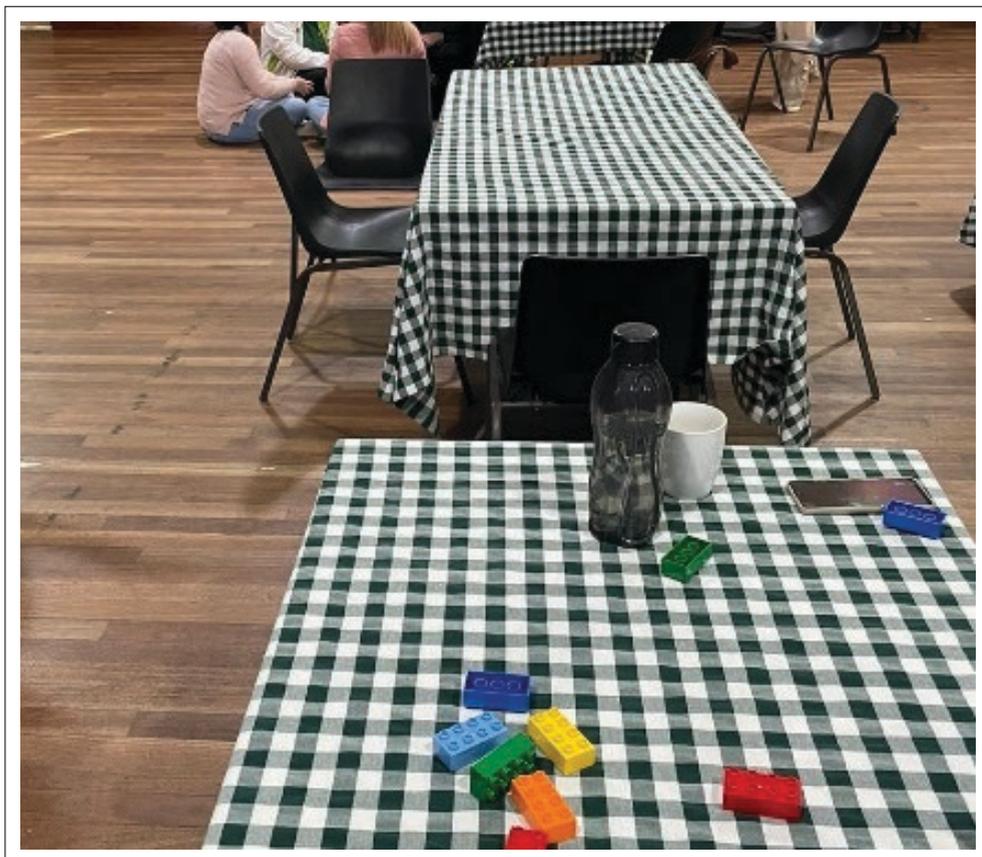
Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe and the photographed individuals.

FIGURE 1.2: Educational Psychology Subject Group training the BEd Hons in Educational Psychology students.

of these select few students. Thus, Six Bricks® added a variety of new skills to assist, support and improve learners' academic and mental health needs within the educational environment, as these students can fulfil the role of educator and wellness counsellor within the educational field.

■ Six Bricks® in Educational Psychology: A community engagement tool

The NWU Department of Educational Psychology implemented a community engagement initiative called 6SESS. The initiative focused on implementing Six Bricks® in ten primary schools' Foundation Phase classrooms within the North West province (see Figure 1.3). The 6SESS project was a partnership between the NWU Department of Educational Psychology and the North West Department of Education to support learners in schools with LEGO®-based learning initiatives to further their learning and understanding, with a focus on improving learners' morale



Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe.

FIGURE 1.3: Educational Psychology Subject Group training a primary school with Six Bricks®.

and mental well-being in schools. The success of the community project depended on the partnership between the NWU and the North West Department of Education, as well as the pre-service training of students.

■ **Six Bricks® in the higher education curriculum: An additional tool for teachers**

The NWU has integrated the curriculum of the pre-service teacher, with a special focus on first-year students, with Six Bricks®. This allows students trained as facilitators to implement the Six Bricks® activities in schools where they enter the educational environment with their work-integrated learning. This initiative has been running for the past four years, supporting in-service teachers with training and implementation in their classrooms.

The pre-service training highlighted the importance of having students trained in the Six Bricks® activities, as they could implement it faster and cover a wider audience. Six Bricks® has become a part of the E³ national rollout. The E³ initiative focuses on future-proofing current learners for their future careers and preparing them to not only become employees but to create future entrepreneurs who will create jobs as well (DBE 2022). It is a youth empowerment initiative that seeks to develop crucial skills in learners, to support their holistic development, which should make them employable in the future job market (DBE 2022). Furthermore, the E³ initiative seeks to develop crucial business-, people- and management-skills in these learners, which will enable them to create jobs by starting their own companies. Finally, the aim is to have learners understand that in their future role as employers, they will be able to assist in the development of others around them as well, creating a sustainable market of employment and employability within South Africa. Six Bricks® was identified to be implemented within the Foundation Phase in all public primary schools across South Africa to support the development of these identified skills in learners from a young age.

■ Six Bricks® within an academic framework

■ Theoretical framework

The theoretical framework is a perspective or 'lens' through which the researcher looks to guide research (Fouché, Strydom & Roestenburg 2021, p. 247). This framework can be described as the 'glue that holds everything together'. Thus, a theoretical framework arranges and makes meaning of thoughts, perceptions, observations, reflections and interpretations and gives focus and direction to research (Fouché et al. 2021, p. 247). Theory can also be seen as a facilitator of a more holistic way of creating meaning (Jaccard & Jacoby 2010, p.2013). Therefore, theory can be seen as an inductive interpretative reasoning process that uses a conceptual framework to define and explain relationships between interconnected parts with the aim to unlock the meaning that people give to experiences (Fouché et al. 2021, p. 248).

That being said, the meta-theory of this book will be the AT, which provides the framework for this powerful tool to facilitate understanding of the world through play by providing opportunities for all authors to express their experiences with Six Bricks® within their world of collaborative teaching, learning and therapeutic commutation.

■ Activity theory

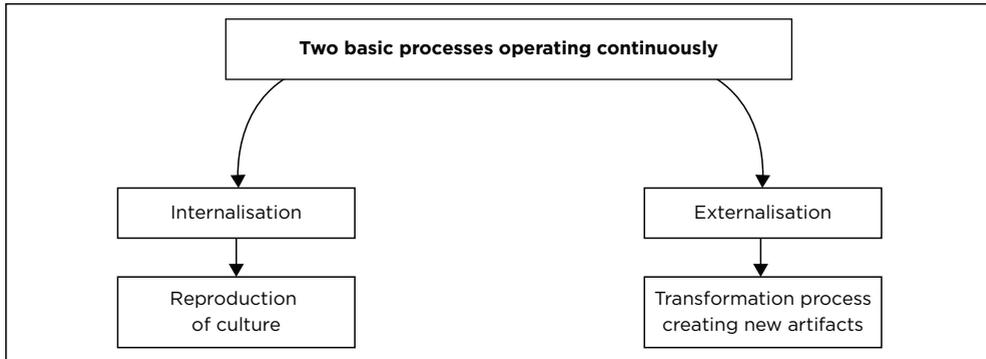
The internationalisation of the AT in the 1980s and 1990s took place amidst many dramatic changes in the political and economic systems in

the history of human existence (Engeström 2006, p. 19). Transformation during this time, such as the fall of the Berlin Wall and the release of Nelson Mandela, amazed the world as these phenomena reflected activities and manifestations 'from below' and not outcomes from elite political decision-makers (Engeström 2006, p. 19). These actions proved that the individual had the power to make an impact on their environment. Thus, towards a new rationality, human activity is considered as an object of natural processes, with the subject (a human) not being seen as an element outside of the object of their actions (Lektorsky 2006, p. 69) and human cognition is seen as partners in the subject or object process as a kind of communication (Lektorsky 2006, p. 69).

In this book, the AT is used as a developmental view of conceptual frameworks and practical actions as seen in the world. Thus, individuals in social settings shape and are shaped by one another in the learning process (Wiske & Spicer 2010, p. 637). Therefore, activity can be seen as a potential generator of both individual and organisational learning.

Vygotsky's original visualisation of his theory shows behaviourism as the response to a stimulus (Mc Avinia 2016, p. 59). However, the three prime aspects must be highlighted. These are the (1) human subject who uses (2) tools to achieve an (3) object or objective (Mc Avinia 2016, p. 59). These three aspects can be described as follows: the object is the motivation for the activity that is intended, the activity or action, and the tools are any means employed to carry out the actions. For example, instruments, technologies and communication can be considered tools. Furthermore, the subject can be referred to as the human element. Therefore, a subject (human), working towards an object (motivation), who uses a tool (instrument), will create or cause an outcome (Mc Avinia 2016, pp. 59–63). According to this theory, humans, therefore, perform actions to achieve goals, and a set of actions that meets the need of the goal can be seen as an activity (Mc Avinia 2016, p. 64). It can therefore be noted that the agency or action that produces a particular effect is the link between action and motivation (Mc Avinia 2016, p. 64) (see Figure 1.4).

Activity theory sees the worldview of constructivism more broadly. In this theoretical framework, people are seen as constructing their institutions and activities by means of expansive material object-orientated actions, voices and utterances, with ongoing dialogues within and between collective activity systems under investigation (Engeström & Miettinen 2006, p. 10). It can therefore be noted that the system's view and the individual's view must be complimentary, with the study of an activity system becoming a collective, multi-voiced construction of its past, present and future zones of proximal development (Engeström 1987, cited in Engeström, Miettinen & Punamäki 1999, p. 10).



Source: Adapted from Engeström and Miettinen (2006, p. 10).

FIGURE 1.4: The two basic processes in the activity theory.

■ The activity theory

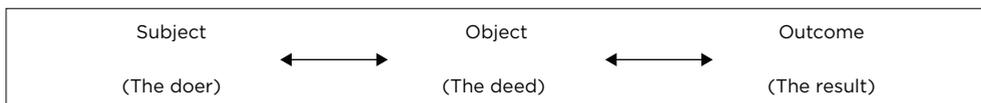
Any activity that is carried out by a subject (person) will include goals (creative effort), means (tools) and the process of moulding or making an object (the reason behind the ultimate behaviours of individuals), as well as the results of all these aspects (Davydov 2006, p. 39). This is seen through the lens of a wider historical and cultural context, going beyond the given possibilities (Davydov 2006, p. 39) and facilitating the subject to step outside the frames of a given situation.

The basic contents of the concept of activity are the process of a material or spiritual activity that is connected to a person's ideal image of the foreseen product or result (Davydov 2006, p. 40). Furthermore, activity exists as both collective and individual, especially when a person acts as a generic social being (Davydov 2006, p. 41).

Therefore, to conclude, human activity is purposeful and is executed by sets of actions using 'tools', which can be physical or psychological (Hasan & Kazlauskas 2014, p. 9). The core of an activity in relation to the AT is the relationship between the subject (human effectuator) and object (the thing being done) (Hasan & Kazlauskas 2014, p. 9), and forms the core of an activity (see Figure 1.5). The object of activity encompasses the activity's focus and purpose (Hasan & Kazlauskas 2014, p. 9) with the outcomes of the activity being either intended or unintended.

■ Play as an activity type

The integrative function of rules, roles, scripts, symbols and actions, as well as imagined situations, integrated, has the potential to organise an activity system (Leontev 1978, cited in Hakkarainen 2006, p. 233). The object which



Source: Hasan and Kazlauskas (2014).

FIGURE 1.5: The core of an activity.

is transformed is the integrative element of the activity system, making the object of the activity central to motivation (Hakkarainen 2006, p. 233). As play is orientated to emotions, needs and motives, this can thus be seen as the 'object' when considering the AT. Play, therefore, produces opportunities for general flexibility and an inclination to change one's approach when facing the concrete demands of a situation, be it intellectual challenges, imagination, fantasies or emotions (Hakkarainen 2006, p. 234), or as required by the immediate 'reality' in which the child finds themselves. The goals of play are meaningful to their contents. Therefore, in reflecting on 'play', actions that express the meaning of these playful actions must be seen in relation to the play goal rather than the attainment of the goal, which is often seen in the form of a concrete result (Hakkarainen 2006, p. 234).

■ Looking at the Six Bricks® initiative through the lens of the activity theory

Using the AT lens for research takes an activity as the unit of analysis (Hasan & Kazlauskas 2014, p. 11). The activity which was analysed ('who is doing what for what purpose') was the relationship between the subject (human effectuator, who was the child or person engaging with the bricks) and object (the thing being done, the engagement with the bricks). This real-world analysis proceeded by following the steps suggested by purpose (Hasan & Kazlauskas 2014:11-12), which concisely linked the Six Bricks® initiative to the AT.

□ Step 1

Significant activities within the Six Bricks® system were identified as subjects being the human element, the object as the actual play and engagement with the bricks, and the purpose, as the play orientated to emotions, needs and motives (Hakkarainen 2006, p. 233).

□ Step 2

The actions and mediating tools of the activity or activities that were identified were the tools or means (Davydov 2006, p. 39) that were engaged with, namely the Six Bricks®.

□ Step 3

The continual highlighting of the dimensions between the identified activities and the relationships between all facets of the AT provided a holistic and insightful understanding, which laid down the framework for rich descriptive opportunities for the situations that were reported in this book.

Furthermore, this framework enabled the contributors to represent and explain their own studies' experiences and observations within the complex environments in which the Six Bricks® initiatives were implemented. Thus, as previously discussed, the environments that were considered by the authors in their studies included the Six Bricks® initiative in Educational Psychology as a mental health tool, a community engagement tool and a higher education curriculum strategy as an additional teaching tool. The subsequent chapters will elaborate in detail on the personal experiences of the authors within these diverse environments and how the implementation of this initiative was used by reporting these efforts using an autoethnographic narrative with AT as a guiding theoretical lens.

■ Autoethnographic narrative as a research method

For a theory to find its place in education, that theory must inevitably have practical value that is constructed through personal experience (Starr 2010, p. 2). As (Schubert 1986) stated:

The individual seeks meaning amid the swirl of present events, moves historically into his or her past to recover and reconstitute origins, and imagines and creates possible directions for his or her future. Based on the sharing of autobiographical accounts with others who strive for similar understanding, the curriculum becomes a reconceiving of one's perspective on life. It also becomes a social process whereby individuals come to a greater understanding of themselves, others, and the world through mutual reconceptualisation. (p. 33)

As far back as 2007, Hickey and Austin (2007, cited in Starr 2010, p. 3) stated that autoethnography is generally understood as providing for the critical engagement of the self as it has been socially constructed, reconstructed and deconstructed. Thus, autoethnography constructs a self-narrative where the purpose is to reflexively critique the situatedness of the self-concerning others in a social setting by providing a holistic personal view of the process and experiences regarding oneself or one's interactions with others. An autoethnographic study is reality-based, in so far that conventional evaluation standards of validity, reliability and objectivity are considered from a more constructivist perspective (Starr 2010, p. 3). Therefore, autoethnography speaks to the reality and importance of a situation by extracting rich details

essential to the authenticity of the study. Autoethnography is a style of autobiographical writing combined with qualitative research that explores an individual's unique life experiences concerning social and cultural institutions (Custer 2014, p. 1). Therefore, autoethnography is not just a way of knowing; it is a way of being involved in the world consciously, emotionally, cognitively and reflexively.

This discussion, therefore, brings us to the second aspect of this method, namely the narrative aspect. As pointed out by Kyratzis and Green (1997):

[...] narrative research entails a double narrative process, one that includes the narratives generated by those participating in the research, and one that represents the voice of the researcher as a narrator of those narratives. (p. 17)

The Educational Psychology Subject Group members and the research team at AUTHer have provided these reflections regarding the Six Bricks® and LEGO® initiatives that have been implemented in various educational and community environments. These reflective dialogues and perceptions have therefore been set to paper in a manner that brings these stories, experiences and actions to light. Stories should be 'thinking tools', stimulating the reader in their own creative and imaginative internal world so that they may produce their own stories, better than the stories heard, and power these stories into reality to change the world.

■ Conclusion

This chapter covered the scope of the LEGO® Six Bricks® story of how it travelled from New Zealand to South Africa and assisted various challenges seen in the South African educational system, such as the lack of adequate teacher training and the lack of suitable teaching methods. This initiative was discussed in its use in education, workplace wellness, mental health and health promotion environments, all of which led to the positive 'noise of fun'.

Every story has an ending. With LEGO® and the specific Six Bricks® initiative there is, fortunately, a very happy ending, with a theoretical framework that embraces the Six Bricks® narrative, enthusiasm, passion and eagerness by all participants, resulting in the wonder of play throughout all ages to promote education and wellness. Underpinning LEGO®'s opinion that play forms an essential part of life, which develops the five fundamental childhood skills namely communication, critical thinking and problem-solving, emotional growth and coping, developing and maintaining fine motor skills and inspiring creativity. These, once learned, must be internalised and harnessed as an adult in creatively and imaginatively approaching life to confront adult challenges and subsequently thrive.

This book will cover topics ranging from the acquisition of micro skills to the teaching of Foundation Phase learners, narrative support of adolescents via career counselling, community engagement regarding health and education and exploring the sustainability of this initiative. All this is done with a simple 90-plus-year-old LEGO® brick (LEGO® Foundation 2022) that has not only survived but has now been resurrected into a 21st-century ‘toy of joy’ for adults and children alike and created a wonderful world of the ‘noise of fun’!

PART 2

**Initiatives in the
South African educational
and health care contexts**

LEGO® Six Bricks® rethinks promoting 21st-century wellness skills for teaching and learning in children

Wanda van der Merwe^{a,b}

^aSchool of Psycho-Social Education,
Faculty of Education, North-West University,
Potchefstroom, South Africa
^bResearch Out of Entity,
Faculty of Education, North-West University,
Potchefstroom, South Africa

Villera le Roux^{a,b}

^aSchool of Psycho-social Education, Subject Group Learner Support,
Faculty of Education, North-West University,
Potchefstroom, South Africa
^bCommunity-based Educational Research (COMBER),
Faculty of Education, North-West University,
Potchefstroom, South Africa

Tarien Breytenbach^{a,b}

^aSchool of Psycho-social Education, Subject Group Educational Psychology,
Faculty of Education, North-West University,
Potchefstroom, South Africa
^bResearch Out of Entities Unit (ROE), North-West University,
Potchefstroom, South Africa

How to cite: Van der Merwe, W, Le Roux, V & Breytenbach, T 2023, 'LEGO® Six Bricks® rethinks promoting 21st-century wellness skills for teaching and learning in children', in L Preston & W van der Merwe (eds.), *Six Bricks®: A path to wellness in the educational and health systems*, AOSIS Books, Cape Town, pp. 23-46. <https://doi.org/10.4102/aosis.2023.BK427.02>

■ Abstract

Forming a base of foundational skills is a must for all individuals; however, the wellness of the individual is an even bigger necessity. To achieve this, the pedagogy of play approach designed around elements of choice, wonder and delight should be present in the environment to effectively function within a micro-learning environment from a very young age. The LEGO® and Six Bricks® initiative is an educational tool that facilitates the play approach within any situation. This chapter will discuss the various activities that can be used with individuals to encourage their development and engage them in 21st-century skills. These include skills such as communication, collaboration, critical thinking and creativity, which are all needed for the wellness of human beings in their environment. The question posed was: How can LEGO® and Six Bricks® activities promote and develop 21st-century skills in children to promote lifelong wellness?

Autoethnography was utilised as a research strategy; hence, data were collected from the best practices of the authors and reported using the theoretical framework of the activity theory (AT).

■ Introduction

The life of work as we know it and the skills needed to perform optimally are drastically changing. Collaboration, problem-solving skills and oral and written communication, with particular emphasis on the pairing of oral and written communication, are in high demand among employers (Rios et al. 2021, n.p.). Research by Rios et al. (2021, n.p) in America shows that these skills are the four most sought-after 21st-century skills found across approximately 142,000 job advertisements. Preparing learners in a simple, static or linear and foreseeable world should no longer be the aim of education in the 21st century (Astuti et al. 2019, p. 1). A shift in skills to (1) prepare people for the dynamic and changeable world, (2) nurture creative behaviour, (3) give freedom for unique individual intelligence and (4) produce innovators should be the attainable goals of education in the 21st century. Undoubtedly, the sooner we start to teach children to think critically, communicate effectively, collaborate and be creative, the better it will support children to adapt to the changing social and working environments in which they must function. Practising and implementing these skills can alleviate several of the stressors that lead to burnout and other mental health issues.

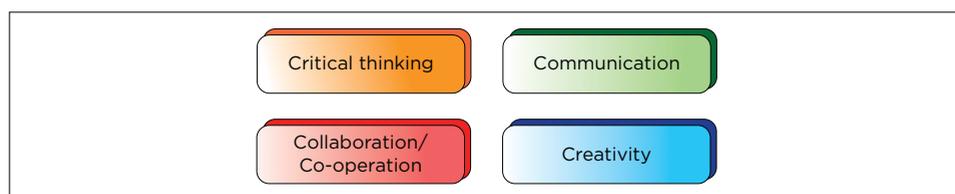
■ Problem statement

If schools and educational institutions want to keep up with the rapid changes and challenges in society, researchers and industries should advocate for the

necessity of and demand for creative and innovative problem-solving skills (Engelhardt & Elbæk 2019). Pioneers in ‘out-of-the-box thinking’ are crucial when considering the world we live in, especially in light of our lived reality during the coronavirus disease 2019 (COVID-19) pandemic. Global crises – including the management of health risks, poverty, natural disasters, climate change, emergencies and struggling economies – depend on novel ideas or solutions and accentuate the urgency for innovative and divergent thinking (Chakraborty 2021; Roberts 2021). A new skillset can assist with innovative and divergent thinking. Soft skills, 21st-century skills, interpersonal skills, people skills, life skills, personal qualities and thinking skills have been identified and deemed necessary to collaborate and work effectively to solve the above-mentioned global problems (Betti, Biderbost & García Domonte 2022, p. 1; Chakraborty 2022, p. 37; Korolyova, Voyakina & Zherebayeva 2021, p. 3). In literature, various categories and identifying criteria are used when discussing soft skills. The criteria most often used in educational settings mention ‘the 4 C’s’ of ‘learning and innovation’, namely critical thinking, communication, collaboration/cooperation and creativity (NE Association 2012). Figure 2.1 illustrates the ‘4 C’s of learning and innovation’, which is the main focus of this chapter (NE Association 2012).

Additional classifying criteria divide soft skills into the ability to use interpersonal skills (quality communication, teamwork, leadership, empathy, partnership and collaboration) and executive functioning skills (metacognitive skills, curiosity, open-mindedness, flexibility, creativity, judgement, problem-solving, systematic thinking, critical thinking and self-management) (Betti et al. 2022; De Freitas & Almendra 2021, p. 255). In short, soft skills are all the skills outside of subject knowledge that a person may need to successfully direct themselves and their teams in the workplace.

Although the necessity for these skills is widely acknowledged, industries nonetheless report that as much as 89% of newly appointed employees do not effectively execute their roles in the workplace because of insufficient soft skills (Janove 2021). The Department of Basic Education (DBE) acknowledges the need for the development of soft skills by incorporating the subject field of Life Orientation or Life Skills into the South African school curriculum to



Source: National Education Association (2012).

FIGURE 2.1: The 4 C’s of learning and innovation that form the core of 21st-century skills.

develop skills for effective living and learning. When one speaks to educators and parents, they regularly acknowledge the urgency to teach skills that would support children to adapt to the fast-paced societal and technological changes we witness daily. Generation Z has also indicated the need to develop interpersonal, professional and technical skills that might support them in the future (Mahesh, Bhat & Suresh 2021, p. 120). However, the following question arises: Why is it that various entities and groups recognise the urgency for the development of soft skills, yet people entering the workforce do not possess these essential qualities?

Our research team's observations and experiences conclude that success in most South African schools is often measured according to mastery of hard skills, including a grasp of academic content and the attainment of the three basic skills in education (reading, writing and arithmetic). The attainment of soft skills is often abandoned or added as an afterthought, as teachers experience many difficulties, including the extensive curriculum and pressure to teach academic content (Marchant et al. 2019). The necessity to integrate soft skills development into the existing curriculum content is clear (Mozgalova et al. 2021). There is an urgent need to support teachers with methods and strategies to imbed and integrate these skills into the curriculum content for effective teaching and learning, especially the 4 C's of learning and innovation.

Recent studies claim that play, game-based learning and improvisation in safe settings are successful methods for transferring interpersonal skills, linguistic skills, and the capability to understand one's personal behaviour and reactions to feelings (Chakraborty 2021; Copple et al. 2014; Kessel 2018; Riley & Nicewicz 2022, p. 102). This should not come as a surprise, as theorists such as Vygotsky and Piaget advocated for natural experimentation by connecting play with the development of speech, cognitive functioning and self-awareness decades ago (Mooney 2013). Play-based learning takes on a holistic approach where children can have fun and enjoy themselves while attaining important soft skills for the future.

Furthermore, play is important for the wellness of children. UNICEF (2022) also highlighted the importance of play for children, suggesting that incorporating play can protect children against extended exposure to stress. Play also helps children to process emotions: allowing them space to play assists them in working through feelings such as pain, fear and loss (UNICEF 2022). If we create societies where children play and learning takes a play-based approach, we will also promote wellness in children. Not only do theorists and researchers advocate for more play, but recent research shows that Generation Z learners prefer more hands-on and social learning experiences (Riley & Nicewicz 2022, p. 98). Unfortunately, a disconnect between play theory and practice is often present in schools.

This may again be because of the focus on curriculum content and the mastery of subject knowledge and minimal time for exploration and creativity. In general, children are deprived of play because of societal changes in the last few decades. A report published in 2012 concluded that play deprivation could be attributed to myriad extracurricular activities, caregivers' aversion to risky play and smaller play spaces because of urbanisation (Whitebread et al. 2012).

The relevance and interconnection of soft skills for future-oriented work settings are apparent and recognised by both educational institutions and the labour market. Thus far, a disconnect exists between the development need and the attainment of actual skills. In addition, literature shows that play-based activities can be applied to develop soft skills, yet children are deprived of play. There is an undeniable urgency for more play and opportunities for children to acquire soft skills. LEGO® and Six Bricks® can be successfully used in classroom settings by getting children to have fun while moving to attain memory and myriad other developmental skills (LEGO Foundation® n.d., p. 4). LEGO® and Six Bricks® activities include open-ended, creative and collaborative ideas and games. The open-endedness of LEGO® and Six Bricks® provides the ideal opportunity for teachers to incorporate games and activities while allowing children to be creative and innovative to attain these crucial soft skills. Consequently, the authors needed to consider how educators can incorporate these activities in the Foundation Phase.

■ Research question

The research question was as follows: How can LEGO® and Six Bricks® activities promote and develop 21st-century skills in children to promote lifelong wellness?

■ Aims and objectives

This chapter aims to explore the researchers' perspectives on teaching and learning to promote and develop 21st-century skills, with a focus on the '4 C's for teaching and innovation'. The authors aim to understand and reflect on LEGO® and Six Bricks® activities to promote the development of 21st-century skills and lifelong wellness in children. Hence, the objectives for the chapter were as follows:

1. To employ an autoethnography - specifically a collaborative autoethnography (CAE) - to guide the aim of the chapter.
2. To explore which LEGO® and Six Bricks® activities can be used to develop 4 C skills in learners and promote wellness.

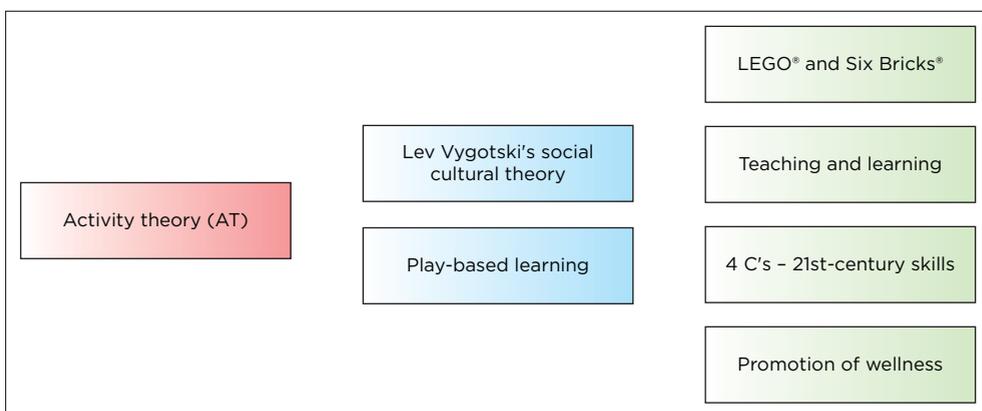
■ The theoretical and conceptual framework

■ Theoretical framework

The theoretical approach is the ‘blueprint’ for a research study, as it functions as a guideline to aid and construct the study and sets out the framework to guide one as to how to approach the entire study (Grant & Osanloo 2014, p. 13). It consists of the selected theory that supports the thinking, planning, actions and practices (Grant & Osanloo 2014, p. 13) in the study. Hence, AT was used as the overarching theory (see ch. 1) – the play-based theory that illustrates the importance of play for the development of children. The focus was on the promotion of child wellness with play-based theory activities and Lev Vygotsky’s socio-cultural theory of cognitive development, which illustrates the importance of social learning and that the 4 C’s are important. Figure 2.2 elucidates the theoretical and conceptual framework.

■ Activity theory

As indicated in Chapter 1, AT was used as the theoretical framework for the chapter. The relationship between the subject (human effectuator) and object (the thing being done) forms the essence of activity; the outcomes of an activity can be envisioned, but there can also be others that are unplanned, which is the focus of AT. Figure 2.3 outlines the focus of this chapter, of AT – that is, educators (teaching and learning) utilising LEGO® and Six Bricks® to promote 21st-century skills, especially the 4 C’s of critical thinking, communication, collaboration/cooperation and creativity – in children.



Source: Conceptualisation of this graphic was done by the authors of this chapter. The illustration was created by Laura Steyn, published here with appropriate permission from Laura Steyn.

FIGURE 2.2: The theoretical and conceptual framework for the chapter.



Source: Conceptualisation of this graphic was done by the authors of this chapter. The illustration was created by Laura Steyn, published here with appropriate permission from Laura Steyn.

FIGURE 2.3: Educators utilising LEGO® and Six Bricks® to promote 21st-century skills, according to activity theory.

■ Vygotsky’s socio-cultural theory of cognitive development

Lev Vygotsky (1896–1934) was a Russian psychologist whose socio-cultural theory emphasised the significance of culture and interaction in the development of cognitive abilities (Akpan et al. 2020, p. 50). Focusing on children’s cognitive development, underscoring the integration of social, cultural and biological elements, and believing that socio-cultural circumstances play a central role in human cognitive development are important elements of the above-mentioned theory (Rahmatirad 2020, p. 23). Emphasis on interaction, collaboration and group work for effective learning is an important aspect of social constructivism (Akpan et al. 2020, p. 50). Aiding a pupil’s learning through the support of teachers, with practices such as scaffolding, is now an essential part of many education systems (Moore 2011). Vygotsky’s concept of the zone of proximal development (ZPD) is, therefore, a fundamental framework integrated into many educational systems (Moore 2011). Also, according to Rahmatirad (2020, p. 237), socio-cultural theory supposes that language can be effortlessly learned by learners who are allowed to socialise and interact with other learners or with the speakers of the language they are learning. The use of social interactions is also important for the development of the 4 C’s as communication is one of the important skills to foster in teaching and learning.

■ Play-based learning

Learning while playing is essential to the focus of play-based learning (Daniels 2018, p. 1). Play-based learning differs from the broader concept of play because learning is not always necessary for an activity to be considered as play. However, it remains fundamentally necessary to the definition of play-based learning (Daniels 2018, p. 1). Two types of play form the primary focus of play-based learning: free play, which is directed by the children themselves, and guided play, where some teacher guidance or involvement is required (Daniels 2018, p. 1). Centre-based learning and goal-oriented framed play are some of the terminologies used to refer to guided play

activities (Daniels 2018, p. 2). One distinction that can be made is who has control over the play activity: if both the teacher and students have some control over the play exercise, for example, the teacher gets involved without taking over or transforming the activity, while sometimes play activities may be teacher-directed, such as games deliberately planned by the teacher (Daniels 2018, p. 2). Zosh et al. (2018, p. 2) argue that children experience joy and have agency in their play contexts. Guided play can assist children in understanding and deriving meaning (Zosh et al. 2018, p. 5). Further, guided play or games can teach effectively by presenting information that is contextualised in ways that make sense to children. When children play, they choose themes, objects and people that are relevant and interesting to them and thus gain meaning (Zosh et al. 2018, p. 5).

Daniels (2018, p. 3) mentioned that game-based strategies can be used to teach recommended academic goals in an engaging and developmentally appropriate way, which is confirmed by supporters of play-based learning. Daniels (2018, p. 3) further emphasises that active teacher involvement in play is essential and that free play alone is often considered insufficient to support academic learning. Important play-based learnings, such as mutual and teacher-directed play activities, have recently been identified in research as play activities that support academic development (Daniels 2018, p. 3). Zosh et al. (2018) provide a multidimensional definition of play:

[...] creates a spectrum of play opportunities from free play through guided play to games and then playful direct instruction (a form of direct instruction with minor playful elements to try to keep children engaged). This more nuanced definition allows us to better define the mechanisms for playful learning - how and why different types of play are related to various types of outcomes. (p. 9)

Therefore, the concepts of play-based learning and Vygotsky's socio-cultural theory of cognitive development (illustrated in Figure 2.1), considering the overarching theory of AT, were defined for the chapter.

■ Conceptual framework

However, Regoniel (2020) mentions that the concepts are based on a literature review in which evidence is still incomplete or theories arrived at are insufficient. Regoniel further says a conceptual framework is a combination of interlinked concepts that convey a comprehensive understanding of a phenomenon. The following concepts are defined for the chapter.

■ LEGO® and Six Bricks®

These concepts are explained and defined in Chapter 1. The use of LEGO® and Six Bricks® is an international initiative to advocate learning with play. The LEGO Foundation® (n.d.) defines Six Bricks® as follows:

Six Bricks® is a hands-on tool for learning. Through fun and short activities with sets of LEGO® DUPLO® bricks in six bright colours, children can practice their memory, movement, creativity, and more. (p. 4)

■ Teaching and learning

A transformation process of knowledge from educators to learners can be considered as a definition of the teaching and learning process. In this process, the educator identifies and determines the learning objectives, acquires teaching resources and executes the teaching and learning strategy (Munna & Kalam 2021, p. 1).

■ The 4 C's of 21st-century skills

A comprehensive set of skills will be required for the challenges of the 21st century, which presupposes individuals' abilities in fundamental subject skills, social and cross-cultural skills, proficiency in languages, and an understanding of the economic and political powers that impact on societies (Joynes, Rossignoli & Fenyiwa Amonoo-Kuofi 2019, p. 12). Hence, the '4 C's' model focuses on communication, collaboration, critical thinking and creativity (Joynes et al. 2019, pp. 12-13).

■ Promotion of wellness

We must acquire ways not only to adapt and cope but also to actively thrive and flourish in the rapid transformations taking place in our society (Edington et al. 2015, p. 249). Play can be used to develop skills and promote wellness. Nijhof et al. (2018, p. 426) highlight the potential to promote physical, social, emotional and cognitive development through play interventions, whether real, digital or a combination of these. Play is important; it supports children's academic and non-academic development and children acquire important skills through play (Dowdall & Popp 2022, p. 89, cited in Skeen et al. 2022). A crucial factor in determining how a child navigates the social world, manages stressful situations, handles their emotions and mentally course-corrects where necessary is the child's ability to self-regulate (Dowdall & Popp as cited in Skeen et al. 2022). Self-regulation has a significant influence on children's long-term mental well-being and their ability to thrive. Play is the best way in which young children can apply and develop self-regulation skills (Dowdall & Popp, cited in Skeen et al. 2022). Therefore, this chapter focuses on the use of LEGO® and Six Bricks® in teaching and learning to promote lifelong wellness by focusing on the development of the 4 C's. If we focus on developing these important skills in teaching and learning, it will assist learners to learn through play and understand themselves and the people around them in a world that is changing. These skills can help young people to grow and flourish.

■ Empirical investigation

■ Qualitative approach

In this research, a qualitative methodology was used. Busetto, Wick and Gumbinger (2020) define a qualitative approach as follows: the study of the nature of phenomena (qualitative data are closely aligned to why people do or do not do certain things) and the data are provided in words rather than numbers. Creswell et al. (2022) support Busetto et al. by defining qualitative research as naturalistic research that focuses on human behaviour. Creswell et al. further state that the visual representation of data is a recent important aspect of qualitative research. In this study, we aimed to visually present our data to characterise 21st-century skills and contribute to the new, important aspect of qualitative research, namely visual representation (Creswell et al. 2022).

Qualitative research also aims to transform the world and explore how and why people act in a certain way (Creswell & Poth 2016). This is also the core idea of AT, the theoretical framework that underpins this research (Hasan & Kazlauskas 2014; Swanberg et al. 2022).

■ Constructivism as the philosophical orientation

In the case of this research, the interpretivist orientation was used. Interpretivism is also referred to as constructivism, which strives to understand how the world works (Creswell & Poth 2018). This orientation focuses on the subjective meanings of people's experiences (Creswell & Poth 2018; Creswell et al. 2022). With constructivism, we focus on how people construct meaning (Creswell et al. 2022). According to Creswell et al., constructivism is based on the following assumptions:

1. To understand human life, it is necessary to look internally and not only externally at people.
2. Every human has a unique social life and therefore constructs unique meanings.
3. When we understand things and learn new things, we can gain insight into situations.
4. The social world affects human behaviour.
5. Human knowledge and the social world are interrelated.

■ Autoethnography as a research strategy

The chapter used autoethnography as a research strategy (see ch. 1). According to O'Hara (2018, p. 14), studying and analysing oneself and personal experiences in the context of influential factors that form oneself,

proposing insight into feasible alternative perspectives and influencing a specific field or body of knowledge are important in autoethnography. Autoethnography involves the researcher as both the observer and participant, the subject and an insider who uses an outsider's view or perspective (O'Hara 2018). The following six steps for the autoethnography were followed, as indicated by O'Hara (2018, pp. 15–16):

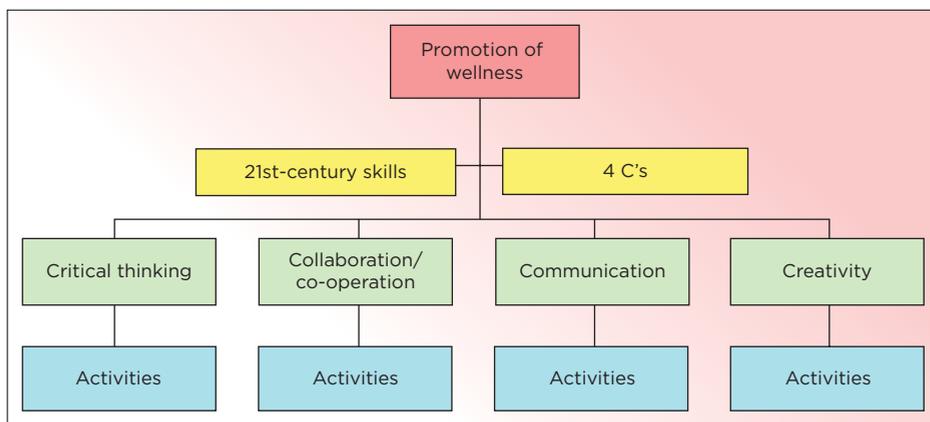
- **Step 1:** The first step of autoethnography is to determine collaboration; this chapter focuses on collaboration through a multiple-author study (O'Hara 2018, p. 15). Three authors collaborated to write this chapter; hence, a CAE, as Roy et al. (2020, n.p.) mention, has self-reflection and collaboration as the two dominant components. Autoethnography as a method of qualitative investigation is strengthened by collaboration among researchers (Roy et al. 2020, n.p.). As was indicated in the problem statement, the authors realised from their experiences that children need to be equipped with a different skill set, and for children to adjust to a changing world, teaching and learning need to focus on the required skills. The incorporation of the 4 C's into teaching and learning can help children with said skill set. The 4 C's – collaboration, creativity, critical thinking and communication – are needed for understanding the world, people and the self. Understanding and being able to function in a changing world would contribute to the promotion of wellness. Therefore, children who understand that needs and feelings can be communicated and who can think critically to solve problems in collaboration with others in a creative manner can contribute to growing and flourishing societies and communities.
- **Step 2:** Ethical aspects were borne in mind and suggested steps in this regard were followed (O'Hara 2018, p. 15). When conducting a qualitative study, it is of the utmost importance to consider ethical issues that might occur during the process (Creswell & Poth 2018). As researchers, we aimed to empower each other in the research process (Creswell et al. 2022). Wood (2019) also highlights that there should not only be respect when it comes to ethics but also beneficence. The Belmont report provides guidelines on ethics and states that there should be justice, autonomy and beneficence (Department of Health, Education and Welfare 1979). In this study, we treated each other with respect, which is in line with autonomy (Department of Health, Education and Welfare 1979; Wood 2019). We tried our best to teach each other new skills that we could also apply in the 21st century while working collaboratively on this book; this benefitted each of us and is therefore in line with beneficence (Kyngäs, Mikkonen & Kääriäinen 2020). We also treated each other as equals: each author gained from this research rather than feeling that something was taken from them

in the process; this is in line with justice (Kyngäs et al. 2020; Department of Health, Education and Welfare 1979; Wood 2019).

- **Step 3:** According to O’Hara (2018, p. 16), Step 3 involves the decision of the theoretical underpinning of the perspective. As discussed in the theoretical and conceptual framework section, AT was used as the overarching framework for the chapter. Further, Vygotsky’s socio-cultural theory for cognitive development and play-based learning was applied.
- **Step 4:** The next step in the process was to collect and gather the data (O’Hara 2018, p. 16).
- **Step 5:** O’Hara (2018, p. 16) indicates that Step 5 entails ‘reflect[ing] on the work and your feelings on the topic’.
- **Step 6:** This step involved writing up the report. O’Hara (2018, p. 16) mentions that autoethnography can be published with added drawings, photographs, poetry or other forms of evocative mediums.

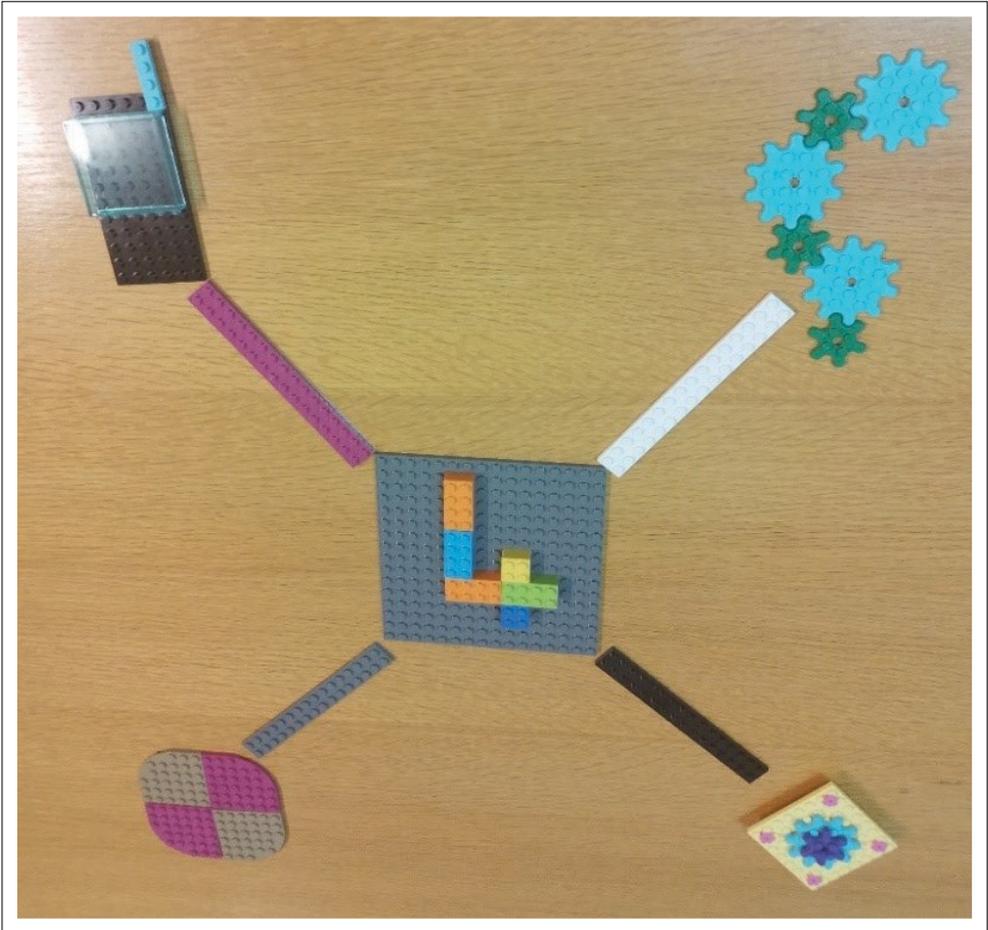
Steps 4–6 are dealt with next, as these steps involved a collaborative brain map of the 4 C’s as an envisioning of how teaching and learning could incorporate the 4 C’s in the 21st-century classroom to promote wellness in children. Figure 2.4 shows the multi-author thinking on the 4 C’s in teaching and learning as part of the data collection and data analysis process.

Reflecting on the process of utilising the 4 C’s in teaching and learning, the following activities were envisioned as a starting point to incorporate activities to develop skills. Figure 2.5 demonstrates the authors’ mind map, developed from reflection on their own experiences of how to incorporate some of the activities of the 4 C’s into teaching and learning.



Source: Conceptualisation of this graphic was done by the authors of this chapter. The illustration was created by Laura Steyn, published here with appropriate permission from Laura Steyn.

FIGURE 2.4: Multi-author thinking on the 4 C’s in teaching and learning as part of the data collection and data analysis process.



Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe.

FIGURE 2.5: The authors' mind map on the 4 C's.

The following activities and reflections are a collaborative data collection and data analysis process of the three authors' reflections and collective ideas.

■ Communication skills

Sharing thoughts, questions, ideas and solutions is important in communication (Chiruguru 2020, p. 10). Important aspects of effective communication are the aptitude to express thoughts clearly and persuasively, both orally and in writing, express views, communicate articulated instructions and motivate others through speech (Joy nes et al. 2019, p. 12).

■ Activity 1: Listen, copy and build

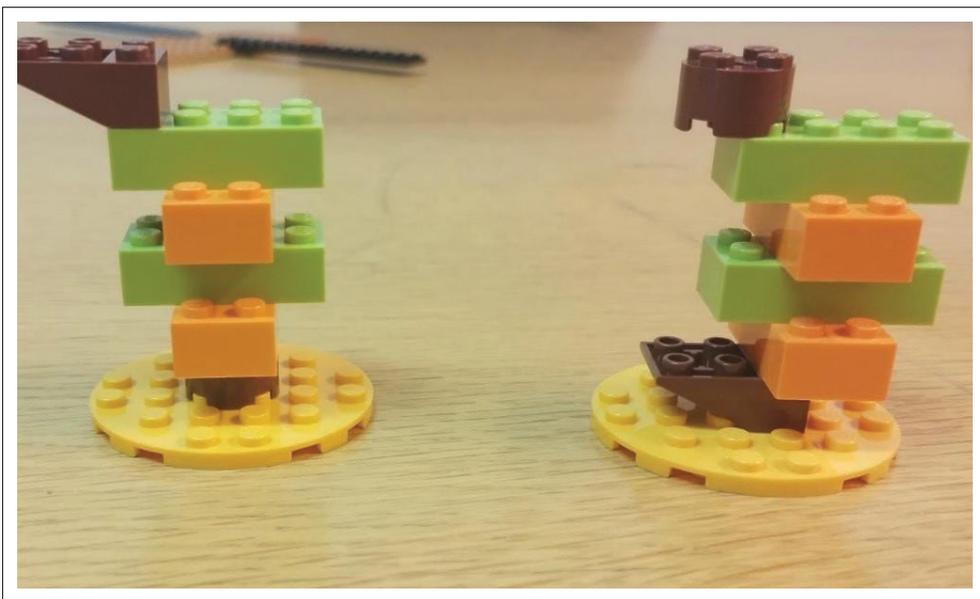
This activity consists of four variants. The same activity can be differentiated to accommodate different levels of difficulty. One learner builds a figure, and while hiding it from another learner, the former learner explains how the figure looks. While the former learner explains the figure, the other learner builds. When they are finished, they compare the figures to determine if the figures are similar. When reflecting, the learner can explain where they went wrong while building the figure. The other learner can reflect on how they could have explained the figure better (Figure 2.6).

□ How it improves communication skills

1. The learners should be able to communicate clearly.
2. The other learner should listen carefully, promoting active listening skills.

□ Skills that can be improved with the activity

1. Visual perception
2. Visual discrimination



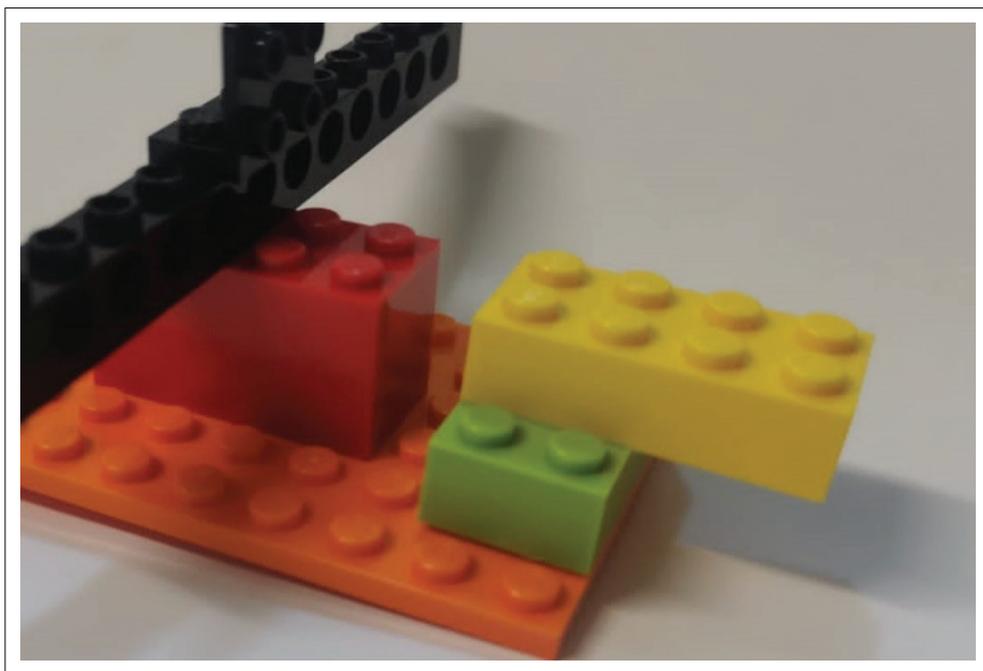
Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe.

FIGURE 2.6: Listen, copy and build the activity.

3. Fine motor skills
4. Position and space
5. Directionality
6. Listening
7. Non-verbal communication
8. Emotional awareness and management
9. Questioning

■ Activity 2: Twitter-Twitter

As many learners as possible can play together; this would make the game more difficult. The first learner builds a figure and hides it from the rest of the group. The learner then whispers the instructions on how to build the figure; the other learners are not allowed to hear. The 'tweet' should be whispered until it reaches the last learner. The last learner should then build the figure. Afterwards, the learners can reflect on the process (Figure 2.7).



Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe.

FIGURE 2.7: Twitter-Twitter activity.

□ How it improves communication skills

1. One should be able to communicate instructions.
2. The other learners should be able to listen carefully.
3. Active listening skills are promoted.

□ Skills that can be improved with the activity

1. Auditory memory
2. Fine motor skills
3. Directionality
4. Auditory sequencing
5. Collaboration
6. Team building
7. Listening skills
8. Attention span
9. Language development
10. Expands vocabulary

□ Collaboration skills

Chiruguru (2020, p. 8) mentions that positioning talent, expertise and smarts to work is important in collaboration and working together to achieve a goal. Joynes et al. (2019, p. 12) claim that the future of collaboration in the workplace involves networked collaboration, positioned far from the physical location of information sources and removed in distance from colleagues. Chiruguru (2020, p. 9) also argues that collaboration generates more knowledge for a larger number of people and yields more holistic results than individual efforts.

■ Activity 3: *Simunye* [We are one]

The group should work together to pass a brick between the learners and get it to the last learner in a circle. The group should hold hands the whole time and are not allowed to let go of each other's hands. To make the activity somewhat more challenging, they can build a figure while following the same principle - they are not allowed to let go of each other's hands.

□ Collaboration skills

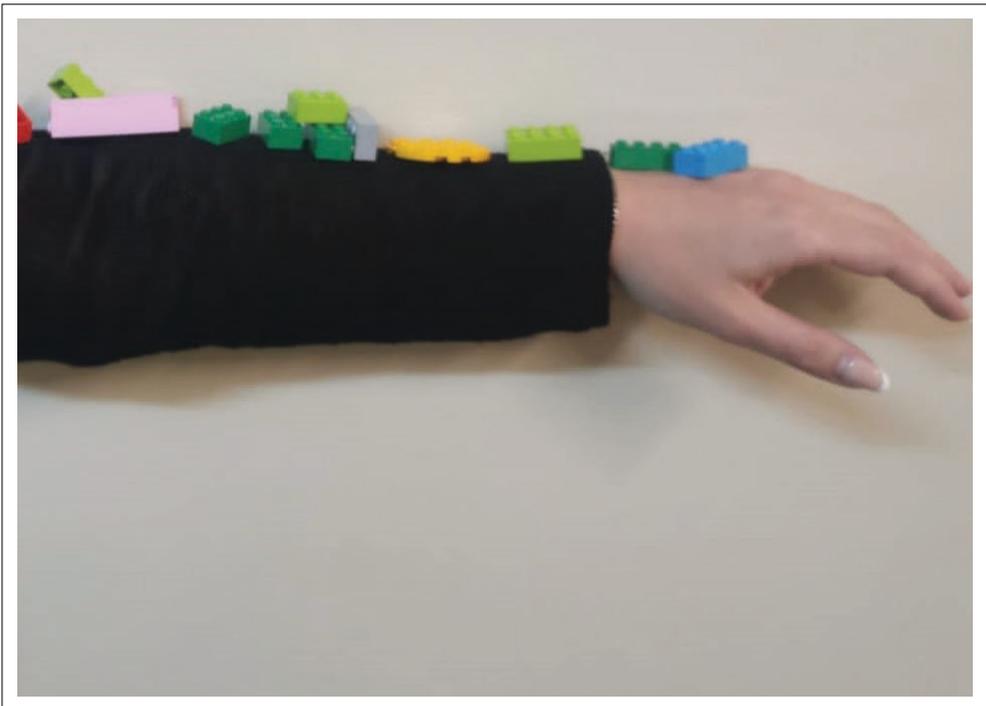
1. Problem-solving
2. Communication
3. Working towards a common goal

□ Skills that can be improved with the activity

1. Gross motor skills
2. Fine motor skills
3. Body awareness
4. Laterality
5. Directionality
6. Communication skills
7. Problem-solving skills
8. Interpersonal skills
9. Knowledge sharing and strategy

■ Activity 4: Teamwork stacking

Two teams compete. One person in each team should stand with their arm straight and the team should stack as many LEGO® bricks as possible on the person's arms. The team that gets the most LEGO® bricks on the member's arm wins (Figure 2.8).



Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe.

FIGURE 2.8: Teamwork stacking.

□ Differentiating the teamwork stacking

The teacher builds on one learner's arms; the other teams compete for time to complete the pattern. The team that completes the activity first wins.

□ Collaboration skills

1. Problem-solving
2. Communication

□ Skills that can be improved with the activity

1. Gross motor skills
2. Body awareness
3. Problem-solving
4. Listening
5. Critical thinking
6. Leadership

□ Critical thinking skills

Learners develop other skills such as a higher level of concentration, deeper analytical abilities and improved thought processing by learning critical thinking in the classroom (Chiruguru 2020, p. 4). Skills such as communication, information literacy and the capability to examine, analyse and constructively evaluate evidence are skills necessary for critical thinking (Joynes et al. 2019, p. 13).

■ Activity 5: LEGO® 'Tick-brick-toe'

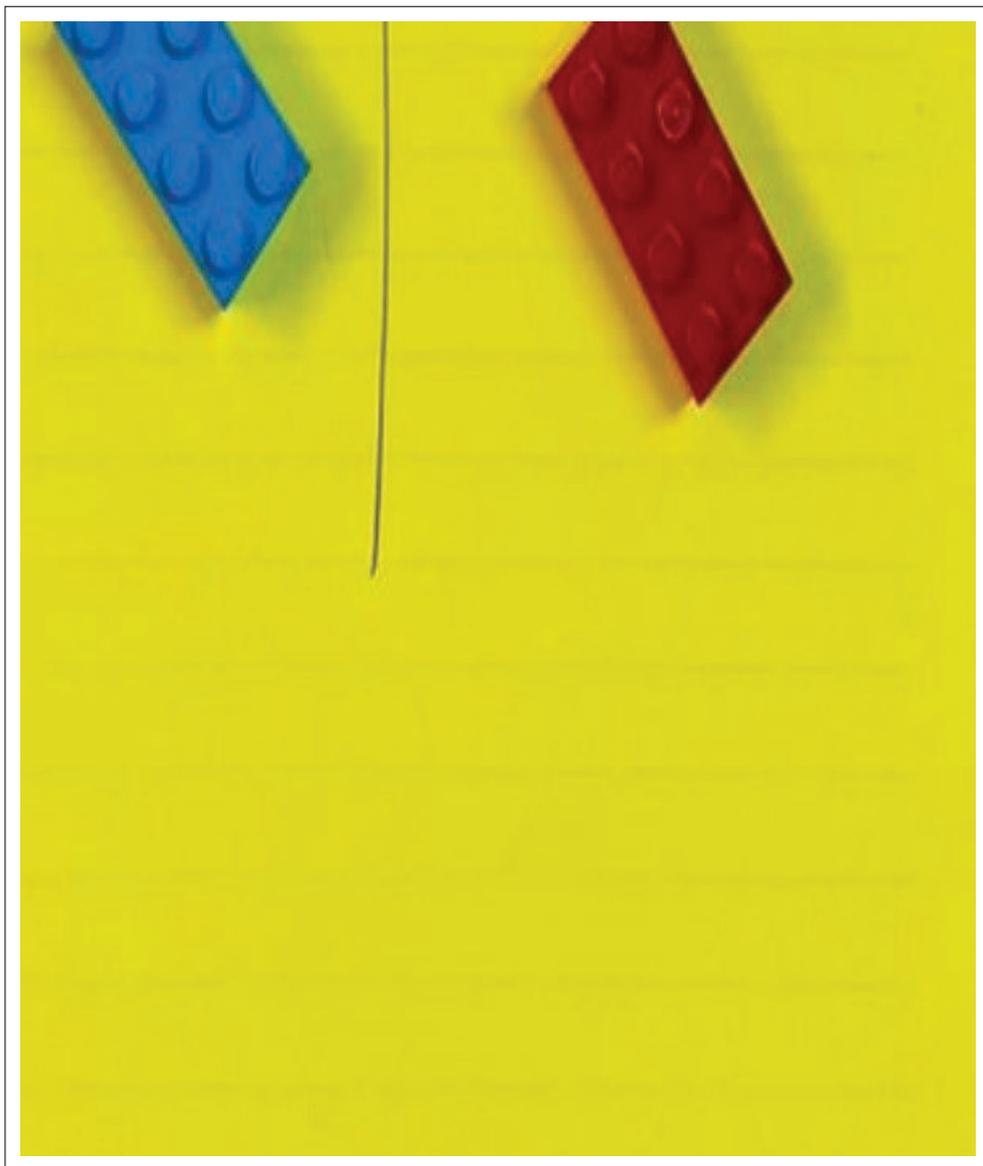
The teacher can draw lines on a piece of paper, and the learners can play 'Tick-tack-toe' with different colours of LEGO® bricks. Figure 2.9 illustrates the LEGO® 'Tick-brick-toe' activity.

□ Critical thinking skills

1. Problem-solving
2. Communication

□ Skills that can be improved with the activity

1. Fine motor skills
2. Problem-solving



Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe.

FIGURE 2.9: LEGO® 'Tick-brick-toe'.

3. Strategy skills
4. Concentration and focus
5. Good sportsmanship
6. Away from devices and screens
7. Patience

■ **Activity 6: LEGO® elimination**

The teacher takes a few LEGO® bricks and gives the learners the same bricks. The teacher explains what the brick does not look like. The learners then go through a process of elimination. In the end, the teacher and learners should have the same brick left.

□ **Critical thinking skills**

1. Problem-solving
2. Communication

□ **Skills that can be improved with the activity**

1. Critical thinking
2. Problem-solving
3. Metacognition
4. Elimination
5. Listening skills
6. Vocabulary knowledge
7. Reasoning skills (encourages thinking processes)

□ **Creative skills**

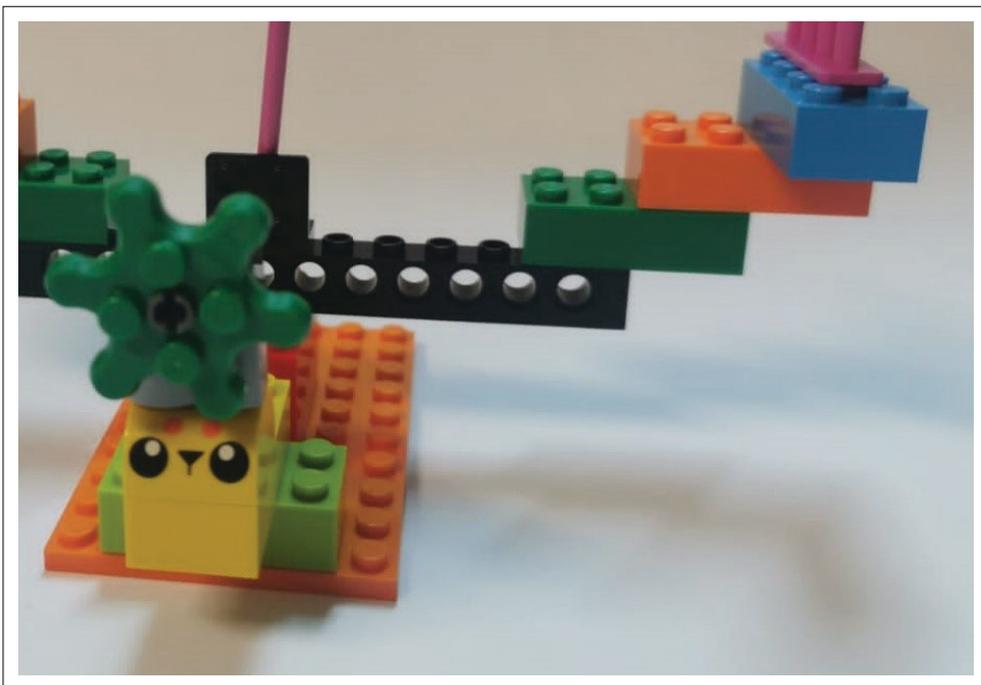
With the rise of technology, endless new possibilities are available, although the traditional ways of creativity are still available (Chiruguru 2020, p. 6). Joynes et al. (2019, p. 13) claim that individuals' capacity for innovation and creativity is increasingly seen as requirements for professional and personal success in the context of global competition and task automation. New approaches to getting things done, innovation and invention through creativity (Chiruguru 2020, p. 6) are important skills.

■ **Activity 7: What is this?**

The teacher begins with a brick. The brick is sent around in the classroom as the children sit. Each learner gets the opportunity to add bricks to the figure. When the last learner adds their brick, the class gets to decide what the figure is and what the function of the figure is, making it open-ended (Figure 2.10).

□ **Creative skills**

1. Problem-solving
2. Communication



Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe.

FIGURE 2.10: What is this?

□ Skills that can be improved with the activity

1. Critical thinking
2. Problem-solving
3. Curiosity
4. Open-mindedness
5. Imagination
6. Metacognition
7. Reasoning skills (encourages thinking processes)
8. Flexibility

■ Activity 8: Invention for a problem in South Africa

The teacher explains to the learners that they should invent any object that can help with a problem we experience in South Africa, for instance, load shedding (Figure 2.11).



Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe.

FIGURE 2.11: Invention for a problem in South Africa: A solar-chargeable hairdryer for load shedding created by multi-authors.

□ Creative skills

1. Critical thinking
2. Innovation

□ Skills that can be improved with the activity

1. Curiosity
2. Imaginative
3. See interesting opportunities
4. Challenging assumptions
5. Problem-solving
6. Metacognition
7. Divergent thinking

■ Reflecting on the research question

Considering the research question stated: What LEGO® and Six Bricks® activities can promote and develop 21st-century skills in children for lifelong wellness?

The chapter affirms the importance of LEGO® and Six Bricks® activities to develop 21st-century skills. The views and reflections of the multi-authors of the LEGO® and Six Bricks® activities highlighted the following important aspects: (1) the endless easy activities that can be done to develop the 4 C's, in teaching and learning, (2) the utilisation of LEGO® and Six Bricks® in the classroom to develop 21st-century skills, (3) the practical use of LEGO® and Six Bricks® in the classroom and (4) promoting lifelong well-being by regularly practising the 4 C's and developing the skills by applying the skills of creativity, collaboration, communication and critical thinking. In this way we develop individuals who can apply the skills in a new workplace, where individuals can maintain themselves and therefore thrive and flourish.

■ Reflection on the process of collaborative autoethnography

It is a known fact that mental health and positive connections with people are deteriorating because of high stress and the high work standards of society. This erratic and dynamic alteration of knowledge and skills place pressing demands on people's ability to regulate themselves and their work. This trend can only predict disaster for the future mental health of society. With the emphasis on the 4 C's soft skills, such as clear communication, creativity, interpersonal skills and emotional intelligence, it is important to build healthy workplace cultures and enhance inclusivity.

The authors of this chapter worked collaboratively and concluded that LEGO® and Six Bricks® are multifunctional tools that can help with the learning process as well as the development of the most important 21st-century skills (Pearsall 2021). When it comes to LEGO® and Six Bricks® activities that can be used to enhance 21st-century skills, the possibilities for activities are endless. The practicality of the use of LEGO® and Six Bricks® is further enhanced by the possibility to differentiate these activities in order the accommodation of various levels of attainment according to South African contexts and the teacher's knowledge of the children in their classes (LEGO Foundation® 2022).

The use of LEGO® and Six Bricks® is also beneficial as it integrates play-based learning with the attainment of necessary soft skills. With the use of these activities, children will be granted the needed time to play while developing skills to communicate effectively, collaborate with their peer

group, build creativity and practice critical thinking. The authors of this chapter conclude that the incorporation of play-based LEGO® and Six Bricks® in teaching and learning can serve as a protector of an individual's overall well-being while also enhancing the development of 21st-century skills.

■ Conclusion

The purpose of the chapter was to explore the use of LEGO® and Six Bricks® for the development of activities focused on the 4 C's to promote wellness in children. The objective of this study was to, from the perspectives of multiple authors with an autoethnography strategy, gain a deeper insight into how the use of LEGO® and Six Bricks® can effectively contribute to – and enhance wellness by developing activities for the 4 C's. The authors reflected on activities to develop the 4 C's. They regard the utilisation of LEGO® and Six Bricks® activities as important in teaching and learning to foster wellness.

The use of Six Bricks® in optimising engaged teaching and learning to promote wellness for Foundation Phase learners

Jaco van der Merwe^{a,b}

^aSchool of Psycho-Social Education,
Faculty of Education, North-West University,
Potchefstroom, South Africa

^bResearch Out of Entity,
Faculty of Education, North-West University,
Potchefstroom, South Africa

■ Abstract

Optimising engaged teaching and learning leading to wellness in the Foundation Phase learner is vital for every child's development. Thus, play-based education is a widely used concept that takes on many forms. One of which is the utilisation of concrete 'manipulables'. These concrete aids could be objects such as LEGO® and DUPLO® bricks, which provide a tangible learning tool that can support learners in the classroom to actively engage. Using these 'manipulables' (Six Bricks® activities) supports the

How to cite: Van der Merwe, J 2023, 'The use of Six Bricks® in optimising engaged teaching and learning to promote wellness for Foundation Phase learners', in L Preston & W van der Merwe (eds.), *Six Bricks®: A path to wellness in the educational and health systems*, AOSIS Books, Cape Town, pp. 47–61. <https://doi.org/10.4102/aosis.2023.BK427.03>

neuro-priming of the child, building a solid learning base for future general wellness. Teachers become facilitators of learning as they empower and support the child in a play-based (Six Bricks® activities) approach to ‘warm-up’ their neurons and parts of their brain associated with the given subject to be taught. Once this base identity becomes cemented, a child has an optimal chance to function, leading to general physical and mental wellness. The research question that is posed is: How can Six Bricks® activities promote active learner engagement through strategic play-based teaching and learning strategies to form a solid base for future wellness? The activity theory framework was considered, with reporting being done from the researchers’ own experiences within a classroom situation.

■ Introduction

Research shows that engaging students in learning and education is a difficult task (Ledertoug & Paarup 2021, p. 443). However, the crux of the matter is that engaging the learner is at the heart of preparing students for the future. Engagement, according to Ledertoug and Paarup (2021, p. 443), can be seen as ensuring that a learner’s academic, personal and social skills remain relevant and meaningful well beyond the context of the learner’s present school life but well into the future where their ‘*today’s*’ learning will meet the demands of the 21st century, promoting a positive base for wellness. This engagement must be achieved at an early age when the learner starts on their academic path and should, in turn, spiral into more support, more communication and better overall academic results. Taking into consideration that Foundation Phase learners are at the beginning of their academic careers, with many more years of education ahead of them (and for some, even a university career), a solid foundation regarding academia and learning must be built from the very beginning (Bal, Bakker & Kallenberg 2006, cited in Ledertoug & Paarup 2021):

[...] engagement in education is important because of its contagiousness: an enthusiastic teacher passes it on to the students, and an engaged student passes it on to his or her peers in a reciprocal or circular process. So let us get it started. (p. 467)

■ Problem statement

There has been a growing concern worldwide regarding the decline in mental health and family well-being (Hussain et al. 2022, pp. 1-2; Ssegonja et al. 2022, pp. 1-2). People have indicated that they feel overwhelmed by the growing costs of living and the detrimental effects that the COVID-19 pandemic has left in its wake (Racine et al. 2020, p. 1). The decline in mental health is not only a concern among adults, but

recent studies have found that there has been a worrying decline in the mental health of primary school children as well (Hussain et al. 2022, p. 2; Ssegonja et al. 2022, pp. 1-3). This decline has impacted the emotional well-being of learners (Meherali et al. 2021, pp. 1-2) and, in turn, their engagement with their academic work as well as their social interactions with peers and educators has been influenced (Wand et al. 2019, p. 136). Hence, their active engagement and participation have been directly influenced. Apart from this disengagement by learners, there is an even further worrying growth in educator disengagement (Lawson & Lawson 2020, pp. 3-4). Educator disengagement contributes to lower academic achievement in learners, as learners experience less support from their educators regarding the clarity of instructions, conceptual explanations and task orientation (Lawson & Lawson 2020, pp. 1-4). In this downward spiralling situation, educator attitudes towards learners are also experienced as negative by the learners, which leads to further learner disengagement (Collie, Granziera & Ma 2018, p. 127), resulting in further educator disengagement; and in this way, the vicious cycle continues to spiral (Nolberto-Quispe, Gonzales-Macavilca & Iraola-Real 2021, pp. 994-995).

■ Aims and objectives

This chapter aims to discuss the use of Six Bricks® to obtain optimised engaged teaching and learning to promote positive wellness in Foundation Phase learners. It further explored how Six Bricks® can be incorporated into existing interventions as a supportive tool and not only as a new intervention on its own. The ease of its incorporation into implemented programmes will be discussed, as it highlighted the versatility of Six Bricks® as a tool that could be utilised to support various governmental projects and interventions. Six Bricks® was used to enhance and support school-based mindfulness initiatives in New Zealand with great success, even though the Ministry of Education was reluctant to incorporate it when it was first proposed. Therefore, the objectives are to explore how one can turn around the general disengagement of learners and educators creating a path to positive engagement in academic aspects through the use of Six Bricks®, which had a direct influence on both learners' and educators' mental health. This will be done by discussing how the use of Six Bricks® as an optimising tool to engage learners in teaching and learning would promote a positive wellness base for everyone, especially Foundation Phase learners. A conceptual grounding will inform the reader of the context before the exploration of the Six Bricks® engagement initiative is discussed.

■ Concept clarification

■ What is engaged teaching and learning and why is it so important?

Engagement is a highly debated topic, as there are various definitions in research (Padgett et al. 2018, pp. 816–817). However, some of the fundamental concepts that are present in most definitions reflect engagement as an interactive process, which can be influenced by the individual's contextual influences, their current environment and finally their cognitive and emotional status (Doa 2020, p. 3; Padgett et al. 2018, p. 817). Engagement is thus seen as a state of being rather than an inherent genetic trait that was predetermined by one's intellectual abilities or medical diagnosis (Padgett et al. 2018, p. 817). This state of being is directly influenced by their current mental health state, as a learner who is experiencing low mental health will present as less engaged (Burke et al. 2021, pp. 31–32).

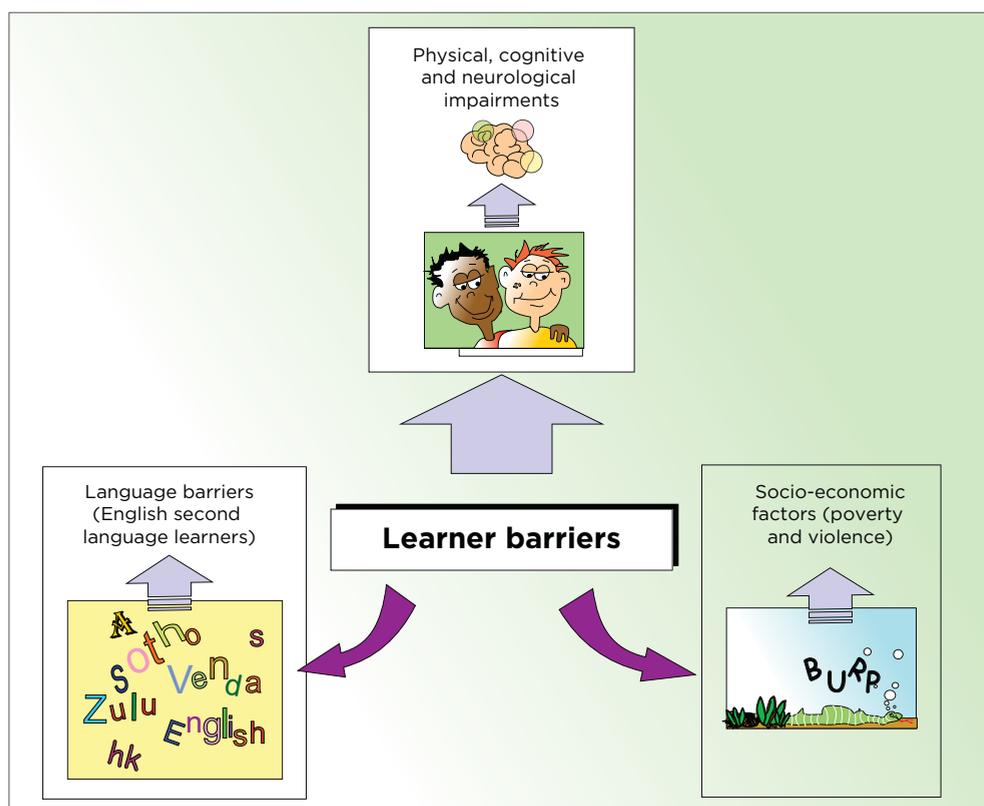
Engaged teaching and learning can be described as the focused and undistracted process of sharing, presenting and acquiring knowledge (Doa 2020, pp. 2–3). Educator engagement focuses on the educator's ability to share their knowledge with their learners, without any form of distraction or prejudice towards their employer (the school or the Department of Basic Education [DBE]) or their learners (Love et al. 2020, p. 48). This can also be influenced by the educator's current mental health state, which can be directly influenced by the learners' behaviour, engagement and the need for them as educators to implement classroom management (Mahlo 2017, pp. 1–2; Petersen 2017, pp. 1–2). On the other hand, learner engagement can be described as the degree to which the learners are invested in the work being taught by the educator, and this is influenced by their behavioural, cognitive and affective engagement at the given time of instruction (Lee et al. 2022, p. 212). Engagement (by both educators and learners) is vital when it comes to academic achievement, mental health, truancy and future dropout rates (Mogavi et al. 2021, p. 5). This is where the researcher proposes that Six Bricks® be utilised as a tool to enhance the engagement of both educators and learners. This playful active engagement of both educators and learners should lead to the learning experience being more positive, which will directly influence their mental health and well-being (Collie et al. 2018, pp. 125–126; Harn & Hsiao 2018, pp. 64–65). This should lead to the development of positive relationships between the educator and the learners as well as among the learners and their peers (Harn 2019, pp. 8–9).

■ Learner engagement

The influences on learner engagement should be one of the key questions, as learner engagement contributes to truancy and dropout rates according

to Mogavi (2021, p. 5), as learners' experiences of the education system are negative, and thus has a direct influence on their mental health (Harn 2019, pp. 8–9). Learner engagement also directly influences knowledge retention, understanding, application and achievement, enhancing metacognition (Doa 2020, p. 3; Moser 2020, p. 10, 12, 17, 100). Learner engagement, therefore, can be seen as a predictor of future achievement or dropout of learners, especially for vulnerable learners (Doa 2020, p. 3). And if we view Erickson's theory on childhood development, these learners are all in the Industry versus Inferiority phase, which states that success and failure during this phase directly influence their self-esteem, self-worth and, therefore, their all-round mental health (Louw & Louw 2021, pp. 26–24).

If learner engagement is such an important predictor of future academic achievement (according to Erickson), the next question which must be posed should be: What are the 'things' that impede learner engagement? These 'things' are referred to as barriers to learning (see Figure 3.1).



Source: Landsberg et al. (2017, p. 19), published with appropriate permissions.

FIGURE 3.1: Barriers that impede learner engagement.

A barrier to learning can be defined as any factor that hinders or creates an obstacle to a learner's natural ability to learn (Donald et al. 2020, p. 445). Barriers to learning have been included in South African educational policies, like the screening, identification, assessment and support (SIAS) document to ensure that all learners are given an equal opportunity to receive a basic education (Preston & Van der Merwe 2021, p. 28). This again leads to the researcher asking: Can Six Bricks® activities be used to support these learners in the classroom context?

■ Educator engagement

Educator engagement can be described as the educator's active involvement in teaching the prescribed curricular work to the learners (Love et al. 2020, p. 48). Educator engagement influences learner engagement, as an educator's enthusiasm regarding the subject could have a positive or negative influence on learner engagement (Abla & Fraumeni 2019, p. 1). Furthermore, the emotional and mental well-being of an educator could be a contributing factor to educator engagement on learner engagement (Abla & Fraumeni 2019, p. 1). If the educator is distracted by systemic influences, personal life crises, health-related problems, learner engagement and attitudes, as well as work-related stresses, the negative impact on the well-being of the educator will naturally influence the educator's engagement (Kengatharan 2020, p. 2).

Therefore, engaged teaching and learning is a reciprocal interaction between educators and learners, whereby both can contribute to or impact the other's level of engagement (Collie et al. 2018, p. 125; Kengatharan 2020, p. 2). How do we practice engaged teaching and learning in an ever-intrusive and distracted world? The answers can be found in the interactive and playful activities that Six Bricks® can provide (Matangira 2022).

To support this idea, the researcher will share his observations and experiences during his time as an educational psychologist in New Zealand, where the Ministry of Education (MoE) started a mindfulness campaign in all schools, whereafter LEGO®-based and Six Bricks® activities were incorporated to support the development of mindfulness and engaged learning in the classrooms. This was to highlight how the Six Bricks® activities could be adapted and used as a tool to enhance and support the MoE's vision and current mindfulness project and not reinvent the wheel with a new programme.

■ Mindfulness practices

Mindfulness has been described by the World Health Organization (WHO) as a perceived state of well-being or welfare (New Zealand Health

Education Association 2019, p. 7). During this perceived state, the individual realises their potential to cope with normal life stressors (New Zealand Health Education Association 2019, pp. 3, 7). Within this ability to cope, the individual remains a contributing member of society, whereby they can learn, live, work and function 'normally' (New Zealand Health Education Association 2019, pp. 3, 7). Hence, the focus on a curriculum that supports the development and enhancement of mental health in learners, ensuring that they are empowered and capable of withstanding the threat of stressors, is essential (New Zealand Health Education Association 2019, p. 3).

Mindfulness practices have been utilised in a variety of settings to enhance the mental health of individuals (Loucks et al. 2022, pp. 1-2). During the COVID-19 pandemic, the spotlight fell on educators' and learners' mental health, as there was a direct decline in their mental health and well-being (Meherali et al. 2021, pp. 1-3). There is a direct link between mindfulness and mental health, and between mental health and engagement (Keng, Smoski & Robins 2011; Loucks et al. 2022, pp. 1-2). Hence, the researcher's interest in utilising mindfulness practices to enhance engaged learning practices. During his time in New Zealand, the researcher experienced mindfulness programmes in schools along with social skill-building programmes that were introduced into all New Zealand schools called Positive Behaviours for Learning (PB4L) (Rohan 2017, pp. 1-4). Here, the MoE sought to improve mental health in schools, whereby mindfulness techniques were taught to learners to support them in coping and developing positive mental health (New Zealand Health Education Association 2019, p. 20; Rohan 2017, pp. 1-4). But in isolation, having a mindfulness approach to support the positive mental health development in learners, without a school-wide intervention to curb stress-inducing situations, such as bullying, emotional, physical or cyber, could be seen as a 'skill and drill' approach to putting a 'band-aid over a bullet wound' (New Zealand Health Education Association 2019, p. 20).

If mindfulness is introduced into schools to gloss over the bigger social problems, then it will fail (New Zealand Health Education Association 2019, p. 20). However, when combined with a school-based or systemic approach, whereby mental health development is supported not only to cope with stressors but to negate future stressors from occurring, the impact of the programme should be more effective (New Zealand Health Education Association 2019, p. 20). This is exactly what the New Zealand MoE sought to do by introducing both mindfulness practices and PB4L into schools. This intrigued the researcher, as the MoE saw the academic impacts and benefits that mental health holds to enhance learning in schools (Rohan 2017, pp. 1-4). It was then suggested that to create an optimal situation for mindfulness, a mind shift had to be made to accommodate a situational

environment that was conducive to the elements of mindfulness. One of the aspects explored was to create an environment of fun and play, especially for the younger learners. This in turn led the system to look at a play-based approach to education.

The researcher, therefore, posed the question: ‘How could a play-based approach in the Foundation Phase be introduced utilising Six Bricks® to cultivate an environment for both mindfulness and social skills development?’ To further add to that question: How do we structure it to increase the sustainable development and enhancement of mindfulness practices in classrooms to enhance both educator and learner engagement without it becoming more work?

In other words, instead of having two separate approaches, was there a method that supported the development of both mindfulness and social skills development in one approach? This brought the researcher to a play-based, tactile and age-appropriate therapeutic intervention called LEGO®-based therapy (LBT). Therefore, LBT was used to initially support this mindfulness approach to enhance learners’ mental health, and later on, Six Bricks® activities were introduced in classrooms to enhance both educator and learner engagement and mental health.

■ LEGO®-based therapy

Daniel B Legoff is a licensed paediatric neuropsychologist, and the creator and founder of LBT (LEGO® therapy.com, 2022). Legoff et al. (2014, pp. 27-29) mention that LBT was designed as an intervention to develop and enhance social skills in children with autism spectrum disorder (ASD). LEGO®-based therapy was specifically designed to take place in a group setting, as it ‘obliges’ the participants to interact with each other to achieve a common goal (Legoff et al. 2014, pp. 27-29). This common goal is the completion of a chosen LEGO® set (Legoff et al., 2014, pp. 27-29). This intervention further motivates and develops social and linguistic skills in children with ASD (Legoff et al. 2014, pp. 27-29). This is done by focusing on their interests and enhancing social play abilities between children with ASD and their peers to maintain and make friendships (Legoff et al. 2014, pp. 27-29; Levy & Dunsmuir 2021, p. 59). This highlights the importance of the group dynamic, as one cannot interact socially by oneself.

However, Levy and Dunsmuir (2021, p. 59) further highlight that ‘forced social interactions’ or the group therapy setting on its own will not develop social skills in learners with ASD. However, if one were to combine the group settings with a structured approach, where you can control certain variables, it increases the probability of developing communication and social skills in children with ASD (Levy & Dunsmuir 2021, p. 59). In other

words, children with ASD should be encouraged to improve their communication and social skills by working together to create LEGO® models during therapy sessions (Levy & Dunsmuir 2021, p. 59). This approach will assist children with ASD to practice, develop and enhance their social skills, as the following aspects are addressed during LBT sessions: joint attention, turn-taking and sharing all form part of the therapeutic approach, as there is a focus on the role and task division (Legoff et al. 2014:37–45). The main roles are: ‘manager’, ‘supplier’ and ‘builder’, and each role has a certain set of rules to follow, leading to specific interactions and social skills development to ensure that the common goal and task completion are possible (Legoff et al. 2014, pp. 37–45).

In considering this approach with children with ASD, the researcher believed that LBT could be utilised to support the development and enhancement of social skills in all children and learners who have underdeveloped social skills. These skills include equitable involvement and shared problem-solving, which are needed to build good social relationships (Levy & Dunsmuir 2020, p. 58).

■ Six Bricks®

Six Bricks® was originally developed in South Africa by Brent Hutcheson to support the academic development of young learners. The activities were designed to be implemented in short bursts by an educator with his or her entire class. Six Bricks® focuses on the concept of LEGO® to inspire creative thinking and follows a play-based initiative, focused on having learners move around, using six DUPLO® bricks of different colours to ignite their tactile senses as they follow instructions given to them by their educator or peers (Harn 2018, p. 1; Rillo 2015). Six Bricks® shares many fundamental core components with LBT regarding social skills development because of the social interactive core of its activities (Hutcheson 2022).

Examples of activities include building towers using the six bricks provided, throwing the DUPLO® bricks and catching them, balancing the bricks on your head and tapping them together to copy a sound pattern. Other activities that utilise higher-order thinking, include learners standing back-to-back. Where one learner tries to describe what they are building to their friend who needs to try and copy them by following verbal instructions. Six Bricks® focuses on improving a child’s language skills, problem-solving, collaboration, emotional regulation and mediation (Care for Education 2022).

Initially, when Brent Hutcheson started the Six Bricks® concept, it was largely used in the educational context to support learners with academic learning development (B Hutcheson, pers. comm., 11 February 2018).

There was an initial focus on language and Mathematics learning through verbal descriptions of activities for language development, and adding and subtracting bricks for mathematic development (Harn 2018, p. 1).

However, in recent years, Six Bricks® has been used to promote positive communication, relationships and interpersonal cohesion among organisational teams (Nikkibush.com 2022). At its core, Six Bricks® involves assigning tasks, executive function development, problem-solving, sharing and providing feedback in the form of reflection (Harn & Hsiao 2018, p. 1). Highlighting the limitless potential that Six Bricks® poses for people of all ages, especially in a schooling environment which has both children (learners) and adults (teachers).

■ A short history of the interventions implemented in the New Zealand context

The researcher will now give a brief history of the intervention strategies implemented in the New Zealand context and how Six Bricks® was adapted to support MoE strategies currently running at the time. The researcher gained a lot of insight and knowledge from the intervention strategy he implemented in New Zealand, especially on how to find a foothold in schools and provincial and national rollout strategies. Furthermore, the researcher gained insights regarding LBT and Six Bricks® effectiveness in enhancing mental health in schools as part of a school-based intervention. With this new-found knowledge and inspiration, he wanted to bring the strategies back and implement them within the South African education system to promote active and engaged learning.

The term ‘active and engaged learning’ is used to describe this state of being ‘present’ in class (Kumar 2021, pp. 49–51). Virginia Satir has been credited as one of the first people to speak about being present; this was, of course, within a therapeutic context, where there are no distractions and where you can engage with a client on a deeper level (Robinson 2019, p. 170). This description of being present in class, resonated with educators as they liked the positive way it described what they truly wanted from their learners.

This state of being present has also been adopted by mindfulness practices, practised widely in education settings of first-world countries such as New Zealand (Education Gazette Editors 2020). Mindfulness relates to engagement, as both are referred to as states of undistracted being (Kumar 2021, pp. 49–51; Erwin, Robinson & Aveta 2017, p. 2). It is in this state, where there are no distractions from past or future events or anxieties, that learners are focused on their current task and fully

committed to the here and now (Erwin et al. 2017, pp. 2-3; Robinson 2019, p. 170).

In this context, if a learner is focused within the classroom and mindfully busy with learning activities, they would be seen as being 'present' or attending to their current learning task without distractions (Erwin et al. 2017, p. 1).

Utilising the New Zealand MoE's vision of incorporating mindfulness practices into the education system, the researcher introduced a play-based intervention, called Six Bricks®, within the New Zealand MoE's mindfulness learning environment and vision. Having learners 'present, focused, and mindful' in class is linked directly with one of the main concerns for New Zealand educators. All these correlated with the descriptions of what Six Bricks® activities were trying to achieve and promote in learners (Rillo 2015).

Another aspect that was evident with New Zealand educators, which they vocalised, was that they were exhausted by the amount of work they needed to do during teaching time with learners who seemed to be aloof, distracted and disruptive. This was evident and even supported in the many behavioural case referrals made by New Zealand educators to the MoE Bay of Plenty (BoP) offices where the researcher was based as an educational psychologist. This highlighted the strain it placed on New Zealand educators' mental health and wellness, as dealing with difficult learners daily affected their mental well-being. Another concern, communicated by the educators, which could be said to be the opposite, was that learners tended to sit placidly, with limited participation or engagement, or ask little to no questions about the work. This led New Zealand educators to question their teaching methods in relation to their students' enjoyment of their classes, again placing strain on their mental wellness and well-being. Thus, if they could have learners actively engaging in an interactive, energetic and 'fun' way, that should meet both these needs, and this is where the Six Bricks® activities were seen as vital.

Reflecting on the researcher's interactions with educators from New Zealand (and now also from South African educators), this placid, motionless and almost lifeless classroom seemed to be a 'universal' concern. This led to the original systemic intervention within the New Zealand BoP called the 'BRICKS club'. As you will read in the section 'The original New Zealand Bricks club Bay of Plenty', these clubs focused on enhancing learners' ability to cope in school and enhance their mental well-being. These clubs paved the way for Six Bricks® to be utilised in classrooms to enhance and promote engaged teaching in both the learners and the educators, which directly influenced their perceived mental wellness and well-being.

■ The original New Zealand BRICKS club, Bay of Plenty

The original BRICKS club started with learners receiving an adjusted version of LBT called 'BRICKS club', as LBT is trademarked. The focus rested on supporting learners to develop social skills through a mindfulness approach. The original design followed the basic outlines of LBT and identified learners were selected to participate in the intervention. Resource teachers for learning and behaviour (RTLB) were trained in this technique to implement the initiative during a dedicated period in the learners' school day, three times a week.

The RTLB would focus on developing social skills to support academic and classroom engagement among learners. This was done through the utilisation of mindfulness practices and reflective processes at the end of each session. This aimed to guide learners in seeing how what they learned in these sessions could be transferred into the classroom to try and limit their behavioural outbursts or impulsive behaviours. This initial model did differ from the Six Bricks® model, which was implemented after the initial BRICKS club programme. The original BRICKS club was the genesis of the programme currently still being implemented in New Zealand. The original idea was to build 'the good citizen' and ensure that learners can actively engage in class through a play-based mindfulness approach. The first six months of the original BRICKS club developed at a steady pace throughout the two pilot towns, Rotorua and Taupo. As more and more schools expressed interest in the intervention, the programme started to attract interest from other regions outside the BoP. Other regions' MoE staff members requested to attend training sessions to enable them to implement the programme in schools within their regions.

The popularity of the intervention was because of a decline in referrals for behavioural cases within Rotorua and Taupo. This drew the attention of senior management within our regional MoE office, as well as the national MoE office. The original BRICKS club was a great model, and it did have proven success, but it was not without its faults and limitations.

Some limitations were that children only received the intervention two-three times per week. They would need an allocated time during their school day to receive this intervention and this meant missing out on the curriculum during class time. Thus, Arthur Manarangi (the researcher's supervisor at the BoP MoE) and the researcher began thinking about how to improve on these limitations. This brought them to Six Bricks®.

■ Six Bricks® activities within the New Zealand contexts and replicated in South Africa to bring change in the classroom

After the success of the initial BRICKS clubs, the idea for this intervention to be provided to learners daily, within the classroom context, began to develop. With a new mindset, Arthur and the researcher started discussing what this new intervention strategy could look like. But first, they needed to identify core criteria that the intervention would need to meet. The main criteria still applied: (1) educators needed a practical tool to develop social skills in learners, and (2) it needed to be a fun, play-based and movement-based intervention.

It was also noted that there needed to be a balance between the playful intervention strategy and formal education during teaching times. Ideal as it might be for the learners, we cannot simply play our way through the curriculum; there has to be some form of formal teaching as well (Ministry of Education New Zealand 2021). However, the play-based nature of the approach was needed to support learners to become more mindful of the work they were doing at present. Hence the play-based task or activity was needed to support learners to ‘forget’ about everyday distractions and help them to become more focused in class.

Thus, the initiative needed to intermittently utilise short bursts of interactive Six Bricks® activities and a movement-based structure. This will excite and engage learners in the classroom, followed by formal teaching activities and tasks. The importance of combining a mindfulness approach and movement supported enhanced blood flow, increased oxygen to the brain and assisted in the priming of neural pathways (Chiang 2017, p. 17). Finally, the enjoyment of the Six Bricks® activities released endorphins in the brain leading to a perceived positive learning experience and an improved mental wellness state (Hussain & Khandekar 2019, p. 777). This, in theory, should lead to learners being more focused during academic teaching time and classroom activities. This focused learner could then be seen as an active and engaged individual in a learning environment (Erwin et al. 2017, p. 1). This is where the BoP Six Bricks® initiative started, which the researcher has since brought back to South Africa and replicated in the North West province with similar results.

■ Activity theory

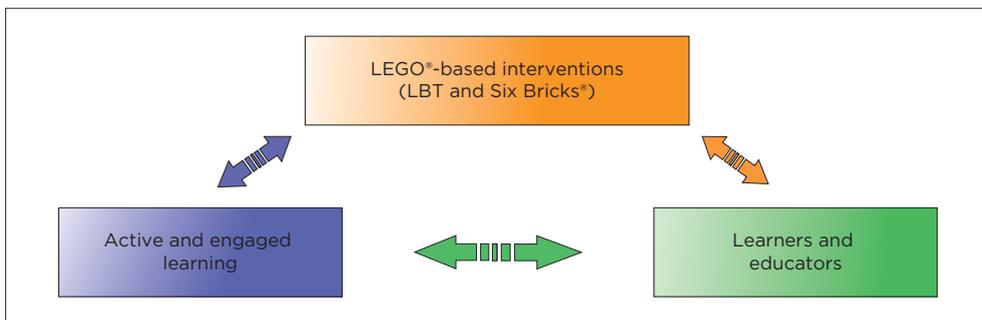
This entire initiative and intervention process is rooted in activity theory (AT), as LEGO®-based interventions were the activities that were

implemented within the two different communities to enhance mental health and wellness through active and engaged learning in both educators and learners.

As discussed in Chapter 1, AT is an umbrella term that can be defined as a human response to stimuli to bring about change (Rocha 2022, p. 13). According to Mwalongo (2016, p. 20), there is a triad of variables that influence each other when implementing an AT approach to research (see Figure 3.2). This triad is used to help explain human activities (Gerdera & Williams 2016, p. 20). These variables are the subject, the object and the artefact (Gerdera & Williams 2016, p. 20). Within this chapter, the subjects were the learners and the educators, the artefacts were the LEGO®-based interventions and the object is the behaviour that needed to be changed or improved (active engagement with learning and mental health) (see Figure 3.2).

Activity theory was used as a theoretical framework for several reasons. Firstly, the framework fits in this chapter because the learning process involved the use of LEGO®-based interventions to facilitate and promote active engagement with learning and the enhancement of mental wellness in both educators and learners. Through the lens of AT, learner and teacher perceptions of their active engagement and enhancement of their mental health are key factors that underpin this chapter’s focus. As previously stated, if learners participate more during academic teaching times, then their active engagement will be enhanced. And if they are enjoying the learning activities and they deem learning to be fun, then their mental health and wellness will also be improved, making these measurable, observable variables.

The same can be stated regarding educators: if educators’ perceptions regarding the active engagement of learners in their classrooms can be observed (if they see any changes or improvements), then one can deduce



Source: Adapted from Gerdera and Williams (2016, p. 20).
Key: LBT, LEGO®-based therapy.

FIGURE 3.2: Visual representation of the triad to have learners actively engaging with their learning.

that the learner's active engagement with their learning has improved. If educators spend less time reprimanding learners and implementing classroom management strategies and thus spend more time teaching and enjoying their work, then it can be seen as an improvement in their mental health. This, in turn, will also influence teacher engagement in class, which could again enhance the learning of their students.

However, before one can implement an activity theoretical approach, some key aspects first need to be handled. For this chapter, the following steps needed to be carried out. Firstly, the educators (subjects) needed to be trained to use the tool (artefact) and to be supported to change the behaviour (object) of the learners (subject). The educators in turn had to implement the activities with the learners to support the development of skills needed for active engagement with learning and to bring about the change in the learners' behaviour.

■ Conclusion

In conclusion, LEGO®-based interventions served as a successful tool to enhance mental health and wellness in both educators and learners by enhancing active and engaged learning in classrooms. The active engagement of learners in the classroom enhanced their mental health as they enjoyed classroom activities and their learning enhanced, leading to positive mental health and well-being. Educators' mental health enhanced as they spent less time reprimanding learners and managing their classroom in terms of learner behaviours and could spend more time teaching and positively interacting with learners. Finally, when combining the LEGO®-based activities with reflective mindfulness activities, both educators' and learners' mental health improved as they became more present in the classroom and focused on the tasks at hand. The initiative was implemented in both a developed and a developing country (New Zealand and South Africa, respectively) and different types of classrooms and education systems with success, highlighting the universality of the LEGO®-based interventions and activities.

Encompassing LEGO® and Six Bricks® in traditional African games as a psychoeducational intervention

Wanda van der Merwe^{a,b}

^aSchool of Psycho-Social Education,
Faculty of Education, North-West University,
Potchefstroom, South Africa

^bResearch Out of Entity,
Faculty of Education, North-West University,
Potchefstroom, South Africa

■ Abstract

Play is an important developmental tool for children to holistically reach critical cognitive, emotional, behavioural and psychical milestones. Play can be valuable in assisting counsellors with the wellness of children, as children are often exposed to various stressors within their environment. The utilisation of indigenous knowledge systems, especially traditional African games, is an asset in the South African context. The chapter will explore the use of Six Bricks® and LEGO® in traditional games in an attempt to psychoeducate children on wellness in a counselling setting. To explore

How to cite: Van der Merwe, W 2023, 'Encompassing LEGO® and Six Bricks® in traditional African games as a psychoeducational intervention', in L Preston & W van der Merwe (eds.), *Six Bricks®: A path to wellness in the educational and health systems*, AOSIS Books, Cape Town, pp. 63-92. <https://doi.org/10.4102/aosis.2023.BK427.04>

the use of traditional African games using LEGO® and Six Bricks®, the research question for this chapter will therefore be: How can LEGO® and Six Bricks® in conjunction with playing traditional African games, be utilised to psychoeducate children on mental health? Data were collected from the literature on traditional African games and were then used as the framework to critically reflect on the usefulness of traditional African games and LEGO® and Six Bricks® to psychoeducate children on wellness in a counselling setting, as seen through the lens of the activity theory.

■ Introduction

Using an intervention strategy such as playing assists children to develop cognitively, physically, emotionally, socially and morally. Play impacts the holistic development of children. De Witt (2017, p. 138) indicates that the physical development and sensorimotor development of young children are developed through activities such as throwing balls, climbing, running and constructive play. She further indicated that children's cognitive development is impacted by an understanding of concepts developed through play (De Witt 2017, p. 138). Louw and Louw (2022, p. 231) affirm that play assists children in practising new skills and that play aids children in discovering and exploring. Furthermore, play assists the child emotionally to feel good about themselves, as there is no right or wrong way to play (De Witt 2017, p. 138). Additionally, play activities support the emotional development of a child as the expression of emotions and the understanding of emotions are developed through play (De Witt 2017, p. 139). Social development is impacted by playing together and learning together through play (De Witt 2017, p. 139), as empathy is developed and enhanced through the imitation of social roles by putting yourself in somebody else's shoes (De Witt 2017, p. 140). Therefore, the social, cognitive and affective needs of children can be addressed by numerous games that can be modified (Mweli 2019, p. 99). It is clear that the act of playing assists children to develop and grow, and that impacts the children's mental health. Play is one of the most important expressions of children; therefore, play can be used meaningfully in counselling (Koukourikos et al. 2021, p. 293). The counsellor gets on the child's level and speaks the language of the child, the language of play (Koukourikos et al. 2021, p. 293). Subsequently, counsellors can utilise play in a counselling setting. By using play for children to express emotion and feelings in a safe counselling space, the counsellor can assist in the promotion of mental health in children.

South Africa remains a dual economy with one of the highest and most persistent inequality rates in the world (The World Bank 2022). Inequality in wealth, coupled with low intergenerational mobility, means that inequalities are passed down from generation to generation with little

change over time, creating a perpetual poverty cycle (The World Bank 2022). With this situation, South Africa can be considered a resource-scarce country. To ameliorate this situation, we need to tap into indigenous knowledge to assist in creating communities of wellness and care. Therefore, many traditional games can be effective sources into which we can tap, enabling children to play, and while playing, we are instilling various skills that are needed for the promotion of good mental health. Hence, psychoeducational interventions such as traditional games to promote wellness in children are of the utmost importance.

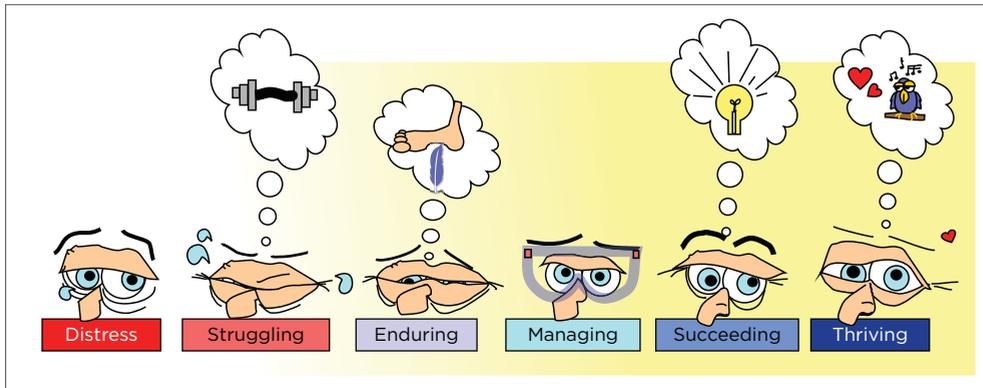
■ Background

■ The importance of psychoeducation to promote health

Numerous problems are being experienced by children, which often impact their mental health. The United Nations Children’s Fund (UNICEF) (2021) reported that the absence of caring responses is impacting the suffering of children and that mental health disorders are the top causes of death, disease and disabilities. UNICEF (2021) further indicated that ‘an estimated 13% of adolescents aged ten- to nineteen-years-old is estimated to live with a diagnosed mental disorder’. Disturbing statements, such as ‘Suicide is the fourth leading cause of death among fifteen- to nineteen-year-olds’ and ‘Every year, almost 46,000 children between the ages of ten- and nineteen-years-old end their own lives’ – about one every eleven minutes – seem to become commonly accepted (UNICEF 2021). In the *Mental State of the World 2021* report (Sapien Labs 2021, p. 14), a report consisting of 223,000 responses from 34 countries in four languages, it was indicated that the biggest challenges with their mental well-being were reported by English-speaking respondents.

The mental health quotient (MHQ) is a scale that automatically provides an individual with a composite mental well-being score (Sapien Labs 2022). The scale provides sub-scores along six dimensions of mental health, namely distressed, struggling, enduring, managing, succeeding and thriving, along with explanations and recommendations (Sapien Labs 2022) (see Figure 4.1).

Further indications from *the Mental State of the World 2021* report (Sapien Labs 2021, p. 14) are that the core Anglosphere countries, with eight out of ten of those countries showing the lowest MHQ scores (MHQ score range from 46 to 63), as well as countries with large English-speaking populations (e.g. South Africa and India) which also have low scores. South Africa ranks at a low score of 46. The *Mental State of the World 2021* report (Sapien Labs 2021, p. 8) shows that the MHQ score is divided into positive



Source: Adapted from Sapien Labs (2021, p. 8) by Laura Steyn, published with suitable permission from Laura Steyn.

FIGURE 4.1: Mental health quotient score scale.

and negative components. If we consider South Africa’s overall score of 46, it indicates that people perceived their mental state at a lower level, indicating that South Africans experience mental health challenges. To further highlight this score, the South African Depression Anxiety Group (SADAG 2021) reported on mental health issues in the South African context during Mental Health Day in 2021. This report carried exceptionally worrying figures regarding the status of mental health in South Africa, such as how one in three South Africans will experience some mental health concerns in their lifetime. From this rather bleak situation, the need arises for effective interventions to support the needs of all individuals, especially children.

To further compound this situation, there is a chronic shortage of mental health workers in the South African context. This results in many individuals’ mental health needs not being met, especially those of children. Table 4.1 illustrates the dire need for mental health workers in South Africa.

When considering South Africa’s MHQ score and the total under-provisioning of qualified mental health workers, one can see that many individual and community mental health needs are not being met, resulting in well-being being severely impacted. Support and interventions for all South Africans are vital as the new generation of children growing up in these environments will most definitely have an impact on the future wellness of communities. Thus, any positive mental health intervention for children or adults alike would be welcomed and appreciated by everyone.

To ameliorate this situation, psychoeducational interventions can assist individuals and communities in the promotion of wellness (Afdal et al. 2022, p. 7). Focusing on the present and teaching individuals or groups how to deal with a problem to reduce stress-related incidents and prevent re-occurrence is the basis of any psychoeducational interventions

TABLE 4.1: The current ratio of psychiatric specialists to the population breakdown per province.

Province	Population	Total psychologists	Ratio to population
Eastern Cape	6,676,590	2	1 : 3,338,295
Free State	2,932,441	4	1 : 733,110
KwaZulu-Natal	11,513,575	35	1 : 328,959
Limpopo	5,926,724	11	1 : 538,793
Mpumalanga	4,743,584	3	1 : 1,581,194
Northern Cape	1,303,047	2	1 : 651,523
North West	4,122,854	41	1 : 100,557
Western cape	7,113,776	99	1 : 71,856

Source: Adapted from StatsSA (n.d.).

(Afdal et al. 2022, p. 7). Psychoeducational interventions are aimed at providing important information related to individual or group challenges, especially when dealing with problems and situations. However, psychoeducational interventions can also be applied to various age groups and educational levels (Afdal et al. 2022, p. 7), providing a flexible and dynamic tool. Furthermore, Kvamme et al. (2022, p. 37) point out that in various settings such as schools, community clinics and hospitals, psychoeducational groups for the youth can be utilised with beneficial results. Therefore, psychoeducational interventions can be utilised to support children with various mental health conditions and promote general wellness.

■ Traditional African games

Considering the needs of South Africa, with its varied cultures, languages and people, we must take into consideration the indigenous knowledge systems which can guide the development and focus of any psychoeducational intervention. This is important, especially when working within the context of the youth in South Africa. We therefore need to deem indigenous knowledge a positive asset that can be explored, developed and utilised. Mweli (2019, p. 95) explains that rich knowledge and skills that have been cherished and used by indigenous people for many years form part of indigenous knowledge systems. Van Wyk (2015) argues that:

Indigenous knowledge is a process of learning and sharing social life, histories, identities, and economic and political practices, unique to each cultural group. (p. 47)

Central to the existence of indigenous and rural communities is the concept of indigenous knowledge systems (Govender & Mutendera 2020, n.p.). Most of these indigenous knowledge systems, because of their multidisciplinary, holistic and systemic nature, have created, evolved and developed universally accepted community practices in agriculture, health care, food production and preparation, education and conservation

management (Govender & Mutendera 2020, n.p.). Furthermore, the development of this indigenous knowledge in the societies where it has developed empowers the community and the individual within the community to make meaning of the world, utilise the knowledge to address local problems and create unique solutions, all of which focus on the specific context (Van Wyk 2015, p. 47).

Taking into consideration the definition of indigenous knowledge, which, as stated previously, addresses local problems and various challenges, it would be prudent to consider psychoeducational interventions, which include indigenous knowledge when children experience challenges with their mental health.

As traditional games are a rich source of indigenous knowledge that can be utilised to promote mental health in children, it is seen as the perfect solution to addressing mental health problems in children within different cultures. Nugraha, Handoyo and Sulistyorini (2018, p. 226) report's findings on the research of traditional games in Indonesia indicate that these traditional game-based learning activities have a significant effect on the learners' social skills, which can be seen to increase by 19% on the pre-test or post-test results. From this research, we should take note that traditional games can be a positive intervention method to consider, based on psychoeducational intervention for children. Additionally, Mweli (2019, p. 99) indicated that traditional games can be facilitated, transferred and expressed in effective education and learning. Nxumalo and Mncube (2019, p. 109) also confirm that indigenous games can be adapted to address modern-day needs. To sum up, Mweli (2019, p. 101) specifies that language development, physical development, healthy habits and critical thinking skills are promoted by playing traditional games. There are various traditional games as South Africa has a rich in-depth knowledge system that is a positive asset for South Africa. This chapter will further elaborate on the two traditional games utilised for the chapter, as many of the games will maybe not be used for the promotion of mental health. However, as indicated by Nxumalo and Mncube (2019, p. 109), indigenous games can be transformed to help with modern-day needs, and for this chapter, the focus was on traditional games to promote mental health as we have a need for resources in mental health. Playing an adapting traditional game that has familiar roots to children will possibly assist mental health workers in creating safe counselling spaces where children will be able to express themselves freely and build on strengths to promote their mental health.

Hence, considering that the chapter utilises traditional games as a positive asset, as a form of psychoeducational intervention to promote wellness, the traditional game can be further adapted for counsellors and used to address the mental health needs of children in South Africa.

■ LEGO®, Six Bricks® and play

The Educational Hub (2019) argues that play has significant cognitive, physical, social and emotional benefits, and play is essential to the well-being of children of all ages. Play is important for children. To stress the importance of play, the following aspects are cited as important elements that are developed with play:

1. Physical and locomotor play is connected to neural maturation and the improvement of motor skills (Louw & Louw 2022, p. 289).
2. Play promotes cognitive development and constructive learning experiences in social relations and skills (Louw & Louw 2022, p. 289).
3. Play helps children's investigative spirit, to find unusual information by discovering the environment (Louw & Louw 2022, p. 289).
4. Language and communication skills are enriched by playing, following rules and negotiating the rules of a game (Louw & Louw 2022, p. 289).
5. The therapeutic value of play is important; Freud and Erikson show that play can help children master their fears and conflicts (Louw & Louw 2022, p. 289).

Therefore, it is clear that play is good for children and promotes learning and development, and in so doing, we are also impacting the mental health of children. Hence, Louw and Louw (2022) emphasise the importance of play by stating:

[...] is a powerful medium through which children learn about the world and themselves. (pp. 385-386)

Whitebread (2017, p. 168) indicated that professionals working in childcare, education and paediatrics should be aware of the importance of children's play, in all its many forms, and how opportunities for playful experiences can be supported in domestic, educational and therapeutic environments. Whitebread (2017, p. 168) further stated that a review of the data on the role of play in mental health suggests that children's natural playfulness may have some extremely important functions for healthy physical and mental development. Play therapy fully meets children's unique developmental needs; it is widely used to deal with emotional and behavioural problems of children (Koukourikos et al. 2021, p. 294). Therefore, counsellors must consider playing in the counselling setting for the promotion of mental health.

As indicated in Chapter 1, LEGO® and Six Bricks® can be used as active tools to promote play-based activities. Therefore, in conclusion, children at play are busy with development and learning. Within the playful environment, the development of holistic skills helps children promote good mental health. Thus, the use of traditional games – a positive asset – can be beneficial as a psychoeducational intervention for counsellors to assist

children in understanding the world and themselves, and this contributes to good mental health.

■ Research question

Bearing in mind the aforementioned background for the study, the following research question was formulated for the chapter: How can LEGO® and Six Bricks® in conjunction with playing traditional African games, be utilised to psychoeducate children on mental health?

■ Aims and objectives

This chapter aims to explore the researcher's perspectives on using LEGO® and Six Bricks® with traditional games to promote mental health in children in a counselling setting. The author aims to understand and reflect on LEGO®, Six Bricks® and traditional games to promote mental health in counselling. Therefore, to explore the use of traditional games (as psychoeducational intervention) to create a safe space where children will feel safe in the sense that games are familiar to them and they will share emotions, and that, in turn, will assist them with better mental health. Six Bricks® and LEGO® are used by counsellors to adjust the game to promote and psychoeducate a child in some mental health aspects. The traditional games are utilised, as these are familiar games to children and assist in creating a safe space for children in a counselling setting. Hence, the objectives for the chapter were as follows:

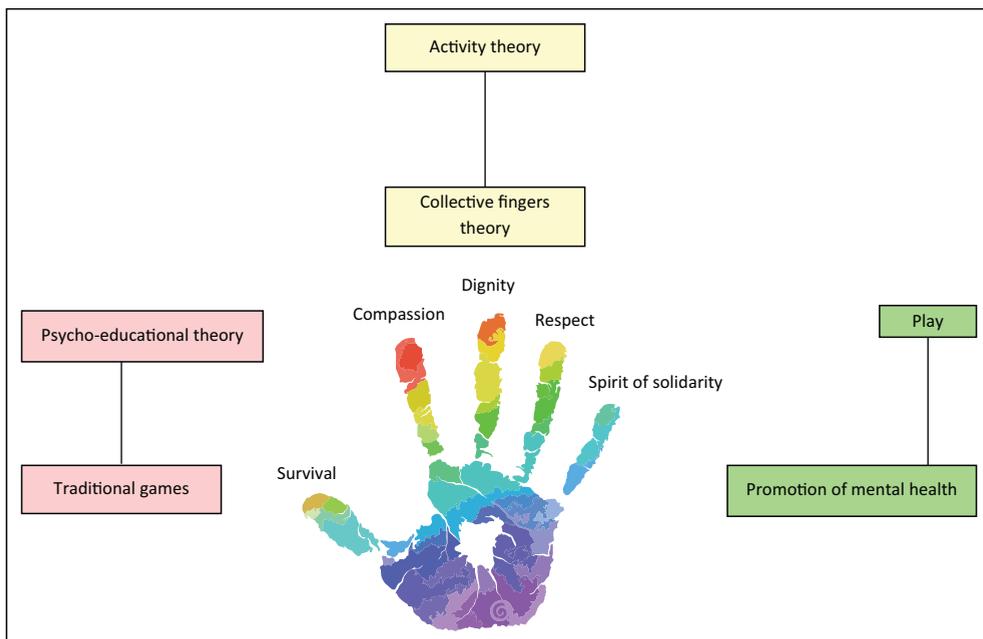
- to employ an autoethnography to guide the aim of the chapter
- to explore what traditional games, according to the research, could possibly be adapted as a psychoeducational intervention for counsellors to promote the mental health of children.

■ The theoretical and conceptual framework for the chapter

■ Theoretical framework

Varpio et al. (2020, p. 990) elucidate that a theoretical framework is developed and incorporates the related concepts and ideas, which are developed from one or more theories that a researcher generates to frame a study. Therefore, Figure 4.2 illustrates the conceptual and theoretical framework generated for the chapter.

The theoretical framework for the study consists of the overarching theory of the activity theory (AT) that was discussed in Chapter 1. Chu, Glad and



Source: Conceptualisation of this graphic was done by the author of this chapter. The illustration was created by Laura Steyn, published here with appropriate permission from Laura Steyn.

FIGURE 4.2: The conceptual and theoretical framework for the chapter.

Wever (2021, p. 3, cited in Kaptelinin & Nardi 2006) stated that the work carried out by psychologists Lev Vygotsky and Sergei Rubinshtein in the 1920s and 1930s, when they sought an understanding of how the complex relationship between the human mind and society manifests in human activities, indicates the conceptual origin of the AT. Engeström (1999, cited in Chu et al. 2021, p. 4) indicated that 'AT has the conceptual and methodological potential to be a pathbreaker in studies that help humans gain control over their artifacts'. Lioutas et al. (2019, p. 3) explain that AT as a subject, having developed a level of motivation, uses the available tools to effectively interact with the object to produce any result or to transform an object into an outcome. Figure 4.3 shows the three elements of the AT as applied in this chapter: the children as the subject, the tool traditional games with LEGO® and Six Bricks®, with the object and the promotion of mental health.

Further, in the chapter, the researcher draws from the Collective Fingers theory of Mbingi and Maree (1995, cited in Molose, Goldman & Thomas 2018, p. 197), explaining that the Collective Fingers theory incorporates the five values of *ubuntu*, namely, survival, compassion, the spirit of solidarity, respect and dignity. Mbingi and Maree (1995, cited in Molose et al. 2018, p. 197) show that the Collective Fingers theory uses the hand as a symbol.



Source: Author's own work, adapted from Hasan and Kazlauskas (2014).

FIGURE 4.3: Activity theory - promotion of mental health of children utilising traditional games with LEGO® and Six Bricks®.

A hand, therefore, perfectly represents the *ubuntu* concept as it requires the cooperation of all fingers and the thumb to function optimally. The Collective Fingers theory implied that although there was little formal education for indigenous people centuries ago, the *ubuntu* philosophy provided traditional education for indigenous people, through which they were socialised to respect each other, be responsible for themselves and others, and co-exist (Ngubane & Makua 2021, n.p.). Mweli (2019, p. 95) argues that South Africa is a multilingual and multicultural society with a rich knowledge base that can be utilised to enhance learners' academic achievements.

■ Conceptual framework

A conceptual framework, according to Maree (2022, p. 81), is a comprehension of the theories, principles and previous research findings that guide the research. Varpio et al. (2020, p. 990) note that the justification for conducting a given study is the conceptual framework. Hence, the following concepts are of importance for the focus of the chapter and are therefore defined in this section.

■ Psychoeducational interventions

Psychoeducational interventions are interventions accompanied by methodical, didactic and designed knowledge transfers regarding the treatment of a disease or its support (Ekhtiari et al. 2017, p. 239). Through the integration of emotional and motivational aspects, psychoeducational interventions enable stakeholders to treat the obstacle or disease or improve the outcomes (Ekhtiari et al. 2017, p. 239). Furthermore, psychoeducational interventions' basic aim is for patients (clients) and families to work together with mental health professionals to gain knowledge about various facets of the illness and its treatment for better overall outcomes for patients (clients) and their families (Sarkhel, Singh & Arora 2020, n.p.).

■ Traditional games

Traditional sports and games (TSGs) are defined by Bronikowska and Groll (2015) as:

They are not just games, they are part of culture, history, a goal, a people, a purpose, a structure, a philosophy, and a strategy. TSG are important because they help refine many skills (e.g. teamwork, cooperation, managing a challenge, setting, and achieving goals), build character, provide an outlet for expression, and allow for the improvement of performance. They allow for fun, enjoyment and fun and making friends. (p. 2)

In light of this, as stated by Bronikowska and Groll (2015, p. 2), TSGs are good tools to use for the promotion of mental health.

■ Promotion of mental health

Singh, Kumar and Gupta (2022, p. 5) define mental health promotion as a broad concept that advocates for a strengths-based approach that includes the entire population and seeks to address the broader determinants of mental health. Mental health promotion's goal is to eliminate health inequalities through enablement, collaboration and involvement (Singh et al. 2022, p. 5). Thus, the promotion of mental health aims at reducing the growing prevalence of mental illness and the prevention of mental health (Singh et al. 2022, p. 2). While the strategic application of health promotion and disease prevention are universally considered concepts in public health, the promotion of mental health promotion and prevention are often elusive (Singh et al. 2022, p. 2).

■ Play

The LEGO Foundation® (2017, p. 11) denotes that play can mean a variety of experiences and types, and these experiences can range from play which is more directed or structured to children given the freedom to explore and discover with minimal constraints in various environments. The concept of freedom to play infers that all the materials are available when the individual plays. Thus, all environments, such as a home, a garden, urban settings, rural settings or wherever the individual finds themselves, are conducive to free play.

The culture, values, and beliefs in the home as well as in the wider community constantly influence play, as suggested by the LEGO Foundation® (2017, p. 11). Gray (2013, n.p) mentions the five characteristics of human play:

1. 'Play is self-directed and self-selected'.
2. 'Play is intrinsically motivated - means are valued more than ends'.
3. 'Play is guided by mental rules, but the rules leave room for creativity'.

4. 'Play is imaginative'.
5. 'Play is performed in an alert, active, but relatively non-stressed state of mind'.

Furthermore, play is a powerful medium and can also be utilised in counselling settings to assist with a variety of problems that impact children's mental health. 'Play therapy is widely used to treat emotional problems and behavioral disorders of children because it fully meets their unique developmental needs' (Koukourikos et al. 2021, p. 294).

■ Method

■ Research methodology

Qualitative research is engrossed in how people organise themselves and their environments and how residents of these environments make sense of their settings through symbols, rituals, social structures, social roles, et cetera (Nieuwenhuis 2019a, p. 59). Lately, visual data have been added as a data source because people attach various meanings to visual data (Nieuwenhuis 2019a, p. 59). Consequently, the chapter has used a qualitative research design, focusing on the natural environment where interaction takes place, in other words, where social life is considered in terms of processes rather than statistical terms (Nieuwenhuis 2019a, p. 59). Busetto, Wick and Gumbinger (2020, p. 7) mention that a varying interactive process between data collection and analysis, revision and improvement of the approach takes place where necessary and is indicative of good qualitative research. In this chapter, this process was followed as the perceptions, perspectives and feelings of the author of this chapter were reflected, contemplated and reported, with much re-reflection occurring, making it a dynamic and interactive personal rendition of the reporting. The author focused on the development of psychoeducational interventions for children to promote mental health; therefore, the chapter used a qualitative design.

■ Philosophical orientation

In the chapter, constructivism-interpretivism was used to examine the psychoeducational intervention of traditional games to promote mental health. Interpretivism is sometimes denoted as constructivism because it highlights the ability of the individual to construct meaning (Nieuwenhuis 2019a, p. 66). Subsequently, Nieuwenhuis (2019b, p. 67) indicates that interpretivism's focus is on understanding and elucidation and not on the description. Pham (2018, p. 3) cites that, rather than a truth that can be controlled by a process of measurement, interpretivism implements a relativistic ontology in which a single phenomenon can

have numerous interpretations. Constructivism-interpretivism aims to understand the phenomena by exploring the meanings that individuals assign to them (Nieuwenhuis 2019b, p. 67). Thus, it can be concluded that this orientation provides the author of the chapter an opportunity to evaluate and report on perspectives regarding this specific phenomenon, namely, the psychoeducational interventions using traditional games facilitated by LEGO® and Six Bricks® to promote mental health.

■ Autoethnography

Narrative research, autobiography, ethnography and art-based research are among the various qualitative traditions on which autoethnography draws as a unique qualitative methodology (Cooper & Lilyea 2022, p. 197). In traditional research, where the researcher's voice is usually not openly included as part of the research, autoethnography fills a gap (Cooper & Lilyea 2022, p. 198). Adams, Ellis and Jones (2017) explain that autoethnography:

[...] is a research method that uses personal experience 'auto' to describe and interpret 'graphy' cultural texts, experiences, beliefs, and practices 'ethno'. (p. 1)

Consider that the basic unit of analysis is you, the writer and the researcher, as the autoethnography develops (Cooper & Lilyea 2022, p. 198).

□ Autoethnography: Data collection and data analysis

Cooper and Lilyea (2022, p. 200) indicate that journal entries, historical artifacts, documents, field notes and interviews can be used as data collection forms. The author employed a journal entry, photographs, artwork and written work into her experiences of traditional games as psychoeducational interventions to promote mental health. Data analysis in autoethnography can make use of various qualitative traditions, such as general descriptive qualitative research, ethnographic research, narrative inquiry and arts-based qualitative research (Cooper & Lilyea 2022, p. 200). Cooper and Lilyea (2022, p. 201) argue that autoethnographic data analysis can utilise 'basic' qualitative research analysis, which has several characteristics that are appropriate and beneficial, for example, descriptive focus, the exploration of human experience and the recognition of subjective meaning-making. The data collected were therefore analysed using descriptive codes and themes which were reflectively personalised.

□ Autoethnography: Quality control

Multiple sources of data collection or triangulation are a mechanism of quality control in research design. For example, a photograph dated during that period depicting the experience verifies outside one's memory, with a journal entry in which one reflects on an experience

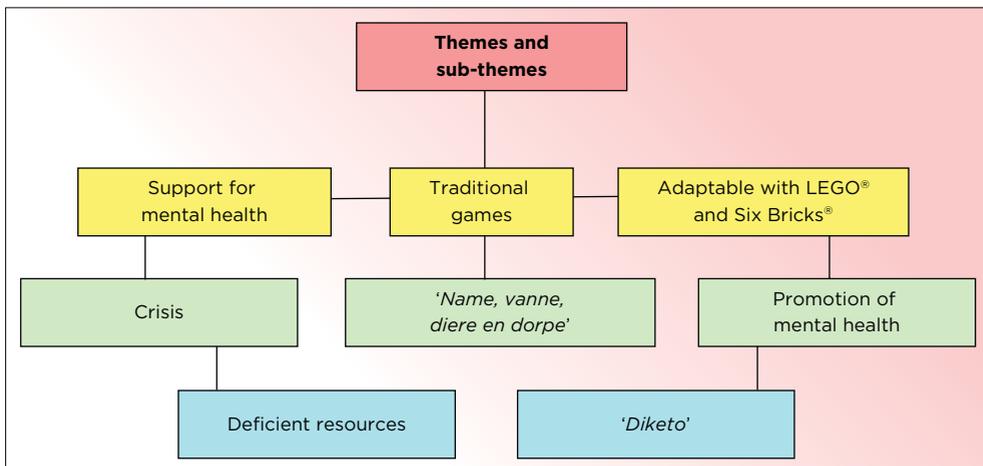
(Cooper & Lilyea 2022, p. 203). Therefore, the author made use of photographs with journal entries to ensure quality control of the chapter.

□ Autoethnography: Ethics

Autoethnography presents unique ethical issues to consider (Cooper & Lilyea 2022, p. 204). Should you need to get permission from people identified in the story, which is the responsibility of the researcher and an important ethical consideration (Cooper & Lilyea 2022, p. 204). Maree (2020, p. 47) points out that an important ethical aspect is to act in the best interests of the participants. If the author was a participant with other individuals, permission would be needed, but as the author is reflecting on the use of traditional games as a psychoeducational intervention for the promotion of mental health, the author undertook not to mention any identifying details in the process when the data were collected and analysed.

■ Utilising autoethnography for the psychoeducational intervention of traditional games with LEGO® and Six Bricks® to promote mental health

The author analysed the journal entries and this resulted in three main categories, which were recognised and identified out of these sub-themes. Figure 4.4 presents an overview of the three broad themes and sub-themes that were generated from the data.



Source: Conceptualisation of this graphic was done by the author of this chapter. The graphic was created by Laura Steyn, published here with appropriate permission from Laura Steyn.

FIGURE 4.4: An overview of the three broad themes and sub-themes that were generated from the data collected.

■ Theme 1: Need for mental health – crisis and deficient resources

In the author's experience as an educational psychologist working in diverse communities, the necessity for efficient support for mental health for individuals as well as for the broad South African communities seemed to be lacking.

Support for mental health is needed; there are many emergencies and tragedies in a country with diverse challenges such as poverty, violence, gender-based violence, substance abuse, and various other contributing factors. Support for mental health is important and urgent.

Reflecting on the immense need to support children with regards to mental health, as well as contemplating the shocking statistics of – 'about one every eleven minutes' – children are ending their own lives in the background of the chapter. Figure 4.5 was created by the author to depict the crisis that many children are facing daily.

In discussions with colleagues, we always come to the conclusion that the need for mental health support for children, individuals, families, and communities is impacted, and good mental health support is required.

Children are experiencing a variety of mental health challenges – I see that in practice as well as in my direct community. Families are stressed and affected by numerous challenges. During the COVID-19 pandemic, people were anxious and I received numerous calls from parents who were concerned about their children. It is a crisis: individuals require mental health support.

The lack of resources is also problematic – the great need for mental health is there, but resources are limited (Figure 4.6).

As an educational psychologist, I know the need is there for mental health support in schools and in community settings, but I also know the lack of resources and the lack of human resources. I have worked for the Department of Basic Education (DBE) and understand how few educational psychologists and counsellors are available on district levels. We also need counsellors working in diverse communities to support people, groups and families on a primary level and focus on positive wellness, as well as psychoeducation on various topics that are needed in communities as a preventative measure.

I further cannot understand why regulating bodies, higher institutions and government do not address the need for more mental health workers. I also fail to understand why educational psychologists are not being utilised to the fullest, as many mental health workers are needed in communities.



Source: Photograph taken by Wanda van der Merwe of an artwork created by Wanda van der Merwe, published with appropriate permission from Wanda van der Merwe.

FIGURE 4.5: A visual depiction of the crisis of children ending their own lives, 'one every eleven minutes'.

Most hospitals do not have an educational psychologist on their staff, which can be a valuable resource on community levels.

The following poem came to mind while reflecting that the children of South Africa are in crisis and that we are not responding to those needs. I came across this little poem that my mother kept for years, of which the original author is unknown (Figure 4.7).

■ Theme 2: Traditional games

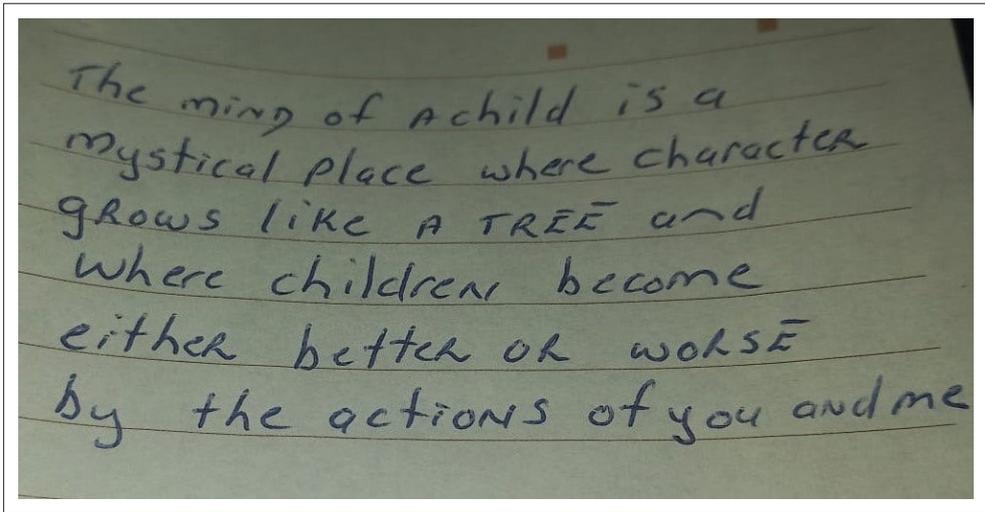
As the autoethnography approach was used for the chapter, the researcher used her experiences and reflections, connecting the two games she knew



Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe.

FIGURE 4.6: Witrand Hospital in the North West province of South Africa is one of the two mental health specialised hospitals in this province.

and reflected on how the two games could possibly be adapted to promote mental health as the aims of the chapter indicated (see Figure 4.4). As the traditional games are a valuable resource, they could possibly be used to assist with the mental health crisis in South Africa. The use of traditional games as indigenous knowledge and a positive resource in South Africa



Source: Photograph taken by Wanda van der Merwe, exact time and date unknown, published with permission from Wanda van der Merwe. The identity of the original author of the poem is unknown.

FIGURE 4.7: A poem: 'The mind of a child'.

can be utilised as a psychoeducational intervention to promote mental health in children and communities.

Reflecting on traditional games, two games came to mind. One of my favourite games that I played as a child was 'Name, vanne, diere en dorpe' ['Names, surnames, animals and towns']. To play, you need paper and a pencil. One child identifies a letter of the alphabet, and everybody must write a name, surname, animal and town starting with that specific letter. For example, if 'v' was selected, I would think and write down for each category something starting with 'v', such as Vanessa (name), Van der Merwe (surname), vulture (animal) and Vereeniging (town). The winner was the person who got the most categories, and the overall winner was the person with the highest tally as the alphabet was worked through from a to z. This game kept us busy on many rainy days.

Another traditional game I learned as an intern educational psychologist working in township schools, where young girls taught me to play 'Diketo'. I became aware of the richness of our South African knowledge. 'Diketo' is a game that needs a circle, stones and good hand-eye coordination. You need a circle made of chalk on cement or a circle drawn in sand with stones. The idea is to throw a stone in the air, pick up stones with the same hand, catch the stone, then throw the stone again and place the stone/s into the circle and catch the thrown stone again. It is a game that I could not master, but I was in awe of the skills of the children playing this game.

■ Theme 3: Adaptable for LEGO® and Six Bricks® for the promotion of mental health

Considering that psychoeducational interventions can assist individuals or groups to understand, cope, support ideas and promote awareness and comprehension, these games were adapted to accommodate the LEGO® and Six Bricks® initiatives, bringing African traditions closer and integrating these traditions with modern play tools. Six Bricks® was rolled out nationally in a joint initiative by the DBE, UNICEF South Africa, the LEGO Foundation® and Care for Education (Matangira 2022). This initiative was done to facilitate the implementation of the concept of play-based learning in Grades R to 3 using manipulatives (Matangira 2022). As the actions of play have been recognised as a central method children learn, it was innovative to adapt this national rollout and make it a traditional learning experience with a truly South African 'flavour'. Thus, adapting this initiative to traditional African games was a logical step forward to include all participants playfully by connecting future generations to their roots. Therefore, traditional African games have become a playful way in which mental health is promoted by encouraging everyone to participate, relax and enjoy.

■ Adaptation of the traditional game '*Name, vanne, diere en dorpe*' with LEGO® and Six Bricks®

■ General instructions

As indicated in the previous reflection on the theme of traditional games, '*Name, vanne, diere en dorpe*' ['Names, surnames, animals and towns'] is a game where you use the alphabet to recall a name, surname, animal and town from a selected alphabet letter. Taking inspiration from this game, a game was adapted to focus on clients or children who must associate strengths and aspects of themselves when a letter associated with their name is selected. This game can be used in a group setting, and to start the game, clients come forward if the letter of the alphabet is selected out of a hat; for example, drawing a 'T', Tom will come forward. Then, with his eyes closed, he will select one of the six bricks (from Six Bricks®). According to the colour he chooses, he must provide an answer about himself (see the connection of colour to question). If this is done on an individual basis with clients, the client will just select a LEGO® brick and answer the question connected to the Six Bricks® colour - for example, the yellow brick of the Six Bricks® set represents 'Who am I?'. Utilising the simple format of the Six Bricks® initiative can assist children in finding their strengths as well as understanding themselves and building on their self-concept. Individuals

who understand themselves can make better and healthier choices in life. Identifying strengths can lead individuals to utilise them regularly when making decisions and choices. Understanding yourself can lead to doing more self-care activities and can help with lessening stress and anxieties in life. This game promotes good mental health and aids the child in finding strengths within themselves. The game was renamed, '*Vind jouself deur name, vanne, diere en dorpe*' ['Find yourself through names, surnames, animals and towns'] (Figure 4.8).

■ The elements of '*Vind jouself deur name, vanne, diere en dorpe*' ['Find yourself through names, surnames, animals and towns']

The six elements are (see Figure 4.8):

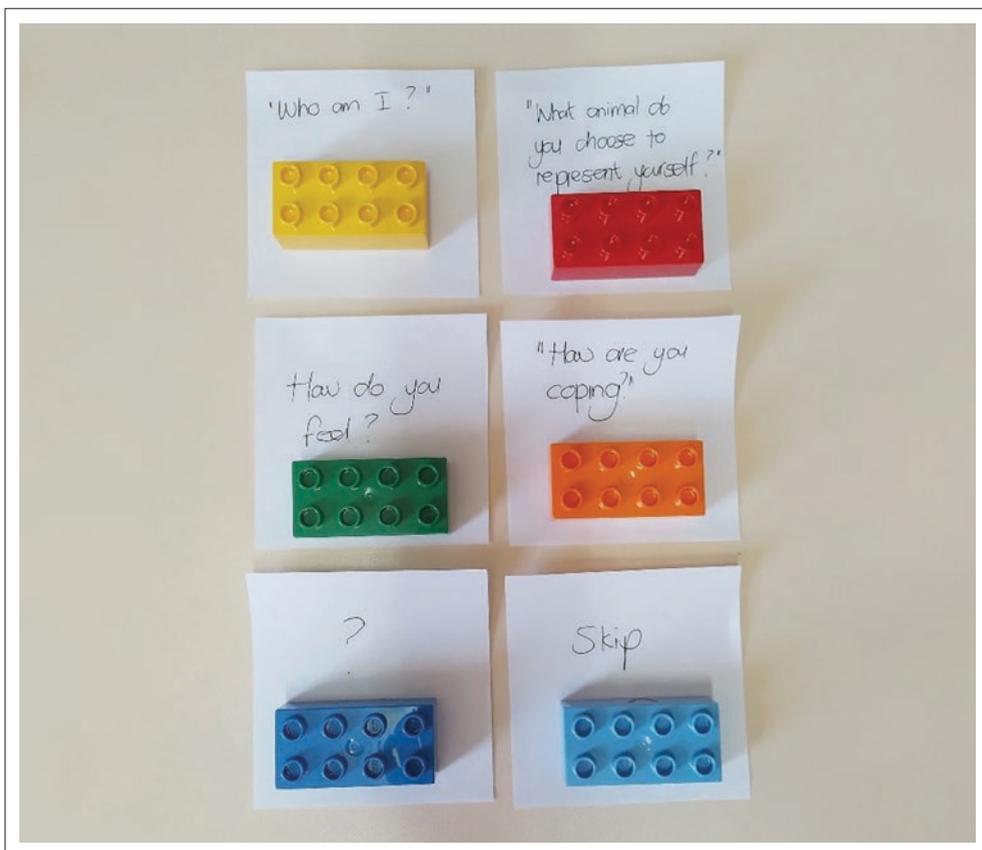
- **Yellow:** Who am I?
- **Green:** How do you feel?
- **Red:** What animal do you choose to present yourself?
- **Orange:** How are you coping?
- **Dark blue:** Open question, where any question could be asked by the counsellor
- **Light blue:** Skip/Pass - the client does not have to answer a question.

The yellow brick of the Six Bricks® set represents 'Who am I?', as indicated in Figure 4.9. If this brick is selected, the client must explain to the group or the therapist who they are, providing their name, surname and general information (hobbies, favourite programme, favourite cold drink, favourite colour and favourite chocolate) about themselves or the group.

The red brick of the Six Bricks® set, as shown in Figure 4.10, opens more personal information with questions, namely, 'What animal do you choose to represent yourself?' and 'Why did you choose this animal?'. With this question, the respondents can also discuss the strengths and weaknesses of the animal and any other feature that they like or admire in the animal.

The green brick presents a more emotional side to the game, as illustrated in Figure 4.11. With these questions, feelings and emotions are explored and discussed, asking the participant the general question, 'How do you feel?'. Thereafter, questions regarding other emotions and feelings can be explored. 'When does the green brick feel angry, loved, scared, overwhelmed, happy, sad, tired, embarrassed?' and other questions on feelings and emotions can be explored.

Figure 4.12 shows that the orange element presents environments where the child or participant functions, namely home, school, community or with friends. Therefore, questions that indicate any environmental matter can



Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe.

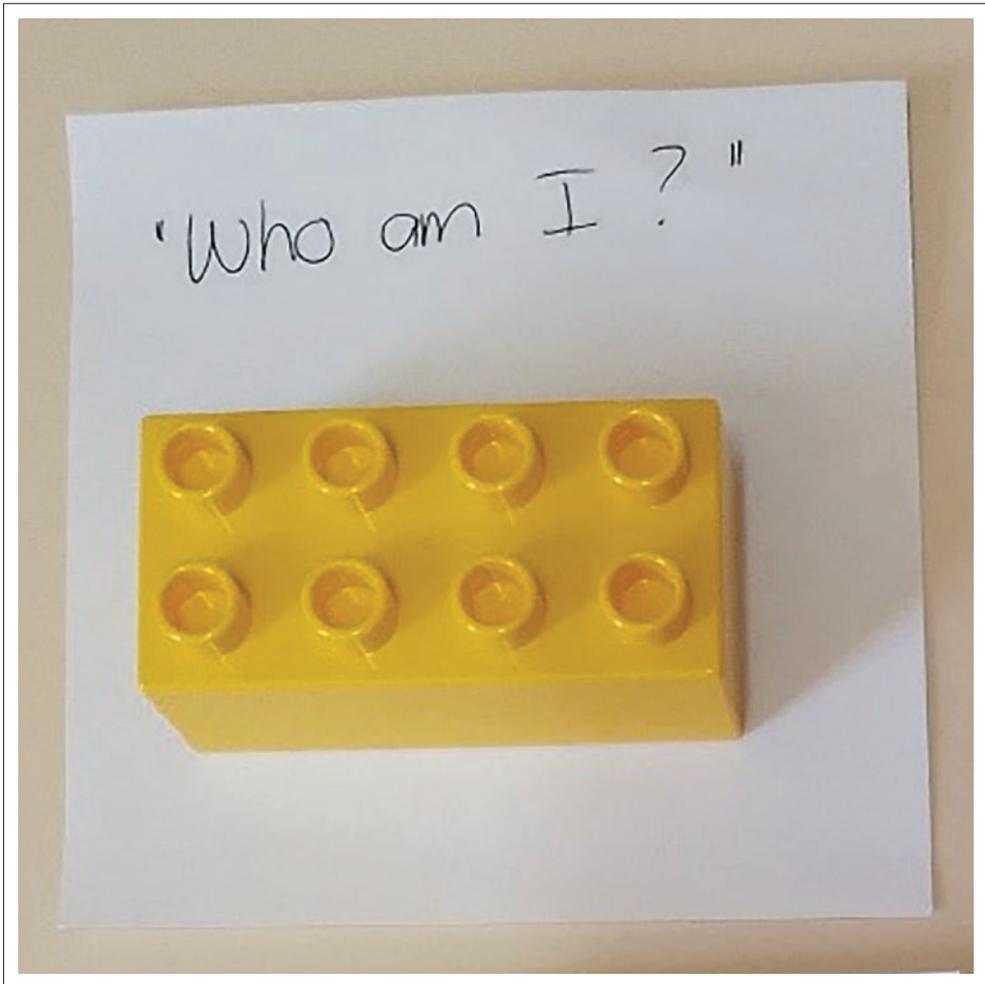
FIGURE 4.8: The six colour elements of the Six Bricks®, adapted to suit the game, '*Vind jouself deur name, vanne, diere en dorpe*'.

be posed to the respondent here. 'How are you coping?', 'How is homework?', 'How is Mathematics?', 'What is important to you?', 'How is school?', 'How are your friends' and 'How is home?'

Figure 4.13 illustrates the dark blue and light blue bricks as 'wild bricks'. The dark blue brick of the Six Bricks® set enables the participant to ask anyone a direct question. The light blue brick enables the participant to skip any of the questions that anyone may ask.

■ Procedure for '*Vind jouself deur name, vanne, diere en dorpe*'

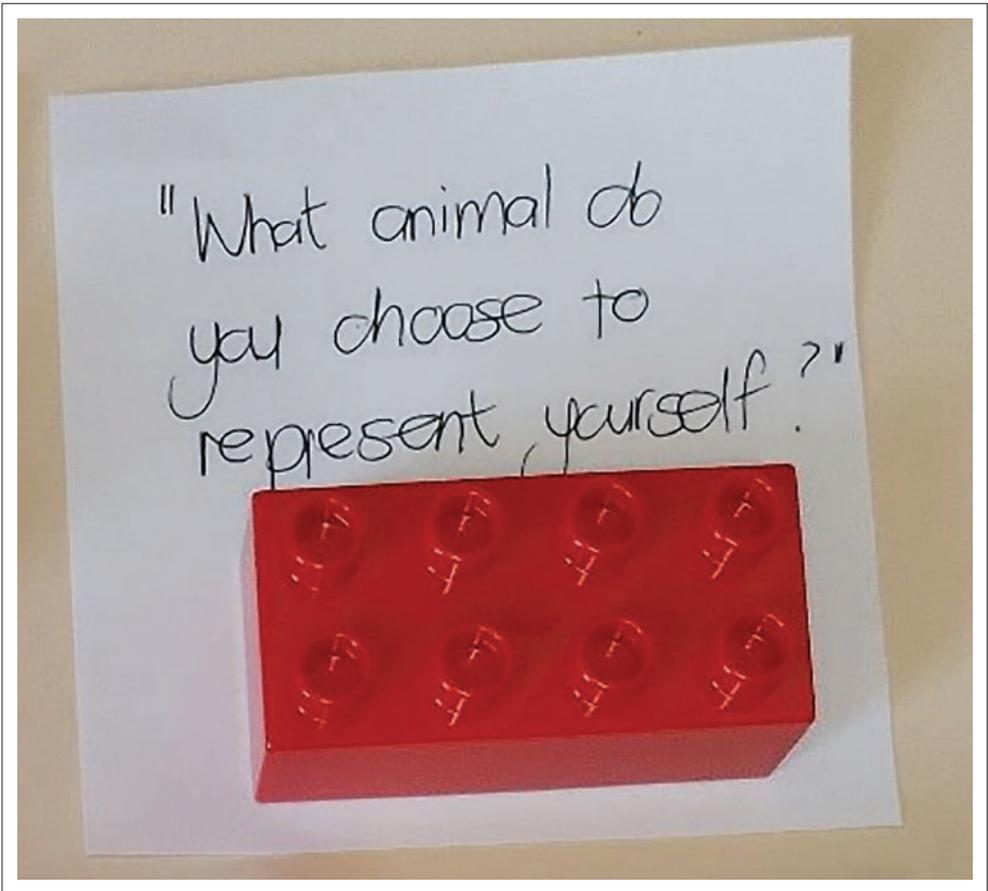
The game can be utilised in a group setting or one-on-one with a counsellor. The counsellor will call out a letter of the alphabet, for example, 'p'.



Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe.

FIGURE 4.9: The yellow element for the adapted game '*Vind jouself deur name, vanne, diere en dorpe*'.

Then everybody with a name starting with a 'p' must take part in the following section of the game. Each member of the group, or the individual, has a set of Six Bricks®. The selected person must select one of the Six Bricks® to start, keeping their eyes closed. For example, if the 'p' was selected, 'Peter' must come forward and select a brick, with his eyes closed. If, for example, the selected brick is red, then he must choose which animal he is going to be and then elaborate on that animal. The process continues until all individuals share the information relevant to the Six Bricks® and the



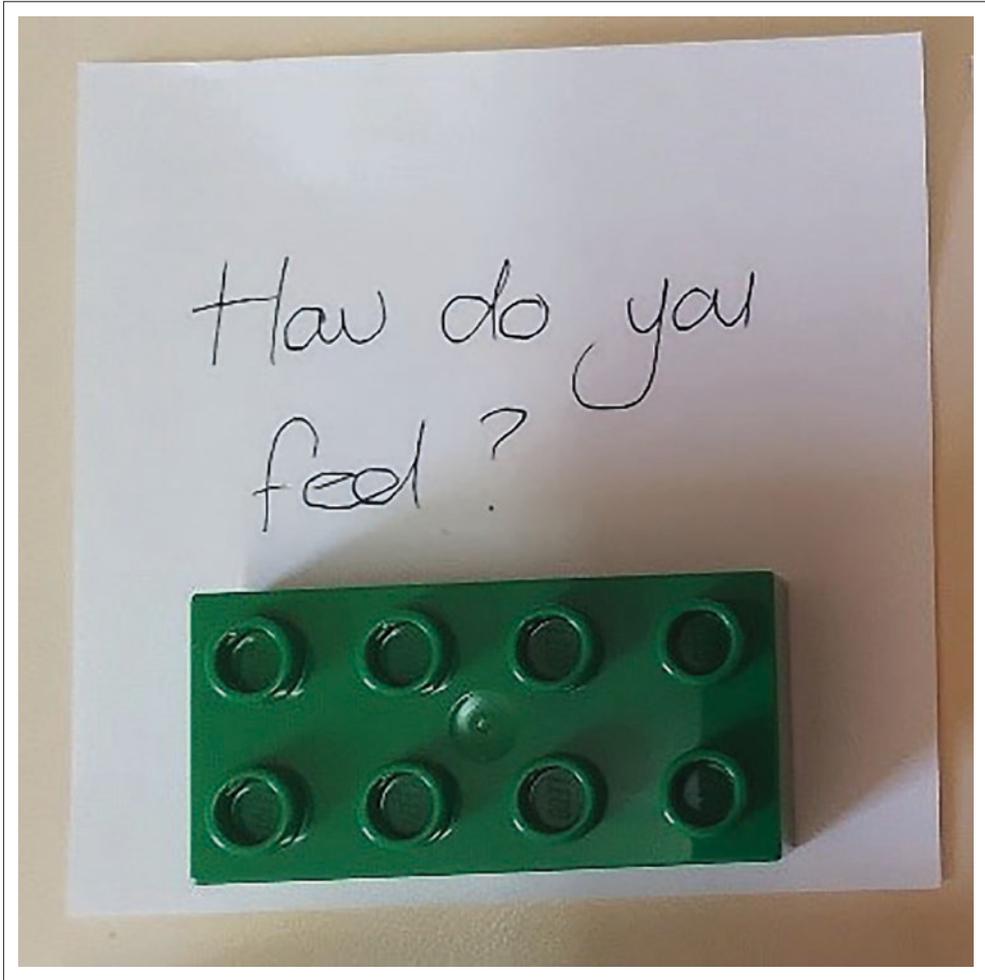
Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe.

FIGURE 4.10: The red element for the adapted game '*Vind jouself deur name, vanne, diere en dorpe*'.

meaning of each of the Six Bricks®. The closure reflection is where individuals share what important aspect they will take away from the game.

■ Adaptation of the traditional '*Diketo catch yourself*' game with LEGO® and Six Bricks®

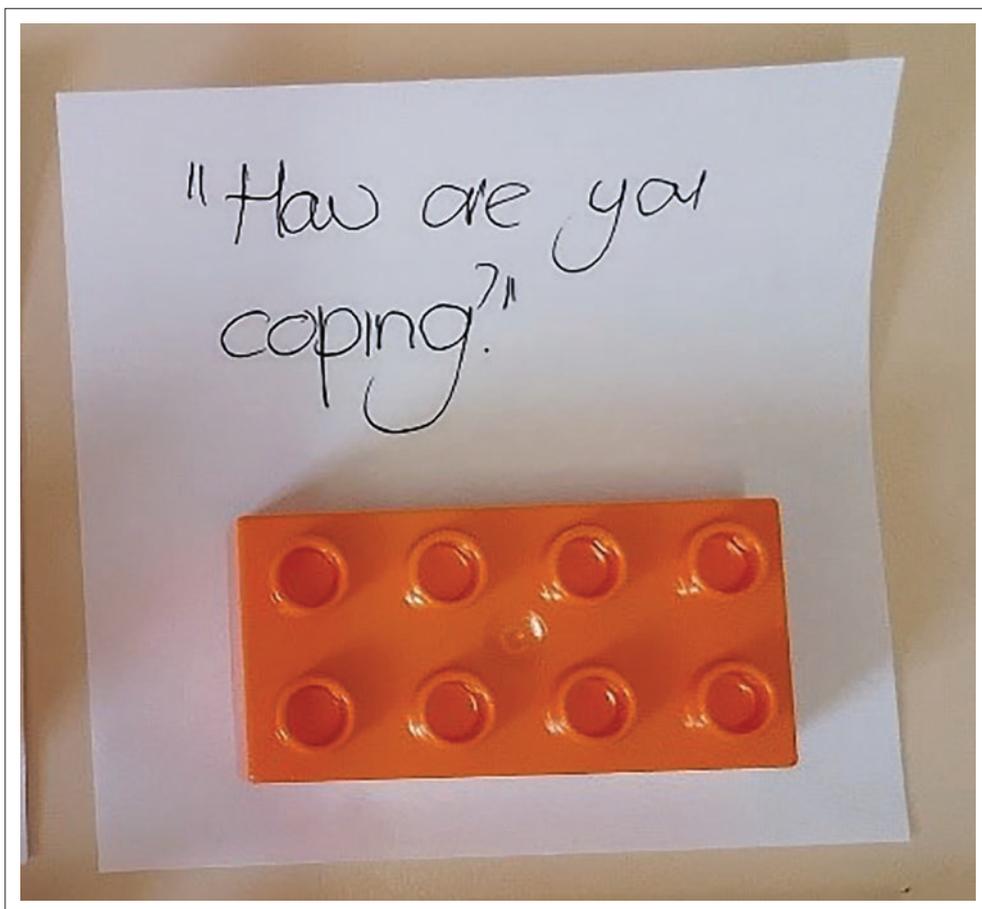
This game is traditionally played with stones in the sand, as reflected in the theme of traditional games. To adapt this game to LEGO®, smaller bricks were used. Even though they are like the Six Bricks® (2x4 bigger bricks), they are just a smaller version of them. Thus, the colours and studs are the same, with only the size differing. In the autoethnography reflection, the researcher reflected on two games, and as the aims of this chapter



Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe.

FIGURE 4.11: The green element for the adapted game, '*Vind jouself deur name, vanne, diere en dorpe*'.

indicated, the possibility of adapting the games as a psychoeducational intervention to promote mental health was stated. Consequently, the traditional game of '*Diketo*' was adjusted with LEGO® in mind, as the researcher wanted to address the needs of modern society as indicated by Nxumalo and Mncube (2019, p. 109), that indigenous games can be adapted to address modern-day needs. LEGO® was used as a colourful play medium in a counselling setting to use the familiar game to build on the self-awareness of clients and assist with children's mental health. The game will focus on individual strengths, weaknesses, opportunities and threats and



Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe.

FIGURE 4.12: The orange element for the adapted game, '*Vind jouself deur name, vanne, diere en dorpe*'.

by understanding that individuals can make the right choices for themselves. It supports the increase of self-awareness, and self-awareness helps individuals to understand their emotional state and can assist to enhance mental health.

The original game is usually played by two players, with pebbles, and it is a game that requires hand-eye coordination. A circle is drawn in the sand and filled with stones. One player throws a stone into the air and then grabs as many stones in the circle as possible before they catch the thrown stone with the same hand. The player with the most pebbles in the end wins (Western Cape Government 2022).



Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe.

FIGURE 4.13: The two blue bricks are considered 'wild bricks' and are included in the adapted game, 'Vind jouself deur name, vanne, diere en dorpe'.

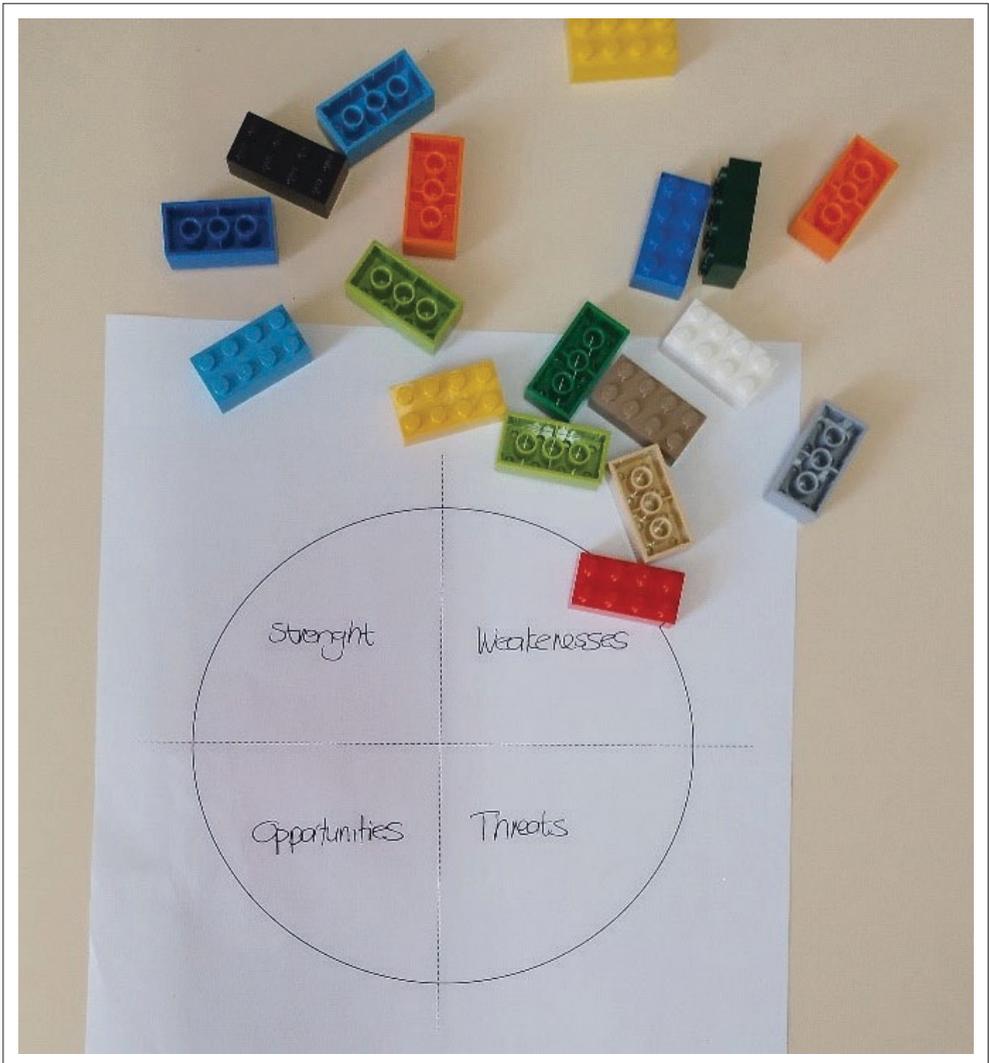
■ 'Diketo catch yourself' game

■ General information

The circle is presented by the four elements representing the strengths, weaknesses, opportunities and threats. Participants still throw the LEGO® brick into the air and try to grab the other LEGO® bricks. The bricks grabbed can be placed into the circle under one of the four elements. Figure 4.14 demonstrates the four elements of strengths, weaknesses, opportunities and threats in the circle.

■ Procedure for the 'Diketo catch yourself' game

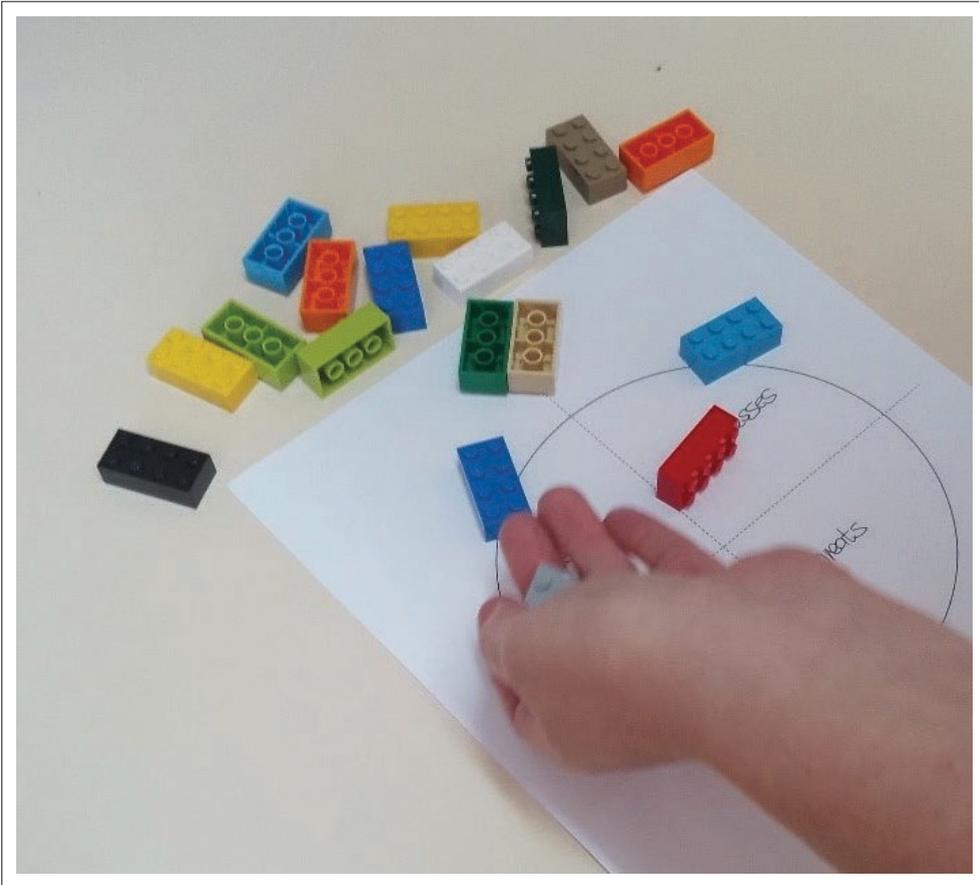
Firstly, the players must identify some challenges they have or are presently experiencing in their lives. This game is played with the idea of solving the situation at hand and evaluating the consequences. Thereafter, one LEGO® brick must be thrown in the air, and before catching it with the same hand, the participant must try to grab as many LEGO® bricks as possible. The grabbed LEGO® bricks can be placed on the strengths, weaknesses, threats or opportunities that are provided on the circle. Each of the coloured LEGO® bricks must be associated with either a strength, weakness, opportunity or threat. After the general allocation of LEGO® bricks to these four areas, the coloured LEGO® bricks need to be discussed.



Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe.

FIGURE 4.14: The four elements of strengths, weaknesses, opportunities and threats of the new traditional game, 'Diketo catch yourself', adapted with LEGO®.

Questions that relate to the allocation of the LEGO® bricks can be phrased as 'Why have you allocated a red brick as a threat to your schoolwork, what is that threat?' and 'I see that you put the green brick in the strengths section, what are your strengths?'. Discussion and exploration of the four elements will be done by the participant and counsellor, and overall, how to prevent or ameliorate the situation identified, utilising and exploring strengths and opportunities identified during the game. Figure 4.15 shows the playing of the 'Diketo catch



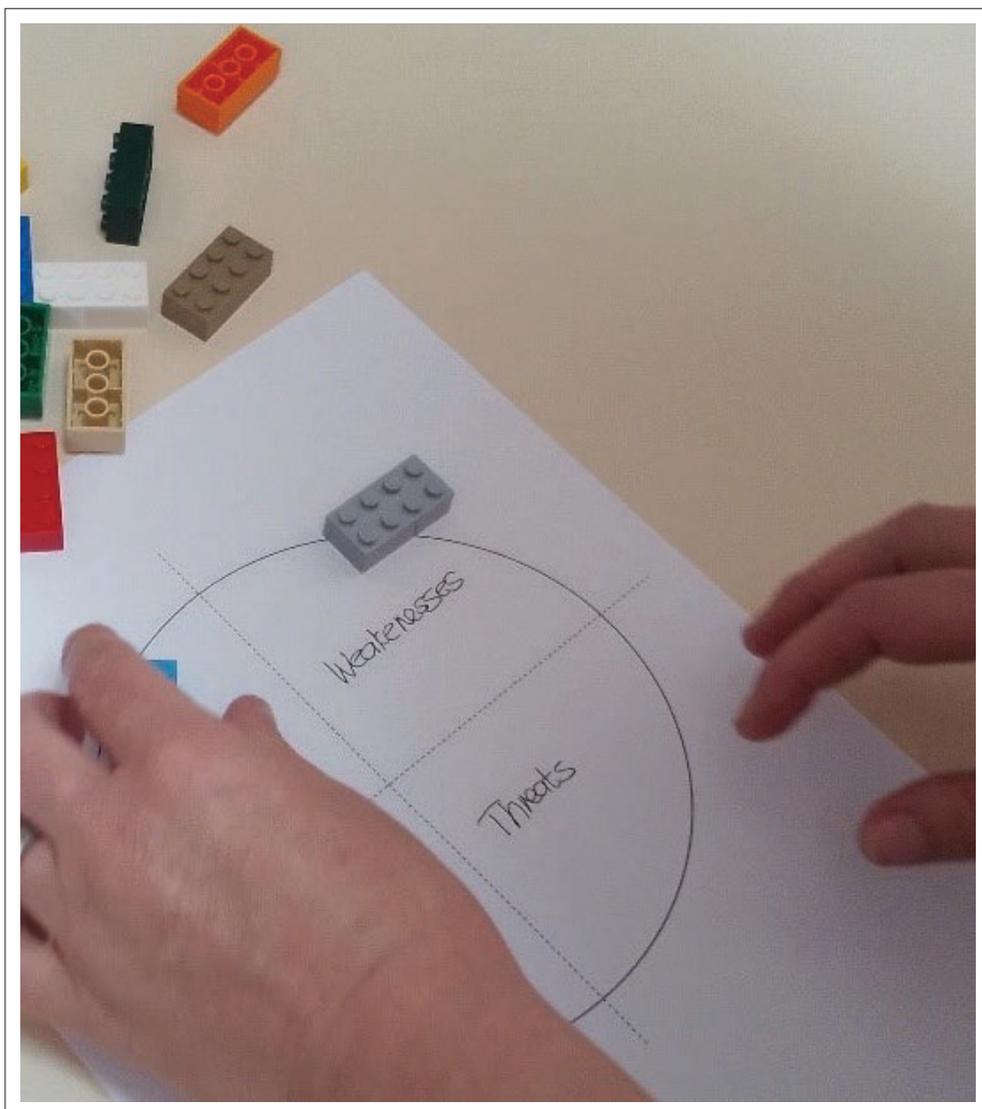
Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe.

FIGURE 4.15: Playing the game: 'Diketo catch yourself'.

yourself' game. Whereas Figure 4.16 illustrates the participant placing the LEGO® bricks under a category.

■ Autoethnographic reflection

The research design that was deemed suitable for this study was the autoethnography method. The author, participant and researcher reflected in a journal on mental health in their specific sphere and community, with a deep understanding of the need and crisis within South African communities. These reflections were also confirmed by the rationale of this chapter, indicating that the mental health situation of children in the world and South Africa is in crisis.



Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe.

FIGURE 4.16: Placing the LEGO® bricks under a category.

By considering the familiarity of traditional games, it was thought that this playful pastime of children could be a rich source of indigenous knowledge and assistance to counsellors, benefiting the mental health of children from an early age in a culture-friendly manner, as was also indicated in the rationale of the chapter. Consequently, the research question postulated was: How can LEGO® and Six Bricks® in conjunction with playing traditional African games, be utilised to psychoeducate children on mental health?

Further reflection also indicated that the promotion of mental health can be done by counsellors using traditional games and encompassing LEGO® and Six Bricks® in actively involving children within a familiar game in understanding themselves, their strengths and areas wherein they can improve. Thus, by playing both these new traditional games in a counselling setting, children can become more self-aware and confident when making choices in their lives, resulting in better mental health.

■ Conclusion

The purpose of this autoethnography chapter was to explore the psychoeducational intervention of traditional games with LEGO® and Six Bricks® to promote mental health. An attempt was made to gain a better understanding of the promotion of mental health by counsellors using traditional games with children, based on traditional games. The use of traditional games together with LEGO® and Six Bricks® showed that by adapting traditionally familiar games, a positive and beneficial effect on the mental health needs of South African children can be achieved. These findings can further serve to benefit the South African context by using traditional games together with LEGO® and Six Bricks®. Psychoeducational interventions can be initiated to assist everyone in a playful and fun way.

LEGO® to enhance narrative career counselling and promoting mental wellness among adolescents with diverse needs

Elmaré Mong^{a,b}

^aSchool of Psycho-social Education, Subject Group Educational Psychology, Faculty of Education, North-West University, Potchefstroom, South Africa

^bResearch Out of Entities Unit (ROE), North-West University, Potchefstroom, South Africa

■ Abstract

In the South African context, there is a need for the youth to become positive about their future again. To attain this, we need to gain an insight and understanding of the South African adolescent's world from a broader worldview. Instead of quantifying their experiences to direct them into the future, we must rather hear their stories and support their uniqueness, dreams and fears. The notion is thus to guide the adolescent to construct a brighter future for themselves through a narrative dialogue. This chapter aimed to explore ways in which career practitioners can utilise LEGO® to

How to cite: Mong, E 2023, 'LEGO® to enhance narrative career counselling and promoting mental wellness among adolescents with diverse needs', in L Preston & W van der Merwe (eds.), *Six Bricks®: A path to wellness in the educational and health systems*, AOSIS Books, Cape Town, pp. 93-108. <https://doi.org/10.4102/aosis.2023.BK427.05>

enhance career counselling among adolescents with diverse needs to promote a better personal perspective for the adolescent regarding their future in the present South African environment. Suggested recommendations and guidelines for South African career practitioners were offered by employing the activity theory framework. The outcome was enhanced narrative career counselling and mental wellness promotion for adolescents with diverse needs.

■ Introduction

Nowadays, 'work' forms such an immense part of our day that we need to ask ourselves which of these viewpoints we want to live by: 'Working 9 to 5, what a way to make a living. Barely getting by, it's all taking and no giving' (Dolly Parton) OR 'if you do what you love, you'll never work another day in your life' (Anthony n.d.). I presume we will all agree that the latter would be best, but how do we get there? As mentioned in Chapter 1, LEGO® is still growing and thriving, and the possibilities are endless. Accordingly, this chapter illuminates how practitioners working in the career counselling field can engage with adolescents in such a way that they hopefully have a career one day that they love - by utilising these colourful bricks.

In post-modern society, the world of work is depicted differently than years ago. At first, globalisation was one of the biggest impacts on the world of work. According to Savickas (2019, p. 3), job stability and security do not necessarily exist in the workplace any longer because organisations are more fluid. Terminologies such as boundaryless careers (not working lifelong for one employer), de-jobbing (project work) and the protean career (flexible, versatile and adaptive) can create insecurity for current employers and job seekers (Savickas 2019, p. 6). Currently, two vast world events - coronavirus disease 2019 (COVID-19) and the ongoing war between Ukraine and Russia - could lead to de-globalisation (Keller & Marold 2022).

Along with this ever-changing world of work, there is a tremendous need for youth all over the world to be positive yet again about their future. According to the World Health Organization (WHO) (2021), one in seven ten- to nineteen-year-olds experiences mental health disorders, and suicide is the fourth leading cause of death among the fifteen- to nineteen-year-old age group. In South Africa, we have 10 million people in the 15-24-year-old age group, and from this group, 7.7 million are inactive in the labour market. The main reasons for this are discouragement and loss of hope to get a job with their existing skills. Moreover, the unemployment rate for people aged 15-24-years-old for the first quarter of 2022 has mounted to an alarming 63.9%. Unemployment for the age group 25-34-years-old is 42.1%, and the current work-age population unemployment figures have climbed to 34.5% (StatsSA 2022).

■ Problem statement

Consequently, the current work environment necessitates a more constructive approach to prepare youth for the fluid work market. McMahon and Watson (2020, p. 3) assert that a need arises for a revised career counselling approach that focuses more on context rather than just the individual. There has been a definite shift from the trait-and-factor model, where the individual must fit themselves into a certain career's specifics, towards a more personal model (Morgan 2010, p. 501). Therefore, a constructivist approach rather than a positivist approach should be employed (McMahon & Watson 2020, p. 3). Psychometric testing is not seen as unnecessary or obsolete because a practitioner can combine 'traditional' assessments with qualitative instruments to truly apprehend a person's life story (Maree 2018, p. 163). According to Argyropoulou and Kaliris (2018, p. 497), we should keep in mind that the focus of career counselling shifted from simply choosing a career to assisting a person with the management of their career path by defining who they are as a person. Furthermore, Maree and Maree (2021, p. 1) suggest that we should engage earlier with adolescents regarding career choices and not wait until they are in secondary school. Hence, if young learners are presented with much-needed career counselling, they could be empowered. This early engagement may inspire them to be actively involved in their schooling and ultimately make decisions about their career path at a later stage (Maree & Maree 2021, p. 1). Moreover, some learners do not obtain much value from traditional career counselling because they do not fit 'into the box'. These learners usually think differently and do not perform well on standardised testing, because of their 'uniqueness', as these learners can be seen as neurodivergent.

■ Aims and objectives

This chapter aimed to explore ways in which career practitioners can utilise LEGO® to enhance narrative career counselling among adolescents with diverse needs. It was thought that this would be effective to ultimately promote a better personal perspective for the adolescent regarding their future in the present South African environment. This enhanced personal perspective could then lead to improved wellness.

■ Research questions

The following research question emerged: How can South African career practitioners utilise LEGO® to enhance narrative career counselling for adolescents with diverse needs? The following secondary questions were derived:

- How can the LEGO® tool be used to enhance narrative career counselling for adolescents with diverse needs?
- How will this approach improve and promote wellness among adolescents with diverse career counselling needs?

■ Research design

As mentioned in Chapter 1, the chapters of this book have been written by incorporating an autoethnographic research method. The research design deemed suitable for this chapter was the auto-phenomenography method, which is one of the auto-methodology types. The auto-phenomenography method was designed by Gruppeta in 2004, and the main difference between it and autoethnography is that this method focuses on the investigation of a phenomenon whereas autoethnography investigates social and cultural life (Shu 2022, p. 3). According to Bunde-Birouste, Byrne and Kemp (2019, p. 512), auto-methodologies has three components and an auto-phenomenography study comprises: 'Auto-', which is the self; 'graphy', which is the research process; and 'phenomeno', which is the phenomenon that is researched. In this instance, 'auto' is the reflection of the author, 'graphy' is driven by the activity theory (AT) (see theoretical framework) and 'phenomeno' comprises a few concepts, namely narrative career counselling, LEGO® and the promotion of wellness.

Six steps drive an autoethnographic study (O'Hara 2018, p. 15), and the first three are also applicable to this auto-phenomenography study. Firstly, the author must describe the relevance of the study, as that is one of the key differences between writing an autobiography and conducting an autoethnographic study. The relevance of this chapter was described under the rationale of the chapter and was mainly formed from the author's own experience as a career practitioner and observations shaped by working and supervising her Honours Educational Psychology students in the practice field. In the next step, the researcher needs to ensure that ethical standards such as beneficence and maleficence guide the study. In this chapter, there were no overt risks as no participants were involved. Subsequently, the author discussed which theories informed the study (O'Hara 2018, p. 16). For this chapter, the AT was the overarching theoretical lens. The last three steps, such as data collection, analysis and report writing do not apply to this chapter, as this chapter focuses mainly on the reflections of the author regarding future possibilities with LEGO® in the South African career counselling context, and this chapter is thus non-empirical. From this point, the author conducted a critical review by incorporating the AT as the overarching theoretical framework.

■ Conceptual framework

According to Niewenhuis (2022, p. 81), a conceptual framework can be seen as the ‘adhesive’ of a research study. It assists a researcher in having a sound understanding of prior research and relevant theories, providing a base from which to form one’s understanding of the aspect under study. The following concepts will be discussed in this framework: LEGO®, narrative career counselling, mental wellness and adolescents.

■ LEGO®

‘Leg godt’, is the Danish word for ‘play well’, it is also where the abbreviation of LEGO® is derived from (LEGO® 2022). According to the Cambridge dictionary (n.d.) LEGO® is ‘a brand name for a toy for children consisting of small plastic bricks and other pieces that can be joined together to make models of many different objects’. (LEGO® n.d.a, n.p.)

■ Narrative career counselling

Narrative career counselling is an umbrella term for telling your story, either in written, verbal or visual representation format (Maree 2019, p. 186). It is, furthermore, a technique where the career practitioner facilitates the storytelling process. The client narrates their life story, and the practitioner supports the client in envisioning their future, setting goals and coming up with a definitive action plan (Savickas 2019, p. 37). Important to note with this approach is that the client is the expert in their own lives and that the counsellor should emphasise this. Clients thus listen to their voices as the practitioner reads back their life stories and themes to them. This is empowering for the client because they can make their own choices and act upon them within a safe space (Maree 2019, p. 190).

■ Wellness

The Global Wellness Institute (n.d.) defines wellness as ‘the active pursuit of activities, choices, and lifestyles that lead to a state of holistic health’. Most wellness models comprise six dimensions: physical, mental, spiritual, emotional, social and environmental. This chapter will focus on mental wellness. Mental wellness focuses on the internal process and conscious action to obtain resilience, growth and flourishing. It has four components, namely mental (thinking, processing information, understanding and usage of information), emotional (feeling, managing and expressing emotions), social (connecting with others and relationships) and psychological (what a person does with external inputs by making decisions and acting upon them) (McGroarty 2021).

■ Adolescents

The timeframe when a person is seen as an adolescent varies in research. Some believe that it should be demarcated in early, middle and late adolescence, while others are of the opinion that adolescents should rather be defined according to their physical and psychological growth and socio-cultural norms (Louw & Louw 2022, p. 436). In South Africa, an adolescent is seen as a person between the ages of twelve- and eighteen-years-old. Adolescents are not only developing physically and psychologically, but they also enter a period in their lives in which they have to decide about their future. Supriatna (2020, p. 232) divides this period into two timeframes regarding future planning. Firstly, ages fifteen- to eighteen-years-old must decide whether they will stay in school or rather start to work. During this time, they struggle with finding their self-identity and making these important life choices simultaneously. Secondly, the age group 15–24-years-old – this is the exploration phase of different career options and ultimately entering the world of work. This chapter focuses on adolescents with diverse needs.

■ Adolescents with diverse career needs

According to Foxcroft and Grieve (2018, p. 314), there are various contexts in which a person functions synchronously that could influence assessment results. For instance, a person's biological context (age-related changes and physical impairments), the intrapsychic context of a person (transient conditions and psychopathology) and lastly, a person's social context (schooling, language, culture, environmental factors and 'test-maturity'), all have a bearing on the assessment results. Along with these influences, individuals with diverse career counselling needs, such as neurodivergent adolescents, will be highlighted.

■ Neurodivergent individuals

According to Gregory and Courtney (2022), neurodivergence is a social theory that was developed by sociologist Judy Singer, a self-advocate with autism, in 1990. The concept of neurodiversity assists in the understanding of the working of the brain; thus, it highlights the fact that the brains of individuals with certain neurodevelopmental disorders work differently.

A person with autism spectrum disorder (ASD) who is on the spectrum is characterised in the DSM-5 (2013) as:

[...] persistent deficits in social communication and social interaction across multiple contexts, including deficits in social reciprocity, non-verbal

communicative behaviours used for social interaction, and skills in developing, maintaining, and understanding relationships. (p. 31)

Attention deficit hyperactivity disorder (ADHD) is defined in the DSM-5 (2013) as:

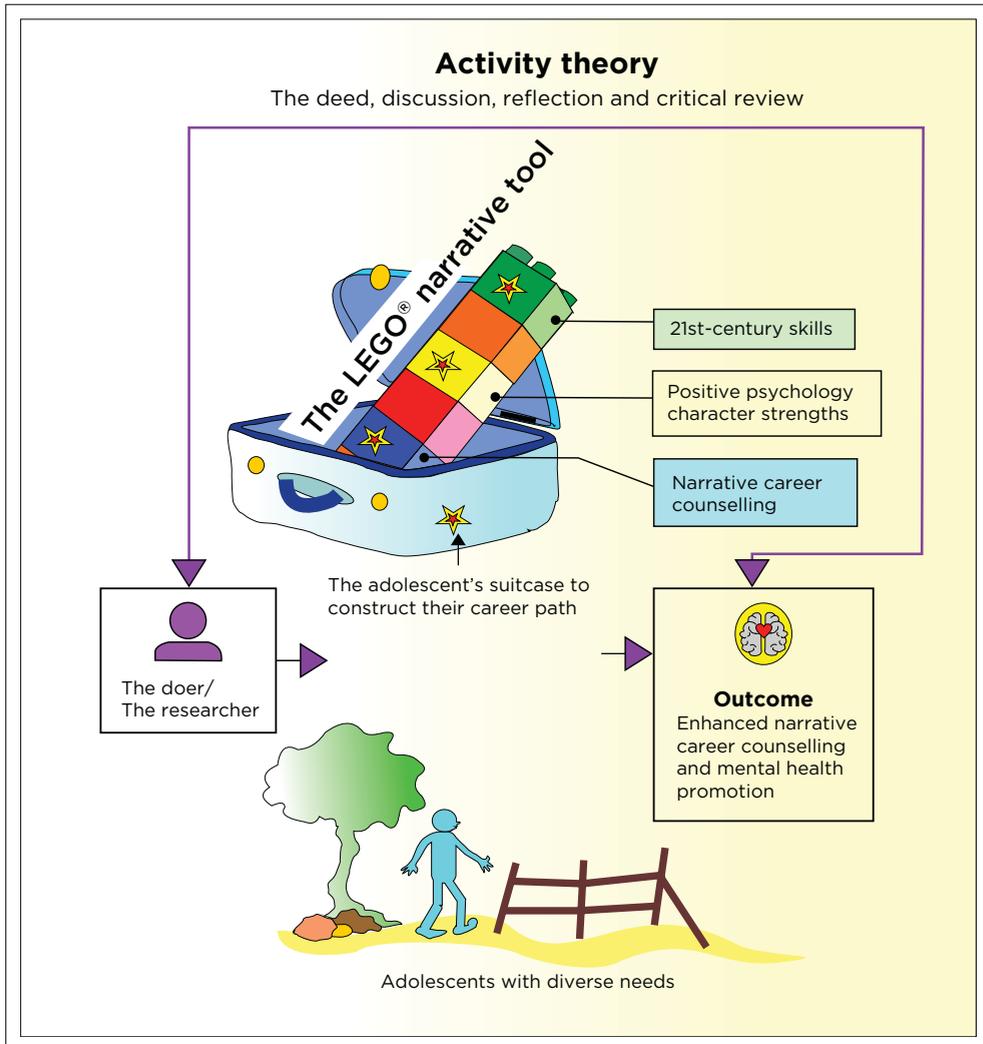
[...] impairing levels of inattention, disorganization, and/or hyperactivity-impulsivity. Inattention and disorganisation entail the inability to stay on task, seeming not to listen, and losing materials, at levels that are inconsistent with age or developmental level. (p. 32)

Specific learning disorders are also categorised under neurodivergent disorders. In this chapter, the focus will be on dyslexia and dysgraphia. Dyslexia is a language-based disorder that affects reading, spelling, writing and Mathematics, and dysgraphia is usually present when a person has trouble with fine motor coordination, leading to handwriting difficulties (Preston & Van der Merwe 2021, p. 30). Therefore, these learning disorders can all be considered as neurodiverse afflictions, in which the brain works differently – not wrongly or just atypically, but uniquely and in an exceptional manner. These unique differences should be embraced rather than seen as challenging (Gregory & Courtney 2022). Neurodevelopmental disorders usually commence before a child enters primary school. It is a disorder that is categorised by deficits that influence their functioning on a personal, social, academic or professional level. There are also cases of co-morbidities: a child can thus have more than one or a combination of these disorders (DSM-5 2013, p. 31).

■ Theoretical framework

As discussed in Chapter 1, this book is conceptualised from an overarching theory that is the AT. Therefore, in this chapter, the author followed suit, and the theoretical framework (see Figure 5.1) for this chapter entails a subject (effectuator or researcher), an object (deed) and the outcome.

In this context, the researcher was the author, who conducted the first three steps of an auto-phenomenography research method and thereafter conducted a critical review. The deed was portrayed with a ‘suitcase’ analogy. The ‘suitcase packed with LEGO® bricks’ is thus the researcher’s interpretation of how an adolescent with diverse needs can be assisted in constructing their career path successfully (see Figure 5.1). Lastly, the outcome was envisaged as an enhanced approach to career counselling that can ultimately promote wellness for adolescents with diverse needs. In the section ‘Unpacking the “suitcase”: Discussion and reflection’, adolescents with diverse needs will be discussed. Thereafter, a short overview is provided to discuss the aspects needed to assist the adolescent with diverse needs on their career path.



Source: Conceptualisation of this graphic was done by the author of this chapter. The illustration was created by Laura Steyn, published here with appropriate permission from Laura Steyn.

FIGURE 5.1: Author's application of the activity theory.

■ Unpacking the 'suitcase': Discussion and reflection

The 'bricks' (aspects) that were packed in the 'suitcase' (see Figure 5.1) for an adolescent with diverse counselling needs will now be unpacked successively: 21st-century skills; positive psychology, character strengths and wellness; narrative career counselling; and LEGO® as a narrative career counselling tool.

■ 21st-century skills

The beginning of the chapter portrayed how different the world of work is today as opposed to the state of things many years ago. Van Laar et al. (2020, pp. 2–3) list the core 21st-century skills which a person needs to continually develop and improve to be successful in today's labour market as follows: technical, information, communication, collaboration, critical thinking, creativity, problem-solving and later digital skills were added. Melnichuk (2022), of Forbes, further adds that there are five soft skills that employees need to grow as a professional and ultimately secure a good career. These skills are flexibility, making decisions and taking responsibility for them, teamwork, empathy and critical thinking. Learning these skills has been important to prospective job seekers for some time, but it is now even more so as we have entered an era where very little is guaranteed. 'Today, the only consistency from year to year is change' (Stauffer 2022). Argyropoulou and Kaliris (2018, p. 484) state that a person further needs meta-skills in today's world of work because it is crucial for decision-making, career exploration and life planning. These skills are high-level, and if a person possesses them, it will help them to use and advance their other skills. Neale (2022), of Forbes, describes emotional intelligence (EI) as one of the most crucial skills for personal and professional success. When a person has EI, they can easily identify, understand and manage their own emotions, and because they understand their own emotions, they are naturally inclined to understand the emotions of others. This leads to improved relationships in the workplace and becoming a team player.

Miglianico et al. (2020, p. 760) state that today's organisations need employees who can function in the uncertain work environment in which we are finding ourselves. They are asking the following question: Could strengths be a key to this puzzle? To answer this question, character strengths and mental wellness, cited in positive psychology, will thus be considered.

■ Positive psychology, character strengths and mental wellness

According to Seligman, positive psychology can assist people to flourish and live a content and healthy life (Cherry 2021). Positive psychology emphasises the importance of character strengths and virtues, mindfulness, resilience, happiness, optimism and well-being, (Cherry 2021). One of the key contributions positive psychology has made is that the approach supports and encourages an individual to reflect on, consider and identify their core strengths and utilise them, leading to individual flourishing (Mead 2020). Peterson Strength-based positive interventions can be used to enhance positive mental health (Bates-Krakoff et al. 2022).

TABLE 5.1: Values in action.

Core virtues	Character strengths
Wisdom and knowledge	Creativity, curiosity, judgment, love of learning and perspective
Courage	Bravery, perseverance, honesty and zest
Humanity	Love, kindness and social intelligence
Justice	Teamwork, fairness and leadership
Temperance	Forgiveness, humility, prudence and self-regulation
Transcendence	Appreciation of beauty and excellence, gratitude, hope, humour and spirituality

Source: Adapted from VIA Institute on Character (n.d.).

These strengths are classified under the values in action (VIA) and are divided into six virtues (see Table 5.1). Identification of adolescents' character strengths encourages them as it raises self-awareness, and in becoming more focused on their own identity, their self-identity will be developed, enhanced and promoted (Mead 2020).

In 2014, Niemiec already deliberated that the connection between character strengths and career counselling has not been researched to a great extent. Today we realise that if a person possesses character strengths, it will strengthen their vocational identity and complement their talents and abilities, supporting the individual in this ever-changing work environment. Furthermore, if adolescents are provided with the opportunity to practice their character strengths and develop their whole character in the pre-career stage, it can create a personal awareness and be beneficial (Villacís, Naval & De la Fuente 2022, p. 13). According to Niemiec (2014), if a person can understand and practice their signature strengths, their average strengths and become aware of their weaker strengths, and be able to realistically compensate for these, their self-awareness will be developed, ultimately becoming more realistic and informed when choosing a career. To assist with this realisation and awareness, a narrative career counselling approach is suggested.

■ Narrative career counselling

According to McMahan (2018, p. 58), storytelling has always been part of our lives since infancy. Storytelling shapes our understanding of our surroundings and our actions with others. We form our identity over time through storytelling; in short, people understand themselves better by telling stories about themselves (McMahan 2018, p. 59).

The career construction theory (CCT) and life design counselling (LDC) will be discussed under the narrative career counselling umbrella. Career construction theory is grounded on the following approaches: the person-environment, the developmental and the psychodynamic. One of the

focuses of this approach is to allow the client to work through their career-life transitions and to make meaning of this world of work with its various challenges (De Bruin & De Bruin 2018, p. 251). The main objective of the LDC approach is to assist people in resolving problems and career uncertainties by highlighting the importance of narrative techniques and structured interviews (Di Palma 2017, p. 30). This approach can be seen as a contextual model (Di Palma 2017, p. 32). This approach has two experts – the client is the expert in their own life and own stories and the counsellor is the expert on the life-designing process (Savickas 2015, p. 11).

Savickas (2005, p. 42) developed the Career Construction Interview technique, which is centred around the LDC. Six questions are asked by the counsellor during this interview, the first being: How can I be useful to you as you construct your career? By doing this, the counsellor and the client narrow down the central career problem for the sessions ahead. Thereafter the counsellor commences the construction process by asking the following five questions: about the client's childhood role models, the client's preferred magazines, TV shows, a current favourite story from a book or movie that the client likes, the client's favourite motto and then lastly the client's earliest childhood recollections. (Savickas 2019, p. 59). The practitioner can thus incorporate LEGO® into this approach: the client can be asked to build their role model, a favourite story, et cetera. After this construction phase, the counsellor and the client deconstruct the central meaning from the answers gathered. They work through aspects that can hinder the client in making meaningful career decisions. The counsellor then discusses new perspectives with the client that can counter these limitations. From these micro-narratives, a macro-narrative is formed – a life portrait (Savickas 2015, p. 13). This is, therefore, the reconstruction phase; this life portrait includes the client's past, present and future. The last phase, co-construction, occurs when the client and the counsellor develop concrete plans, thus step-by-step actions that the client should take in the future (Savickas 2015, p. 13).

On the South African front, Maree (2017) developed the career interest profile (CIP) that can be used as a tool to facilitate the narrative counselling process. The CIP is based on the self-concept and various psycho-social development theories: the CCT, the life construction theory and the LDC theory (Maree 2017, p. 29). It has four components (Maree 2018, p. 157):

1. part one is background information about the person's biographical, family and work-related aspects
2. part two has a question on a person's preferences and dislikes
3. part three asks fifteen narrative questions
4. part four provides the counsellor with assistance on how to listen for client's life themes and stories.

The CIP is suitable for the South African context and even large groups (Maree 2017).

According to McIlveen and Patton (2007, p. 7), there are a couple of techniques that a practitioner can make use of to facilitate narrative career counselling, such as spoken and written forms (e.g. autobiographies and metaphors), visual and spatial forms (e.g. lifelines, life role circles and Career-O-Gram). The latter has been added to the list by McIlveen and Patton (2007, p. 7), as some individuals may be unable to express themselves in words and will then rely on visual cues and written forms. Fritz and Beekman (2011, pp. 165-174) mention a few narrative career counselling techniques such as reflective journaling, collages, artifacts, lifeline, card sorting, vocational sorting and building your story in the sand. According to McMahon (2018, p. 62), counselling is not only a science but also an art, and when narrative career counselling is carried out, the practitioner must be as creative as possible.

Neurodivergent learners would need a different approach to narrative career counselling because activities that need intense spoken or written language, such as diary entries, collages, timelines, et cetera, might not work for them. As LEGO® Therapy is suitable for children who have social and communication challenges (Celestine 2021), LEGO® is thus suggested as an alternative tool to narrative career counselling for these learners. It is a tool that could be used for *all* learners, depending on their personality and interests.

■ LEGO® as a narrative tool

LEGO SERIOUS PLAY® (LSP) is among other LEGO® initiatives, applicable in this chapter. It was originally designed experimentally for adults to assist with problem-solving, creative thinking and reflection (LEGO® n.d.b). In companies, it is utilised to generate new ideas and find solutions. Team members are guided by a facilitator to answer certain questions through storytelling, employing building with the LSP bricks and provided characters. These constructed stories are then used as a starting point for discussions that lead to problem-solving (Elmansy 2015). Currently, these sets are available for all age groups, and it is suitable to use in business and education environments (LEGO® n.d.b). It is thus appropriate for career counselling facilitation as well.

The author will describe a few scenarios where LEGO® has been utilised as a narrative tool. In Taiwan, Harn and Hsiao (2018) understood the importance of strengths-based career counselling and they facilitated the strength-4D LEGO® career model with 29 college students. LSP and Six Bricks® were incorporated to construct the strength-4D LEGO®

career model. This model has four phases in which the individual can envisage and build possibilities based on their strengths. The phases include the discovery phase, the dream phase, the design phase, and lastly, the density phase, where participants imagined their future. The second phase is aimed at discovering the individual's themes. The third is where the individual creates their future action plan, which can be considered the same as the co-construction phase of the Life Design approach (author's assumption). The final phase embraces evaluation and the exploration of possible challenges (Harn & Hsiao 2018).

Bab and Eriksen (2014), from Denmark, explain how LSP is utilised in their Build and Share™ project. This approach combines LEGO® with positive psychology by facilitating the exploration of an individual's character strengths and values within a group context to better understand their uniqueness in a constructive nature. Thus, through Build and Share™, one can explore facets, such as subjective happiness, optimism, gratitude, positive emotions, goal setting and accomplishment, flow experiences, values and character strengths (Bab & Eriksen 2014, p. 6).

Cherkashina and Zalilova (2015) experimented in Madrid with LSP to help adolescents find their calling in a fun and engaging way with children as young as eight-years-old, up to sixteen-year-old adolescents. During this experiment, all the participants could build their career preferences and share them in groups. In this study in Madrid, an occupational choices matrix was incorporated by updating it in the New Careers Atlas with LEGO®. The following questions were part of this approach, which is a basis for any other narrative interventions that could be explored further:

- Build a model of the 'best' day that happened to you.
- What did your best day look like? What did you do? Who was around you? Why was it the best day?
- Build a model of your perfect day at work that will happen 20 years from now.
- How will your perfect day at work look? What are you doing? Why is this a perfect day?

Closer to home, in South Africa, lecturers and students of the Educational Psychology Subject Group in the Faculty of Education, North-West University, received training (see Figure 5.2) from Care for Education in narrative counselling techniques with LEGO® and explored more concrete and tangible approaches to career counselling.

The experience that the author gained at the training made her realise how versatile these colourful bricks are. We have been trained in the usage of different kinds of bricks (even LEGO DUPLO®, which the author first thought was only for little children), and the author is enthusiastic about the



Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe.

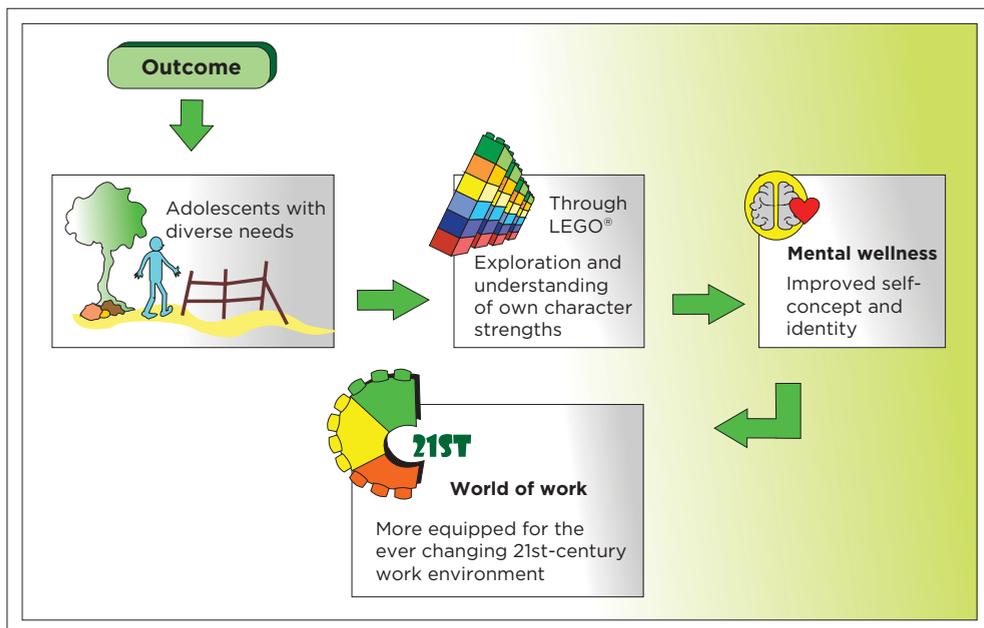
FIGURE 5.2: North-West University Educational Psychology lecturers and Honours students being trained in narrative counselling.

prospects of using LEGO® as a narrative career counselling tool within the South African context. A practitioner can use LEGO® with all age groups and as career counselling is across the lifespan; it is a promising tool for any practitioner's toolbox. Moreover, after the training, the author became aware that LEGO® as a narrative tool can be used in almost any context, especially with someone who does not necessarily fit the 'traditional' career counselling approach.

From the aforementioned, it is clear that a combination of LEGO® products can be used in a narrative career counselling approach for adolescents with diverse needs, for example, Six Bricks® and LSP. The Build me 'Emotions' LEGO® set (LEGO® n.d.c) and the Build your 'personal strengths' LEGO® set (LEGO® n.d.d) could also be incorporated into this approach as a person can explore their emotions and personal strengths in an engaging way. LEGO® DUPLO® (LEGO® n.d.e) provides the practitioner and client with various characters and figurines that could be included in self-exploration through storytelling.

■ The outcome of the activity theory

The main research question was to explore how South African career practitioners can utilise LEGO® to enhance narrative career counselling for adolescents with diverse needs. As mentioned previously, the AT was the overarching theoretical framework and vehicle for this chapter. The author 'packed' certain elements in the adolescent's 'suitcase' to construct their



Source: Conceptualisation of this graphic was done by the author of this chapter. The illustration was created by Laura Steyn, published here with appropriate permission from Laura Steyn.

FIGURE 5.3: Activity theory outcome: Researcher's reflection.

career path and in the deed section of the AT 'unpacked' it (see Figure 5.1). Now the author's outcome of the AT is portrayed in Figure 5.3.

Figure 5.3 can be understood as follows: if a narrative career counselling approach is conducted by combining positive psychology and utilising a variety of LEGO® sets as a narrative tool, then adolescents with diverse career counselling needs will have an opportunity to express themselves narratively in a creative way. Through this self-exploration approach, they will be able to explore and develop their character strengths and improve their self-concept and self-identity. This will in return improve their mental wellness because they will have good, well-developed self-awareness and be more equipped for the uncertain and ever-changing world of work.

■ Conclusion

At the beginning of the chapter, the question posed was about how we as practitioners can mobilise adolescents to have a career one day in which they will prosper. The statement by Mark Anthony, 'If you do what you love, you'll never work a day in your life', was presented as the approach to which we aspire. To conclude, LEGO® provides endless opportunities for the career practitioner who is looking for new and exciting ways to conduct

narrative career counselling. It is an inclusive approach, as it can be used across the lifespan of a person, and it can be used when one works with neurodivergent adolescents. Moreover, it can be used with *any* person, depending on their interests and specific career counselling needs.

‘You can discover more about a person in an hour of play than in a year of conversation.’ – Plato

A South African perspective of health and well-being complexities in children: The Six Bricks® initiative

Petra Bester

Africa Unit for Transdisciplinary Health Research (AUTHeR),
Faculty of Health Sciences, North-West University,
Potchefstroom, South Africa

Christelle Liversage

Africa Unit for Transdisciplinary Health Sciences (AUTHeR),
Faculty of Health Sciences, North-West University,
Potchefstroom, South Africa

Christi Niesing

Africa Unit for Transdisciplinary Health Sciences (AUTHeR),
Faculty of Health Sciences, North-West University,
Potchefstroom, South Africa

■ Abstract

The social determinants of health (SDH) are the non-medical factors that influence health outcomes. They are the conditions in which people are born, grow, work, live and age, and the wider set of forces and systems shaping the conditions of daily life. These forces and systems include

How to cite: Bester, P, Liversage, C & Niesing, C 2023, 'A South African perspective of health and well-being complexities in children: The Six Bricks® initiative', in L Preston & W van der Merwe (eds.), *Six Bricks®: A path to wellness in the educational and health systems*, AOSIS Books, Cape Town, pp. 109-125. <https://doi.org/10.4102/aosis.2023.BK427.06>

economic policies and systems, development agendas, social norms, social policies and political systems (WHO 2022a).

With this introductory quote, research has enlightened societies and communities that social determinants can be considered more important than health care or lifestyle choices (WHO 2022a) in influencing the health and well-being of individuals. Thus, to address these determinants adequately, action and input are required from all sectors of society and communities in which individuals reside. It is suggested that one aspect that can fulfil some of these requirements and ameliorate the gap between various health and well-being complexities could be the Six Bricks® initiative that has been recently rolled out in the South African context. This educational tool has been noted in the positive support and care for teaching, learning and children where it was already rolled out. Thus, to focus this chapter, one can ask: What is the influence of the Six Bricks® initiatives on the complexities of health care and well-being of the child within the South African context?

Data were collected using a literature review, considering the background of a child's SDH and comparing these facts to the scenarios where the Six Bricks® initiatives have been rolled out. This was done using the United Nations Children's Fund (UNICEF) 2020 multilevel framework of child wellness. Results showed that this educational tool positively influenced the SDH of children.

■ Introduction

This chapter approaches child health and wellness from the SDH angle, where social determinants influence health equity in various ways, either positively or negatively (WHO 2022b). A few examples of these determinants that directly influence child health and wellness are, among others, food security, housing and life conditions (WHO 2022b). However, one can consider three determinants to be vital to child health and well-being; especially applicable to this chapter are early childhood development education and health services (WHO 2022c). A child, in Section 28 of the South African Constitution, is defined as a person under the age of eighteen-years-old (Constitutional Court of South Africa 2022). As children develop from birth and neonate to infant, toddler, older child and then to adolescent, their experiences and developmental needs change. From the entry of the neonate into this life, there is an increased interest in the first 1,000 days of a child's life, viewing these as the foundational stage to ensure a thriving child with a long and healthy life (WCG 2022). South Africa's child health and wellness needs are complex, with many of the present socio-economic and political ills stemming from the apartheid era (Maphumulo & Bhengu 2019, p. 1), in which the health care system was

fragmented and discriminatory. Furthermore, there is overwhelming evidence that the quality of health care in South Africa has been compromised by various challenges that negatively impact the overall health care that is available to the general South African public (Maphumulo & Bhengu 2019, p. 1).

■ Problem statement

A child that is hungry, malnourished and stunted, growing up in a household of poverty and unemployment, children living with obesity and mental ill-health issues and experiencing violence and bullying are just a few examples of the complexities which negatively affect the overall physical and mental health of the individual from an early age. Thus, health is affected by virtually all policies enacted at organisational and systems levels (Emmons & Chambers 2021, p. 134), whether an impact on health and well-being is intended or not. Policies are the main driving force that creates a context around which interventions are integrated into people's everyday lives and their activities (Emmons & Chambers 2021, p. 134), including health, well-being and educational aspects. The Six Bricks® initiative is a national Department of Basic Education (DBE) rollout and forms part of the E-Cubed (E³) initiative. The E³ initiative entails the DBE's focus on entrepreneurship, employability and education, supporting and empowering both educators and learners with 21st-century skills (DBE 2021), it is thus suggested that the Six Bricks® initiative can be considered within the realistic perspective of health and well-being complexities to positively influence the health and well-being in children.

■ Aims and objectives

This chapter aims to explore a realistic perspective of the health and well-being complexities of a child within the South African context in conjunction with the influence of the Six Bricks® initiatives. Objectives that this chapter plans to achieve are to clarify the concepts surrounding the health and well-being of children within a South African context and provide a realistic perspective regarding these complexities. After this, an exploration of the influence of the Six Bricks® initiatives will be discussed.

■ Clarification of concepts

■ Health and well-being

On World Health Day 2022, global attention was focused on actions that keep humans and the planet healthy and create societies focused on well-being (WHO 2022b). Health is considered a biopsychosocial concept

incorporating social, physiological and psychological factors and the interaction between these factors, in which health enables social, economic and personal development fundamental to well-being (Centres for Disease Control and Prevention [CDC] 2018). Thus, health can be seen as referring more to the physical (the human body, its anatomy, physiology and pathology), psychological (mind, emotions and cognition), social (intra- and interpersonal) and wellness relating to one's lifestyle. A child with a physical disability can, for example, experience mental wellness, while a child with no physical illness might have a mental illness.

Well-being is seen as a meaningful positive outcome for people, their societies and communities because it indicates that the individuals within these environments perceive that their lives are going well (CDC 2018). Furthermore, well-being is associated with various health benefits, such as job, career, family and socio-economic aspects, reflecting a decreased risk of disease, illness or injury. In short, individuals with high levels of well-being are more productive at work and are more likely to contribute to their communities (CDC 2018).

With these definitions in mind, a child's mental and emotional well-being can be considered a main factor supporting their overall development and learning (CEI 2022). A child's well-being can be supported by facilitating positive growth and enabling children to learn optimally while building the skills to reach their full potential (CEI 2022). Therefore, physical health is dependent on access to nutritious food, shelter and sleep, sanitary and safe living conditions and access to places to play and exercise. Furthermore, all children, from an early age, should have support for their mental and emotional health, which assists in building secure identities, responsible relationships and feeling loved and respected (CEI 2022).

'Education can have intra-, inter-, and trans-generational impacts on health' (The Royal Society of Medicine 2022, n.p.). Even though the 'exact causal mechanisms linking increased basic education to health are not well understood', it is suggested 'that better-educated individuals have greater opportunities to be healthy' (The Royal Society of Medicine 2022, n.p.). Among other factors, access to income and knowledge which supports the family leads to the offspring tending to engage in healthier behaviours. Additionally, 'children's mental and physical health is directly impacted by their school environment and their teachers' (The Royal Society of Medicine 2022, n.p.). 'For children's long-term health outcomes, the most influential dimension of school connectedness is their relationship with their teachers' (The Royal Society of Medicine 2022, n.p.), yet roles played by schools and teachers have been largely ignored. To conclude, given the undeniable impact education has on the current and future health of societies and communities, a shift towards integrated health

care and education is needed, with policymakers looking (The Royal Society of Medicine 2022):

[...] beyond artificial silos, boundaries, timelines, and toxic fee-for-service models to innovate and create novel models of care and commissioning pathways that fully incorporate the education sector. (para. 1)

Taking this into consideration, there is an overlap between a child's health and wellness and participation in educational activities, such as the Six Bricks® intervention in classrooms. This initiative accommodates many aspects of the SDH, supporting the child's complex educational, health and wellness needs.

■ Realities of South African health and well-being

'Despite the end of apartheid in the early 1990s, South Africa remains racially and economically segregated' (De Villiers 2021, p. 1), with persistent social inequality, poverty, unemployment and a heavy burden of disease, compounded by the inequitable quality of health care service provision (De Villiers 2021, p. 1). Furthermore, the burden of diseases is a major challenge, especially in the overburdened South African public health care system, which is already unable to accommodate increased demand (De Villiers 2021, p. 3), resulting in high levels of mortality and morbidity. The Health and Welfare Sector Education and Training Authority (HWSETA) related to the South African health care system is plagued by many systemic and structural challenges, including 'inefficiencies, staff shortages, variability in skill sets between rural and urban areas, and suboptimal care levels and patient management' (De Villiers 2021; HWSETA 2022). The reality of the South African health care system is that this sector is driven by challenging socio-economic realities and the high burden of disease, which tax resources and staff (HWSETA 2022, p. 7). Furthermore, high levels of gender-based violence and other social crimes increase the demand for public health care and social welfare services (HWSETA 2022, p. 7).

South Africa's National Health Promotion Policy and Strategy for 2015–2019, published in 2014, highlighted children as part of the following key target audiences across the lifecycle for health promotion: (1) promoting better health for children under five-years-old; (2) creating awareness among women of childbearing age on available services; and (3) addressing risky behaviour and promote healthy lifestyle practices of the youth (Department of Health [DoH] 2014, p. 4). Leading on from this primary National Health Policy is the Integrated School Health Programme (ISHP). The ISHP is a division from the re-engineered primary health care (PHC) services provided by the South African DoH, which has been revitalised for the early screening of illnesses and conditions by providing

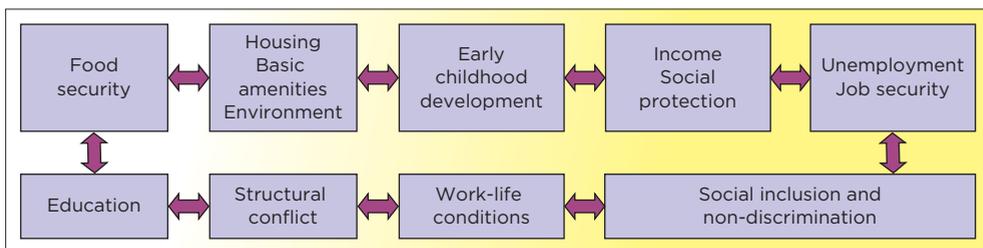
school health services to all learners in primary and secondary schools (Republic of South Africa [RSA] 2022). These services are aimed at preventative measures to identify health issues that may be detrimental to learning, such as cognitive needs, poor eyesight and hearing (RSA 2022) – in other words, holistically supporting a child. Part of this support is educational aspects, which should also be a top priority, and this is where the Six Bricks® intervention is brought on board to complete the holistic picture.

■ Social determinants of child health defined

SDH are conditions of daily life that influence people’s health (Lachman 2020, p. 260). The conditions in which a child is born, the household in which they grow up, the employment or unemployment of their parents, and the environment in which they play influence their health and wellness (Lachman 2020, p. 260). Children born into – and growing up in – lower socio-economic conditions will have a worse health and wellness status than children from higher socio-economic conditions, according to the World Health Organization (WHO 2022c).

The examples presented in Figure 6.1 imply that the health and wellness of learners started long before the classroom and extended beyond the school’s boundaries. South Africa ranked at the top, with 63% against the average of 38.28% for the Gini index, measuring income distribution and indicating a high inequality level (World Population Review 2022). The bottom 60% of South African households are more dependent on social grants than labour market income (Statistics South Africa [StatsSA] 2021a) as South Africans have become poorer over the last six years (Business Tech 2021) as the country’s official unemployment rate of 33.9% as reported by August 2022 remains high (StatsSA 2022).

Against this backdrop of socio-economic and political challenges stands the South African education system, the largest – yet also one of the most unequal public systems globally – which truly reflects the impact of SDH on



Source: Adapted from WHO (2022c).

FIGURE 6.1: Negative influences on the health and wellness of people across their lifespan.

children (Sterne 2021). On the one hand, there are wealthy schools that function effectively; however, the poorly funded schools, which 85% of South African learners attend, are dysfunctional (Sterne 2021). Teachers are therefore exposed daily and directly to the impact of SDH on learners and parents and communities. Furthermore, within an educational system, SDH is also present in the allocation of the South African public ordinary schools' quintiles. Schools in South Africa are classified into five groups, from the 'most poor' to the 'least poor' (School Guide 2022).

It is true, as one can see from this discussion, that the realistic perspective of the health and well-being of children in South Africa is complex and, at times, gloomy; however, it is suggested that the Six Bricks® initiative can influence this predicament by simply engaging the child playfully to develop a variety of skills, ranging from communication and relationship building to critical thinking. For example, the Foundation Phase Initiative (FPI) (the LEGO Foundation® 2022) is a partnership between UNICEF South Africa, the LEGO® Foundation, the DBE and Care for Education promotes Six Bricks® to enhance learning through play. Through this programme, the LEGO Foundation® has committed to providing Foundation Phase children in public schools with their own set of six bricks. With this in mind, educational support is facilitated by the Six Bricks® intervention in classrooms as a free resource, with bricks donated and instruction freely available on the Internet. As cited in Chapter 1, the LEGO Foundation® works in conjunction with UNICEF and other worldwide partners to enhance the learning and development of children from developing and war-torn countries (the LEGO Foundation® 2022), aiming to grant all children the opportunity to learn and develop to their full potential through education initiatives such as Six Bricks®.

School quintiles (1, 2, 3, 4 and 5) are based on the allocation of financial resources according to the poverty of communities (measured against national poverty rankings) and the infrastructure in and around a school. Quintile 1 implies the 'poorest' quintile, with the 'least poor' in quintile 5. Quintiles 1, 2 and 3 schools are no-fee schools, and quintiles 4 and 5 schools are fee-paying schools (School Guide 2022). Lower quintile schools imply higher levels of poverty, unemployment and other related social ills that might influence the health of all. In 2015, 11,252 South African schools (8,192 primary schools and 3,060 secondary schools) were situated in rural communities (Parliamentary Monitoring Group 2015). By December 2021, more than 12 million children younger than eighteen-years-old received a child support grant (Consumer Price Index, presented by StatsSA 2021b), in the amount of ZAR460 per month against the food poverty line at ZAR744.96 per person. From this SDH discussion, it is argued that child health and wellness are largely influenced by the upstream challenges that they face in their homes, communities and societies at large and should be

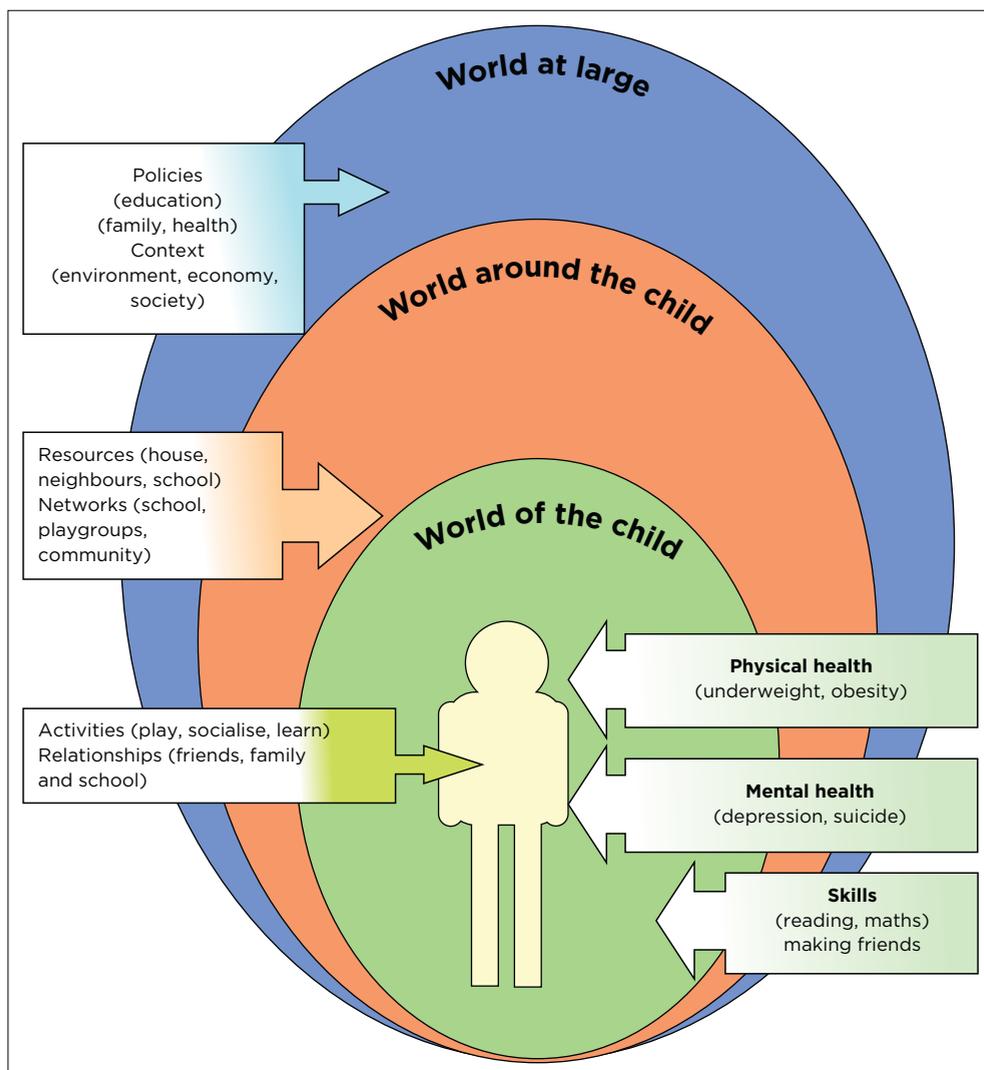
acknowledged in the health and education debate. In considering these statistics and the drive by the LEGO Foundation® (discussed in ch. 10), a positive impact on communities and societies regarding children, people and the environment can be made using the Six Bricks® initiative to understand, enhance and even improve the health and well-being complexities that children in South Africa experience. Thus, the Six Bricks® initiative can positively influence a child's health and well-being through educational Six Bricks® instruction.

■ A multilevel framework of child health, wellness and education

In the section 'Social determinants of child health defined', the upstream challenges that influence a child's health and wellness were discussed. In this section, the child's SDH is presented as also being interdependent and multi-levelled (see Figure 6.2). These levels include the child's personal space as their biopsychosocial health and genetics, followed by their families and households and significant others, then the areas where they live, their communities and society (UNICEF 2020, p. 6). Although the teacher cannot diagnose and treat a child's health, the classroom becomes a microcosmos of the relationships in the life of children, directly impacting their health and wellness. In this multilevel framework, like in the ecosystemic theory of American psychologist Urie Bronfenbrenner, the child is placed at the core of the framework (UNICEF 2020, p. 6). UNICEF (2020) views childhood as a positive, with children's experiences as being positive and the prospect of good futures (UNICEF 2020, p. 6).

This is not always reality, but one aspect that is real is that this framework of concentric levels or spheres influences the child and explains how children interact with their environments.

At the centre of this framework is the child, with well-being outcomes being objective or subjective (UNICEF 2020, p. 6). Objective suggests outcomes such as education, and subjective reflects more of the expression of the child's point of view, feelings and emotions. Thus, outcomes are directed and influenced by three aspects, namely the world of the child, the world around the child and the world at large (UNICEF 2020, p. 6). This framework gives rise to a complex health and well-being structure, with personal and relationship connections being highlighted. Each of the outcomes (subjective or objective), the world of the child, the world around the child and the world at large, which forms the base of the complex health and well-being structure, the personal and relationship structures can all be touched, understood, explained and taught through the Six Bricks® initiative.



Source: Conceptualisation of this graphic was done by the authors of this chapter. The illustration was created by Laura Steyn, published here with appropriate permission from Laura Steyn.

FIGURE 6.2: Adapted from UNICEF's 2020 multilevel framework of child wellness.

■ The complexities of health and well-being in South Africa

Teachers must remember that children's SDH and wellness are complex, interdependent and multifaceted. In a classroom, the learners have varying levels of biopsychosocial health and wellness challenges, which will be discussed around the multilevel framework of child health and wellness in

the South African context, namely according to the world of the child, the world around the child and the world at large.

■ The situation of children in South Africa

'A country where children have equal rights under the Constitution, but where the worlds into which they are born and their opportunities in life are very unequal.' (UNICEF n.d., n.p.)

The world of the South African child is a harsh one, as children's access to quality education remains impacted by poverty, inequality and socio-economic factors (Benque 2021). Without an adequately qualified teaching workforce and quality schooling, especially in rural and high-poverty areas, a child's access to an appropriate education is often limited, negatively impacting the future development of the child's learning ability and the formation of a sound foundation (Benque 2021). Furthermore, access to health care remains precarious, with children also living in inadequate housing, such as informal housing dwellings, shacks in backyards and rooms built of non-durable materials; additionally, adequate sanitation is also lacking (Benque 2021). Nutrition is also an issue of contention, as more than half of the children under the age of five-years-old are stunted, with South Africa having the highest level of stunting in Africa, a condition which negatively impacts the growth and development of a child (Benque 2021).

Finally, in the world of the South African child: firstly, many children are left without parents because of HIV, and secondly, as South Africa is an important destination for refugees, children often face stigmatisation and discrimination, with a high level of violence and cyberbullying (Benque 2021). This is the world of a South African child, with many of the challenges influencing the child's mental and physical well-being and health. By 2019, less than 11% of adolescents in South Africa had access to medical aid (StatsSA 2022, p. 29), which implied that approximately 90% of all South African adolescents are fully dependent on public health care. More than 70% of South African adolescents will first try self-medication before they seek treatment from health care professionals in 2019, and 106,383 registered live births were reported among South African adolescents (StatsSA 2022, p. 29). More than 12% of female adolescents opted for termination of pregnancy and 66% of male children aged between ten- and fourteen-years-old are regularly exposed to male circumcision (StatsSA 2022, p. 43). It is alarming to consider that 20% of South African children and adolescents had either an untreated or detected mental illness (StatsSA 2022, p. 46). From the South African National Youth Risk Behaviour Survey, 24% of adolescents (between Grades 8 and 11) felt sad, hopeless and depressed, and 21% tried at least once to commit suicide.

■ The world around the South African child

By 2021, 18.8% of children in South Africa lived without their biological parents; 33.8% of children lived with both parents; approximately 11.5% of children were orphaned (lost one or both of their parents); and 43.4% of children lived with their mothers only (StatsSA 2021b, p. 1). Less than half of the South African households (41.5%) were, in 2021, functioning as nuclear units, 33.6% of South African households were extended households and 1.6% as complex households (StatsSA 2021b, p. 9). In 2021, 20.9% of South African households had limited access to food and 23.8% had more limited access to food (StatsSA 2021b, p. 51). Learners must have access to a safe house with vector control, clean water and sanitation services, a balanced diet and sufficient sleep. This scenario does not apply to all South Africans; however, most of the population does experience these challenges.

The South African youth has the highest road accident fatalities compared with any other age group, albeit in four different categories of road users, namely as a driver (41.1%), passenger (51%), pedestrian (4.6%) or cyclist (3.4%). The most prevalent natural causes of death of South African youth are tuberculosis, HIV, influenza and pneumonia, heart disease, other types of viral disease and other types of natural causes (StatsSA 2022, p. 56). Non-natural causes of youth mortality are external causes of accidental injury, assault, transport accidents, intentional self-harm and other forms of non-natural deaths.

When developing a profile of specific disease burdens, cancer is not well-documented. Yet Hodgkin and non-Hodgkin lymphoma are the most prevalent cancers (24%) among children aged between ten- and nineteen-years-old, with a survival rate of 79% (Cancer Association of South Africa [CANSA]: StatsSA 2022, p. 39). Other types of cancers prevalent among children are bone cancer, brain cancer, leukaemia and connective tissue cancers. Myeloma leukaemia, lymphoid leukaemia and non-Hodgkin's lymphoma, as well as unspecified malignant neoplasms, are the major causes of cancer-related teenage mortality.

■ The world at large: South African societies and communities

Children should feel safe within their communities, neighbourhoods, families and school environment. As social beings, children are entitled to safe relationships with others, as well as basic services, such as education, health, security and protection. However, in the South African context, many societies and communities do not provide these very basic needs.

The 2018 Global Peace Index listed South Africa as one of the most violent and dangerous places on Earth, and getting worse, ranked 125 out of 163 countries (GPI 2018, p. 9).

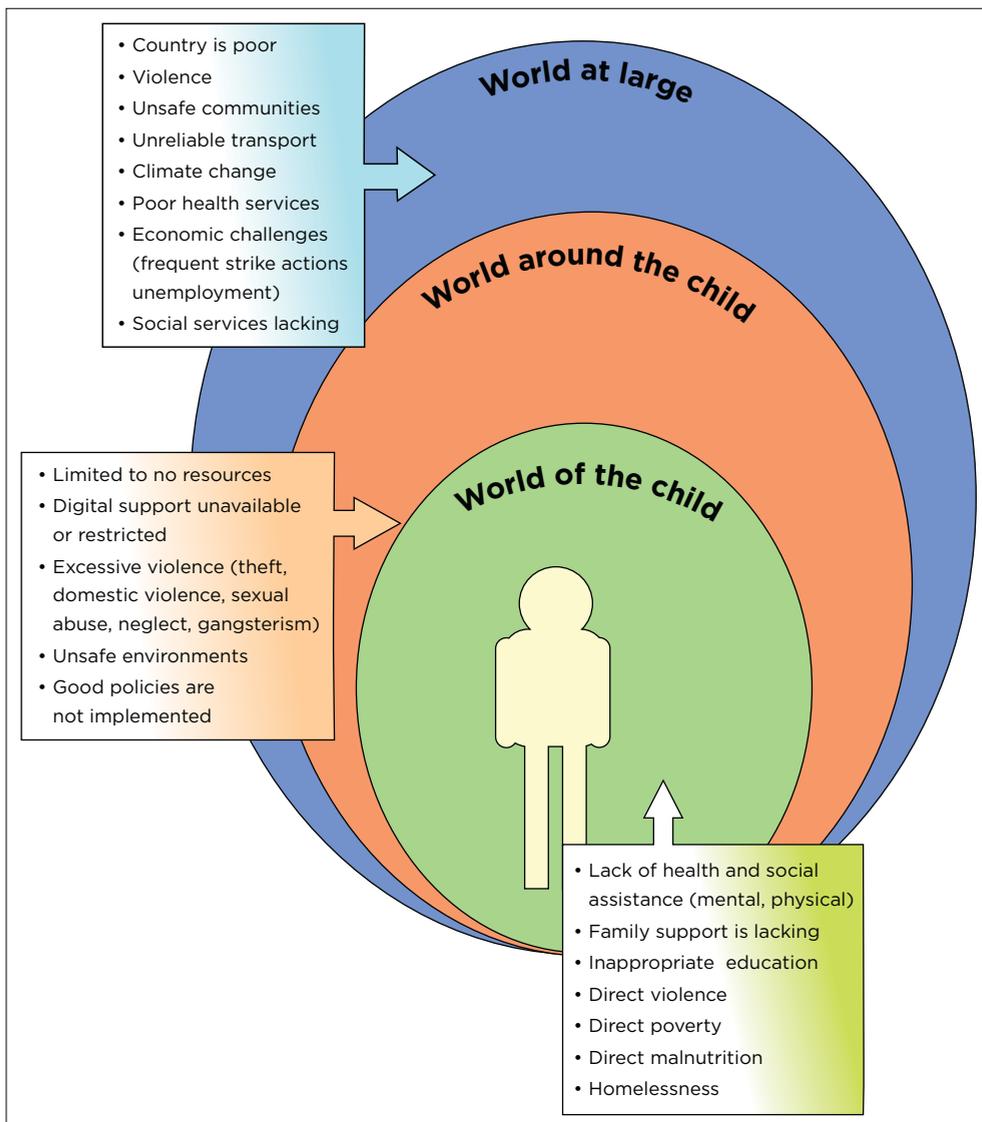
The 2022 South African crime statistics reported a 22.6% increase in the murder rate of children, with a 30% increase in attempted murder against children and approximately 75 people murdered daily within South Africa (*TimesLIVE* 2022). In 2019, 11.4% of South African households did not have safe or improved drinking water (StatsSA 2022, p. 21) and inadequate access to water, sanitation and hygiene (Abrams et al. 2014), all of which adds to the South African climate of unrest, poverty and crime. Growing up in a world of violence most definitely does influence society as a whole, and specifically the children within these societies.

Finally, children's health and wellness are influenced by the socio-economic status and income of the households where children live and the children's access to medicine, efficient doctors and appropriate medical treatment (see Figure 6.3).

■ LEGO®-based and Six Bricks® initiatives

Six Bricks® has been rolled out in three provinces (Eastern Cape, Free State and Gauteng) within the South African education system, which has led to more interest in this play-based learning tool, as it has the potential to enhance both academic and mental health in learners (Matangira 2022). One cannot say that this initiative will be the magic solution to health and wellness problems in the South African context; however, via this educational approach, a definite tool is provided that teachers could use to ameliorate the SDH effects on the youth of South Africa, which could be beneficial, educationally, for health care and overall well-being.

'Our future depends on the education we get' (Shanell Nkosi, seven-years-old) (Reddy 2020). Care and Support for Teaching and Learning (CSTL) is a UNICEF programme that has been introduced to hundreds of schools throughout South Africa (Reddy 2020). This programme has two main functions: mainstreaming care and support throughout the educational system and coordinating care and support activities delivered to the schools (Reddy 2020). Thus, to answer the question of 'What is the influence of the Six Bricks® initiatives on the complexities of health and well-being of the child within the South African context?', one can mention that one size does not fit all, but through educational initiatives such as LEGO® and Six Bricks®, much can be achieved, and health and wellness learning can be promoted.



Source: Applied from UNICEF (2020).

FIGURE 6.3: The South African context of the multilevel framework of child wellness.

So, what is LEGO®? Definitions.net (n.d.) defines LEGO® as:

[...] a toy made by the LEGO® Company and consisting of small, coloured, plastic bricks that can be made to join together and be taken apart, used to construct buildings, vehicles, etc. (n.p.)

That is exactly what it is: plastic toy bricks that can be interlinked and played with. Furthermore, to elaborate on the following concepts of Six Bricks®, one can consider this explanation (Care for Education 2020):

Six Bricks® is a concept designed to excite and motivate young children in the classroom to attain the skills, knowledge, and attitudes necessary for success in later life. To help the formation of a young learner's brain, developmentally appropriate early experiences and relationships are vital. To grasp concepts, children must be given time to manipulate concrete tools. They need opportunities to use their whole body to explore and aid their development of ideas, curiosity, and imagination. (n.p.)

Thus, combining the DUPLO®² six colourful bricks with educational and developmental activities to create the proudly South African concept of Six Bricks®, an initiative was developed whereby care, support and the facilitation of teaching and learning were concretely placed in the learner's hands in a playful and fun manner.

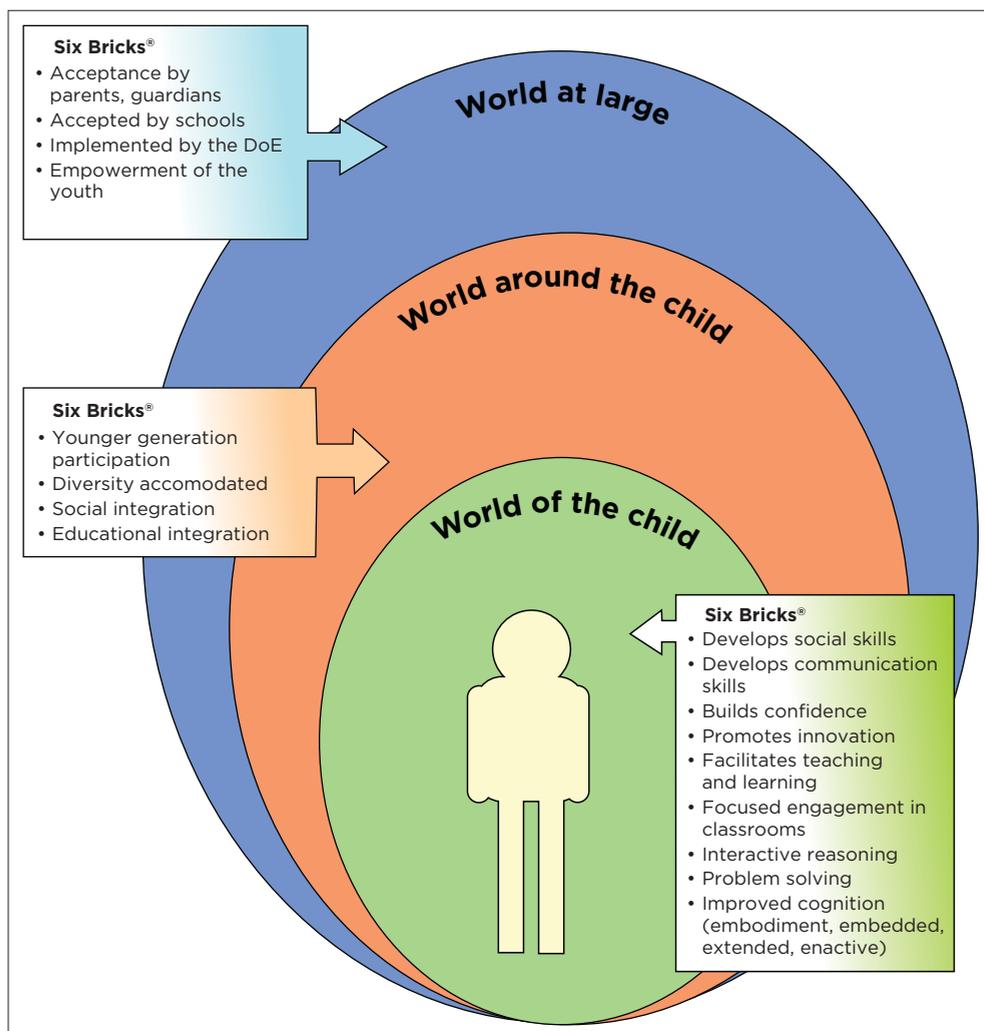
■ A realistic application of the Six Bricks® initiative to health and well-being complexities in children within the South African context

The application of Six Bricks® initiative was applied in the South African context following the three aspects that UNICEF suggested in their 2020 multilevel framework of child wellness (see Figure 6.4). This represents the 'after' scenario, which the Six Bricks® initiative brought to the child's world and the interacting systems.

■ World of the child

There are lots of reasons to consider applying the bricks for educational purposes for the child. As these bricks possess varieties of shapes and colours, they can be employed to build various models for various teaching modalities (Horikoshi 2020, p. 239). Thus, for the child, who is most probably already familiar with these bricks, utilisation would increase the learner's enthusiasm in participating, easing the burden on teachers and also facilitating the learning that takes place as these activities can be tailored to each child's needs (Horikoshi 2020, p. 253). Furthermore, children learn how to reason about structure from observation and by interacting with the world around them (Walsman et al. 2022, p. 90). Thus, by taking things apart and putting them back together again, children tangibly feel the world around them, promoting interactive reasoning and problem-solving. An added personal advantage that the bricks offer is the sharpening of social and communication skills that the child will need on

2. DUPLO® is a product of the LEGO Corporation® and can be seen as a bigger version of the original LEGO® brick designed to be used by younger children, as it is more difficult to swallow.



Source: Conceptualisation of this graphic was done by the authors of this chapter. The illustration was created by Laura Steyn, published here with appropriate permission from Laura Steyn.

FIGURE 6.4: UNICEF's 2020 multilevel framework of child wellness applied to the Six Bricks® initiative.

their path forward, academically and in life. The Six Bricks® initiative and other LEGO® intervention programmes are viewed as highly acceptable programmes that can help young people improve their communication and social skills (Barr et al. 2022, p. 1237).

Finally, a relatively new approach to cognition is also reflected in the Six Bricks® initiative, namely the '4E's' approach (Zenk et al. 2021, p. 847). The '4E's' denote an embodied, embedded, extended and enactive approach to cognition (Zenk et al. 2021, p. 847). Thus, *embodiment* can be seen as cognition that relies on the body, which is not always reliant on brain

functions, with cognitive systems *embedded* in external environments, with external environments being part of and constitutive of cognitive processes (*extended*) (Zenk et al. 2021, p. 847). Finally, cognitive processes actively engage with and co-create both their (internal and external) environments and themselves as living organisms in a closed feedback loop (Zenk et al. 2021, p. 847), shaping the environment and being shaped by the environment (*enactive*).

Thus, the Six Bricks® initiative stimulates the cognitive system within a child, facilitating interaction with their environment, just by using the six LEGO® objects (bricks) as tools for supporting their cognitive activities as well as sense-making of their world by using their creative processes. Succinctly put, Six Bricks® empowers the child within their world to function in the world around them and in the world at large.

■ The world around the child

Research findings suggest that LEGO® based activities, such as the Six Bricks® initiative and LEGO®-based therapy (LBT) are acceptable to facilitators and parents when used as an educational tool. With reports of improvements in communication and social skills (Barr et al. 2022, p. 1246), this initiative is an attractive and acceptable option for schools. Therefore, with the child working in the world around them, they become cooperatively innovative (Zenk et al. 2021, p. 847). Thus, with the child interacting with the world through playing with Six Bricks®, the child can physically externalise their ideas, encouraging an exploratory mode of thought and creation as opposed to following and executing a pre-existing plan (Zenk et al. 2021, p. 847).

■ The world at large

Implementing the Six Bricks® initiative is not a single cognitive system of one child at work, being involved in such activities, usually involves a whole group of systems interacting with each other and their artifacts, leading to a process of participatory sense-making and co-creation. (Zenk et al. 2021, p. 848)

The advocacy for the youth to participate in the development aspects of the society in which they live has been voiced by academics, practitioners and policymakers for several years (Le Dé et al. 2021, p. 867). LEGO®-based activities engaged children and fostered children's participation, giving them the capacity to accommodate diversity, facilitate creative processes and foster ownership and empowerment, which, through fun, equipped the children with knowledge and tools to engage in discussion with adults (Le Dé et al. 2021, p. 874). Thus, LEGO®-based activities provide tools and skills that have the potential to provide a playful platform for children to

participate and gain power in the everyday affairs of their locality (Le Dé et al. 2021, p. 876).

■ Conclusion

Looking realistically at the health and well-being of children in the South African context, one sees many challenges and at times the future looks bleak. Children are sensitive to the world around them, so it is no surprise that the child's environment can and will either be a positive or negative influence on the future of the child. As the LEGO Foundation® (2022) states:

Much as we'd love to, we can't swoop in and fix everything. But we can give children time and space to develop skills that help them cope with fear, loss, and change. (n.p.)

In conclusion, as mentioned previously, the Six Bricks® initiative is not a 'fix-all' remedy; however, it goes a long way in giving children a voice by promoting communication, building self-confidence and providing an educational foundation to all children who are exposed to this initiative. To secure future generations' health and well-being, present generations must be equipped to critically think, problem-solve and effectively communicate regarding SDH issues that South Africans are facing now and in the future, and the Six Bricks® initiative is a positive start.

PART 3

**LEGO® initiatives in the
South African community
context and beyond**

Africa Unit for Transdisciplinary Health Research (AUPHeR): A Six Bricks® Social Greenhouse® innovation

Christi Niesing

Africa Unit for Transdisciplinary Health Sciences (AUPHeR),
Faculty of Health Sciences, North-West University,
Potchefstroom, South Africa

Petra Bester

Africa Unit for Transdisciplinary Health Research (AUPHeR),
Faculty of Health Sciences, North-West University,
Potchefstroom, South Africa

Christelle Liversage

Africa Unit for Transdisciplinary Health Sciences (AUPHeR),
Faculty of Health Sciences, North-West University,
Potchefstroom, South Africa

How to cite: Niesing, C, Bester, P & Liversage, C 2023, 'Africa Unit for Transdisciplinary Health Research (AUPHeR): A Six Bricks® Social Greenhouse® innovation', in L Preston & W van der Merwe (eds.), *Six Bricks®: A path to wellness in the educational and health systems*, AOSIS Books, Cape Town, pp. 129-151. <https://doi.org/10.4102/aosis.2023.BK427.07>

■ Abstract¹

The Social Greenhouse[®] is an approach to implementing sustainable projects in different South African contexts. Building on over a decade's best practices of sustainable community development and highlighting practical tools, this chapter guides the reader in integrating the five phases of the Social Greenhouse[®] with the Six Bricks[®] initiative towards a sustainable impact in creating innovative solutions for complex challenges. The main research question thus posed will be: How can the Social Greenhouse[®] approach facilitate the sustainable integration of the Six Bricks[®] initiative? The Social Greenhouse[®] framework will be used in a practical application description to emphasise the importance of approaching and entering communities in a track-proven manner. This implementation approach may not only contribute to the sustainability of the Six Bricks[®] initiative, but the explication of this approach can be a tool for the future sustainability and ultimate success of similar projects in the rural educational sphere.

■ Introduction

The purpose of developing the Social Greenhouse[®] social innovation process was to fill the 'Technology Community Gap'. The South African government follows a multifaceted approach to implementing the National Development Plan (NDP). The NDP aligns with United Nations Educational, Scientific and Cultural Organization (UNESCO) 17 sustainable development goals (SDGs) to eradicate poverty (Scott et al. 2017, p. 78). Exuberant amounts of funding are spent yearly on developing innovations for communities and not with communities by implementing a top-down approach (Niesing 2016, p. 162). Integrating the Six Bricks[®] initiative with the Social Greenhouse[®] innovation process implementation of the Six Bricks[®] initiative within communities can be effortlessly achieved.

■ Problem statement

To attain the desired result in global societies, collaboration is required, or, succinctly put (Senge 2003, p. 2), 'realising desired results in a global society - or in any context - requires both learning and leadership, but above all it involves collective creating'.

Moss Kanter (2009) further identifies a need when attempting to attain positive results in global societies:

Big societal problems are the next innovation frontier, and the best companies are practicing what I call 'leadership yoga' — flipping the organization upside

1. This chapter represents a substantially reworking of more than 50% and is an amalgamation of two existing publications, namely Niesing et al. (2019) and Niesing and Bester (2019).

down to have their eyes to the ground to see the grass roots, where the next opportunities are starting to grow. (n.p.)

Therefore, from these two perspectives, one can see that genuine, sustainable community development can only be attained if communities engage as full partners and drive their development processes. Community members or recipients of interventions should not merely be passive ‘receivers’ or actors during these processes but fully engaged participants (Niesing 2016, p. 162). Moss Kanter (2010, n.p.) confirms this finding by stating: ‘change is a threat when done to me, but an opportunity when done by me’.

In a South African context, the South African government formulated the NDP for this developmental process. The NDP strategised a long-term perspective on sustainable development in support of the global SDGs (Republic of South Africa [RSA] 2022). With the government NDP development process, the South African Department of Basic Education (DBE) launched another initiative called the E³ national initiative (discussed in ch. 1) in partnership with the non-governmental organisation (NGO) Care for Education, whose staff are the global leaders in Six Bricks® training and development (DBE 2022; LEGO Foundation® 2022).

As a support effort of these initiatives, the Africa Unit for Transdisciplinary Health Research (AUTHeR) proposes a sustainable approach plan for the rollout of the Six Bricks® initiative in the Foundation Phase rural educational environment by using the Social Greenhouse® innovation process.

■ Aims and objectives

This chapter aims to highlight the role AUTHeR can play in integrating the Six Bricks® initiative into a community project. The objectives will be attained by a background discussion of the functions and services that AUTHeR provides for projects, the methodological approach, and how the Six Bricks® initiative will be interwoven into the Social Greenhouse® innovation process to provide an alternative sustainable manner to implement the Six Bricks® initiative.

■ Background

As a background to this chapter, the author will touch on the various strategies initiated by the South African government to support multiple helix approaches to facilitate the implementation of the NDP (Gachie 2020, p. 204). These include funding programmes to support research and development. Various research-informed interventions in communities in South Africa resulted from these developmental interventions without alleviating poverty or having tangible results for over 20 years (Ramnath 2015, p. 58). Many of the local

communities thus rejected most of the technologies developed through these research programmes; therefore, market entry failed (Hanlin 2022). The Africa Unit for Transdisciplinary Health Research has also implemented various programmes over the past fifteen years. Through these various programmes, best practices were identified, and literature generated from these initiatives led to the community technology gap being explored and solutions offered to improve the situation. By considering the Six Bricks® initiative, best practices will be identified which can assist in launching this initiative into communities by using the sustainable approach of the Social Greenhouse® innovation process.

■ Concept clarification

■ Africa Unit for Transdisciplinary Health Research

To ameliorate the community technology gap, intervention-based research was conducted by AUPHeR. The Africa Unit for Transdisciplinary Health Research is a research entity of the Faculty of Health Sciences, North-West University (NWU), and renders social innovation services through the Social Greenhouse® (AUPHeR 2022a). It enables research-informed community-based projects across disciplinary boundaries, offering realistic solutions to real-life challenges.

Therefore, for AUPHeR to be able to attain a multidimensional real-life impact on any community using the Six Bricks® initiative, the following research focuses are areas that AUPHeR promotes, namely, health promotion and well-being activation; sustainable diets as an essential aspect in well-being activation; and sustainable community development (AUPHeR 2022a).

With these areas synchronised with the strategic priorities of the broader South African health care arena, all projects are mapped according to various dimensions of holistic health care (AUPHeR 2022a), namely, physical health with an added psycho-social well-being aspect. Furthermore, sustainable diets and food systems, including consumer interests, holistically incorporate ethical, environmental and economic factors (AUPHeR 2022)

■ The core message and services provided by the Africa Unit for Transdisciplinary Health Research

The message that this research unit bases its services on is the core value of communities being complex and sensitive yet robust. Therefore, to strengthen communities, an asset-based approach is used because this

strategy facilitates the ability to enable a community to recognise its strengths by understanding what they have rather than what assets they need or lack. Thus, research and support done by AUTHeR emphasises a community's assets and does not just focus on the needs. This core message will be used as a foundation in this chapter.

To engage in communities and run the Social Greenhouse® innovation process using a sustainable approach for implementing any project, they are critical services needed for support of AUTHeR. Therefore, AUTHeR chooses to embrace the sustainable livelihood framework, making these efforts sustainable and not a 'once-off' initiative but a process measured over time. This being favoured as a single-impact measurement can be misleading, leading to a favoured holistic approach with participatory methodologies. To obtain grassroots insight, a bottom-up and top-down approach is always initiated, resulting in positive alliances when working with community forums. It is with this in mind that AUTHeR engaged with the Six Bricks® initiative to embrace the livelihood framework that endeavours to attain a sustainable holistic approach to a Six Bricks® community implementation.

The Social Greenhouse® presents social innovation services, which are employed to assess the community and devise a working plan before initiating any community engagement and support by consulting, referring, collaborating and aligning corporate social responsibility processes with community assets, needs and requirements. Services provided are fourfold: firstly, with a needs-solution matrix, whereby AUTHeR matches appropriate products and services with the specific community. Secondly, via participative designs, AUTHeR conducts community-engaged product development. Thirdly, AUTHeR implements the innovations and facilitation of all implemented community engagement products within the communities. This facilitation phase is then further supported as the adoption of innovations is helped by supporting these users. Finally, to monitor and evaluate the sustainability and impact of the initiative, AUTHeR manages monitors and measures the sustainability indicators. With this explanation, one can see that the Social Greenhouse® innovation process is a well-researched and intense process, which, with its multidimensional real-life impact, can be confidently used in conjunction with the Six Bricks® initiative in any community engagement rollout.

The Social Greenhouse® innovation process is as intense as it is in managing, monitoring and measuring the sustainability indicators, facilitating communication and being a hands-on team within communities, and it goes without saying that a support element is vital. Here, we will provide background to the support process regarding the Social Greenhouse® innovation process.

■ Support office to facilitate the Social Greenhouse® innovation process of the Six Bricks® initiative

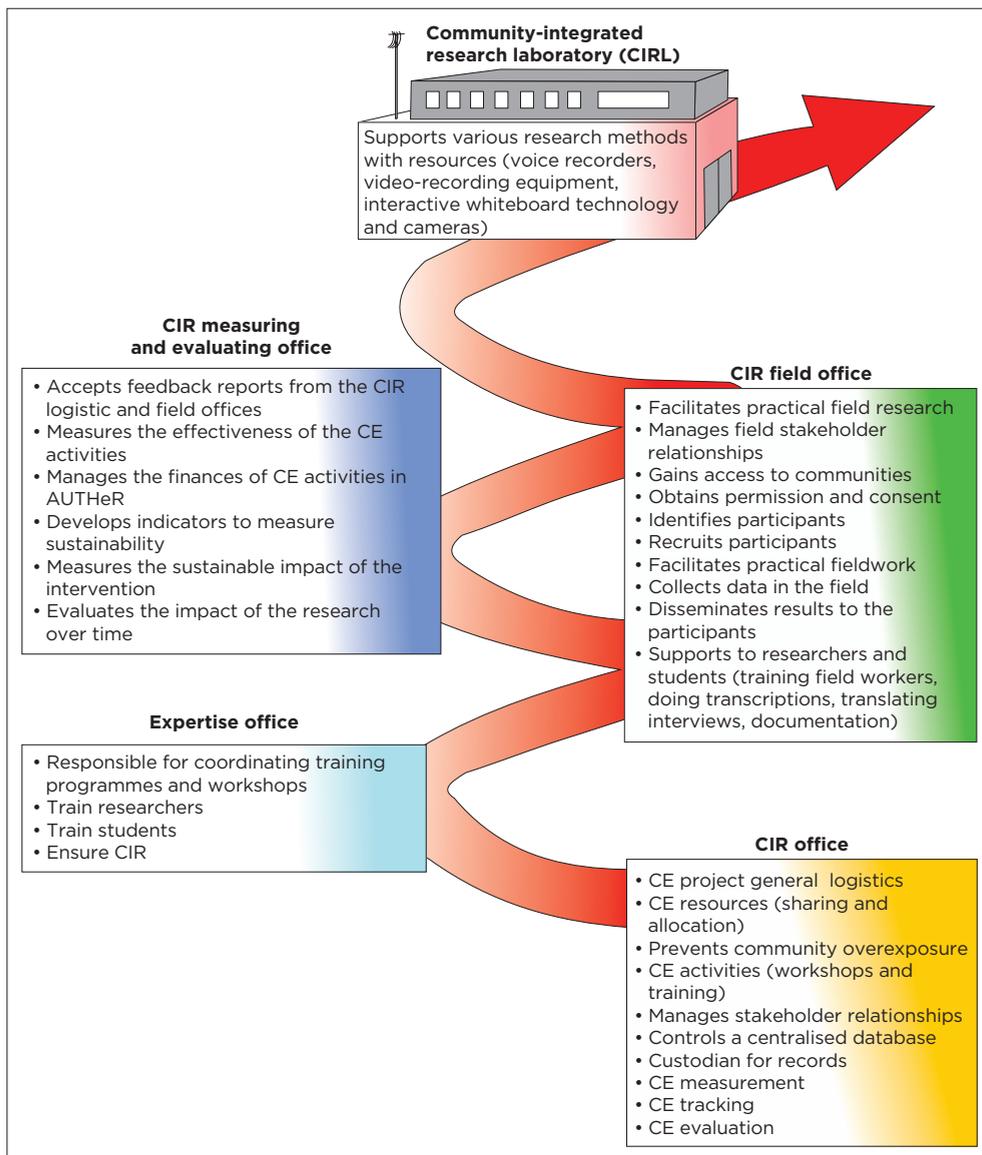
■ Background to the Social Greenhouse® innovative process

The intervention-based research planning resulted in a design thinking process, which bridged the community technology gap, resulting in the Social Greenhouse® process being born and developed. To enable community integrated research (CIR), the Social Greenhouse® functions from a fully functional support office on the premises of the Potchefstroom Campus of NWU (AUTCHeR 2022a). This office utilises cloud-based project management software and provides essential support and continuous reporting on Social Greenhouse® activities through the CIR Office (see Figure 7.1). Community integrated research within AUTCHeR has a holistic perspective of engaged scholarship; therefore, this office performs various functions which are available for Six Bricks® intervention planning: 'The Community Integrated Research Laboratory (CIRL) supports various research methods with voice recorders, video recording equipment, interactive whiteboard technology, and cameras' (Niesing et al. 2019, p. 8).

■ Methodological approach to the development of the Social Greenhouse®

AUTCHeR is a transdisciplinary research unit that includes multiple scientific disciplines focusing on shared problems referred to as 'wicked' problems and the active input of practitioners from outside academia. (Niesing & Bester 2019, p. 9)

A wicked problem is a social or cultural problem that is difficult or impossible to solve because of the complexities and interconnectedness of these problems (Wong 2022). Furthermore, with a wicked problem, it can be noted that the lack of clarity, both in their aims and solutions, is prominent, with these types of problems being subject to real-world constraints (Wong 2022). However, there is a growing trend to build connections between disciplines in solving complex or wicked problems (Velthuisen 2012). As far back as 1973 (Rittel & Webber 1973), these types of problems were defined, and the term wicked problems emerged. In a discussion of a wicked problem, one can start by acknowledging that these types of problems are so complex that one struggles to know where to start. Additionally, wicked



Source: Conceptualisation of this graphic was done by the authors of this chapter. The graphic was created by Laura Steyn, and was redrawn, published here with appropriate permission from Laura Steyn.
 Key: CIR, community integrated research; CE, community engagement; AUTHeR, Africa Unit for Transdisciplinary Health Research.

FIGURE 7.1: Support offices facilitating the Social Greenhouse® innovation process, which are available for the Six Bricks® initiative.

problems do not always have a definite solution, and at best, one may only mitigate the various negative effects (Wong 2022):

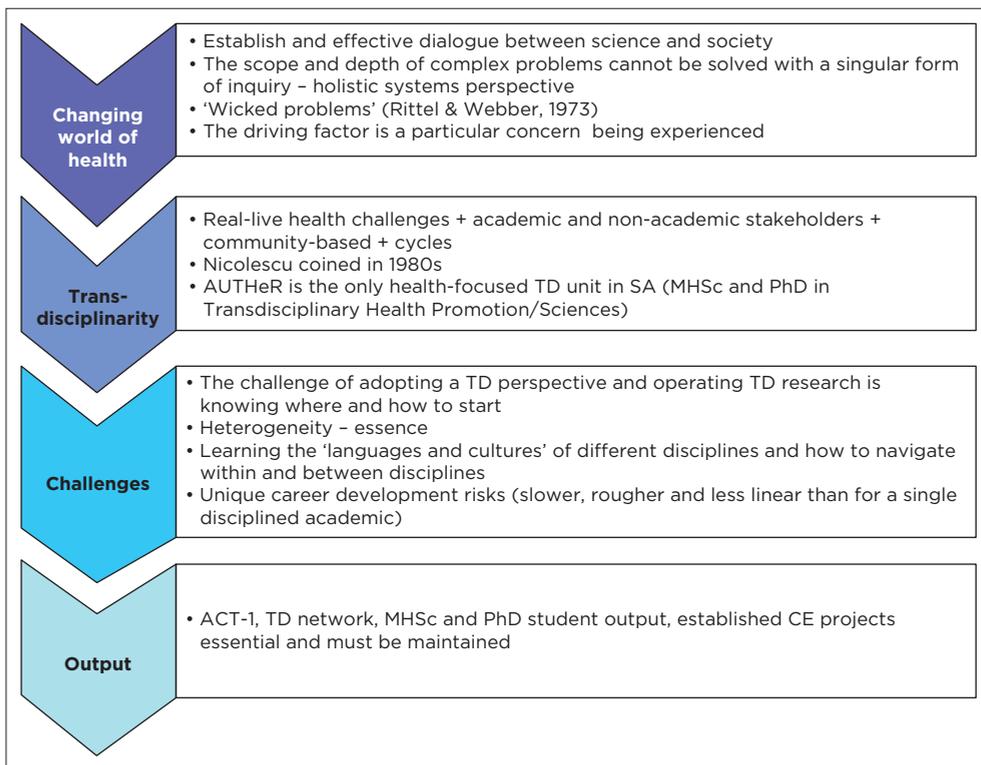
When you learn how to tackle wicked problems, you learn how to improve the world and the lives of the people who live in it. (para. 1)

In education, there tends to be a major 'wicked' problem that affects educational initiatives. That is how to translate these (often worthy) educational aims into lasting, authentic and tangible changes in routine educational practice (Armstrong 2017, p. 233). However, these changes cannot be 'unidimensional' (Armstrong 2017, p. 233) but must be adopted and included throughout society politically, socially, culturally, psychologically and behaviourally (Armstrong 2017, p. 233). Thus, when the concept of a wicked problem is applied to education, especially that of special needs and inclusive education, critical attention must be given to innovations necessary for educational change whereby key problems in the field are addressed (Armstrong 2017, p. 229). The Six Bricks® initiative, in conjunction with a transdisciplinary approach, can be seen as the beginning of a solution to the presenting educational wicked problem.

Transdisciplinarity seeks to transcend disciplinary perspectives, merging the concept of cooperation and working together into a broader framework in a systemic manner (Steger et al. 2021, p. 4). Transdisciplinarity thus requires practical engagement and personal investment by various individuals with issues of immediate concern, intending to create the highest form of an integrated project (Steger et al. 2021, p. 4). Moreover, a transdisciplinary approach (see Figure 7.2) aims to create solution-orientated knowledge, which can be transferred to both scientific and societal practice, as the knowledge is socially robust enough for research and implementation (Lang et al. 2012). The advantage of a transdisciplinary research design is that it enables buy-in from all the stakeholders. It is important to note that transdisciplinary research design, designed for a developed world context, cannot merely be replicated and transferred to a developing world context (Van Breda & Swilling 2019). Thus, the uniqueness and context must always be relevant to the designs used. This highlights the fact that the Social Greenhouse® innovation process will keep the design for implementing the Six Bricks® unique and relevant for the rural education context.

■ **Methodological approach to the development of the Social Greenhouse® process: Intervention mapping**

Implementation mapping, a novel five-step protocol, is based on intervention mapping, a technique that guides the design of multilevel health promotion



Source: With permission from AUTHeR, NWU.

Key: TD, transdisciplinary; MHSc, Masters degree in Health Sciences; PhD, Doctor of Philosophy degree/doctoral degree; ACT-1, First Africa Conference on Transdisciplinarity; CE, community engagement.

FIGURE 7.2: Flow diagram of the transdisciplinary approach applied by Africa for Transdisciplinary Health Research for developing the Social Greenhouse® in the real-world context.

interventions and implementation strategies (Fernandez et al. 2019, p. 1) and will be used as a methodological framework model to plan the Six Bricks® initiative. Implementation mapping involves five tasks (Fernandez et al. 2019, p. 1), namely:

1. To conduct an implementation needs assessment to identify programme adopters and implementers.
2. To define the adoption and implementation outcomes and performance objectives, identify determinants and create matrices of change objectives.
3. To choose theoretical methods (mechanisms of change) and select or design implementation strategies.
4. To produce implementation protocols and materials.
5. To evaluate implementation outcomes.

The Social Greenhouse® process is based on this novel, multilevel health promotion intervention, namely intervention mapping. Mapping is a

systematic process for developing strategies to improve the adoption, implementation and maintenance of evidence-based interventions in real-world settings (Fernandez et al. 2019, p. 1). Added to this methodological model is participatory action research (PAR) approach. Participatory action research is an approach to inquiry that has been used since the 1940s (Participatory Methods 2022). It is a research-to-action approach characterised by its unique approach to research that emphasises the importance of reflection, data collection and action geared towards bringing about change (Baum, MacDougall & Smith 2006, p. 854). Thus, in implementing the Six Bricks® initiative, PAR (the research-to-action approach) will reflect the application of the initiative, which would provide information (data), reflection on these results and then actions, which would enable the researcher to adjust the initial application to better suit the situation when the initiative is re-implemented. This cyclic approach is the main impetus behind PAR as it involves researchers and participants working together to understand and be part of a problematic situation and then be able to change it for the better (Participatory Methods 2022). Thus, this iterative cycle of research, action and reflection often enlightens participants, communities and societies to become aware of a situation or challenge and then take action (Participatory Methods 2022). This implies that the Six Bricks® initiative will be used to offer participants, communities and societies the opportunity to be exposed to the Six Bricks® initiative and then be allowed to reflect on the outcomes and change their perceptions before they are again exposed to the Six Bricks® educational tool.

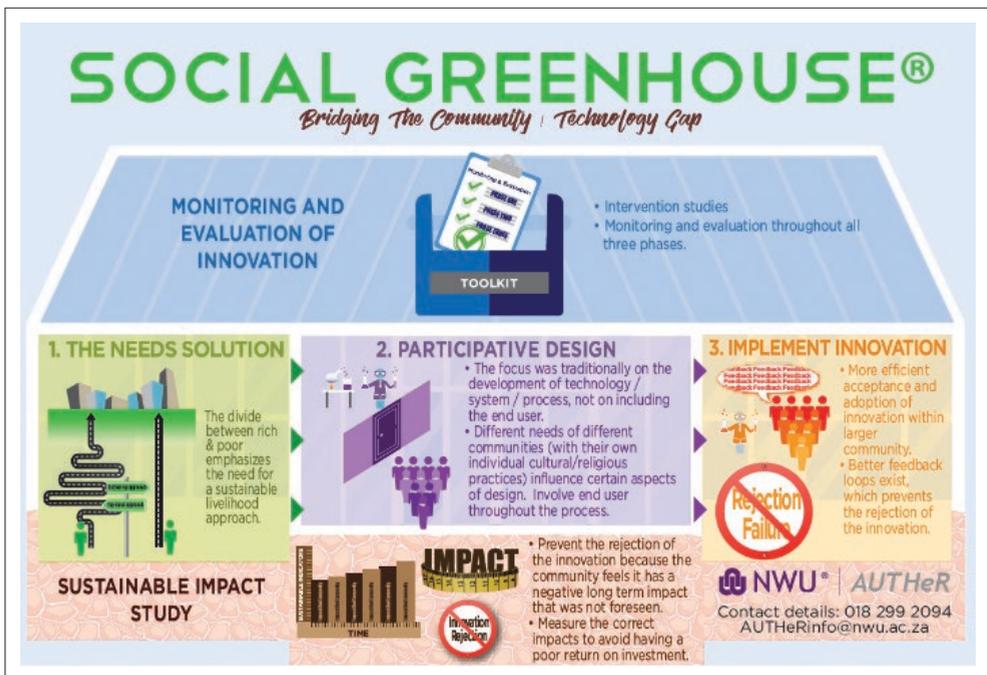
■ Defining the term ‘community’ in relation to the Social Greenhouse® process and the Six Bricks® initiative

‘The term community arrived in its current use, via Old French and Middle English, from the Latin words *communitas*, meaning *fellowship*, and *communis*, meaning common, public, or shared’ (Online Etymology Dictionary 2022, n.p.). Thus, communities have always been identified based on location, identity, culture or organisation, making the concept diverse, complex and dynamic. The Social Greenhouse® process accepts that communities are complex and sensitive yet robust. The Social Greenhouse® process aims to facilitate sustainable development in communities through the strengthening of community assets and not just focusing on community needs. Sustainability is not a once-off but a process and can only be measured over time because single-impact measurements can be misleading. To illustrate the planning of the Social Greenhouse® innovation process with the Six Bricks® initiative, the community that will be targeted to illustrate this will be a community reflecting a rural

educational environment of barriers in the Foundation Phase (Grades 1 to 3) in the South African educational system.

■ Achieving sustainability and sustainable goals

Achieving sustainable development goals by implementing the South African NDP requires sustainability research. Sustainability research or sustainability science attempts to resolve real-world sustainability issues by merging ecological research and social aspects and linking diverse forms of knowledge in the research process (Kajikawa, Tacoa & Yamaguchi 2014, p. 432). Understanding sustainability is a multifaceted, composite challenge as the concept involves multiple aspects of various sustainability issues, considered and dealt with simultaneously or all at once. Sustainability may be the goal, an ideal, an umbrella or a sub-discipline of various disciplines (Morse & McNamar 2013, p. 4), all depending on which lens is looked through for the research and in which context. However, sustainability is fundamentally embedded in a transdisciplinary approach (Lang et al. 2012, p. 26). Figure 7.3 illustrates the Social Greenhouse®



Source: Image acquired from AUTHeR, NWU and published with appropriate permission from AUTHeR, NWU.

FIGURE 7.3: An overview of the Social Greenhouse® process.

social innovation process that was applied to the Six Bricks® initiative in the Foundation Phase.

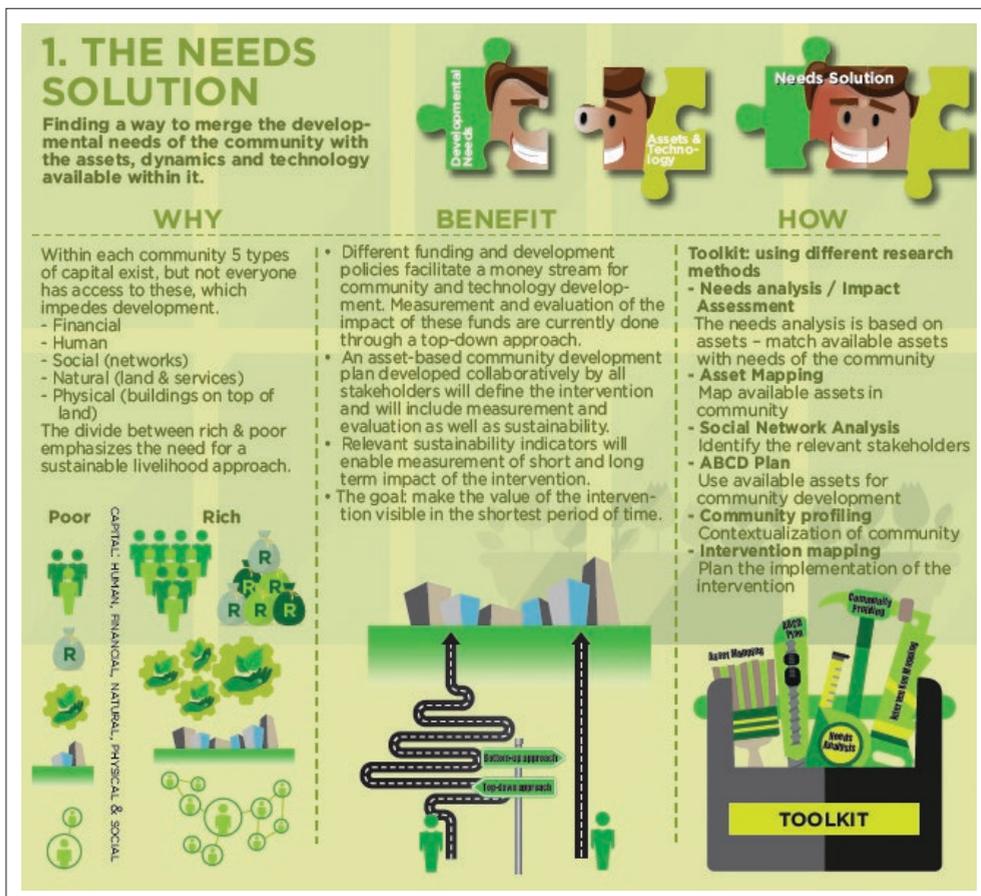
The Social Greenhouse® social innovation process (see Figure 7.3) consists of five phases, each including a toolkit to enhance the results of the process (AUPHeR 2022b). The application of the Six Bricks® in the Social Greenhouse® process is discussed in the context of four practical workshops and the PAR cycles. These workshops are some of the methods that can be applied in the Social Greenhouse® process to introduce the Six Bricks® initiative in an Foundation Phase context. In each phase, the Social Greenhouse® process is described and then followed by an explanation of how the Six Bricks® can be integrated into the process.

To illustrate this process of the Social Greenhouse®, barriers to learning experienced by children within an educational setting will be used. The educational barriers will focus specifically on a Foundation Phase classroom setting in a rural community, where this community challenge will be ameliorated by suggesting the use of the Six Bricks® initiative.

■ Phase 1: Overview of the needs-solution matrix of the Social Greenhouse® process

The needs-solution phase uses a matrix that enables the exploration and the merging of the developmental needs of the community with the assets and technology available within this group of people (see Figure 7.4). This needs-solution matrix, once highlighted, enables one to visually compare possible solutions by weighing variable needs based on importance (Peek 2022). Thus, this phase is held to select the best course of action for the project and aids in prioritising tasks, problem-solving and crafting arguments to defend decisions that have already been made (Peek 2022). During the needs-solution phase, impact indicators are also identified, which usually suggest positive, negative, intended and unintended influences and effects of the initiative.

According to the sustainable livelihood approach, the five types of capital that are usually available for sustainable community development are financial, human, social, natural and physical (Morse & McNamara 2013, p. 28). A challenge to sustainable community development is the limited access that individuals or groups within communities have to these assets, resulting in a divide between rich and poor. Thus, in doing a needs-solution matrix, optimal use of all resources which can and should be available for sustainable development in communities can be identified. Therefore, the main aim of the needs-solution matrix is to make the value of the intervention envisioned visible in the shortest period by linking micro-assets to the macro environment. This results in outcomes such as an asset-based



Source: Image acquired from AUTHeR, NWU and published with appropriate permission from AUTHeR, NWU.

FIGURE 7.4: An overview of the Social Greenhouse® process: Phase 1: The needs-solution matrix.

community development plan, relevant sustainability indicators and a collaborative definition of sustainability for the project (AUTHeR 2022b).

To perform this assessment matrix for the Social Greenhouse® social innovation process, a toolkit for this first phase is identified. With this toolkit, the identification of assets in the community through asset mapping is identified. This entails the exploration of the social networks within the community, identifying the stakeholders, profiling the community and developing an asset-based community development plan (AUTHeR 2022b). To enable all agents, including adopters, implementers and those responsible for maintaining the evidence-based intervention (Fernandez et al. 2019, p. 3), workshops will be presented. This will involve all stakeholders and facilitate a 'buy-in'.

Thus, to sum up, during the needs-solution phase, the Foundation Phase teachers are introduced to the Six Bricks® initiative, they are involved in the intervention and agree to apply the Six Bricks® initiative. The facilitator keeps a record of the discussion as participants construct, reconstruct and co-create a collaborative participatory workshop regarding the situation and the Six Bricks® initiative. This phase is where most of the initial data are collaboratively collected.

Thus, a collaborative effort of constructing–re-constructing and co-creating, which is used throughout the entire Social Greenhouse® process, develops different scenarios, enabling adjustment and change in outcomes as seen as necessary.

The needs-solution phase is usually done through interactive workshops and face-to-face discussions (focus groups and individual interviews). Data from the Six Bricks® initiative will be continually collected and available to assist any stakeholder groups in asset mapping activities to build their communities and identify different assets, needs, strengths and weaknesses. Furthermore, during the needs-solution phase, the Six Bricks®'s actual LEGO® DUPLO® bricks can also be used as a tangible tool to visually represent stakeholder identification, social networks, ideas and other aspects of this planning phase. As this group forges ahead, the development of the asset-based community development plan develops. Thus, while developing the plan, the Foundation Phase teachers are provided with all strategies to stimulate creative thinking and cause-and-effect understanding of the situation that faces them.

To implement the needs-solution phase, two workshops with the Foundation Phase teachers will be allocated. These workshops will be the first steps in the Social Greenhouse® process.

■ **Six Bricks® Workshop 1: The needs-solution matrix: Description of the first workshop which will be carried out with the identified community (Foundation Phase teachers)**

When attempting this phase, the methods used need to be participatory and include techniques such as interviewing, focus groups, mapping (plotting the information), modelling, observation and comparison (Bell & Morse 2012; Chambers 1994). Thus, during this first contact with the identified community (the Foundation Phase teachers), one must consider the behaviours and attitudes that result in the empowerment of these individuals, allowing them to take matters into their own hands, embrace errors, facilitate specific processes and always use their best judgment

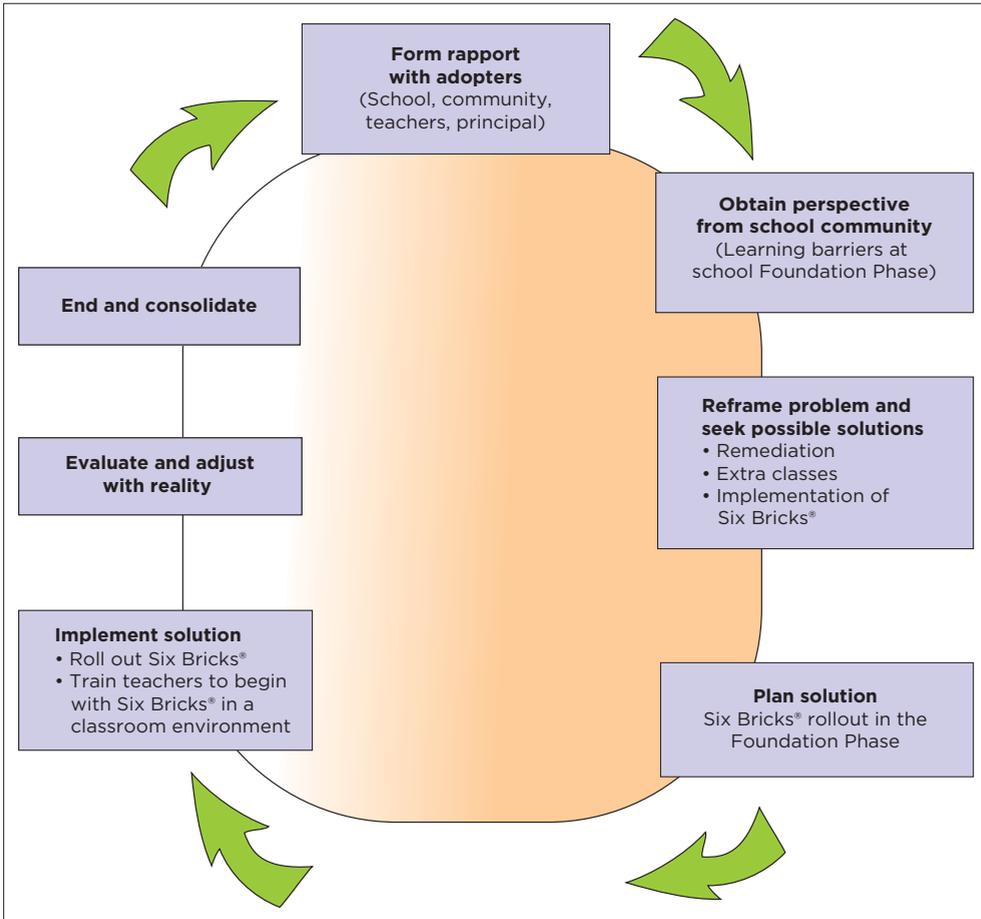
(Bell & Morse 2012; Chambers 1994). Sharing between different actors encourages participants to share their knowledge with others while creating a sense of partnership (Bell & Morse 2012; Chambers 1994). Thus, during this first workshop, everyone gets to build rapport with each other and find out about the community's financial, human, social, natural and physical assets and resources, and the Social Greenhouse® process is discussed. After this initial contact session, all participants have the opportunity to go and think about the suggested Social Greenhouse® process.

■ **Six Bricks® Workshop 2: The needs-solution matrix: Application: Description of the second workshop, which will be carried out with the identified community (Foundation Phase teachers)**

During the workshop, a group of the school's community (Foundation Phase teachers and maybe parents and the governing body of the school) is gathered and the facilitator of the Social Greenhouse® process begins by performing a needs-solution matrix (see Figure 7.5). After rapport is further formed with the school stakeholders, a cooperative discussion is initiated regarding exactly what the challenges are that they face and what their perspectives are of these challenges. For this initiative, examples of barriers that are experienced by the learners will be discussed. The challenges are then reframed and possible solutions are sought. One of the planned solutions that will be suggested to the teachers to ameliorate the barriers to learning that the learners experience will be the Six Bricks® initiative. This initiative will be introduced to the school at the Foundation Phase level. After a participatory discussion, the implementation solution is then devised and collectively accepted, which leads to the decision to implement the Six Bricks® initiative. The realities of the situation and the context of the implementation are then discussed and the necessary adjustments made. These along with the impact indicators (positive, negative, intended and unintended influences and effects of the initiative) are again noted. The workshop thus ends with a consolidation of the plan to implement the Six Bricks® initiative.

■ **Phase 2: Overview of the participative design process of the Social Greenhouse® process**

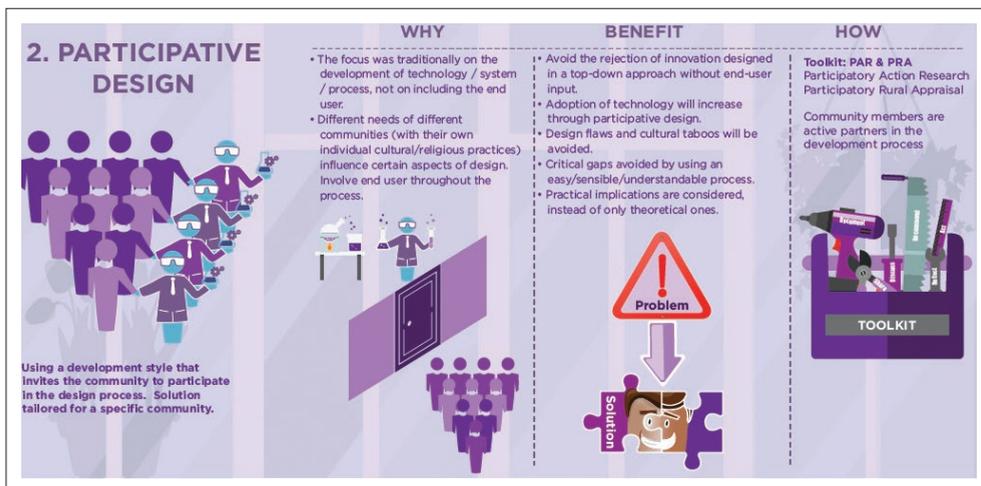
The participative design phase includes a PAR process consisting of various cycles which include all stakeholders (see Figure 7.6). Participatory action research is a research-to-action approach characterised by its unique approach that emphasises the importance of reflection, collection of data



Source: Conceptualisation of this graphic was done by the authors of this chapter. The illustration was created by Laura Steyn, published here with appropriate permission from Laura Steyn.

FIGURE 7.5: An example of the application of the needs-solution matrix within a Foundation Phase school community.

and action geared towards bringing about change (Baum et al. 2006, p. 854). It can therefore be thought of as an ‘umbrella’ research design that follows a systematic inquiry process in direct collaboration with individuals affected by a specific social phenomenon (Baum et al. 2006, p. 854; Cargo & Mercer 2008, p. 327). In its simplest form, the PAR process consists of four phases: problem identification or fact-finding, planning, action and evaluation (Carr & Kemmis 2003, p. 179). The participative design phase of the Six Bricks® initiative will comprise three workshops that essentially fall under the PAR umbrella. Each of the three workshops will have its methodology and data collection processes. Again, a collaborative effort of constructing, re-constructing and co-creating will be used throughout



Source: Image acquired from AUTheR, NWU and published with appropriate permission from AUTheR, NWU.

FIGURE 7.6: An overview of the Social Greenhouse® process: Phase 2: Participative design process.

the participative design phase in a further effort to develop different scenarios and adjust and change outcomes as seen as necessary.

□ **Six Bricks® Workshop 1: Application of the participative design process: First workshop that will be carried out with the identified community (Foundation Phase teachers and other school stakeholders)**

During the participative design phase, additional aspects of a solution to challenges need to be considered: these include cultural practices, policies, community rules and restrictions. For example, for the Six Bricks® initiative, school regulations and DBE requirements will have to be thoroughly discussed. By involving all school stakeholders from the inception of any initiative, the pros and cons can be transparently and critically noted. This phase is beneficial to all stakeholders because when everyone is ‘on board’, there is less chance of rejection or limiting products and technology. Furthermore, design flaws and cultural taboos can be minimised and critical gaps avoided. As this is an application phase, practical implications are considered and manifested from the theoretical aspects. This is done by having PAR form the basis of this phase. Therefore, the suggested application and actual implementation plans of the Six Bricks® initiative during this phase can assist in creative problem-solving while stakeholders are going through the PAR cycles of reflection, collection of data and action. This workshop will comprise all stakeholders involved with the Six Bricks® rollout.

□ **Six Bricks® Workshop 2: Description of the implementation of innovation in other settings: Second workshop that will be carried out with the identified community (Foundation Phase teachers)**

The second workshop scheduled for the participative design phase would enable contextualised adaptation for replication of the Six Bricks® initiative in other settings. Thus, by contextualising the working solution that was adopted in the first workshop, replication can be considered in other settings. This will permit the adoption of the technology or solution, in this case, the Six Bricks® initiative, to a broader audience to prevent any possibility of the rejection of the innovation. The participative design phase is supported through intervention research methods. Thus, from this one group of Foundation Phase teachers, there may be others in other communities who would also like the initiative to be rolled out in their communities thereby strengthening the initiative.

□ **Six Bricks® Workshop 3: The implementation of innovation in other settings: Third workshop that will be carried out with the identified community (Foundation Phase teachers) using a focus group**

One of the methods to enable contextualisation can be based on a focus group discussion (Scribbr 2021):

A focus group is a research method that brings together a small group of people to answer questions in a moderated setting. The group is chosen due to predefined demographic traits, and the questions are designed to shed light on a topic of interest. (n.p.)

This workshop will facilitate the understanding and necessity of the initiative by using a focus group to obtain feedback regarding the Six Bricks® initiative. To highlight the value of these insights and perceptions, focus group themes are often constructed and negotiated in social settings, where participants can share and comment on their experiences with one another (Kitzinger 1994, p. 104; Nyumba 2018, p. 22). Moreover, focus groups are also known to promote self-disclosure while also offering mutual support as participants interact, respond to and trigger specific ideas among one another, ultimately generating data that might not have been acquired through individual interviews (Kitzinger 1994, p. 109). The number of focus groups that will be conducted will depend on the number of participants who want to participate; however, to illustrate the Six Bricks® initiative process, we only mentioned one focus group. All the collected information will be documented and conveyed to all stakeholders.

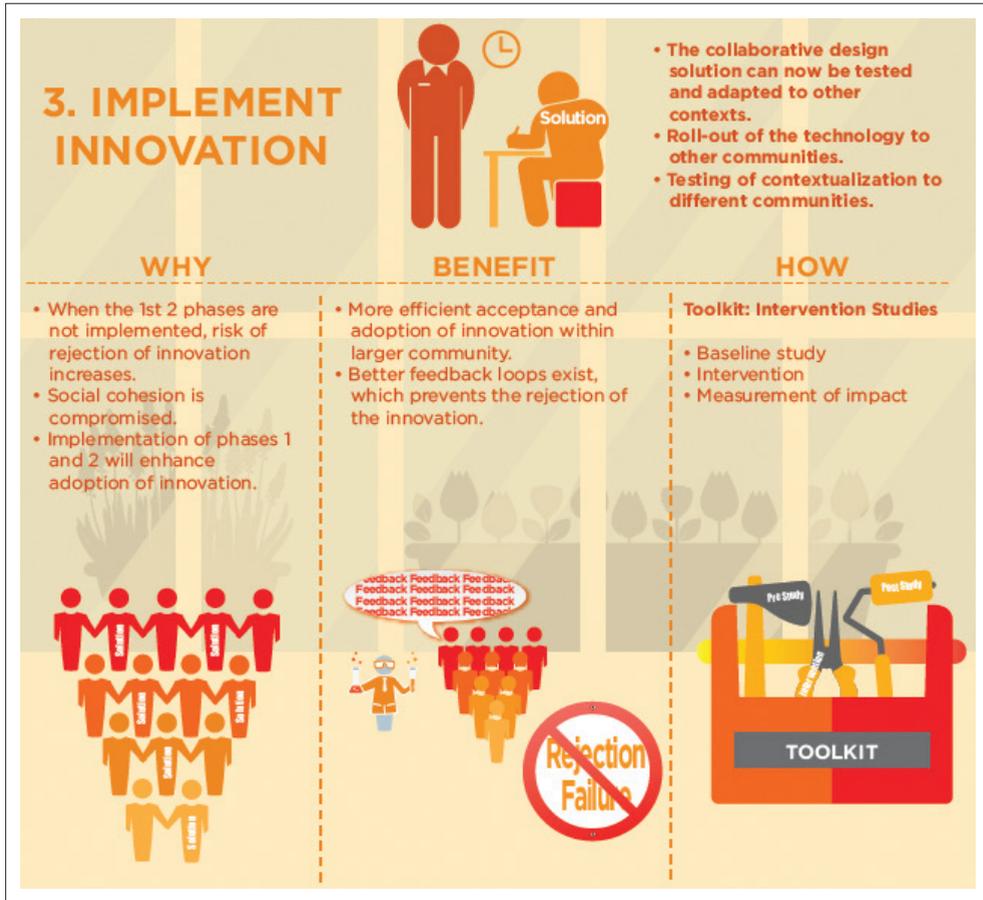
This focus group discussion will further allow the research team to capture group interactions, dynamics, and specific processes and phenomena that will reveal insights into the group's experiences around the suggestion, impact and value of the Six Bricks® initiative on the group and in the larger community. Furthermore, with this insight, the research team will be able to generate data about the group's social construction of their real-life experiences and connect these with the literature researched. Additionally, indicators identifying successes and positive and negative concerns, as in the needs-solution phase, will be noted and refined. Impact indicators usually identify positive, negative, and intended and unintended influences and effects.

□ Phase 3: Application of the implementation of innovation in other settings

The focus group discussions in the participative design phase aimed to verify the indicators identified in the literature, which will include indicators that define success and assist in refining the impact indicators. Impact indicators usually identify positive, negative and intended and unintended influences and effects (see Figure 7.7). Thus, this implementation innovation phase is the actual Six Bricks® initiative that will be implemented in the classroom. If the first two phases are not correctly implemented, there could be a chance of rejection of the Six Bricks® initiative; however, as these two former phases were thoroughly implemented with the workshops, it is doubtful that a rejection of the innovative Six Bricks® initiative would take place. Therefore, more social cohesion would be experienced if the Six Bricks® initiative was adopted. Furthermore, with efficient acceptance and better feedback from all stakeholders, a significant 'buy-in' would be obtained.

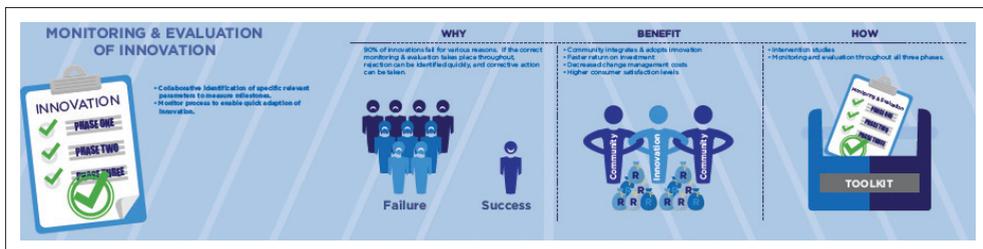
□ Phase 4: The monitoring and evaluation of innovation

Phase 4, the monitoring and evaluation of innovation phase, is linked to the indicators developed in the needs-solution phase (Phase 1) and the participative design phase (Phase 2). This monitoring and evaluation process facilitates the monitoring and evaluation throughout the first three phases of the Social Greenhouse® process (see Figure 7.8). In the monitoring and evaluation of innovation phase, the indicators developed in Phases 1 and 2 are refined throughout the process, ensuring real-time measurement of the impact of the process in the specific community. This constant monitoring and evaluation allow for timely adjustment and adaptation during the implementation and general running of the initiative, as well as limiting the innovation being rejected.



Source: Image acquired from AUTHeR, NWU and published with appropriate permission from AUTHeR, NWU.

FIGURE 7.7: An overview of the Social Greenhouse® process: Phase 3: Implementation of innovation in other settings.



Source: Image acquired from AUTHeR, NWU and published with appropriate permission from AUTHeR, NWU.

FIGURE 7.8: An overview of the Social Greenhouse® process: Phase 4: The monitoring and evaluation.

Thus, the benefits of the Six Bricks® initiative in a community could include community integration and adoption innovation (teachers and learners working together on learning problems), faster return on investment (better academic results), decreased change management costs (all the bricks are donated), higher consumer satisfaction levels (parents, learners and teachers are satisfied) and in the long run, sustainable development within the school community.

Understanding the monitoring and evaluation during the monitoring and evaluation phase is an absolute requirement, which will take the form of the third workshop. During this workshop, participants should by now understand the interventions' actual impact over time. Therefore, a logical framework approach can be used to provide indicators of the processes and the project's impact and sustainability (Bell & Morse 2012, p. 122). The logical framework, also called the log frame approach, encourages more comprehensive thinking to represent findings in their totality while acknowledging both hard and soft elements of a study or project (Bell & Morse 2012, p. 123). The log frame approach is descriptive and analytical (Bell & Morse 2012, p. 122). It enables those involved in a project to set out both the formal (outputs, purpose and goals) and informal aspects during each phase (Bell & Morse 2012, p. 122). The log frame approach allows project performance to be quantitatively or qualitatively monitored and analysed (Bell & Morse 2012, p. 123). The log frame approach encourages involving as many persons in a project as possible so that the resultant change to the environment can be of value (Bell & Morse 2012, p. 123). The entire log frame approach considers verifiable indicators, means of verification and assumptions to track goals, purposes, outputs and activities (Bell & Morse 2012, p. 123). Verifiable indicators are measures used to verify the extent to which a goal is reached. At the same time, verification considers the data sources necessary to confirm the measurement for which purposes are being achieved (Bell & Morse 2012, p. 123). To obtain these data, a workshop will be arranged for all role players.

□ Six Bricks® Workshop 1: The description of the monitoring and evaluation

During the monitoring and evaluation of innovation phase, a monitoring and evaluation workshop will be held whereby the Six Bricks® initiative is reported and analysed. All stakeholders will be involved in adding their perceptions to the data collected during the workshop.

Indicators noted throughout the Social Greenhouse® process so far are refined, adjusted and amended. This will ensure timeous changes for future directed planning. In this workshop, the community will integrate and voice

their opinions about the Six Bricks® initiative. Aspects such as the effectiveness of the initiative, pros and cons, and general implications that emanate from the Six Bricks® initiative will be brought to the workshop.

□ Phase 5: Description of sustainable impact

Phase 5, the sustainable impact study phase, measures the long-term sustainable impact of the innovation by using short-term indicators, which measure the impact over time in different settings (see Figure 7.9). The benefits of measuring the sustainable impact include greater return on investment (better academic results), improved long-term planning strategies (better teaching and learning) and a clear picture of the truly sustainable impact on the community (better overall education for Foundation Phase learners). Sustainability planning and prediction are achieved by the identification of sustainability indicators (with the collective community and stakeholder input), long-term measurement of impact over time and sustainable impact toolkits built into all phases throughout the process. One workshop will be arranged to enable the communities involved to report their findings.

□ Six Bricks® Workshop 1: Description and application of sustainable impact

The purpose of the final workshop of the series is to take the data generated in the first two workshops, transfer the knowledge and co-create new knowledge that can ultimately be used to elicit action to bring about change in the impact of interventions. To ensure that learning is successfully transferred and co-created, the research team proposes hosting a World Café. The World Café approach requires that individuals sit in small groups in a café setting while engaging in conversations regarding the identified phenomenon (Aldred 2011, p. 58; Fouché & Light 2011, p. 31). A World Café is ideally suited for large groups as it is a conversational process that assists groups in engaging in constructive dialogue that can build relationships and foster collaborative learning (Fouché & Light 2011, p. 32). World Cafés also strive to create environments where the shared activities of the



Source: Image acquired from AUTHeR, NWU and published with appropriate permission from AUTHeR, NWU.

FIGURE 7.9: An overview of the Social Greenhouse® process: Phase 5: Sustainable impact.

participants result in positive outcomes and responses to challenges and problems that may arise (Aldred 2011, p. 58).

During this final workshop, reporting about the Six Bricks® initiative will take the format of a World Café method of data collection. This method provides the participants with an excellent opportunity to see their input visually as the group facilitators will write down all their comments. Furthermore, this method will promote the participants' creative thinking, assist with the formulation of their ideas and concretely depict their thoughts. Once again, the concrete bricks can also be used to assist in engaging the participant. Overall, this last workshop will be used to provide feedback to all stakeholders and make decisions regarding long-term implementations and planning. Again, as it involves everyone, all decisions will be made in a participatory manner.

■ Conclusion

This chapter illustrated the Social Greenhouse® framework as a practical application using the Six Bricks® initiative, an integrative tool, to illustrate the importance of approaching and entering communities in a trusted manner, explicating the future sustainability and ultimate success of similar projects in the educational sphere.

The Social Greenhouse® social innovation process provides a practical and innovative process for understanding and developing solutions for complex problems. The Six Bricks® initiative can be applied as a tool to facilitate the process of coping with learning barriers of learners in the Foundation Phase. It can be seen that using the Social Greenhouse® social innovation process, successful implementation of the Six Bricks® initiative can be done in a community in a participatory manner involving all. With this meaningful process, sustainable implementation within communities is achievable. Thus, even before using this tool in the classroom, stakeholders can experience the value and dynamic versatility of this initiative for themselves by working through the Social Greenhouse® social innovation process.

Six Bricks® for community wellness: Empowering role players in supporting children in communities

Elmari Fouché^{a,b}

^aSchool of Psycho-Social Education, Subject Group Educational Psychology, Faculty of Education, North-West University, Potchefstroom, South Africa

^bCommunity-based Educational Research (COMBER), Faculty of Education, North-West University, Potchefstroom, South Africa

■ Abstract

The idea of community is often thought of as something more than the sum of parts (Atkinson et al. 2020, p. 1903). It is therefore challenging when comprehending a more subjective aspect of local life within communities, as it tends to reflect the way individuals feel or emotionally function and present as satisfied, healthy and happy (Atkinson et al. 2020, p. 1903). By creating specialised wellness programmes, communities can be successfully involved in their development, growth and well-being. Wellness programmes are thus seen to be at the core of many community engagement initiatives. In this chapter, the Six Bricks® initiative is explored

How to cite: Fouché, E 2023, 'Six Bricks® for community wellness: Empowering role players in supporting children in communities', in L Preston & W van der Merwe (eds.), *Six Bricks®: A path to wellness in the educational and health systems*, AOSIS Books, Cape Town, pp. 153–170. <https://doi.org/10.4102/aosis.2023.BK427.08>

as a tool for wellness by empowering teachers, parents and guardians to support children in communities. The Six Bricks® initiative will concentrate on ways children learn about themselves and others through engaging in activities that develop their sense of citizenship and help them deal with issues of social justice, fairness and empowerment. To focus this chapter, the research question posed was: How can Six Bricks® influence community involvement to promote citizenship?

Data were gathered through book reviews, observations, first-hand knowledge and personal experiences. As a result, suggested community wellness projects were generated, which were applied at various sites in the North West province of South Africa. Results showed evidence of the Six Bricks® initiative having a generally positive effect on the role players, resulting in a positive spin-off for community members in which these community projects were rolled out.

■ Introduction

Community wellness can be assessed by considering the 'self' as an autonomous, rational and independently acting or feeling individual (Atkinson et al. 2020, p. 1903). Furthermore, the main interest thus focuses on how community aspects of life impact one's subjective well-being (Atkinson et al. 2020, p. 1903). On the topic of subjective well-being, it is suggested that in assessing how well one's life goes, thought must be given to relationships with other people and places, as well as materiality; therefore, this process reflects a fluctuating subjective state (Atkinson et al. 2020, p. 1917; Niedderer et al. 2022, p. 2). Given the relationship between the individual and their community, many individuals, especially of the younger generation, narrate their community life-world experiences through meaningful experiences and mindful reflection, which enhances their well-being (Niedderer et al. 2022, p. 12). Such activities promote a focus on the present and future, enhancing emotional well-being by giving hope. These activities are a great way to demonstrate the concept of sharing and being involved in social skills, and these activities are appealing, enjoyable and motivating (Barr et al. 2022, p. 1246). Additionally, this teaches children the value of ethics and living fairly. With Six Bricks®, there are countless possibilities and special learning opportunities to promote community involvement and citizenship.

Such activity is provided by the Six Bricks® initiative. Furthermore, identifying, recognising and prioritising the needs of parents, especially in resource-restrained contexts, had a great potential to improve the child's development, which positively influences their well-being (Skeen et al. 2022, p. 5) throughout the child's life course.

■ Problem statement

Children growing up in the 21st century and during the Fourth Industrial Revolution (4IR) require specialised abilities to meet the demands of their constantly changing environments (Van Heerden & Veldsman 2021, p. 84). These abilities include skills such as the capacity for self-reflection, creativity, effective communication and teamwork (Van Heerden & Veldsman 2021, p. 85). By including children of various age groups in stimulating activities where they learn about themselves and others through play, many challenges are addressed (Van Heerden & Veldsman 2021, p. 90). Furthermore, if taught from a young age, these abilities develop into essential indications of citizenship education later in their lives (Joubert 2021, p. 65). Citizenship is regarded as a universal human task, thought to have important implications for the well-being of young individuals and for the communities in which they live (Stephen 2017, p. 5). Therefore, all of humanity should take on the burden of developing this shared humanity based on the respect of moral principles (Joubert 2021, p. 66). With this important task, it is required that one considers personal values as well as the values of the community in which one resides and that positive, responsive citizenship and leadership are key to the individual, family and community (Stephen 2017, p. 5). For the younger generation, learning these personal and community values and respect can be acquired through play. Children should not just be told what citizenship is; instead, they should experience it first-hand by engaging in activities that provide them with various opportunities to use all their senses and come to understand the concept for themselves (Joubert 2021, p. 68). Only after this personal engagement will the younger generation be able to appreciate its genuine long-term benefits of community and wellness.

Therefore, the 21st-century child growing up during the 4IR needs levels of specialised abilities to meet the demands of their constantly changing environments. It is suggested that by using the Six Bricks® for community wellness, empowerment of teachers, parents and guardians will occur, enabling them to support children in their communities.

■ Aims and objectives

When participating in the Six Bricks® initiative, the teacher and the young child are constantly engaged in activities that promote social justice, democracy, citizenship and general social skills (Barr et al. 2022, p. 1237). Tasks such as setting ground rules for the classroom, taking part in lessons, using and sharing resources in the classroom and communication (Agbagbla 2018; Joubert 2021, p. 70) needed for positive social interactions are all encompassed in the Six Bricks® initiative activities. With the Six Bricks®

initiative, children learn how to share resources when engaged in these activities which require learners to take turns using the bricks and give each other a fair chance (Barr et al. 2022, p. 1246). This chapter aims to illustrate how the Six Bricks® initiative can promote community wellness by empowering teachers, parents and guardians. The objectives set for this chapter are to discuss the concepts to provide an in-depth understanding of the essence of the chapter and to delineate the activities that will be used for adult empowerment to support the child.

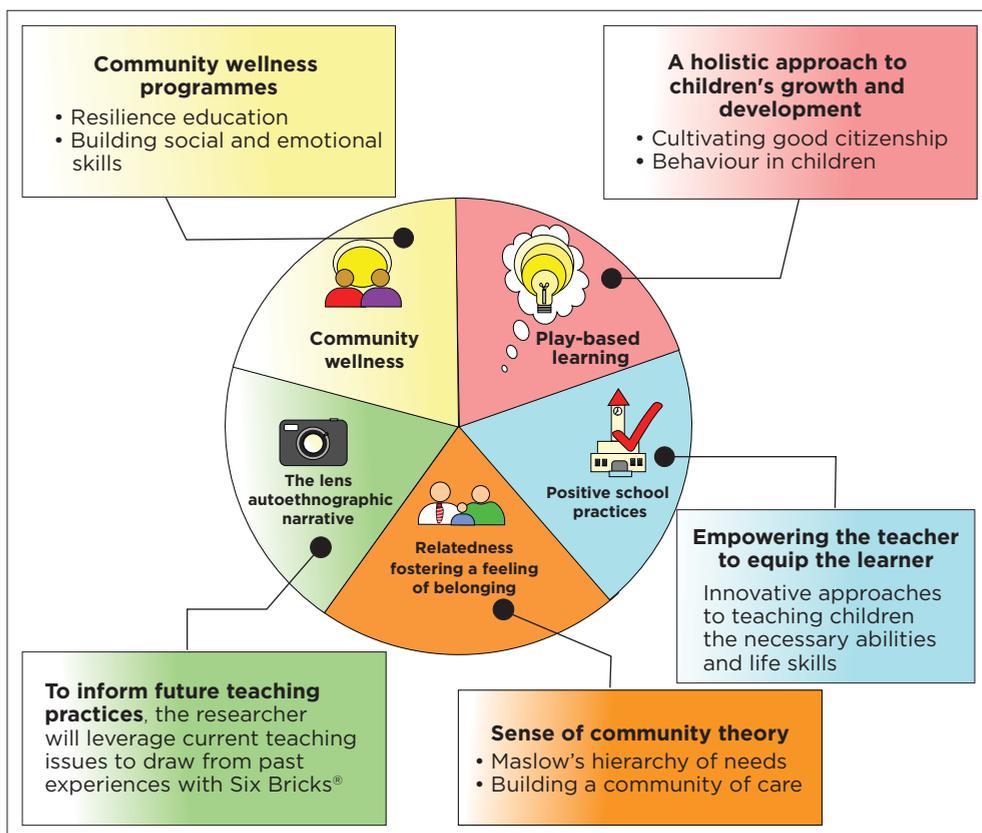
■ Background

Half of all mental health disorders begin relatively early in a child's life, with 10% to 17% of young people between four- and seventeen-years-old meeting the criteria for a mental health condition (Darling et al. 2021, p. 2). This, left untreated, can have a damaging impact across every aspect of a child's life (Darling et al. 2021, p. 2). Within communities, schools have been noted by various policymakers and other stakeholders, where identification and management of mental health problems can be flagged and interventions implemented (Darling et al. 2021, p. 2). Parents' and all primary caregivers' care has a deep and lasting impact on the child's well-being and development (Skeen et al. 2022, p. 2). Thus, by using Six Bricks® for community wellness, parents, teachers and guardians are empowered to support their children in their communities.

Six Bricks® activities develop the child's executive reasoning, communication and teamwork abilities, all of which are essential for decision-making and resilience-building.

Teaching these life skills and emphasising a child's holistic development improves a child's general well-being and ability to contribute more effectively to their communities (Louw & Louw 2022, p. 626). Teachers, other community workers, parents and children were all shared in this programme. The initiative had an overall positive influence on the communities and children regarding relationships, interactions and communication skills (United Nations Children's Fund [UNICEF] 2022) (see Figure 8.1).

The author has worked in various communities within the Potchefstroom area whereby, through her engagement with schools, social welfare organisations, medical institutions, a higher educational institution and in her private capacity as a resident of the community, she has observed many situations where within these communities wellness is often lacking and ignored, especially with the fast pace of life that everyone encounters. The author thus decided to critically engage the communities in which she lives and socially construct, reconstruct and deconstruct (Hickey & Austin 2007,



Source: Conceptualisation of this graphic was done by the author of this chapter. The graphic was created by Laura Steyn, and is redrawn and published here with appropriate permission from Laura Steyn.

FIGURE 8.1: Overview of using Six Bricks® for community wellness to empower teachers, parents and guardians in supporting children in communities.

cited in Starr 2010, p. 3) the world in which she lives, commenting on these communities by looking through the framework of the activity theory (AT).

Thus, the author's autoethnographic constructs voiced from a self-narrative were reflexive of herself concerning others within these communities.

■ Concept clarification

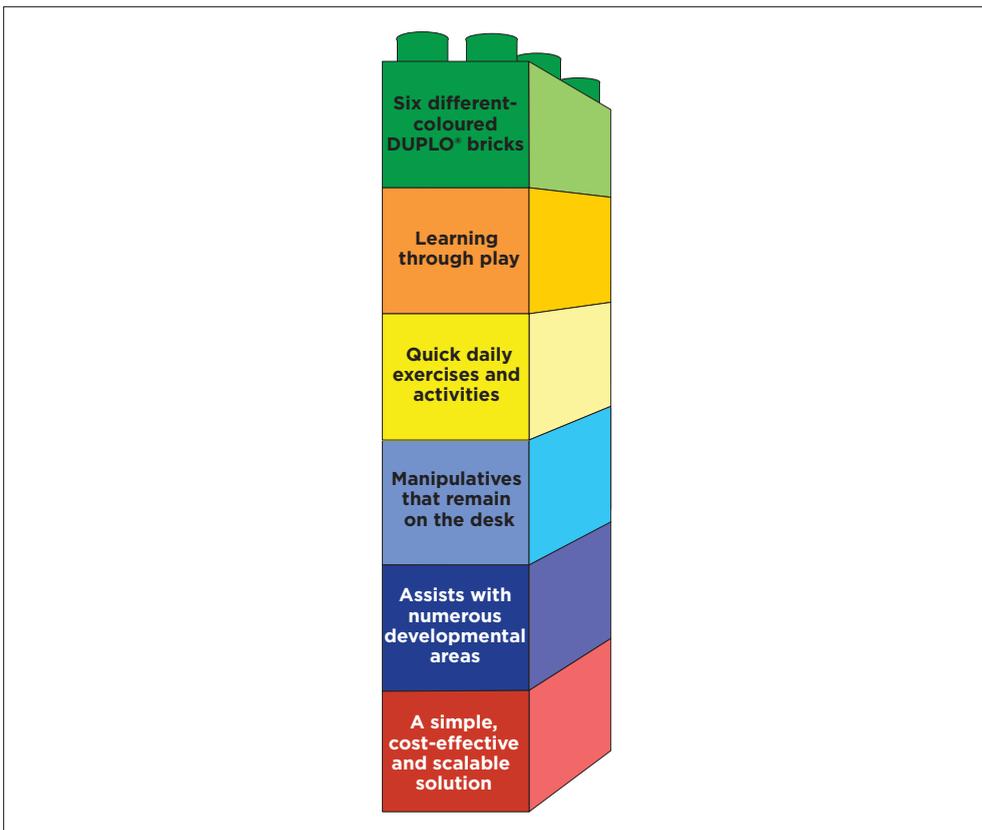
■ Six Bricks®

Brent Hutcheson created Six Bricks® as a tool to assist teachers in practically integrating playful learning into their classroom practices in a straightforward, affordable and scalable manner (Care for Education 2020a).

This South African idea was created through a trial study in the township of Atteridgeville, close to Pretoria. *The Learning Through Play Initiative* (UNICEF 2022) enhances and enriches the *Curriculum Assessment Policy Statements* (CAPS) curriculum while bringing fun, creative learning into the classroom and bringing teachers' and students' smiles and laughter to the classroom every day (UNICEF 2022). By using physical manipulatives, in this case, Six Bricks® (see Figure 8.2), teachers can have a good impact on learner performance through play-based learning (UNICEF 2022).

■ Play-based learning

The Six Bricks® initiative instils positive attitudes in children by teaching them a variety of life skills that they can apply in many settings (Care for Education 2020a). This leads to the child feeling more capable



Source: Conceptualisation of this graphic was done by the author of this chapter. The graphic was created by Laura Steyn, and is redrawn and published here with appropriate permission from Laura Steyn.

FIGURE 8.2: Six Bricks®: A three-dimensional presentation.

and self-assured, which results in a happier and more motivated who wants to learn and participate (Barr et al. 2022, p. 1246). On the Edmentum (2022) blog, playful activities that develop a certain skill set in children help them focus more and support learning. Furthermore, play-based learning has advantages for children's physical, cognitive, social and emotional development by facilitating long-term social-emotional capabilities and enabling the child to form deep relationships (Edmentum 2022). As a result of a holistic approach to children's growth and development, followed and supported by a play-based learning style (Louw & Louw 2022, p. 628; Van Heerden & Veldsman 2021, p. 72), the children's developing brains are given the chance to grow in a nurturing, language-rich and relatively unhurried environment (Edmentum 2022). Part of a holistic play-based approach, engagement is crucial for learning; the teacher aims to pique the pupil's interest so they may participate as fully as possible in the activity.

The teacher should facilitate investigation and foster awe in the child, which the Six Bricks® instruction does a fantastic job of doing (Van Heerden & Veldsman 2021, p. 77). Making learning enjoyable is intended to instil in the child a lifelong love of learning.

■ Community wellness

Well-being, or wellness, has been defined as the combination of feeling good and functioning well (Ruggeri et al. 2020, p. 1). Additionally, experiencing positive emotions such as contentment, joy and happiness and having positive relationships with others also adds to the individual's sense of wellness (Atkinson et al. 2020, p. 1905; Ruggeri et al. 2020, p. 1). Furthermore, having a sense of control over one's life, which generates a sense of purpose, creates a sustainable condition that allows the individual or community to develop and thrive (Atkinson et al. 2020, p. 1905; Ruggeri et al. 2020, p. 1), all of which are factors adding up to community wellness. The term 'subjective well-being' is synonymous with positive mental health and goes hand in hand with community wellness (Atkinson et al. 2020, p. 1905; Ruggeri et al. 2020, p. 1).

Thus, from the aforementioned resources, one can say that communities that are not healthy cannot be places where resilience can be built, as community sustainability is often related to resilience, and a city's resilience often starts from community resilience (Surjono et al. 2021, p. 35). Communities that can come together and assist one another through difficult times are subsequently more resilient. If there are strong levels of involvement in communities and when people genuinely support one another, people will be better equipped to face challenges, which results in community resilience, one of the components that make a city or community

liveable (Surjono et al. 2021, p. 46). This infers that community support and involvement can increase resiliency and assist individuals in addressing challenges and opportunities as they present themselves (Atkinson et al. 2020, p. 1910). It is therefore crucial to provide communities with the tools they need to take action to improve themselves, their well-being and their situation so that they can perform at their best within their – often limited – environments.

In the context of South Africa, with its distinctive difficulties and variety of challenges (Humphreys & Enqvist 2022, p. 38), people need opportunities to better their lives and the lives of others around them. These opportunities, especially in underdeveloped areas with limited resources, are highlighted by the interactions among social inequalities, environmental stressors and shocks illustrated through communities' subjective experiences of the challenges and responses to various crises (Humphreys & Enqvist 2022, p. 38).

■ Empowering the teacher to support the child

In her abstract regarding positive organisational scholarship (POS), it is defined that POS is the study of that which is positive, flourishing and life-giving in organisations (Cameron 2021, p. 741). Positive organisational scholarship considers the processes and dynamics that occur in and through organisations, in contrast to focusing on individual attitudes and emotions. To empower teachers in their educational setting and comment on the impact of positive educational interventions across multiple cultures, because student well-being and student academic performance are such important outcomes in education (Cameron 2021, p. 741), one must consider the POS within that particular environment. The development of POS has helped to place focus on various positive practices of institutions themselves (Cameron 2021, p. 742). One such practice that can be considered is the Six Bricks® initiative. Thus, in empowering the teacher in this initiative, training must be given. Training is available from Care for Education, the NGO that has developed over 250 activities for Six Bricks® (Care for Education 2020a). These activities cover the developmental years of a child from about three-years-old to twelve-years-old in easy-to-use teacher guides (Care for Education 2020a).

■ Empowering the parent or caretaker to support the child

It makes sense to look at methods in which the parents and caretakers are empowered to aid in the growth and development of their child.

Young children are particularly vulnerable to being trapped in cycles of poverty and inequality (UNICEF 2021). Parental support is most needed when 90% of the child's brain develops, that is, before the age of five-years-old (UNICEF 2021). However, for the optimal development of any child, nurturing, stimulation and social interaction are vital (UNICEF 2021). In poorer and less educated parents, as in the case in many rural areas in South Africa, parents often experience socio-economic stress (UNICEF 2021). These circumstances would leave a parent less equipped to provide this nurturing care, resulting in many of these children starting formal education at a significant disadvantage (UNICEF 2021). Furthermore, if children grow up in families that are conflicted, poorly managed or unpredictable, they are more likely to develop emotional and behavioural difficulties as well as experience child abuse (Doyle et al. 2022, pp. 2-3). Therefore, in essence, parents can be essential change agents in their children's lives (Doyle et al. 2022, p. 1). As with the empowerment of teachers, parents too can be trained and guided in the use of Six Bricks®.

Care for Education brought out a pamphlet that has been helpful in empowering parents in the use of Six Bricks® (Care for Education 2020b). This guide has encouraged parents to engage with their children, assuring them that learning is taking place with this play-based approach (Care for Education 2020b). As the Six Bricks® initiative presents situations where child engagement is a hands-on activity, moral encouragement is seen as the parent cheers on their child (Care for Education 2020b).

■ Supporting children in communities

The global Six Bricks community is growing and thriving with many 'Six Brickers' creating inspirational activities all based on the characteristics of PLAY. (Care for Education 2020a, n.p.)

Steffenak et al. (2021, p. 2) view community support as any public or private services that are offered to assist vulnerable individuals or populations, including care at community centres, primary health care facilities and educational institutions. The Six Bricks® initiative can offer such support to vulnerable children within communities. Children experiencing challenges can be assisted and supported by engaging them in creative, playful activities that teach them certain life skills (Care for Education 2020b). Children practice learning techniques when they are entertained, challenged and engaged in fun ways (Care for Education 2020a). Children's hearts and minds are stretched when they become absorbed in a game or endeavour. They gain social skills and the ability to tell when their playmates are happy, unhappy or frustrated (Monteiro, Carvalho & Santos 2021, p. 1; Play Unlocks Essential Skills 2021). Together, children discover how to persevere to complete more challenging puzzles, recall lines for a play or accept the fact

that they cannot be the hero of every imaginative activity (Play Unlocks Essential Skills 2021).

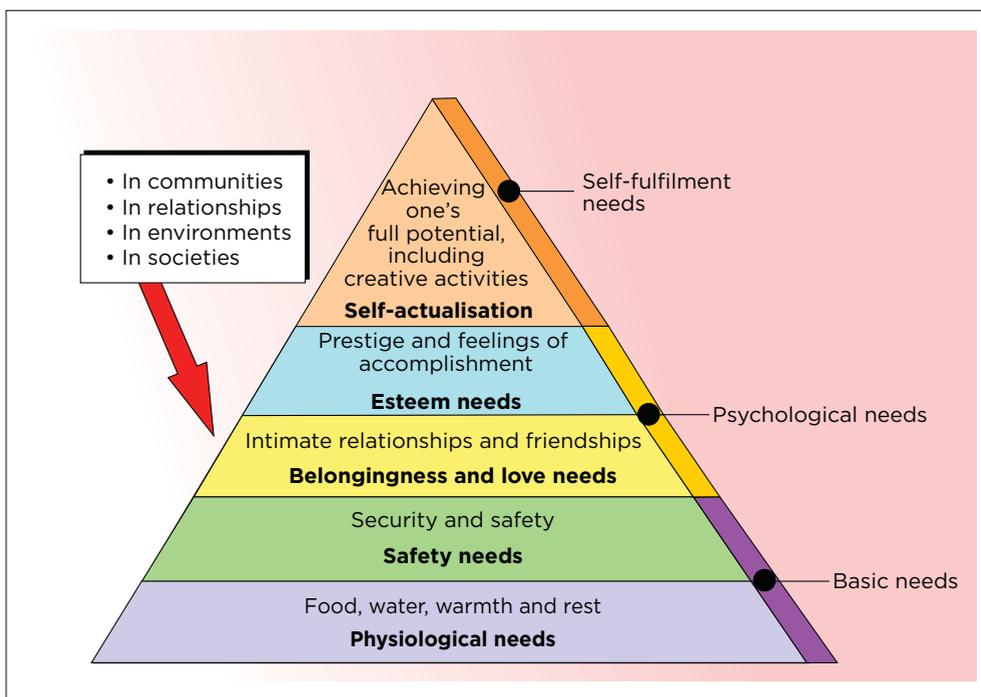
Play is another way to get practice dealing with the unforeseen or unsure. Children experience excitement and applause when they succeed, but they also experience irritation when things do not go as planned (Play Unlocks Essential Skills 2021). They have exactly the training with Six Bricks® they require to remain cool under pressure or to test their ideas before creating the next big breakthrough (Play Unlocks Essential Skills 2021). As such, children's resilience is being built and they learn how to persevere under difficult circumstances. Furthermore, children who respect school and feel like they *belong* there are more likely to participate in school-related activities positively, have a deeper learning experience and increase their academic performance (Monteiro et al. 2021, p. 2).

A kind, encouraging role model can influence how much children identify with their school. Children believe that the school atmosphere is good and supportive, and it fosters a *sense of belonging* and value in the school if they feel that they are cared for and are permitted to engage actively in classroom activities (Monteiro et al. 2021, p. 3). This *sense of belonging* and the need for it will be further discussed in Maslow's hierarchical theory.

■ Theoretical framework

■ Maslow's hierarchical theory is seen as a meta-theory

The author's first idea when thinking about communities and the wellness of communities brings the theoretical framework of Maslow's hierarchy of needs to mind (see Figure 8.3). Within this meta-framework, there is an explicitly directed need that addresses the psychological need for 'belongingness' or being loved and accepted (Hopper 2020). This need also includes the need for an individual to feel included and belong to a social group (Hopper 2020). Consequently, belongingness is a sense of relatedness to a community where there is a conviction that 'I belong', particularly in a setting where one is supported and cared for and offered a helping hand when needed. Therefore, as a community is taken as more than the sum of its parts, the assessment of needs requires one to consider the relationship of the individual to the community (Atkinson et al. 2020, p. 1906). In assessing these needs, which reflect various aspects of life, including well-being and the sense of belonging, they must be seen as aspects that are lived and experienced together (Atkinson et al. 2020, p. 1906). The sense of belonging felt or experienced by an individual is thus related to community well-being, and this, in turn, must be related to individual, subjective well-being (Atkinson et al. 2020, p. 1904).



Source: Conceptualisation of this graphic was done by the author of this chapter. The graphic was created by Laura Steyn, and is redrawn and published here with appropriate permission from Laura Steyn.

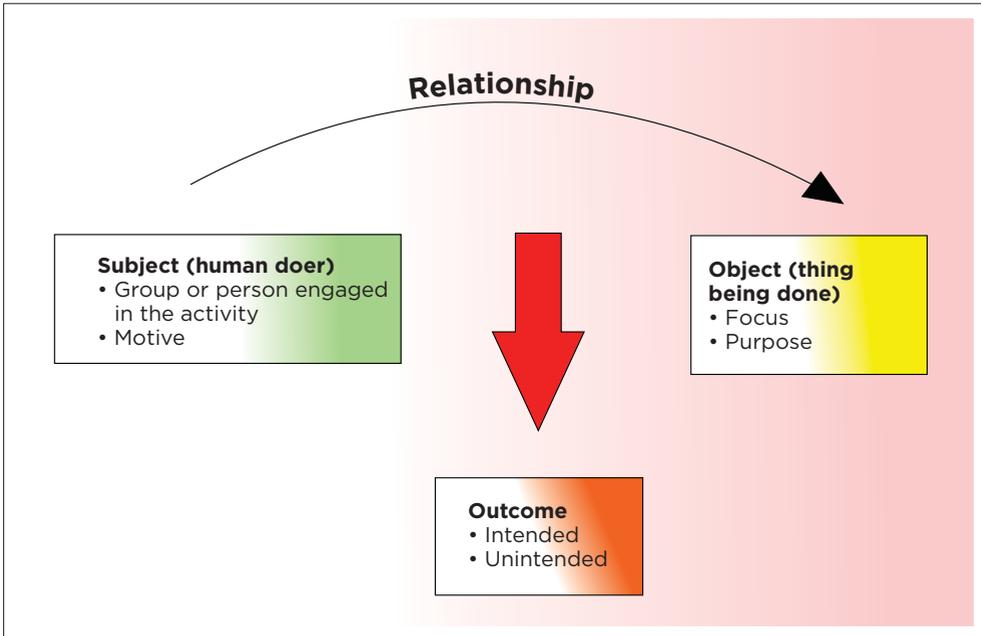
FIGURE 8.3: Maslow's hierarchy of needs: Meeting the psychological need for belongingness.

■ The activity theory is seen as a working theory

In simple terms, AT is all about 'who is doing what, why and how' (Hasan & Kazlauskas 2014, p. 9). In the AT, the relationship between the subject (human doer) and object (the thing being done) forms the core of an activity (Hasan & Kazlauskas 2014, p. 9) (see Figure 8.4). The object of any activity covers the activity's focus and purpose of the action; the subject covers the individual or group engaged in the activity, with the motive, and the outcome can be seen as an intended or unintended result (Hasan & Kazlauskas 2014, p. 9).

■ Integrating the hierarchy of needs with the activity theory

The AT is at the base of the Six Bricks® initiative's approach to community wellness. The Six Bricks® initiative involves a person or 'doer' interacting with the Six Bricks® initiative (object) through playful activities (relationship) with a defined goal or purpose, notably acquiring new skills, inadvertently



Source: Adapted from Hasan and Kazlauskas (2014).

FIGURE 8.4: The core of the activity theory.

or advertently. To satisfy any of Maslow’s hierarchical needs, actions by the individual or group must be performed with some object with motivation or purpose to achieve an outcome – solving the need or moving up or down to other levels.

■ Methodology

■ Autoethnographic narrative as a research method

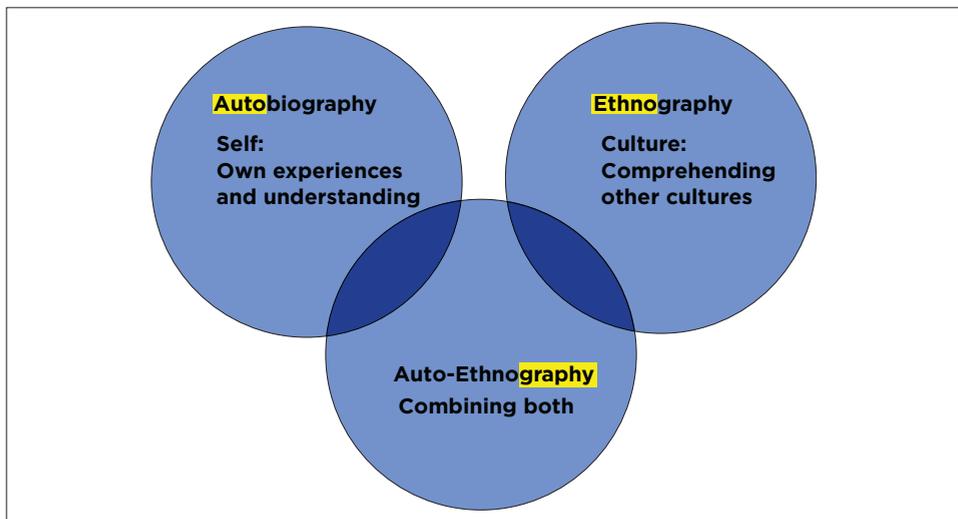
It is often said that the ethnographer is the main tool in ethnographic research. This highlights the fact that subjectivity is embedded in all ethnographic research practices (Koskinen-Koivisto & Lehtovaara 2020, p. xxiii). This may be a true but critical evaluation of the role of the researcher and their view regarding the research field, epistemologies and politics is basic in creating validity and an authentic ethnographical research study (Lõhdesmõki et al. 2020, p. xxiii). Thus, this research method is grounded in engagement and interaction with specific individuals and groups in a specific environment (Lõhdesmõki et al. 2020, p. xviii). By engaging in participant observation, the ethnographer enters the everyday life worlds of the individuals observed (Lõhdesmõki et al. 2020, p. xxiii). These actions will provide the researcher with various hidden meanings, nuances and

emotional insights that were not visible or understandable at first sight (Lähdesmäki et al. 2020, p. xviii). Furthermore, a reflective attitude and disposition need to continually be part of the research process, enabling the researcher to critically acknowledge and reflect on their position and presumptions, political engagements and methodological choices (Lähdesmäki et al. 2020, p. xviii).

■ Autoethnographic methods used

This approach incorporates all aspects of looking at people in their cultural setting with the end goal of producing a narrative account of the occurrences against a theoretical background (Emerald Publishing 2022). During this observational process, various aspects are noted, namely, deeds are done as well as words used, interactions between individuals and groups, as well as their interactions socially, culturally and within the environment (Emerald Publishing 2022).

Furthermore, what is not said as much as what is said is important, as well as emotional expressions and body language. Then, the obvious language usage, symbols and rituals highlight shared meanings reflecting the individual or group's worlds (Emerald Publishing 2022). To achieve this participants, individuals or groups are observed in a manner to enable the researcher to collect the main ethnographic data possible. These observations thus form the essence of the collected ethnographic data (see Figure 8.5).



Source: Adapted from Lähdesmäki et al. (2020).

FIGURE 8.5: A graphical presentation of the process.

To collect this data, the researcher functions in two ways: direct observation of the individual or group's actions (pure observer) or merging in and being present on the scene of the actions, where you observe (Emerald Publishing 2022). Whichever scenario is chosen, be it observations, notes, recordings or descriptive analysis, this is done to interpret the individual's or groups' interactions and events to obtain a systematic account of these participants' behaviour and systems regarding their communities, organisations or institutes (Emerald Publishing 2022).

To illustrate her observations regarding various features involved in what we consider as community wellness, per definition, the author will offer and share some images from the Play Therapy Training session, as mentioned here.

■ Collaboration and positive relationships

Community wellness places a strong emphasis on the value of being able to cooperate and work with one another in a way that will promote healthy and happy relationships Figure 8.6. This was clear from the interactions that took place during the training session between the participants (see Figure 8.6, the promotion of healthy and happy relationships).

Participants revealed an eagerness and willingness to *collaborate* to achieve a shared outcome, as is clear from Figure 8.7. The importance of



Source: Photograph taken by Wanda van der Merwe, exact date, location and individuals unspecified, published with appropriate permission from Wanda van der Merwe and the photographed individuals.

FIGURE 8.6: The promotion of healthy and happy relationships.



Source: Photograph taken by Wanda van der Merwe, exact date, location and individuals unspecified, published with appropriate permission from Wanda van der Merwe and the photographed individuals.

FIGURE 8.7: The willingness to collaborate to achieve a shared outcome.

working together can furthermore strengthen communities' ability to build their *resilience*, as noted by Atkinson et al. (2020, p. 1910).

■ Positive emotions

Your stress-coping bank grows when you experience positive emotions. You can remain more *resilient* in the face of challenges if you find ways to experience a little better each day. To effectively deal with adversity, it is helpful to consume a healthy 'diet' rich in positive emotions to reduce stress (Yoo 2019, p. 186). Happy feelings of *joy and contentment* (all positive emotions) were observed from training participants (as is clear from Figure 8.8).

□ Obtaining a shared outcome: A sense of purpose

The crucial observation made by the author was that participants should not undervalue the positive effect of a *shared outcome*. Getting a good result increases feelings of pride and belonging, which are an important part of community wellness (see Figure 8.9 and Figure 8.10).

■ Conclusion

The author considered the following elements of the definition of community well-being, as stated earlier by Atkinson et al. (2020, p. 1905) and Ruggeri et al. (2020, p. 1): Well-being or wellness has been defined as the combination



Source: Photograph taken by Wanda van der Merwe, exact date, location and individuals unspecified, published with appropriate permission from Wanda van der Merwe and the photographed individual.

FIGURE 8.8: Happy feelings of joy and contentment.



Source: Photograph taken by Wanda van der Merwe, exact date, location and individuals unspecified, published with appropriate permission from Wanda van der Merwe.

FIGURE 8.9: Positive effect of a shared outcome.



Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe.

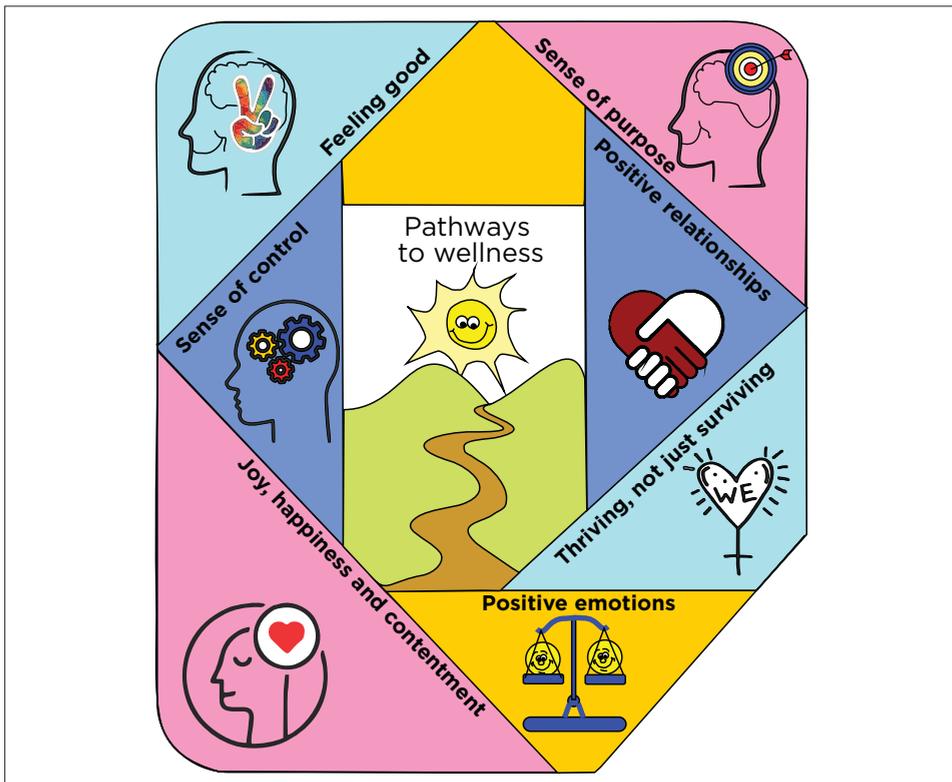
FIGURE 8.10: Positive effect of a shared learning experience.

of *feeling good and functioning well* (Ruggeri et al. 2020, p. 1). Additionally, experiencing *positive emotions* such as contentment, joy, and happiness and having *positive relationships* with others also adds to the individual's sense of wellness (Atkinson et al. 2020, p. 1905; Ruggeri et al. 2020, p. 1). Furthermore, having a sense of control over one's life, which generates a *sense of purpose*, creating a sustainable condition allowing the individual or community to develop and *thrive* (Atkinson et al. 2020, p. 1905; Ruggeri et al. 2020, p. 1) are all factors adding up to community wellness.

During a three-day workshop and training session for Educational Psychology Honours students using LEGO® Play Therapy, the author saw *real-world examples* of these elements of community wellness in action (see ch. 1). The author observed that everyone who attended and participated in the exercises truly enjoyed the experience (see figures showing photographs from this event). Photographs taken at this training event showed that participants expressed *happy feelings* including that joy and contentment. Additionally, when people feel good emotions, they are more likely to retain healthy relationships (Atkinson et al. 2020, p. 1907). Practices and attitudes in the classroom should align with the culture and principles that the school wants to advance (Gravett, De Beer & Du Plessis 2019, p. 25). The self-esteem of children and teachers can be developed by proactive and *supportive relational techniques*, and as a result, a learning community could be created. Working with parents and children is a successful method for improving relationships in schools (Kitching 2017, p. 230).

Most people understand *community* as being greater than the sum of its parts. Understanding the social and emotional facets of communal life helps us to better understand how people interact and feel at ease with one another (Atkinson 2020, p. 1905; Kitching 2017, p. 233). The author experienced this first-hand while observing attendees engaging with one another in a light-hearted way, revealing their comfortableness with the activity and with each other. Such feelings of comfort strengthen relationships and provide social and emotional support (Collet et al. 2019, p. 26).

Being a part of a professional learning community (PLC) can improve well-being by increasing motivation, capacity for leadership and capacity for change (Carpenter 2017, p. 1070). Consequently, such supportive environments will strengthen resilience-building and improve a community's ability to adapt to change and crises successfully (Atkinson 2020, p. 1910). Furthermore, to be able to adapt to change and crisis effectively, the *Pathways to wellness* (Figure 8.11) should be nurtured and acknowledged.



Source: Conceptualisation of this graphic was done by the author of this chapter. The illustration was created by Laura Steyn, published here with appropriate permission from Laura Steyn.

FIGURE 8.11: Pathways to wellness.

A Six Bricks® transdisciplinary community engagement initiative promoting wellness at the special school

Kedibone J Ramadie^{a,b}

^aSchool of Psycho-Social Education, Subject Group Educational Psychology, Faculty of Education, North-West University, Mahikeng, South Africa

^bResearch Out of Entity (ROE), Faculty of Education, North-West University, Mahikeng, South Africa

■ Abstract

Ngaka Modiri Molema District Municipality (NMMDM) often experiences challenges, which include significantly high levels of poverty, unemployment and limited growth in the economy, resulting in an overall declining economy. This largely rural district is made up of 103 wards, eight towns, 21 townships and 198 villages. Within this district, 22 traditional leaders oversee approximately 90% of the population living in their traditional authority areas (Department of Cooperative Governance and Traditional Affairs 2022, p. 28). Within this environment of these challenges, education and health tend to be left on the back burner and often forgotten altogether. Needless to say, special needs education and special schools are even

How to cite: Ramadie, KJ 2023, 'A Six Bricks® transdisciplinary community engagement initiative promoting wellness at the special school', in L Preston & W van der Merwe (eds.), *Six Bricks®: A path to wellness in the educational and health systems*, AOSIS Books, Cape Town, pp. 171-189. <https://doi.org/10.4102/aosis.2023.BK427.09>

more neglected. Thus, adding a transdisciplinary community engagement initiative to this community at one of the special schools in the rural Ngaka Modiri Molema district is a noteworthy achievement in this poverty-stricken environment. By initiating this community engagement project, the research question asked was: How did the Six Bricks® transdisciplinary community engagement initiative promote wellness at a special school?

The result of the Six Bricks® transdisciplinary community engagement initiative proved to be a success in aiding teachers in assisting children with special needs, and this initiative worked exceptionally well within the environment of this special school. Furthermore, the Six Bricks® transdisciplinary community engagement initiative united teachers, learners and communities, building bridges of understanding and communication.

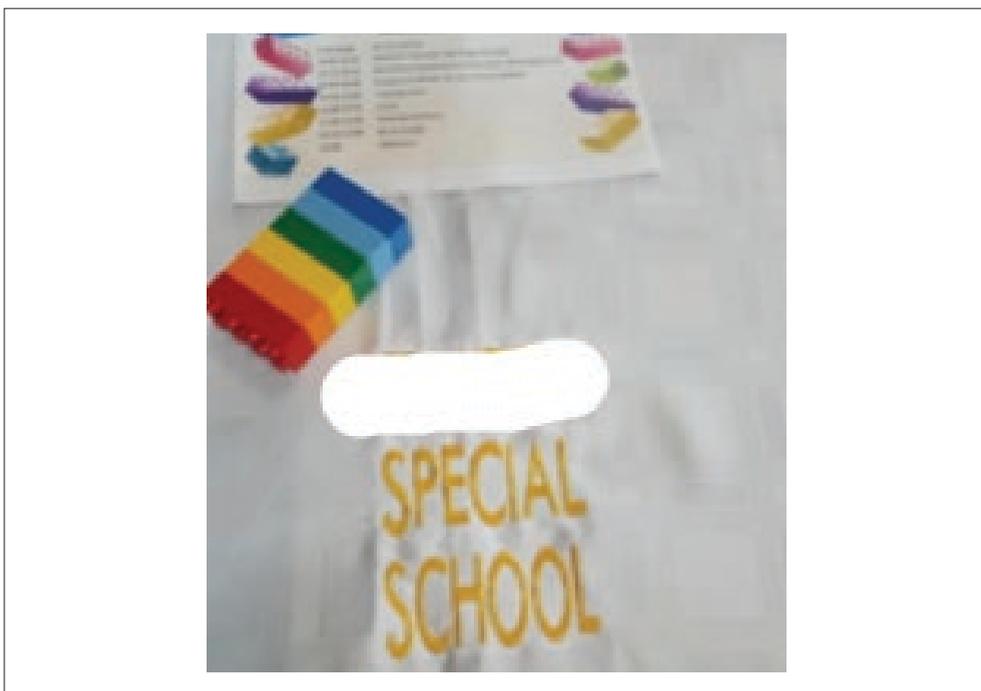
■ Introduction

This special school community engagement initiative that was run in a transdisciplinary manner took planning, organising and driven energy to come to fruition. As Engeström, Miettinen and Punamäki (1999, pp. 19–38) commented, the two basic processes of action are (1) motivation to do the action and (2) doing the action. This process comes from an internalised process, which is usually a reproduction of a cultural influence (inner) and the externalisation process. The transformation from the internal process to the outer (external) creation results in the activity. In the initiation of the Six Bricks® activity in this community, the internalised cultural influences and the externalising processes culminated in an energy-driven, transdisciplinary effort, which was exceptionally positive for this rural community. Being personally involved in this community engagement affected the process, often directly and most definitely indirectly, as this in-depth involvement resulted in personalised '*from-the-heart*' reporting.

In each Six Bricks® activity, there were relationships, relating to education and wellness and to the simple art of knowing or educating. This resulted in a beautiful harmony of people, actions, teaching and learning. Within a background of rural South Africa, where resources are limited and restricted, any positive input is gratefully received and valued; therefore, this Six Bricks® initiative proved to be exciting and novel and empowered the people to carry out their task of teaching children with special needs, linking all role players to the community (see Figure 9.1).

■ Problem statement

As mentioned earlier in the chapter, the NMMDM has various challenges facing the community. With the significantly high levels of poverty,



Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe.

FIGURE 9.1: Linking Six Bricks® and the North-West University to The Special School.

community resources are restricted and extremely limited. Education also suffers under these limitations, with special schools being the most neglected area of educational assistance. Thus, to assist the inclusive and special needs sector of the educational system, assistance is needed for these learners to help them achieve their full potential. Any educational assistance provided to these schools is usually gratefully accepted.

■ Aims and objectives

This chapter aims to explore the Six Bricks® transdisciplinary community engagement initiative that promoted wellness at a special school in the rural Ngaka Modiri Molema district in the North West province. The objectives will be the reporting of this initiative by the author, providing a personal perspective of the process as seen from her various roles. The perspectives that the author fulfilled during this community engagement, among others, were as an academic, a community member and an educator.

■ Concept clarification

■ Six Bricks®

These little DUPLO®-bricks were designed to ‘[...] excite and motivate young children in the classroom to attain the skills, knowledge and attitudes necessary for success in later life’ (C4Ed 2020). With these DUPLO®-bricks, a young learner’s brain is assisted in forming and developing appropriate early experiences and social relationships. With the child grasping and manipulating these DUPLO®-bricks, which serve as concrete, tangible tools, opportunities are presented whereby a child can use their body to explore and develop, ignite new ideas and curiosity, and spark their imagination (C4Ed 2020; Kamdar & Patel 2019, p. 1). As Kamdar and Patel (2019, p. 5) suggest, it is the intention to have Six Bricks® available on the desk of every child in schools and other informal settings and for them to play under the guidance of an adult facilitator. As these Six Bricks® sets are donated by the LEGO Foundation®, it is seen as a cost-effective, understandable tool, which facilitators can be easily trained in and implement (Kamdar & Patel 2019, p. 5).

■ Transdisciplinary

This is an approach that over-runs the boundaries between conventional disciplines and facilitates teaching and learning by focusing on the construction of meaning in the context of real-world challenges (Smothers 2020, p. 10) or thematic topics; thus, problems are seen from various disciplinary perspectives (Smothers 2020, p. 10). As transdisciplinarity requires innovation, cooperation and intentionality (Smothers 2020, p. 10), this community engagement initiative provided the opportunity for three disciplines to come together – namely, Curriculum Studies, Educational Psychology and Comparative and International Education – and find innovative ways to assist with the challenges faced by teachers who must deal with children with special needs in rural areas. This diverse team provided the required collaborative effort in which the multifaceted challenge of teaching children with special needs was supported innovatively with the Six Bricks® initiative.

■ Community engagement

Community engagement can be defined as engaging with a community to achieve long-term and sustainable outcomes, processes, relationships, discourse, decision-making or implementation (Penn State 2022, p. 14). Success at community engagement must include processes, strategies and techniques that consider the community which is being engaged and an

overall sensitivity to what exists within the context of the given community (Penn State 2022, p. 14). The nature of this community engagement focused on a vulnerable rural community where resources were scarce, poverty was rampant and many of the community members felt forgotten and neglected.

■ Community engagement initiative

The initiative that was introduced into this community was the Six Bricks® initiative. Since 2017, in a combined effort by the Department of Basic Education (DBE), United Nations Children’s Fund (UNICEF) South Africa, the LEGO Foundation® and the non-governmental organisation (NGO) Care for Education, this initiative, simply known as ‘Endless ways to learn through play’, has been introduced to South Africa (Matangira 2022). Presently this initiative, which is a national educational rollout, has reached many learners (Matangira 2022):

To date, over 27,500 Foundation Phase teachers from about 4,000 schools in the Eastern Cape, Gauteng, and Free State provinces have been trained, reaching approximately 950,000 children in the three provinces. (n.p.)

With the wish for this initiative to further expand (Matangira 2022):

To reach more teachers and children around the country, the FPI will be expanded to the remaining provinces in the country including Northern Cape, North West, Mpumalanga, Limpopo, Western Cape, and KwaZulu-Natal from 2023. (n.p.)

We, as the North-West University (NWU), have taken up the challenge and started to facilitate this initiative by, as the first high educational institution in South Africa, promoting and supporting this rollout. The initial rollout started at the NWU Potchefstroom campus and it rapidly expanded to the Mafikeng Campus. It is with this background information that the author will report on this first Six Bricks® rollout or the national programme at a small special needs school named ‘The Special School’ (a pseudonym).

■ Wellness

Global Wellness Day offers a comprehensive description of wellness as follows (Anon 2022):

Wellness is an active process of becoming aware of and making choices toward a healthy and fulfilling life. It is more than being free from illness, it is a dynamic process of change and growth. A good or satisfactory condition of existence; a state characterized by health, happiness, and prosperity; welfare. (n.p.)

This definition forms the epitome of this community engagement initiative, as it is seen that if the teachers at this special school are empowered, they will feel that they have grown, obtaining a better condition of existence, and they will experience health, happiness and

prosperity, resulting in a better state of general welfare for themselves and the learners whom they teach.

Toni-Marie Ramos, on her website 'We have Kids', states that teaching children with special needs can be challenging, as educators need to have sufficient training and classroom experience and a great deal of patience and compassion (Ramos 2022, p. 16).

■ A special school in the rural Ngaka Modiri Molema district in the North West province

In the South African context, special schools are a school dedicated to the practice of educating students with special needs in a way that addresses their differences and needs (Equal Education Law Center [EELC] 2016, p. 11). Children are often placed in special schools based on an assessment of their disability rather than on an assessment of their learning needs (EELC 2016, p. 11). Rural schools are often secluded and overlooked because of their remote geographical positioning (see Figure 9.2). This school is situated in a remote central part of the province where the communities are more rural than developed.

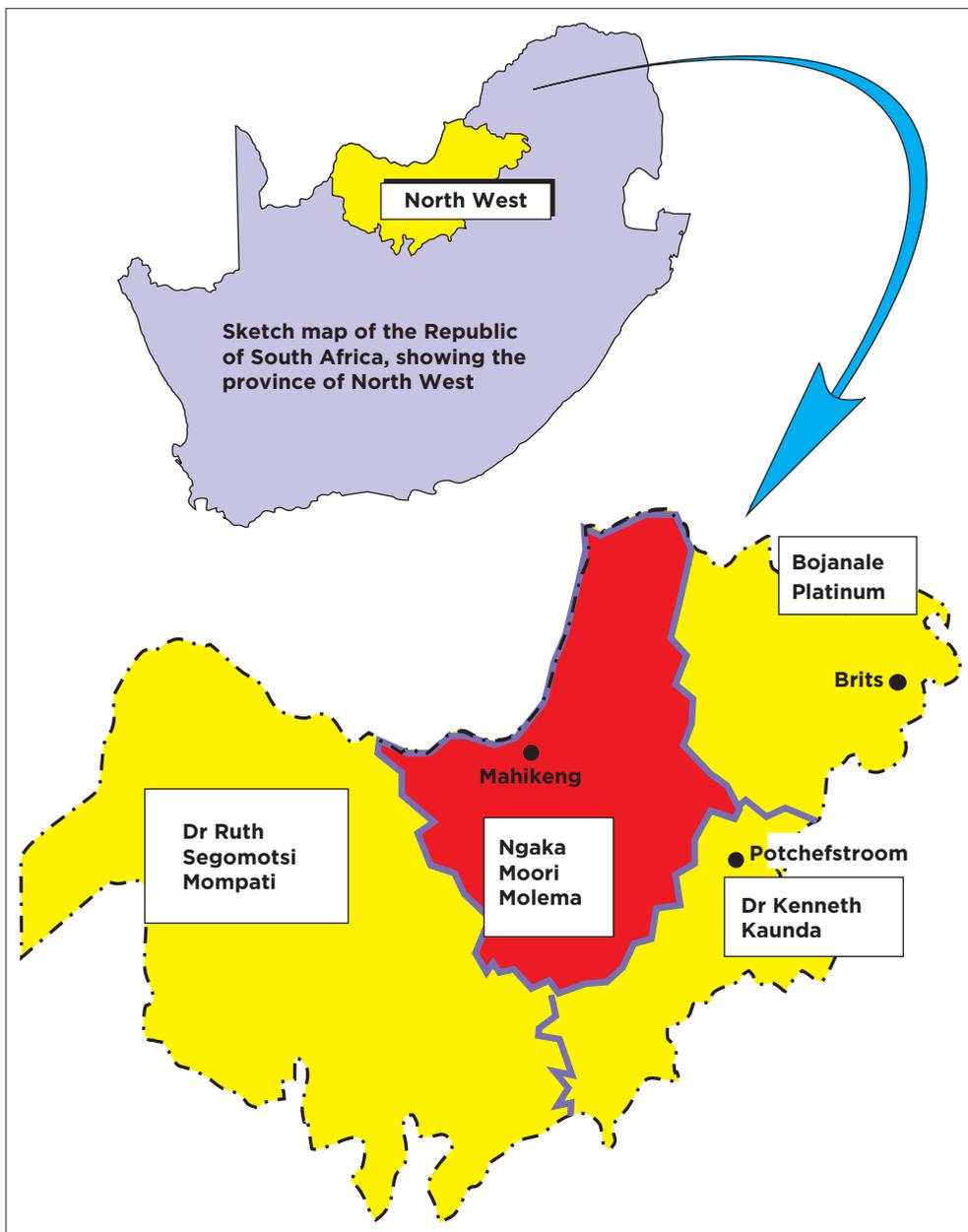
This special school was established in August 2002 at the request of the parents in the community. As with most rural areas, special schools are not readily available. Therefore, after tediously searching for appropriate education facilities for their children, this community school was formed to accommodate children with various disabilities.

Furthermore, skills that enable learners who have disabilities to become more independent by developing them to their maximum potential are the mission of this school. Thus, by providing appropriate educational support, which makes the learner's experiences relevant and applicable, integration into the community is facilitated (see Figure 9.4).

■ Research design and methodology

■ Research approach

This chapter will take on a qualitative approach, embedded within the theoretical framework of the activity theory (AT), whereby Vygotsky's original visualisation of his theory demonstrates that behaviourism or actions are the response to an external stimulus or occurrence (McAvinia 2016, p. 59). Maree (2012, p. 51) says qualitative research is a form of social inquiry that focuses on the way people interpret and make sense of their experiences and the world they live in. The complex issue in which the author is interested is the application of the Six Bricks® initiative at



Source: The illustration was created by Laura Steyn, published here with appropriate permission from Laura Steyn.

FIGURE 9.2: The position of The Special School in the rural Ngaka Modiri Molema district, Mahikeng, in the North West province, South Africa.



Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe.

FIGURE 9.3: The vision and mission of The Special School.



Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe.

FIGURE 9.4: The entrance to The Special School.

The Special School. Along with the joy of the implementation, the author also noted that the empowerment of the teachers at the school after they received training in Six Bricks® was noteworthy.

■ Research design

For this study, a case study research design will be used. Maree (2019, p. 402) believes that case study research design guides a researcher in describing a social phenomenon through progressive in-depth study. Creswell (2019, p. 206) also posits that a case study design is among the research methods of inquiry used for an in-depth study of human activities and events. A case study design was deemed fit for this study as it guided the author and added to an in-depth understanding of the effectiveness of the Six Bricks® application. In addition to the case study design, the researcher employed autoethnography as the research design. Autoethnography is a qualitative research method that permits the researcher to utilise their own experiences to understand a particular phenomenon or culture (Méndez-López 2013, 280). Therefore, the author utilised her own experiences and knowledge about the Six Bricks® initiative in observing and initiating the engagement with the teachers during the lessons which utilised Six Bricks®.

■ Methodology

□ Data generation

The researcher collected data by tapping into her personal experience of the Six Bricks® initiative and by observing the lessons taught through the Six Bricks® initiative at the school in some of their classrooms. Through this interaction and through engaging with the trained teachers in the Six Bricks® initiative, valuable insights were gained and could therefore be reported with insightful meaning.

The author further took field notes and photographs during her visits to the school to aid in compiling the research report. Because the researcher relied on her own experiences, observations, knowledge and personal training on the Six Bricks® initiative, she was able to give a first-hand rendition of this community engagement Six Bricks® rollout at this rural school.

□ Data analysis

The data analysis methods used in an autoethnographic study usually combine two elements: introspection and cultural analysis (Hokkanen 2017, p. 160). In ensuring the validity and richness of the research findings, the

author ensured that her narratives, personal experiences, external behaviours of teachers under study and descriptive facts (Cooper & Lilyea 2022, p. 202) were triangulated during data analysis. Therefore, both introspection and some elements of cultural analysis were used as data analysis methods in this study.

□ Ethical considerations

It is viewed by Ellis (2007, p. 26) that '[...] autoethnography itself is an ethical practice'. In this study, the author used honesty and integrity embedded in personal experience and observations as ethical principles.

■ An overview of the Six Bricks® transdisciplinary community engagement initiative at a special school in the rural Ngaka Modiri Molema district in the North West province

The first time I came into contact with the Six Bricks® initiative, I anxiously waited for the Six Bricks® professional training to start. I recall looking at the stack of Six Bricks® in front of me and wondering if this was even worth the effort of attending the workshop as these DUPLO®-bricks were children's toys. Some students were also in attendance, some of whom had already touched the Six Bricks® and were already playing and engaging with this familiar object. I sheepishly looked for instructions or guidance. This apprehensive state was short-lived and the Six Bricks® training turned into an exhilarating experience. When the instructions were given and the techniques and strategies explained, I became a fully-fledged '6BRICK-er' with an immediate feeling of being welcomed into a family of playful learning and teaching. Now, I cannot wait to give this gift to others.

From 01 March 2022 to 03 March 2022, the author attended the training for Six Bricks® herself to experience this toll first-hand (see Figure 9.5). After this initial training, the author felt equipped to venture out into the community and identify a local school in which the Six Bricks® initiative could be rolled out, beginning the initiative for the first time in the rural area of Ngaka Modiri Molema district in the North West province. She started the community engagement with The Special School by first contacting the school staff and explaining the Six Bricks® concept to them. After this, she gathered her team of Six Bricks® trainers and set a date for teacher training.

On 03 August 2022, the author, together with colleagues, conducted a training workshop at The Special School based on the concepts that were



Source: Photograph taken by Wanda van der Merwe, exact date, location and participants unspecified, published with appropriate permission from Wanda van der Merwe and the photographed individuals.

FIGURE 9.5: The author becoming a '6BRICK-er'.

learned at the Six Bricks® training. As part of the training, officials from the DBE were also part of the event. On the day of the teacher's training, they were overwhelmed and excited that learning through play would accommodate all learners. The day was a resounding success, with everyone enthusiastic and ready to implement the Six Bricks® initiative. With a grateful heart to Care for Education and the LEGO Foundation®, who donated all the bricks, we left the school to give these newly converted 'Six BRICKS-ers®' time to explore, in their own time, the limitless opportunities that these bricks provided (see Figure 9.6). This showcased the Six Bricks® initiative and informed this rural district about the value and limitless advantages of having these simple sets of Six Bricks® introduced into this district. In doing this, we, as NWU, became the first higher educational institution to embrace this initiative and begin the Six Bricks® initiative rollout in the North West province rural district of Mafikeng. After all The Special School teachers were trained, the researcher kept contact with the school and, on a few occasions, did informally engage with the teachers and asked how teachers were using the concepts covered in the Six Bricks® training to supplement their teaching methods in their classrooms.

On an official return visit to The Special School on 06 September 2022, the author did a post-event observation to explore the results of the training that was provided to the teachers based on the Six Bricks® concepts.



Source: Photograph taken by Wanda van der Merwe, exact date and location unspecified, published with appropriate permission from Wanda van der Merwe.

FIGURE 9.6: Six Bricks®-sets donated to The Special School.

As the Six Bricks® training covered the following concepts, the researcher wanted to observe these aspects in the classroom where the teachers were giving their lessons. The Six Bricks® concepts were:

1. **Language:** Using words and sentences that describe in rich detail and give clear instructions. Explaining, reasoning and storytelling help communicate with others and express ideas.
2. **Problem-solving:** Using problem-solving frameworks to approach problems.
3. **Collaboration:** Working together in pairs or teams, taking turns, sharing the materials, learning from peers and sharing ideas and allocating roles and responsibilities to all team members.
4. Using the Six Bricks® colours to stimulate general teaching and learning.

■ Introduction to the follow-up classroom visits in the various grades

The following narratives include the researcher's observations, personal experiences and engagements with the foundation and intermediate teachers who were part of this study. During all the visits, the teachers' enthusiasm was always exceptional and their engagement with the learners was remarkable. To the delight of the researcher, the following observations were made.

■ In the Grade 1 classroom

Instructions by the teacher: The Grade 1 class lesson focused on identifying colours. The educator gave instructions to learners to build a pyramid using different pieces of the DUPLO®-bricks. At the beginning of the lesson, the educator instructed the learners to build the pyramid, starting with the red brick, then adding the dark blue brick, and then continuing to build the pyramid by adding the light blue, green, yellow and orange on the top. The lesson resulted in amazing fun, laughter and learning noise. Furthermore, during this lesson, learners were given the opportunity by the teacher to ask if there were aspects they did not understand regarding the instructions or any other questions that they wanted to pose.

Observations by the researcher: Out of the four main Six Bricks® concepts, the researcher observed and noted that the children's language was becoming more directed and engaging. As some of the learners presented with speech impediments and overall speech barriers, this informal play atmosphere assisted these learners in expressing themselves, or at the least provided an opportunity for them to participate in the classroom activity and try to be part of the group. These learners tried to communicate more with their peers, and even though some could not verbalise they made extreme efforts to link up with the group members. Thus, the researcher can say with confidence that the language, sounds or verbalisations of these children did definitely increase. As some of these learners were profoundly cognitively impaired, problem-solving was not so easy to identify. However, at least when the teacher instructed the learner to build the pyramid, all the learners made an effort and asked each other for assistance. Another aspect that was noted was that these learners had to think about these instructions, sparking quiet times when learners were puzzled over the order or colour of the building project. Thus, remembering the instruction created opportunities for these learners to exercise their recall and memory skills. These actions again reinforced the critical thinking, language and collaborative actions of the group. Some higher-functioning learners did stand out as team leaders who helped the others without the teacher allocating the learners any roles. The learners took on the role of 'peer-instructor' themselves. With all the noise in the classroom, one can say that communication was evident, and cooperation and collaboration were everywhere (even the teacher was roped in to assist some of the learners). This encouraged the interactivity of the class, promoting speaking skills. Thus, the general observation in the Grade 1 class was a wonderful atmosphere of stimulated teaching and learning.

Personal comments by the researcher: On the evaluation of this simple educational instruction, the author was again astounded by how easily

these learners (all who were special needs learners) found learning to be fun and playing while learning and facilitating so many teaching and learning skills. Simply put, the lesson was crucial in teaching learners different important concepts just through playing and building a pyramid. Furthermore, these learners were taught to comprehend and carry out instructions (receptive and expressive language skills), listening skills, motor coordination, colours and shapes, just to mention a few of the basic overt skills. One will never know what internalisation of learning took place within each child or what these children learned personally and individually; all that was observed was the pure pleasure of play. Generally, on reflecting on this Grade 1 class learning, learning through the utilisation of Six Bricks® has improved their visual perception and concentration skills as they managed to pay attention. As much as our brains react to colour, releasing different chemicals that affect us emotionally and physically, colours have been proven to evoke specific physical responses within our bodies. Therefore, Six Bricks® as a learning resource has improved the learners' cognitive skills and evoked many new responses within the learners of which we will never know.

■ In the Grade 3 classroom

Instructions by the teacher: The activity for the Grade 3 class was quite engaging. The teacher introduced the lesson by singing and learners soon joined in the song. The class was composed of learners with various learning barriers and abilities; some of these learners had severe barriers, in some cases so severe that they had difficulty in physically grasping or touching the DUPLO®-bricks. Others had difficulty with speech, and some were wheelchair-bound. Despite these challenges, all the learners enjoyed the activity of building an aeroplane using the Six Bricks®. The excitement associated with the activity kept the class alive, connected and fully engaged.

Observations by the researcher: The author noted that in this Grade 3 classroom, all children participated, regardless of their disability. Six Bricks®, as a mode of participatory action through play, underpinned the view of these simple bricks in that participation is not a privilege – it is a right. The Six Bricks® activities in this class catered to each learner's different learning styles by using different ways to teach and interact. Once again, the four main Six Bricks® concepts were noted. Further observations were that these learners got excited when they saw the Six Bricks® and automatically got moving and making a noise. Eager to start playing, thinking and preparing for the lesson ahead, they all started talking excitedly. This is a sure sign that these Six Bricks® were not a new concept to them.

Talking (language) in this setting was also loud and noisy. The learners all talked at once and worked together after they got the bricks and their instructions. Problem-solving could be seen as building the aeroplane; the learners needed certain bricks and nothing seemed to stop them. Even the children in the wheelchairs tried to grasp the bricks and build. The learners knew what they needed to fulfil the task and they went all-out to achieve this goal. Again, a great sense of sharing and working together was witnessed, with learners asking each other for help and some giving help even though it was not asked for. Using the Six Bricks® stimulated a very fruitful general teaching and learning atmosphere.

Personal comments by the researcher: It was noted that the visual learner, the auditory learner and the tactile learner are all engaged and focused on the Six Bricks®-sets and the teacher's instructions; thus, all types of learners were accommodated. Activities with the Six Bricks® allowed the learners to make mistakes without feeling ashamed or embarrassed, enabling the PROCESS to become important, not just the result. All learners in this grade concentrated on building their own aeroplane, and some were just enjoying touching the bricks without participating in the instructions of the activity. All the children in this class were confident and bold. Six Bricks® brought back that element of playful learning to this classroom and, more specifically, to these learners' environment, enabling them to be one at play, forgetting about their learning barriers and physical, mental, emotional, cultural or social constraints. It was also noted that these learners got excited when they saw the Six Bricks® and automatically got moving. Eager to start playing, thinking and preparing for the lesson ahead.

■ In the Grade 4 classroom

Instructions by the teacher: The Grade 4 class had an activity that required the learners to count the bricks as well as an activity that required learners to count in two's (pairs of DUPLO®-bricks and the studs on the DUPLO®-bricks).

Observations by the researcher: Apart from the delight of just being able to manipulate and play with the Six Bricks®, these learners were also in the process of learning Mathematics. Regarding the language aspect, the words used and the sentences constructed during this lesson reflected that the learners heard and understood the instructions. Their counting abilities also showed an explicit understanding of the concept and actual names of the numbers that they were counting. As well as this expression, the learners also communicated with each other and with the teacher.

The learners counted the bricks up to six, with them complying easily with the teacher's instructions and counting together from one to six. Thus, by using this problem-solving framework, they were able to decide the number of bricks and studs on the bricks that must be obtained to arrive at the answer of '6'. Collaboration was noted in the groups that worked together and the interactions that were evident within the groups. Again, a stimulating teaching and learning environment was created, and optimal learning was achieved.

Personal comments by the researcher: Every time a learner was called on, they would eagerly wave the DUPLO®-brick in the air and shout out the number. The entire atmosphere was electric with pure joy and excitement from the learners, all of them eager to participate. This excitement and eager participation were proof of the effectiveness of the Six Bricks® initiative, as no matter how old the learners were, they all enjoyed the engaged play and subliminal learning.

■ Reflections from an educator's perspective

'In an inclusive society, everyone should be incorporated, and in a classroom, society should be reflected, thus each learner should be accommodated.'
(Teacher 'X' from The Special School)

One of the educators reflected on their experience since incorporating the newly equipped teaching methods from their Six Bricks® training workshop, and they reported that this method of teaching and learning was new, vibrant and exciting for the children and themselves. When considering the old method of teaching, this new initiative improved the learners' engagement and learning. Furthermore, the educator touched on the challenge of how children in a special school encounter many challenges. For example, some of the learners have a short concentration span, and when given tasks, they cannot remember all the instructions, while others are limited in their physical abilities and yet others have cognitive disabilities. However, the Six Bricks® initiative included everyone and participation was generally much better in the classroom environment.

■ Personal reflections and comments from the author

In one class, the author observed that the learners were mainly entertained by a television programme broadcast at 10:00. The moment it was 10:00, most of the learners wanted the television to be switched on. Unfortunately,

not even the bricks could get the children to play during this time. Hence, it could be suggested that the learners need more time for playing and interacting with each other and maybe watching television could be minimised. However, it is also understood that these learners do not have a television in their homes, which makes this passive activity more attractive because of its novelty.

Also noted, during construction play with the Six Bricks®, children become mentally active during their engagement with the bricks and learn to interpret and process sensory information through developing their visual perception, abilities required for constructing logico-mathematical knowledge and skills (Wolfgang, Stannard & Jones 2001). It was for the aforementioned reasons that the Six Bricks® initiative was used in this community engagement effort to possibly encourage the development of visual perception and reasoning skills in these learners. In addition, learners on the autism spectrum were more visually oriented during the Six Bricks® lessons and looked more at their peers and started copying them. Thus, visual cues were used more often by these learners than verbal cues, which obviously was more difficult. These learners were thus fully integrated into the class with their unique manner and ability, which created a cohesive, integrated and inclusive class.

The author of this chapter truly believes that the Six Bricks® initiative that was rolled out in this rural area has given the teachers and learners in this special school numerous ideas, activities and opportunities. Not to mention activities for the learners to practice and improve self-control, which is fundamental to all other learning in life. This tool has helped teachers to practically incorporate playful learning in their classroom practice in a concrete, changeable manner. Furthermore, the author personally uses Six Bricks® to teach various concepts in various subjects, including Mathematics, English and Setswana – even at a university level. In addition to educational purposes, the author further uses Six Bricks® to help in assessing and engaging her learners on other aspects, including physical activities. It also helps in assessing the students' emotional and mental well-being, as it promotes creativity with learners, creating many objects, shapes and levels.

■ Conclusion

Studies on the application of Six Bricks® target mainly learners in a mainstream education system; however, with the author's involvement with this special rural school, she has personally witnessed the true value



Source: Photograph taken by Wanda van der Merwe, exact date, location and participant unspecified, published with appropriate permission from Wanda van der Merwe and the photographed individual.

FIGURE 9.7: A Six Bricks® transdisciplinary community engagement initiative that promoted wellness at The Special School in the rural Ngaka Modiri Molema district in the North West province.

of this tool (see Figure 9.7). With this personal insight, she truly feels that the gap between urban and rural schools must be closed with initiatives such as Six Bricks® being rolled out in the North West province as was done in other provinces such as the Eastern Cape. Furthermore, the Six Bricks® initiative must also be extended to learners in special schools. The learners in special schools face many challenges which need various interventions, with many of these challenges being ameliorated through the Six Bricks® initiative.

In line with the rights of people with disabilities, as stated in the ratified Convention on the Rights of Persons with Disabilities (CRPD) in 2007 and bound by Article 24 of the convention, all parties must safeguard that ‘persons with disabilities are not excluded from the general education system based on disability’. They should be able to ‘access an inclusive, quality and free primary and secondary education on an equal basis with others in the communities in which they live’ (South Africa Human Rights Commission [SAHRC] 2018). Therefore, the provision of the Six Bricks®

initiative should be a prerequisite in all these schools, as it is a package that can assist learners with the acquisition of skills such as speaking, motor function and creativity, as well as supporting all special needs educators in this very important life-changing task of providing support for these vulnerable learners.

Promoting LEGO®'s planet promise: Encouraging sustainable education and wellness in South Africa

Lynn Preston^{a,b}

^aSchool of Psycho-Social Education,
Faculty of Education, North-West University,
Potchefstroom, South Africa

^bResearch Out of Entity,
Faculty of Education, North-West University,
Potchefstroom, South Africa

■ Abstract

The role of Six Bricks® in sustainable educational and wellness development within the South African context is aligned with the LEGO Foundation®'s drive for sustainable development by making a positive impact on communities and societies. The main priority areas, as stressed by the LEGO Foundation®, are children, people and the environment. In light of this promise, the main research question asked was: Did the Six Bricks® initiative foster sustainability within the South African context of education and wellness in alignment with LEGO®'s planet promise, by encouraging the development of sustainable wellness and education?

How to cite: Preston, L 2023, 'Promoting LEGO®'s planet promise: Encouraging sustainable education and wellness in South Africa', in L Preston & W van der Merwe (eds.), *Six Bricks®: A path to wellness in the educational and health systems*, AOSIS Books, Cape Town, pp. 191-203. <https://doi.org/10.4102/aosis.2023.BK427.10>

The theoretical framework was inclined towards an activity theory (AT) framework that included aspects of educational and general wellness within the system. Data collected from the most recent and relevant literature grounded the chapter, and further insights and experiences from practice secured the theoretical framework within a South African context. In the reflections of this chapter, contributions to sustainable development in the South African educational and wellness systems were noted by the empowering of parents, caregivers, educators and many unknown playful adults who, through their personal and community involvement, played, felt better and learned.

■ Introduction

The United Nations Children's Fund (UNICEF) and the LEGO Foundation® have always understood and supported the concept of lifelong learning; therefore, by partnering with learners, parents and caregivers, the foundations of lifelong learning have been laid (UNICEF 2022). Since 2015, UNICEF, the LEGO Foundation® and the South African government have followed this path and have been empowering children to become creative, engaged and lifelong learners through play (UNICEF 2022). As these organisations share a deep commitment to improving children's lives and promoting a better quality of life for all, it is accepted that sustaining these aspects is imperative for enabling future generations to not only survive but thrive. This chapter will focus on three areas that LEGO® has addressed regarding sustainability for the future, namely children, people and the environment. In the South African context, it is no different, and children are our future; therefore, without this new generation being led and guided by the present generation, South Africa has a bleak outcome ahead. Furthermore, without a sustained environment in which all generations can function, the future presents as austere, unwelcoming and depressing.

■ Problem statement

As stated in Chapter 1, every story has an ending, and with the South African Chapter of the International LEGO® initiative, Six Bricks® has given many South African communities a path to wellness in the educational and health care systems. This being said, with many South African societies having many areas where there is a dire need for resources, especially in the more rural areas, has this promise materialised? With LEGO®'s planet promises of playing their part in building a sustainable future by making a positive impact on society (the LEGO® Group 2022), which is a huge undertaking, one must ask if this is possible in all South African communities, where levels of socio-economic challenges, crime and poverty run unabated.

■ Aims and objectives

The chapter aims to explore LEGO®'s planet promises of building a sustainable future by making a positive impact on society in regards to South African societies, especially societies in the more rural areas. The objectives of this chapter will be to explore the elements of LEGO®'s planet promise, namely, people and children within their environments, and compare these to a South African context to assess whether this promise has been fulfilled within a South African context.

■ Background

The privately owned LEGO® Group pursues its promise of sustainability by playing its part in building a sustainable future to make a positive impact on society and the planet (the LEGO® Group 2022). As the LEGO® Group's main priorities regarding sustainable development are children, people and the environment, anyone who aligns themselves with this promise can only support this three-tiered initiative. This promise is defined further by the LEGO Foundation®'s promise of driving sustainable development to make a positive impact on communities and societies by empowering people and children within their environments. In reflecting on this promise, the researcher felt that, in South Africa, particularly the North West province, we have all the elements that the LEGO Foundation®'s promise includes, as well as the energy and drive to partner with them to empower our children and our communities. South Africa is often seen as a developing nation; therefore, any positive assistance, especially in the areas of education, health and wellness, is most welcome, leading to the North-West University (NWU) taking up the challenge and initiating the rollout of Six Bricks® in the province.

In this chapter, the final overall reflections will focus on how the Six Bricks® initiative was employed in the various community, individual and education arenas in promoting playful educational wellness in communities and within individuals themselves.

■ Concept clarification

■ LEGO®'s planet promise

LEGO®'s planet promise, as part of their sustainability effort and corporate social responsibility, is that of playing their part in building a sustainable future by making a positive impact on society (the LEGO® Group 2022). With this promise, LEGO® defined a specific concept of a society that made sense to us as South Africans. This concept of 'society' was pertinently

delineated as children, people and the environment (the LEGO® Group 2022). We, as South Africans who are part of this initiative, have aligned ourselves with this promise to promote sustainability by making a positive impact on South African children, people and the environment by promoting education and wellness within this 'society'. Thus, by educating for wellness in these areas by promoting teaching and learning, this sustainable promise can be pursued and realised for future generations. Furthermore, the promise also speaks about a positive impact on society and the planet. This positive impact on society and the planet we considered to be actions and decisions made in the present that would be optimistic, constructive, encouraging and progressive for future generations. What we do today will have repercussions for the future.

In the context of this chapter, we, the staff of NWU in the Subject Group Educational Psychology to align ourselves to this promise, stand for encouraging sustainable wellness in the South African context by promoting wellness within our community engagement programmes through education and play, which was realised with the Six Bricks® initiative. We stand for educating people through kindness, understanding and empathy and cultivating an aura of caring for people's mental and physical needs. In partnership with our colleagues at the Africa Unit for Transdisciplinary Health Research (AUTCHeR), who kindly reflected on a world without the Six Bricks® initiative, giving us a true picture of the South African context.

■ Sustainable society

According to the Sustainability Society Foundation (SSF) (2012, n.p.), a sustainable society embraces three criteria, namely:

1. Meets the needs of the present generation.
2. Does not compromise the ability of future generations to meet their own needs.
3. Each human being can develop itself in freedom within a well-balanced society and in harmony with their surroundings.

The development of a sustainable society requires a combined approach that considers human well-being, environmental well-being and economic well-being (SSF 2012). To bring this all together, the individual must be at the core of these actions, aware, awake, determined and motivated to create a better society. As these actions begin with the individual, each one of us must be focused and mindful of our actions and interactions (Mind 2022):

Mindfulness is a therapeutic technique that involves being more aware of the present moment. This can mean both outside, in the world around you, and inside, in your feelings and thoughts. (n.p.)

The essence of the Six Bricks® initiative culminates around mindfulness with all participants, old and young, engaging in their world of play, focusing, directed and experiencing the moment within themselves.

■ Wellness development

In the article, 'The toy-making giant is making a new pitch to adults, emphasising LEGO® as the key to unlocking calm' (Hustle Con Media 2022), the following was noted:

If you're still a kid at heart, breathe easy. Because the LEGO® Group - the world's largest toy maker - has some brightly coloured bricks to sell you. More significantly, as The Washington Post noted: The company's pitch has changed. We're not just for 'Star Wars' obsessives anymore. LEGO®s is part of a healthy wellness routine. (para. 6)

In another recent article in *Men's Health*, it was stated that LEGO® could become a wellness brand for stressed-out adults (Lane & Dessent-Jackson 2020, n.p.). They continue that LEGO® (the company) is encouraging adults to (Lane & Dessent-Jackson 2020):

[...] reconnect with their inner nine-year-old to help them escape the stressful barrage of social media and work emails. (n.p.)

In developing wellness, it is suggested that playing with LEGO®'s absent-mindedly promotes mindfulness (Britt 2020; Lane & Dessent-Jackson 2020; Somerville 2020). Therefore, mindfulness-based programmes promote an individual's development of skills such as present-centred awareness, non-reactivity to external experiences and meta-awareness (Rodrigues de Oliveira et al. 2021, p. 11). These skills are suggested to encourage a friendly and rational engagement with adversity and stressful events which may be encountered (Rodrigues de Oliveira et al. 2021, p. 11). Thus, to develop well-being, mindfulness for adults and children alike, playing with LEGO®, is advocated, as it is seen as promoting positive changes psychologically and physically. Emily Coxhead (n.d.), founder of *The Happy News*, states:

Self-care or mindfulness, as it is known, has grown increasingly popular in recent years, backed by research showing the benefits of reflection and thought. (n.p.)

Therefore, to conclude, playing results in an increased level of resilience and a decrease in stress responses by taking the individual out of the situation and focusing them on the concrete diversion at hand. In a final response, the development of wellness is a major factor in the promotion of a sustainable society, as mental health is at the core of humanness. This core of humanness is limitless and boundless and can be identified in all human beings. That said, it implies that in the South African context,

all communities, rural or urban, can and should aim for this playful increased resilience.

■ South African context

Within the sub-Saharan African region, South Africa remains the most dominant country economically and politically (Howell 2019, p. 93). Despite these aspects, South Africa has some of the most socially fractured and unequal societies in the world (Howell 2019, p. 93). Along with these challenges, the population is extremely diverse, with eleven official languages, geographically separated powers, and, added to this mix, numerous African royal houses (Howell 2019, p. 93). South Africa is a country which has a deep traumatic history, and with the post-apartheid failures, it seems that there is no end to the trauma. It has become a reality that the South African government has not been able to capitalise on the rich resources of the country with which it has been endowed (Howell 2019, p. 93). Furthermore, considering South Africa's Constitution, which enshrines equality, Howell (2019, p. 93) describes the South African society as a 'non-racial', racially defined society, in which its history still haunts its development. Even though this picture looks bleak, there are innumerable examples of success (Howell 2019, p. 93) where individuals and communities have withstood overwhelming challenges and proved to be successful in overcoming adversity, collectively bringing about change and peace. One of these circumstances which the author can testify to is the unifying efforts of engaging many communities and individuals in the Six Bricks® initiative across the North West province.

■ Developing sustainable wellness within the South African context

Wellness is the act of practising healthy habits daily to attain better physical and mental health outcomes so that instead of just surviving, you're thriving. (Pfizer Inc 2022, n.p.)

Sustainable wellness would thus be considered as taking these healthy habits, which should be practised daily to thrive, and perpetuating these skills over some time or even for one's entire lifetime. This would promote a sense of joy that can be internalised in each person and enfolded into everyone's daily lives. Within the spheres of education, health and well-being, sustainable wellness can be seen as an integral holistic venture for grounding all initiatives, with mindfulness being at the epicentre. There is no time like the present to take a moment and consider how one is feeling, tapping into one's thoughts and becoming more aware of yourself and

your reactions to the external and internal environments, especially for an individual growing up or just living in the traumatic South African context. Thus, developing sustainable wellness within the South African context would be a continual process of being mindful and presenting with awareness of the present moment throughout all experiences. Within the educational environment, adding the Six Bricks® initiative teaches learners, from a young age, the skills of, among others, mindfulness. Being engaged playfully immediately focuses the mind on a pleasant and rewarding activity for young and old alike, turning their life worlds, even for a moment, into a place of peace, joy and pleasure.

■ Sustainability and a sustainable future

When we play or work with LEGO®, both adults and children alike, it is natural to reflect on these *iconic bricks* (Bacharach & Cook 2017, p. 1), asking ourselves questions about how we construct ourselves and our world and how we interpret and engage with, and in, our world. In these reflections, we realised that there is very little difference between childhood and adulthood approaches to play. At the heart of these actions, there is creativity and the freedom to express our thoughts and ideas and to get lost in the moment: ‘Imagination is more important than knowledge’ (Albert Einstein n.d., n.p.).

The LEGO® brick has been part of our project since 2020, with its use being spread further and further. Presently, it is used and re-used in nearly ten educational institutions in the North West province of South Africa. This can be considered an important issue regarding the role of sustainability and reusability in the modern industrial world (Bacharach & Cook 2017, p. 1). Our partners have re-used these bricks for nearly three years in various classrooms, which can be seen as nearly 100 to 120 learners using and re-using the bricks. In these communities, many little fingers have engaged with Six Bricks®, touching, learning and experiencing their creative energies through these tools during this time.

There can be no universal philosophy of LEGO® play, as the medium is perpetually in flux as new elements and products are added to the system (Lee 2020, p. 14). This very comment suggests that LEGO® bricks are presently evident and will be there for future generations, making them a sustainable tool, now and in the future. To encompass the idea of present and future sustainability, the *Brick Journal* library editor, Joe Meno (cited in Herman 2012), at the LEGO® family magazine, states:

The LEGO® brick is a simple building system that is scalable to the ambition of the builder. There is nothing else like it anywhere. It encourages creativity on a basic level – place a pile of bricks on the floor of a waiting room and watch what happens. People will play and build. (n.p.)

Therefore, to conclude this section, LEGO®, in South Africa, is here to stay. As with everywhere else in the world, we, as the South African market, are eager to embrace this concept and fully involve as many individuals as possible in the Six Bricks® initiative over time, whether in urban, rural, rich or poor environments. After all, it is people, children and the environment that count!

■ Theoretical framework

This chapter is aligned with the AT, which endeavours to understand human activities as systemic, situated within a social phenomenon. The component that is explored and analysed in the AT is that of object-oriented activities, which include aspects such as collective and culturally determined human activity, which all collectively form an activity system. This system includes the object (or objective), subject (the person), mediating artifacts (signs and tools), rules, community and division of labour. It is suggested that within the concept of sustainability, all these systemic aspects must be acknowledged, managed and taken forward sustainably to ensure an optimal future for generations to come.

■ Methodology

To achieve the reflections required for this chapter, data for this chapter were collected from literature, observed experiences and personal reflections (ethnography). As described by Lähdesmäki (2021):

[...] as a method based on engagement and interaction with people in specific environments, the transformation of social, cultural, and societal relations and conditions ineluctably impact the method itself. (p.18)

The ethnographical approach, incorporated with a comparative personal autoethnographic reflection, will form rich qualitative research, weaving personal insight into a story that reflects the wider meaning and understanding of the education and wellness initiatives of Six Bricks®. Autoethnography combines characteristics of autobiography and ethnography (Ellis, Adams & Bochner 2011, p. 2). Therefore, the author retroactively selected and wrote about past experiences, which were assembled using hindsight. This linked the literature and experiences within the South African context, enabling the author to provide an autoethnographic rendition of the comparison of LEGO®'s planet promises to the South African context, which encouraged sustainable wellness and educational development.

For this chapter, a systematic comparison of literature informing of the LEGO®'s planet promise for sustainability and the South African context

was reflected on, highlighting aspects where South Africa has encouraged and achieved sustainable wellness and where there is room for improvement regarding the three pillars of sustainability as cited by the LEGO® Planet Promise, namely children, people and the environment.

■ Children

At the LEGO® Group, children are our role models, due to their hands-on, minds-on approach to learning. (Christiansen 2019, n.p.)

As this statement promotes sustainability, inclusivity and learning through play for children across the globe, it has become more of a reality, especially here in the South African context. The LEGO® Group has always stated that everything they do is driven by their desire to put children first with their belief in the power of learning through play (the LEGO® Group 2019). It has been shown by research and the author's observations and experiences with this initiative that learning through play builds important life skills essential to children's development, making a positive impact on the communities in which they are rolled out in South Africa.

Within the aspect of children, LEGO® also has a play promise, which focuses on the playful learning abilities of children, which not only develops the child academically but also enhances their mental health and social skills (Nemiro 2021, p. 351). These '21st-century skills' are called soft skills and are thought to give learners the ability to keep learning and adjusting to change (Nemiro 2021, p. 351). Problem-solving, creative and innovative thinking, and critical thinking are all part of the modern world of technology and global awareness; thus, communication and collaborative skills are vital in the preparation of a new workforce (Nemiro 2021, p. 351). Regarding this aspect within the schools where we have rolled out the Six Bricks® initiative, there was only positive feedback, encouragement and enthusiasm. With regular visits to these schools, it was amazing to see children engaged and working with the bricks. Observations were made in Grade 1 and Grade 2 classrooms and classrooms where Grade R children were accommodated. Generally, the noise that emanated from these classrooms was notable, and the happy and engaged responses and the singing and chatting of the learners could only be interpreted as pure joy in playing while they were learning. Many of these children did not consider the lessons as learning; their communicative chatter enhanced the imprinting of concepts, and their actions reinforced their grasp of ideas. In these situations, learning was play and time was non-existent.

In considering the LEGO®'s planet's promise regarding children, in the South African context, it can be noted that the rollout of the Six Bricks®

initiative in the schools in the North West province has taken these schools by storm and has created a like-mindedness of eager LEGO® enthusiasts.

On a final note, regarding the Six Bricks® initiative, it must be noted that all bricks are donated by the LEGO® Corporation to these South African schools. Kirk Kristiansen and his family's private holding, KIRKBI, gifted 25% shares to the LEGO Foundation® to fund humanitarian efforts of supporting children globally with development through play initiatives (the LEGO® Group 2022). This highlights LEGO®'s commitment to sustainability in their efforts to support children globally, as 25% of every LEGO® set sold can be seen as funding current and future humanitarian efforts and not just lining the pockets of their shareholders (the LEGO® Group 2022). Every school that participated in the Six Bricks® initiative donated bricks and received training for the teachers. Responses were fantastic, with schools and learners alike wanting to enthusiastically start. This brings us to the comparison of the second aspect of the promise, namely, the people.

■ People

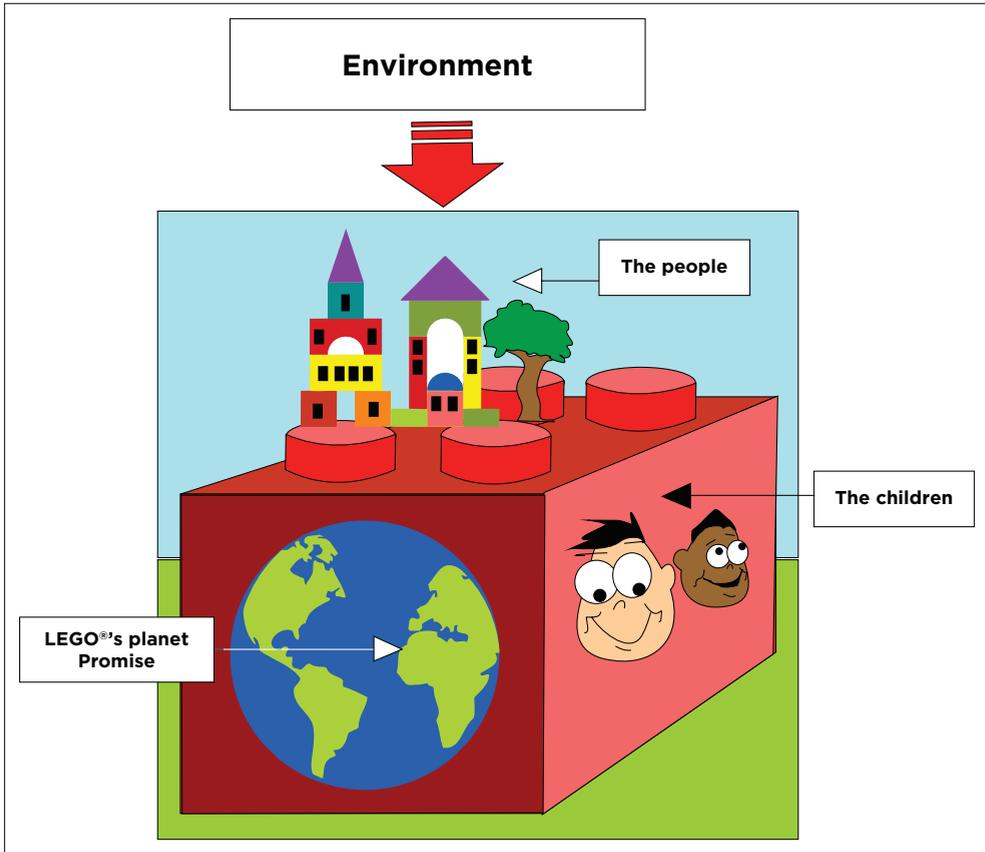
When it comes to LEGO®'s efforts in supporting people, their promise to care deeply for their people is outstanding. Thus, LEGO® promise of making LEGO® play experiences possible for all has been realised here in South Africa (The LEGO® Group 2022). Furthermore, LEGO® and Six Bricks® seek to create a safe environment for their employees and seek to motivate their employees to uphold human rights and ensure a safe, healthy and respectful workplace for all (The LEGO® Group 2022). This aspect is not directly applicable to South Africa; however, just experiencing the Six Bricks® initiative and having this resource donated to the schools was a remarkable effort by this overseas company. Finally, LEGO® strives to develop and enhance responsible business principles across the company (The LEGO® Group 2022), which we at NWU strive to follow with the logistic management of the donated bricks and the training of the educators to ensure that the bricks are optimally used. Within the people promise context, LEGO® and the LEGO Foundation® seek out the same characteristics in their play partners around the world (The LEGO® Group 2022), and with this being noted, NWU is presently the only higher education institute in South Africa taking time and effort to promote and roll out this initiative.

■ Environment

In discussing the environment, the author strongly feels that to set the stage for this last chapter, the unique South African environment must be

thoroughly discussed. South Africa is a land of extremes, with pockets of abject poverty often lying adjacent or close to wealthy neighbourhoods. In South Africa, the term rural is defined as an inexact term that can mean various things to different people, organisations or governments (RHlhub 2022). However, since the re-demarcation of South African municipalities in 1998, the legal definition of urban and rural has fallen away (Statistics South Africa [StatsSA] 2022). This created a unique structural parameter that has shaped many South African neighbourhoods, leaving some of them the most socially fractured and unequal societies (Howell 2019, p. 93), with the worst embedded structural forms of marginalisation (Howell 2019, p. 93). Roughly 23% of the population live in urban areas, within informal settlements where housing and equal access to basic commodities and services are critical issues (URBANET 2020). The challenges in the aspect of housing refer to shelter, water, fuel (for cooking and heating) and solid waste management, as well as overcrowding and the populations' health care status. Thus, in South Africa, even though much of the population lives in an 'urban' environment, multiple housing-related hazards (Mathee et al. 2021) may affect the health of communities in poor rural and urban settings alike in South Africa.

Within this complex South African environment, LEGO®'s environmental promise to lessen its carbon and plastic footprint worldwide is still relevant. LEGO® is now making LEGO® bricks from recycled plastic (The LEGO® Group 2022), with the main objective being to fulfil their environmental promise by ensuring that they have zero impact on the planet. In South Africa, this initiative is wholeheartedly supported by schools, parents, communities and individuals, as South Africa already has an immense pollution problem. Almost 80,000 tons of plastic finds its way into the oceans and rivers of South Africa each year (Ngcuka 2022). Out of the 2,371 thousand tons of plastic waste that is generated in South Africa per annum, 70% is collected, but just 14% of that, including imported waste, is recycled. Therefore, with these staggering statistics, a sustainable environmental promise can only be an asset to a country such as South Africa. With this LEGO® environmental promise, it will certainly ensure that there will be a planet for future generations (The LEGO® Group 2022) and that South Africa will be part of it. Furthermore, LEGO® has an initiative called *Replay*, which it is hoped will inspire LEGO® brick owners to pass on their unused bricks for others to use. In South Africa, all the donated bricks remain the property of the institution or the school, facilitating a yearly rotation of new learners who will have an opportunity to play with the bricks. *Replay*, in South Africa, is a major focus of the NWU initiative, as each school that has been supplied with bricks will only have to be topped up as their bricks are recycled yearly (Figure 10.1).



Source: Conceptualisation of this graphic was done by the authors of this chapter. The illustration was created by Laura Steyn, published here with appropriate permission from Laura Steyn.

FIGURE 10.1: A visual representation of the LEGO® promise.

■ Conclusion

When something is important enough, you do it even if the odds are not in your favour. (Elon Musk, cited in Kim 2023, n.p.)

In this concluding chapter, the author has retrospectively and selectively written about many of the awakenings that were evident in the South African context regarding the Six Bricks® initiative. When the concept first landed on the author's desk, it seemed to be a fun activity that had the potential to entertain children. However, as the school projects began to multiply, the author saw the absolute magic in the children and their teachers within their classroom environment and beyond. Communities were brought on board and the excitement and enthusiasm that the children showed seemed to rub off on the parents and other

community members. A highlight of this initial Six Bricks® initiative was when, at our rural school rollout, the teachers were so 'fired up' that they began to ululate and sing, praising the opportunity to be a part of this initiative.

These final comments have a twofold purpose: firstly, to report on the author's personal experiences along the Six Bricks® journey she, her colleagues and of course other LEGO® fanatics have walked. Secondly, to inspire and create an educational revolution with these simple plastic bricks within the South African context, in rural and urban areas alike in the North West province of South Africa. Sending out these teaching and learning tools for all is a privilege that the author shares with colleagues and NWU.

References

Chapter 1

- Care for Education 2019, *Six Bricks teacher handbook*, Care for Education, Johannesburg.
- CPD Collage 2022, *CPD collage Six Bricks course*, viewed 13 July 2022, <<https://sixbrickseducation.com/about-six-bricks-education#:~:text=The%20Six%20Bricks%20concept%20and,Education%20organisation%20in%20South%20Africa>>
- Custer, D 2014, 'Autoethnography as a transformative research method', *The Qualitative Report*, vol. 19, no. 37, pp. 1-13. <https://doi.org/10.46743/2160-3715/2014.1011>
- Davydov, VV 2006, 'The content and unsolved problems of activity theory', in Y Engeström, R Miettinen & R-L Punamäki (eds.), *Perspectives on activity theory*, Cambridge University Press, New York.
- Department of Basic Education (DBE) 2022, *The DBE's E3 programme develops teachers and empowers youth as WhatsApp Line grows*, viewed 13 July 2022, <<https://www.education.gov.za/E3WhatsAppLine.aspx>>
- Engeström, Y 2006, 'Activity theory and Individual and social transformation', in Y Engeström & R Miettinen (eds.), *Introduction: Perspectives on activity theory*, Cambridge University Press, New York, pp. 19-38.
- Engeström, Y, Miettinen, R & Punamäki, R-L (eds.) 1999, *Perspectives on activity theory*, Cambridge University Press, New York.
- Fouché, CB, Strydom, H & Roestenburg, WJH 2021, *Research at grass roots for the social sciences and human service professions*, 5th edn., Van Schaik Publishers, Pretoria.
- Giddings, S 2017, 'LEGO® and LEGO Foundation®', in K Peppler (ed.), *The SAGE encyclopedia of out-of-school learning*, SAGE Publications, Thousand Oaks, pp. 436-438.
- Hakkarainen, P 2006, 'Play and motivation', in Y Engeström, R Miettinen & R-L Punamäki (eds.), *Perspectives on activity theory*, Cambridge University Press, New York, pp. 231-249.
- Harn, PL 2018, 'LEGO® - Based clinical intervention with LEGO® SERIOUS PLAY® and Six Bricks® for emotional regulation and cognitive reconstruction', *Examines in Physical Medicine and Rehabilitation*, vol. 1, no. 3, pp. 1-3. <https://doi.org/10.31031/EPMR.2018.01.000515>
- Harn, PL & Hsiao, CC 2018, 'A preliminary study on LEGO®-based workplace stress reduction with six bricks and LEGO® SERIOUS PLAY® in Taiwan', *World Journal of Research and Review*, vol. 6, no. 1, pp. 64-67. <https://doi.org/10.31031/EPMR.2018.01.000515>
- Hasan, H & Kazlauskas, A 2014, 'Activity theory: Who is doing what, why, and how', in H Hasan (ed.), *Being practical with theory: A window into business research*, THEORY, Wollongong, pp. 9-14, viewed 15 November 2023, <<http://eurekaconnection.files.wordpress.com/2014/02/p-09-14-activity-theory-theori-ebook-2014.pdf>>
- Jaccard, J & Jacoby, J 2010, *Theory construction and model-building skills: A practical guide for social scientists*, Guilford Press, New York.
- Jemutai, S & Webb, P 2019, 'Effects of a 6 Brick DUPLO® Brick guided play intervention on pre-literate learners' visual perception', *South African Journal of Childhood Education*, vol. 28, no. 1, a634. <https://doi.org/10.4102/sajce.v9i1.634>
- Kyratzis, A & Green, J 1997, 'Jointly constructed narratives in classrooms: Co-construction of friendship and community through language', *Teaching and Teacher Education*, vol. 13, no. 1, pp. 17-37. [https://doi.org/10.1016/S0742-051X\(96\)00049-2](https://doi.org/10.1016/S0742-051X(96)00049-2)
- LEGO® 2022, *The LEGO® Group history*, viewed 10 October 2023, <<https://www.lego.com/en-us/aboutus/lego-group/the-lego-group-history>>

References

- LEGO Foundation® 2017, *What we mean by: Learning through play*, LEGO® Foundation, Billund.
- LEGO Foundation® 2022, viewed 13 July 2022, <<https://learningthroughplay.com/>>
- Legoff, DB, Gomez de la Cuesta, G, Krauss, GW & Baron-Cohen, S 2014, *LEGO®-based therapy*, Jessica Kingsley, London.
- Lektorsky, VA 2006, 'Activity theory in a new era', in Y Engeström, R Miettinen & R-L Punamäki (eds.), *Perspectives on activity theory*, Cambridge University Press, New York, pp. 65-69.
- Mc Avinia, C 2016, *Online learning and its users: Lessons for higher education*, Elsevier, Amsterdam.
- Ministry of Education 2022, *Resource teacher learning & behaviour*, viewed 13 July 2022, <<https://rtlb.tki.org.nz/The-RTLB-service/What-RTLB-do>>
- Schubert, WH 1986, *Curriculum: Perspective, paradigm, and possibility*, Macmillan Publishing Company, Ann Arbour.
- Shuster, LI 2018, *Adding play into your workday can benefit engagement and well-being*, viewed 10 October 2023, <<https://www.lego.com/en-us/aboutus/news/2019/october/play-day-2018>>
- Smith, L 2021, *The disposable society: An expensive place to live*, viewed 10 October 2023, <<https://www.investopedia.com/articles/pf/07/disposablesociety.asp>>.
- Starr, LJ 2010, 'The use of autoethnography in educational research: Locating who we are in what we do', *Canadian Journal for New Scholars in Education*, vol. 3, no. 1, pp. 1-9.
- Teach with Africa 2021, *Education in South Africa*, viewed 25 March 2023, <<https://www.teachwithafrica.org/education-in-south-africa/>>
- Wiske, MS & Spicer, DE 2010 *Teacher education as teaching for understanding with new technologies*, Harvard Graduate School of Education, Cambridge.

Chapter 2

- Akpan, VI, Igwe, IA, Blessing, I, Mpamah, I & Okoro, CO 2020, 'Social Constructivism: Implications on teaching and learning', *British Journal of Education*, vol. 8, no. 8, pp. 49-56, viewed 11 October 2022, <<https://www.eajournals.org/wp-content/uploads/Social-Constructivism.pdf>>
- Astuti, AP, Aziz, A, Sumarti, SS & Bharati, DAL 2019, 'Preparing 21st-century teachers: Implementation of 4C character's pre-service teacher through teaching practice', *Journal of Physics: Conference Series*, vol. 1233, no. 1, a12109.
- Betti, A, Biderbost, P & García Domonte, A 2022, 'Can active learning techniques simultaneously develop students' hard and soft skills? Evidence from an international relations class', *PLoS One*, vol. 17, no. 4, a265408. <https://doi.org/10.1371/journal.pone.0265408>
- Busetto, L, Wick, W & Gumbinger, C 2020, 'How to use and assess qualitative research methods', *Neurological Research and Practice*, vol. 2, p. 14. <https://doi.org/10.1186/s42466-020-00059-z>
- Chakraborty, M 2021, 'The dynamics of soft skills', *The IUP Journal of Soft Skills*, vol. XV, no. 1, pp. 20-26.
- Chakraborty, M 2022, 'Importance of imbibing soft skills in children from a tender age', *The IUP Journal of Soft Skills*, vol. 16, no. 1, pp. 37-43, viewed 12 October 2022, <<https://www.proquest.com/openview/d33db74ce1d7dcb006f672ad1ceebe1f1?pq-origsite=gscholar&cbl=2029989>>
- Copple, C, Bredekamp, S, Koralek, DG & Charner, K 2014, *Developmentally appropriate practice*, National Association for the Education of Young Children, Washington DC.
- Creswell, JW, Ebershohn, L, Eloff, I, Ferrreira, R, Ivankova, NV, Jansen, JD, Nieuwenhuis, J, Pietersen, J & Plano-Clark, VL 2022, *First steps in research*, Van Schaik Publishers, Pretoria.
- Creswell, JW & Poth, CN 2016, *Qualitative inquiry and research design: Choosing among five approaches*, SAGE Publications, Thousand Oaks.

- Creswell, JW & Poth, CN 2018, *Qualitative inquiry and research design: Choosing among five approaches*, SAGE Publications, Thousand Oaks.
- Chiruguru, S 2020, *The essential skills of 21st century classroom (4Cs)*, s.n., s.l. <https://doi.org/10.13140/RG.2.2.36190.59201>
- Daniels, E 2018, *Defining play-based learning. Encyclopaedia on early childhood development*, OISE University of Toronto, Toronto, viewed 11 October 2022, <<https://www.child-encyclopedia.com/pdf/expert/play-based-learning/according-experts/defining-play-based-learning>>
- De Freitas, APN & Almendra, RA 2021, 'Soft skills in design education, identification, classification, and relations: Proposal of a conceptual map', *Design and Technology Education: An International Journal*, vol. 26, no. 3, pp. 245-260. <https://doi.org/10.35199/EPDE.2021.11>
- Department of Health, Education and Welfare 1979, *The Belmont report: Ethical principles and guidelines for the protection of human subjects of research*, viewed 11 October 2023, <<https://www.hhs.gov/ohrp/regulations-and-policy/belmont-report/index.html>>
- Edington, DW, Schultz, AB, Pitts, JS & Camilleri, A 2015, 'The future of health promotion in the 21st century: A focus on the working population', *American Journal of Lifestyle Medicine*, vol. 10, no. 4, pp. 242-252. <https://doi.org/10.1177/1559827615605789>
- Engelhardt, R & Elbæk, L 2019, 'Educating for the 21st century with role play in event design', *European Conference on Games Based Learning*, viewed 12 October 2022, <<https://www.proquest.com/openview/abbdde687891bac4e0ec8598c4325ae9/1?pq-origsite=gscholar&cbl=396495>>
- Grant, C & Osanloo, A 2014, 'Understanding, selecting, and integrating a theoretical framework in dissertation research: Creating the blueprint for your "house"', *Administrative Issues Journal: Connecting Education, Practice and Research*, vol. 4, no. 2, pp. 12-26. <https://doi.org/10.5929/2014.4.2.9>
- Hasan, H & Kazlauskas, A 2014, 'Activity theory: Who is doing what, why, and how', in H Hasan (ed.), *Being practical with theory: A window into business research*, pp. 9-14, viewed 15 November 2023, <<http://eurekaconnection.files.wordpress.com/2014/02/p-09-14-activity-theory-theori-ebook-2014.pdf>>
- Janove, J 2021, *Leaders and employees need soft skills now more than ever*, viewed 11 October 2023, <<https://www.shrm.org/resourcesandtools/hr-topics/employee-relations/humanity-into-hr/pages/covid-19-soft-skills-at-work.aspx>>
- Joyne, C, Rossignoli, S & Fenyiwa Amonoo-Kuofi, E 2019, *21st-century skills: Evidence of issues in definition, demand, and delivery for development contexts*, K4D Helpdesk Report, Institute of Development Studies, Brighton, viewed 10 October 2022, <https://assets.publishing.service.gov.uk/media/5d71187ce5274a097c07b985/21st_century.pdf>
- Kessel, J 2018, 'Let our children play: The importance of play in early childhood education', *University of Montana Journal of Early Childhood Scholarship and Innovative Practice*, vol. 2, no. 1, pp. 1-6.
- Korolyova, L, Voyakina, E & Zhrebayeva, L 2021, 'Developing soft skills for sustainable development in environmental engineering students through foreign language learning', in *E3S Web of Conferences*, vol. 295, EDP Sciences, s.l., n.p.
- Kyngäs, H, Mikkonen, K & Kääriäinen, M 2020, *The application of content analysis in nursing science research*, Springer Nature, New York.
- Mahesh, J, Bhat, AK & Suresh, R 2021, 'Are Gen Z values the new disruptor for future educational institutions?', *Journal of Higher Education Theory and Practice*, vol. 21, no. 12, pp. 102-123. <https://doi.org/10.33423/jhetp.v21i12.4704>
- Marchant, E, Todd, C, Cooksey, R, Dredge, S, Jones, H, Reynolds, D, Stratton, G, Dwyer, R, Lyons, R & Brophy, S 2019, 'Curriculum-based outdoor learning for children aged 9-11: A qualitative analysis of pupils' and teachers' views', *PLoS One*, vol. 14, no. 5, a212242. <https://doi.org/10.1371/journal.pone.0212242>

References

- Moore, M 2011, 'Vygotsky's cognitive development theory', in S Goldstein & JA Naglieri (eds.), *Encyclopedia of child behavior and development*, Springer, Boston, pp. 1549-1550.
- Mooney, CG 2013, *Theories of childhood: An introduction to Dewey, Montessori, Erikson, Piaget, and Vygotsky*, Redleaf Press, St. Paul.
- Mozgalova, NG, Baranovska, IG, Hlazunova, IK, Mikhalishen, AV & Kazmirchuk, NS 2021, 'Methodological foundations of soft skills of musical art teachers in pedagogical institutions of higher education', *Linguistics and Culture Review*, vol. 5, no. S2, pp. 317-327. <https://doi.org/10.21744/lingcure.v5nS2.1355>
- Munna, AS & Kalam, MA 2021, 'Teaching and learning process to enhance teaching effectiveness: A literature review', *International Journal of Humanities and Innovation (IJHI)*, vol. 4, no. 1, pp. 1-4. <https://doi.org/10.33750/ijhi.v4i1.102>
- National Education Association 2012, *Preparing 21st-century students for a global society: An educator's guide to the "four Cs"*, National Education Association, Washington DC.
- Nijhof, SL, Vinkers, CH, Van Geelen, SM, Duijff, SN, Achterberg, EJM, Van der Net, J, Veltkamp, RC, Grootenhuis, MA, Van de Putte, EM, Hillegers, MHJ, Van der Brug, AW, Wierenga, CJ, Benders, MJNL, Engels, RCME, Van der Ent, CK, Vanderschuren, LJMJ & Lesscher HMB 2018, 'Healthy play, better coping: The importance of play for the development of children in health and disease', *Neuroscience & Biobehavioural Reviews*, vol. 95, pp. 421-429. <https://doi.org/10.1016/j.neubiorev.2018.09.024>
- O'Hara, S 2018, 'Autoethnography: The science of writing your lived experience', *Health Environments Research & Design Journal*, vol. 11, no. 4, pp. 14-17. <https://doi.org/10.1177/1937586718801425>
- Pearsall, RCC 2021, *Reimagining play reconstructing education: Exploring discourse in the LEGO® Group as Media Producer*, Malmö University, Malmö.
- Rahmatirad, M 2020, 'A review of socio-cultural theory', *SIASAT*, vol. 5, no. 3, pp. 23-31. <https://doi.org/10.33258/siasat.v5i3.66>
- Regoniel, PA 2020, *What is a conceptual framework? Expounded definition and five purposes*, viewed 11 October 2022, <<https://simplyeducate.me/2020/11/05/what-is-a-conceptual-framework/>>
- Riley, J & Nicewicz, K 2022, 'Connecting with Gen Z: Using interactive improve games to teach soft skills', *Marketing Education Review*, vol. 32, no. 2, pp. 97-104. <https://doi.org/10.1080/10528008.2022.2041440>
- Rios, JA, Ling, G, Pugh, R, Becker, D & Bacall, A 2020, 'Identifying critical 21st-century skills for workplace success: A content analysis of job advertisements', *Educational Researcher*, vol. 49, no. 2, pp. 80-89. <https://doi.org/10.3102/0013189X19890600>
- Roberts, AM, Sternberg, RJ, Runco, MA, Acar, S, Ward, TB, Kolomyts, Y & Kaufman, JC 2021, 'Creativity and cognition, divergent thinking, and intelligence', in JC Kaufman & RJ Sternberg (eds.), *Creativity: An Introduction*, Cambridge University Press, Cambridge, pp. 102-127. <https://doi.org/10.1017/9781108776721.008>
- Roy, R & Uekusa, S 2020, 'Collaborative autoethnography: "Self-reflection" as a timely alternative research approach during the global pandemic', *Qualitative Research Journal*, vol. 20, no. 4, pp. 383-392. <https://doi.org/10.1108/QRJ-06-2020-0054>
- Skeen, S, Gemmel, K, Du Toit, S, Mawoyo, T, Bantjes, J, Kara, T & Laurenxi, C 2022, 'The role of educational institutions in promoting and protecting mental health across childhood, adolescence, and youth', in M Tomlinson, S Kleintjes & L Lake (eds.), *South African child gauge 2021/2022: Child and adolescent mental health*, Children's Institute, University of Cape Town, n.p., viewed 15 October 2022, <http://www.ci.uct.ac.za/sites/default/files/image_tool/images/367/Child_Gauge/2022/educational%20institutions.pdf>
- Swanberg, M, Woodson-Smith, S, Pangaro, L, Torre, D & Maggio, L 2022, 'Factors and interactions influencing direct observation: A literature review guided by activity theory', *Teaching and Learning in Medicine*, vol. 34, no. 2, pp. 155-166. <https://doi.org/10.1080/10401334.2021.1931871>

- The LEGO Foundation® 2022, *Six Bricks booklet*, viewed 14 October 2022, <<https://www.careford.co.za/six-bricks>>
- The LEGO Foundation® n.d., *Six Bricks booklet*, viewed 10 October 2022, <https://cms.learningthroughplay.com/media/jrfpg4tx/sixbricks_ok_print.pdf>
- United Nations Children's Fund (UNICEF) 2022, *How play strengthens your child's mental health: Playful moments are essential for your little one's emotional well-being*, viewed 11 October 2023, <<https://www.unicef.org/parenting/child-development/how-play-strengthens-your-childs-mental-health>>
- Whitebread, D, Basilio, M, Kuvalja, M & Verma, M 2012, *The importance of play*, Toy Industries of Europe, Brussels.
- Wood, L 2019, *Participatory action learning and action research: Theory, practice, and process*, Taylor & Francis Group, viewed n.d., <<http://ebookcentral.proquest.com/lib/northwu-ebooks/detail.action?docID=5896156>>
- Zosh, JM, Hirsh-Pasek, K, Hopkins, EJ, Jensen, H, Liu, C, Neale, D, Solis, SL & Whitebread, D 2018, 'Accessing the inaccessible: Redefining play as a spectrum', *Frontiers in Psychology*, vol. 9, a1124. <https://doi.org/10.3389/fpsyg.2018.01124>

Chapter 3

- Abla, C & Fraumeni, BR 2019, *Student engagement: Evidence-based strategies to boost academic and social-emotional results*, McREL International, Denver.
- Bal, PM, Bakker, AB & Kallenberg, T 2006, 'Bevlogen voor de klas', *VELON Tijdschrift voor lerarenopleiders*, vol. 27, no. 1, pp. 19–22.
- Burke, A, Austin, T-E, Bezuidenhout, C, Botha, K, Du plessis, E, Jordaan, E & Lake, M 2021, *Understanding psychopathology: South African perspectives*, Oxford University Press, Cape Town.
- Chiang, L 2017, 'Enhance learning through brainDance movements: An empirical study', *International Journal of Educational Methodology*, vol. 3, no. 1, pp. 17–23. <https://doi.org/10.12973/ijem.3.1.17>
- Collie, RJ, Granziera, H & Ma, AJ 2018, 'Teachers' perceived autonomy support and adaptability: An investigation employing the job demands-resources model as relevant to workplace exhaustion, disengagement, and commitment', *Teaching and Teacher Education*, vol. 74, pp. 125–136. <https://doi.org/10.1016/j.tate.2018.04.015>
- Doa, P 2020, 'Effect of interaction strategy instruction on learner engagement in peer interaction', *System*, vol. 91, a102244. <https://doi.org/10.1016/j.system.2020.102244>
- Donald, D, Hardman, J, Lazarus, S & Moolla, N 2020, *Educational psychology in social context: Ecosystemic applications in southern Africa*, 6th edn., Oxford University Press, Cape Town.
- Education Gazette Editors 2020, *Integrating mindfulness into learning*, Education Gazette, 19 November, vol. 99, no. 19, viewed 11 October 2023, <<https://gazette.education.govt.nz/articles/integrating-mindfulness-into-learning/>>
- Erwin, E, Robinson, K & Aveta, D 2017, 'Being present: An exploratory study on the use of mindfulness in early childhood', *The International Journal of Holistic Early Learning and Development*, vol. 4, pp. 1–17.
- Gerdera, DS & Williams, PJ 2016, 'Using activity theory to understand student teacher perceptions', in DS Gerdera & PJ Williams (eds.), *Activity theory in education: Research and practice of effective ways for promoting critical thinking through asynchronous discussion forums*, Sense Publishers, Rotterdam, pp. 19–34.
- Harn, PL 2019, 'The application mode and effectiveness of playful positive psychology course with Six Bricks® and DUPLO® play box for high school students', *World Journal of Research and Review*, vol. 9, no. 6, pp. 8–11. <https://doi.org/10.31031/EPMR.2018.01.000515>
- Harn, PL & Hsiao, CC 2018, 'A preliminary study on LEGO®-based workplace stress reduction with Six Bricks® and LEGO® SERIOUS PLAY® in Taiwan', *World Journal of Research and Review*, vol. 6, no. 1, pp. 64–67. <https://doi.org/10.31031/EPMR.2018.01.000515>

References

- Hussain, A & Khandekar, G 2019, 'Comparative study of health-related physical fitness among physical education students and non-physical education students belongs to south Kashmir', *International Journal of Yogic, Human Movement and Sports Sciences*, vol. 4, no. 1, pp. 776-778.
- Hutcheson, B 2018, *Six Bricks*[®], Care for Education, Rotorua.
- Keng, SL, Smoski, MJ & Robins, CJ 2011, 'Effects of mindfulness on psychological health: A review of empirical studies', *Clinical Psychology Review*, vol. 31, no. 6, pp. 1041-1056. <https://doi.org/10.1016/j.cpr.2011.04.006>
- Kengatharan, N 2020, 'The effects of teacher autonomy, student behavior and student engagement on teacher job satisfaction', *Educational Sciences: Theory & Practice*, vol. 20, no. 4, pp. 1-15.
- Kumar, S 2021, 'Fostering mindfulness through embroidery and reverse community-engaged learning in Moroccan Higher Education', *The Journal of Contemplative Inquiry*, vol. 8, no. 1, pp. 48-71.
- Landsberg, E, Kruger, D & Swart, E 2019, *Addressing barriers to learning*, 4th edn., Van Schaik Publishers, Pretoria.
- Lawson, HA & Lawson, MA 2020, 'Student engagement and disengagement as a collective action problem', *Education Sciences*, vol. 10, no. 8, a212. <https://doi.org/10.3390/educsci10080212>
- Ledertoug, MM & Paarup, N 2021, 'Engaging education: The foundation for wellbeing and academic achievement', in ML Kern & ML Wehmeyer (eds.), *The Palgrave handbook of positive education*, Palgrave Macmillan, Cham, pp. 441-472.
- Lee, J, Park, T & Davis, RO 2022, 'What affects learner engagement in flipped learning and what predicts its outcomes?: FL engagement and outcomes', *British Journal of Educational Technology*, vol. 53, no. 2, pp. 211-228. <https://doi.org/10.1111/bjet.12717>
- LEGO[®] Therapy 2022, *LEGO[®] Therapy: Online hub for research, resources, training, and conversation for LEGO[®] therapy and autism*, viewed 16 September 2022, <[http://www.LEGO[®] therapy.com/links/#:-:text=LEGO[®] ff-,Daniel%20B.,University%20in%20Vancouver%2C%20British%20Columbia](http://www.LEGO.com/links/#:-:text=LEGO%20ff-,Daniel%20B.,University%20in%20Vancouver%2C%20British%20Columbia)>
- LeGoff, DB, Gomez de la Cuesta, G, Krauss, GW & Baron-Cohen, S 2014, *Lego-based therapy*, Jessica Kingsley, London.
- Levy, J & Dunsmuir, S 2020, 'Lego therapy: Building social skills for adolescents with an autism spectrum disorder', *Educational and Child Psychology*, vol. 37, pp. 58-83. <https://doi.org/10.53841/bpsecp.2020.37.1.58>
- Loucks, EB, Crane, RS, Sanghvi, MA, Montero-Marin, J, Proulx, J, Brewer, JA & Kuyken, W 2022, 'Mindfulness-based programs: Why, when, and how to adapt?', *Global Advances in Health and Medicine*, vol. 11, pp. 1-12. <https://doi.org/10.1177/21649561211068805>
- Louw, D & Louw, A 2021, *Child and adolescent development*, Van Schaik Publishers, Pretoria.
- Love, AM, Findley, JA, Ruble, LA & McGrew, JH 2020, 'Teacher self-efficacy for reaching students with autism spectrum disorder: Associations with stress, teacher engagement, and student IEP outcomes following COMPASS consultation', *Focus on Autism and Other Developmental Disabilities*, vol. 35, no. 1, pp. 47-54. <https://doi.org/10.1177/1088357619836767>
- Mahlo, D 2017, 'Teaching learners with diverse needs in the Foundation Phase in Gauteng Province, South Africa', *Special Issue-Student Diversity*, vol. 7, no. 1, pp. 1-9. <https://doi.org/10.1177/2158244017697162>
- Matangira, L 2022, *Foundation Phase initiative (Six Bricks): Endless ways to learn through play*, viewed 27 October 2022, <<https://www.unicef.org/southafrica/stories/foundation-phase-initiative-six-bricks-endless-ways-learn-through-play>>
- Meherali, S, Punjani, N, Louie-Poon, S, Abdul Rahim, K, Das, JK, Salam, RA & Lassi ZS 2021, 'Mental health of children and adolescents amidst COVID-19 and past pandemics: A rapid systematic review', *International Journal of Environmental Research and Public Health*, vol. 18, no. 7, a3432. <https://doi.org/10.3390/ijerph18073432>

- Ministry of Education New Zealand 2021, *Ministry of Education*, New Zealand Government, Wellington.
- Mogavi, RH, Ma, X & Hui, P 2021, 'Characterizing student engagement moods for dropout prediction in question poolwebsites', *Association for Computing Machinery*, vol. 37, no. 4, pp. 1-22.
- Moser, A 2020, *Written corrective feedback: The role of learner engagement: Second language learning and teaching*, 1st edn., Springer, Cham.
- New Zealand Health Education Association 2019, *Mental health education in The New Zealand Curriculum*, viewed 20 September 2022, <<https://healtheducation.org.nz/wp-content/uploads/2019/11/NZHEA-position-statement-on-MENTAL-HEALTH-Nov-2019.pdf>>
- NikkiBush.com 2022, *The success cube*, viewed 03 February 2023, <<https://nikkibush.com/talks/the-success-cube/>>
- Nolberto-Quispe, L, Gonzales-Macavilca, M & Iraola-Real, I 2021, 'Influence of positive and negative affects on the academic engagement of students in the initial education degree: Predictive study', *Universal Journal of Educational Research*, vol. 9, no. 5, pp. 994-999. <https://doi.org/10.13189/ujer.2021.090512>
- Padgett, J, Cristancho, S, Lingard, L, Cherry, R & Haji, F 2019, 'Engagement: What is it good for? The role of learner engagement in healthcare simulation contexts', *Advances in Health Sciences Education*, vol. 24, no. 4, pp. 811-825. <https://doi.org/10.1007/s10459-018-9865-7>
- Petersen, N 2017, 'The liminality of new Foundation Phase teachers: Transitioning from university into the teaching profession', *South African journal of Education*, vol. 37, no. 2, pp. 1-9. <https://doi.org/10.15700/saje.v37n2a1361>
- Preston, L & Van der Merwe, W 2021, *A teacher's guide to the SIAS document: Less paperwork, more teaching*, 1st edn., Van Schaik Publishers, Pretoria.
- Racine, N, Cooke, JE, Eirich, R, Korczak, DJ, McArthur, B & Madigan, S 2020, 'Child and adolescent mental illness during COVID-19: A rapid review', *Psychiatry Research*, vol. 292, no. 113307, pp. 1-3. <https://doi.org/10.1016/j.psychres.2020.113307>
- Rillo, M 2015, *Six Bricks for countless exercises*, viewed 15 July 2022, <<https://seriousplaypro.com/2015/05/12/six-bricks-for-countless-exercises>>
- Robinson, KJ 2019, 'Satir human validation process model', in L Metcalf (ed.), *Marriage and family therapy*, 2nd edn., Springer, New York, pp. 166-181.
- Rocha, P 2022, *Collaboration and innovation in criminal justice an activity theory alternative to offender rehabilitation*, 1st edn., Routledge, London.
- Rohan, T 2017, *Teaching positive behaviour: Supporting engagement, participation, and learning*, New Zealand Ministry of Education, Wellington.
- Sregonja, R, Alaie, I, Holmgren, A, Bohman, H, Päären, A, Von Knorring, L, Von Knorring, AL & Jonsson U 2022, 'Association of adolescent depression with subsequent prescriptions of anti-infectives and anti-inflammatories in adulthood: A longitudinal cohort study', *Psychiatry Research*, vol. 317, a114813. <https://doi.org/10.1016/j.psychres.2022.114813>
- Wand, APF, Zhong, B-L, Chiu, HFK, Draper, B & De Leo, D 2020, 'The implications for suicide in older adults', *International Psychogeriatrics*, vol. 32, no. 10, pp. 1225-1230. <https://doi.org/10.1017%2FS1041610220000770>

Chapter 4

- Adams, TE, Ellis, C & Jones, SH 2017, 'Autoethnography', in J Matthes, CS Davis & RF Potter (eds.), *The international encyclopedia of communication research methods*, John Wiley & Sons, Hoboken, pp. 1-11.
- Afdal, A, Zikra, Z, Sukmawati, I, Syapitri, D & Fikri, M 2022, 'Psychoeducational intervention in early childhood education: Analysis for children with disruptive behaviour', in *Proceedings of the 6th International Conference of Early Childhood Education*, online, 07-80 September.

- Bronikowska, M & Groll, M 2015, 'Definition, classification, preservation and dissemination of traditional sports & games in Europe', *TAFISA Recall: Games of the Past – Sports for Today*, viewed 17 October 2022, https://www.researchgate.net/publication/281784618_Definition_Classification_Preservation_and_Dissemination_of_Traditional_Sports_Games_in_Europe
- Busetto, L, Wick, W & Gumbinger, C 2020, 'How to use and assess qualitative research methods', *Neurological Research and Practice*, vol. 2, p. 14. <https://doi.org/10.1186/s42466-020-00059-z>
- Chu, W, Glad, W & Wever, R 2021, 'A meta-synthesis of the use of activity theory in design for sustainable behaviour', *Design Science*, vol. 7, a17. <https://doi.org/10.1017/dsj.2021.17>
- Cooper, R & Lilyea, BV 2022, 'I'm Interested in autoethnography, but how do I do it?', *The Qualitative Report*, vol. 27, no. 1, pp. 197-208. <https://doi.org/10.46743/2160-3715/2022.5288>
- De Witt, MW 2017, *The young child in context A psycho-social perspective*, 2nd edn., Van Schaik Publishers, Pretoria.
- Ekhtiari, H, Rezapour, T, Aupperle, RL & Paulus, MP 2017, 'Neuroscience-informed psychoeducation for addiction medicine: A neurocognitive perspective', *Progress in Brain Research*, vol. 235, pp. 239-264. <https://doi.org/10.1016/bs.pbr.2017.08.013>
- Govender, N & Mutendera, G 2020, 'Teachers' and custodians' views and dilemmas arising thereof regarding the integration of indigenous knowledge in the primary school', *AlterNative: An International Journal of Indigenous Peoples*, vol. 16, no. 4, pp. 356-368. <https://doi.org/10.1177/1177180120970935>
- Gray, P 2013, 'Definitions of play', *Scholarpedia*, vol. 8, a30578. <https://doi.org/10.4249/scholarpedia.30578>
- Hasan, H & Kazlauskas, A 2014, 'Activity theory: Who is doing what, why and how', Faculty of Business - Papers (Archive), University of Wollongong, viewed 12 October 2023, <<https://ro.uow.edu.au/cgi/viewcontent.cgi?article=1405&context=buspapers>>
- Kaptelinin, V & Nardi, BA 2006, 'Activity theory in a nutshell', in *Acting with technology: Activity theory and interaction design*, MIT Press, Cambridge, pp. 29-72.
- Koukourikos, K, Tsaloglidou, A, Tzeha, L, Iliadis, C, Frantzana, A, Katsimbeli, A & Kourkouta, L 2021, 'An overview of play therapy', *Materia Socio-medica*, vol. 33, no. 4, pp. 293-297. <https://doi.org/10.5455/msm.2021.33.293-297>
- Kvamme, LS, Keles, S, Nes, RB, Vaskinn, L, Waaler, PM, Wentzel-Larsen, T & Kjøbli, J 2022, 'Common practice elements in treatment programs for adolescents with externalizing and internalizing problems: A meta-analysis', *Residential Treatment for Children & Youth*, n.v., pp. 1-31. <https://doi.org/10.1080/0886571X.2022.2111397>
- Lioutas, ED, Charatsari, C, La Rocca, G & De Rosa, M 2019, 'Key questions on the use of big data in farming: An activity theory approach', *NJAS-Wageningen Journal of Life Sciences*, vol. 90, a100297. <https://doi.org/10.1016/j.njas.2019.04.003>
- Louw, D & Louw, A 2022, *Child and adolescent development*, 3rd edn., Psychology Publications, Stellenbosch.
- Maree, K, Creswell, JW, Ebersöhn, L, Eloff, I, Ferreira, R, Ivankova, NV, Jansen, JD, Nieuwenhuis, J, Pietersen, J & Plano-Clark, VL 2019, *First steps in Research*, 3rd edn., Van Schaik Publishers, Pretoria.
- Matangira, L 2022, *Foundation Phase initiative (Six Bricks): Endless ways to learn through play*, UNICEF, viewed 18 October 2022, <<https://www.unicef.org/southafrica/stories/foundation-phase-initiative-six-bricks-endless-ways-learn-through-play>>
- Molose, T, Goldman, G & Thomas, P 2018, 'Towards a collective-values framework of Ubuntu: Implications for workplace commitment', *Entrepreneurial Business and Economics Review*, vol. 6, no. 3, pp. 193-206. <https://doi.org/10.15678/EBER.2018.060312>
- Mweli, P 2019, 'Indigenous stories and games as an approach to teaching within the classroom', in I Eloff & E Swart (eds.), *Understanding educational psychology editors*, Juta, Cape Town, pp. 99-106.

- Ngubane, NI & Makua, M 2021, 'Intersection of Ubuntu pedagogy and social justice: Transforming South African higher education', *Transformation in Higher Education*, vol. 6, a113. <https://doi.org/10.4102/the.v6i0.113>
- Nieuwenhuis, J 2019a, 'Introducing qualitative research', in JG Maree (ed.), *First steps in research*, 3d edn., Van Schaik Publishers, Pretoria, pp. 56–77.
- Nieuwenhuis, J 2019b, 'Qualitative research design and data-gathering techniques', in JG Maree (ed.), *First steps in research*, 3d edn., Van Schaik Publishers, Pretoria, pp. 79–116.
- Nugraha, Y, Handoyo, E & Sulistyorini, S 2018, 'Traditional game on the social skill of students in the social science learning of elementary school', *Journal of Primary Education*, vol. 7, no. 2.
- Nxumalo, SA & Mncube, DW 2019, 'Using indigenous games and knowledge to decolonise the school curriculum: Ubuntu perspectives', *Perspectives in Education*, vol. 36, no. 2, pp. 103–118. <https://doi.org/10.18820/2519593X/pie.v36i2.9>
- Parliament Monitoring Group 2022, *Question NW2252 to the Minister of Health*, viewed 16 October 2022, <<https://pmg.org.za/committee-question/19397/>>
- Pham, L 2018, 'A review of key paradigms: Positivism, interpretivism and critical inquiry', MEd thesis, University of Adelaide, Adelaide.
- Sapien Labs 2021, *Mental state of the world*, viewed 16 October 2022, <<https://sapienlabs.org/wp-content/uploads/2022/03/Mental-State-of-the-World-Report-2021.pdf>>
- Sapien Labs 2022, *What is your mental well-being score?*, viewed 17 October 2022, <<https://sapienlabs.org/mhq/>>
- Sarkhel, S, Singh, OP & Arora, M 2020, 'Clinical practice guidelines for psychoeducation in psychiatric disorders general principles of psychoeducation', *Indian Journal of Psychiatry*, vol. 62, suppl. 2, pp. S319–S323. https://doi.org/10.4103/psychiatry.IndianJPsychiatry_780_19
- Singh, V, Kumar, A & Gupta, S 2022, 'Mental health prevention and promotion – A narrative review', *Frontiers in psychiatry*, vol. 13, pp. 1–17. <https://doi.org/10.3389/fpsy.2022.898009>
- South African Depression and Anxiety Group (SADAG) 2021, *It's an unequal world and mental health really matters*, viewed 16 October 2022, <https://www.sadag.org/index.php?option=com_content&view=article&id=3197:world-mental-health-day-10-october-2021&catid=149&Itemid=132>
- Statistics South Africa (StatsSA) n.d., *Publications*, viewed 12 October 2023, <<https://www.statssa.gov.za/publications>>
- The Educational Hub 2020, *The importance of play for well-being and learning at all ages*, viewed 16 October 2022, <<https://theeducationhub.org.nz/what-is-play-and-why-is-it-important-for-learning/>>
- The LEGO Foundation® 2017, *What we mean by: Learning through play*, viewed 17 October 2022, <<https://cms.learningthroughplay.com/media/vd5fiurk/what-we-mean-by-learning-through-play.pdf>>
- The World Bank 2022, *The World Bank in South Africa: The World Bank's strategy in South Africa reflects the country's development priorities and its unique leadership position at sub-regional and continental levels*, viewed 18 October 2022, <<https://www.worldbank.org/en/country/southafrica/overview>>
- United Nations Children's Fund (UNICEF) 2021, *The state of the world's children 2021 on my mind: Promoting, protecting and caring for children's mental health*, viewed 16 October 2022, <<https://www.unicef.org/reports/state-worlds-children-2021>>
- Van Wyk, M 2015, 'Towards an Afrocentric-indigenous pedagogy', in C Okeke, M van Wyk & N Phasha (eds.), *Schooling, society and inclusive education. An Afrocentric perspective*, Oxford University Press, Cape Town, pp. 39–63.
- Varpio, L, Paradis, E, Uijtdehaage, S & Young, M 2020, 'The distinctions between theory, theoretical framework, and conceptual framework', *Academic Medicine*, vol. 95, no. 7, pp. 989–994. <https://doi.org/10.1097/ACM.0000000000003075>

Western Cape Government 2022, *Indigenous games promotion and training*, viewed 18 October 2022, <<https://www.westerncape.gov.za/service/indigenous-games-promotion-and-training#04>>

Whitebread, D 2017, 'Free play and children's mental health', *The Lancet Child & Adolescent Health*, vol. 1, no. 3, pp. 167-169. [https://doi.org/10.1016/S2352-4642\(17\)30092-5](https://doi.org/10.1016/S2352-4642(17)30092-5)

Chapter 5

American Psychiatric Association 2013, *Diagnostic and statistical manual of mental disorders*, 5th edn., American Psychiatric Association, Washington DC. <https://psycnet.apa.org/doi/10.1176/appi.books.9780890425596>

Anthony, M n.d., *If you do what you love, you'll never work a day in your life*, viewed 12 October 2023, <https://www.brainyquote.com/quotes/marc_anthony_418819>

Argyropoulou, K & Kaliris, A 2018, 'From career decision-making to career decision-management: New trends and prospects for career counselling', *Advances in Social Sciences Research Journal*, vol. 5, no. 10, pp. 483-502. <https://doi.org/10.14738/assrj.510.5406>

Bab, M & Eriksen, M 2014, *Build & share introduced - Explore positive psychology with LEGO®*, viewed 11 October 2022, <<http://buildandshare.net/wordpress/wp-content/uploads/Build-Share-Whitepaper.pdf>>

Bates-Krakoff, J, Parente, A, McGrath, RE, Rashid, T & Niemeck, RM 2022, 'Are character strength-based positive interventions effective for eliciting positive behavioral outcomes? A meta-analytic review', *International Journal of Wellbeing*, vol. 12, no. 3, pp. 56-80. <https://doi.org/10.5502/ijw.v12i3.2111>

Bunde-Birouste, A, Byrne, F & Kemp, L 2019, 'Autoethnography', in P Liamputtong (ed.), *Handbook of research methods in health social sciences*, Springer, Singapore, pp. 509-526.

Cambridge Dictionary n.d., *LEGO®*, viewed 21 October 2022, <<https://dictionary.cambridge.org/dictionary/english/lego>>

Celestine, N 2021, *LEGO® therapy*, viewed 26 October 2022, <<https://positivepsychology.com/lego-therapy/>>

Cherkashina, E & Zalilova, A 2015, *Using LEGO® SERIOUS PLAY® in teenager occupational guidance*, viewed 17 October 2022, <<https://seriousplaypro.com/2015/09/26/using-lego-serious-play-in-teenager-occupational-guidance/>>

Cherry, K 2021, *What is positive psychology?*, viewed 06 July 2022, <<https://www.verywellmind.com/social-learning-theory-2795074>>

De Bruin, GP & De Bruin, K 2018, 'Career- counselling assessment', in C Foxcroft & C Roodt (eds.), *Psychological assessment in the South African context*, 5th edn., Oxford University Press, Cape Town, pp. 243-254.

Di Palma, T 2017, 'Career project: Counselling and vocational identity construction', PhD thesis, University of Naples, Naples.

Elmansy, R 2015, *Using Lego serious play as a design thinking tool*, viewed 14 October 2022, <<https://www.designorate.com/using-lego-serious-play-as-a-design-thinking-tool/>>

Foxcroft, C & Grieve, KW 2018, 'Factors affecting assessment results', in C Foxcroft & G Roodt (eds.), *Psychological assessment in the South African context*, 5th edn., Oxford University Press, Cape Town, pp. 313-333.

Fritz, E & Beekman, L 2011, 'Engaging clients actively in telling stories and actualising dreams', in K Maree (ed.), *Shaping the story*, Brill, Leiden, pp. 163-175.

Gregory, E & Courtney, D 2022, *What does it mean to be neurodivergent?*, viewed 15 October 2022, <<https://www.forbes.com/health/mind/what-is-neurodivergent/>>

Gruppetta, M 2004, 'Auto-phenomenography? Alternative uses of autobiographically based research', in *Association for Active Researchers in Education (AARE) Conference Paper Abstracts-2004*, AARE, Sydney, pp. 1-10.

- Harn, P & Hsiao, C 2018, 'Strength-4D career model with LEGO® SERIOUS PLAY® and six bricks', *International Journal of Management and Applied Research*, vol. 5, no. 4, pp. 157-173. <https://doi.org/10.18646/2056>
- Keller, C & Marold, R 2022, *The acceleration of deglobalisation*, viewed 17 October 2022, <<https://www.cib.barclays/our-insights/3-point-perspective/Homecoming-The-acceleration-of-deglobalisation.html>>
- LEGO® n.d.a, *The LEGO® Group history*, viewed 21 October 2022, <<https://www.lego.com/en-us/aboutus/lego-group/the-lego-group-history>>
- LEGO® n.d.b, *Serious play*, viewed 15 October 2022, <<https://www.lego.com/en-gb/themes/serious-play>>
- LEGO® n.d.c, *Build you personal strengths*, viewed 14 October 2022, <<https://www.lego.com/en-gb/family/activities/build-your-personal-strengths>>
- LEGO® n.d.d, *Build me 'emotions' by LEGO® Education*, viewed 14 October 2022, <<https://education.lego.com/en-us/products/build-me-emotions-by-lego-education/45018>>
- LEGO® n.d.e, *DUPLO®*, viewed 23 October 2022, <<https://www.lego.com/en-za/search?q=Duplo>>
- Louw, DA & Louw, E 2022, *Child and adolescent development*, Van Schaik Publishers, Pretoria.
- Maree, JG 2017, *Career interest profile technical manual*, JvR Psychometrics, Randburg.
- Maree, JG 2018, 'Advancing career counselling research and practice using a novel quantitative+ qualitative approach to elicit clients' advice from within', *South African Journal of Higher Education*, vol. 32, no. 4, pp. 149-170. <https://doi.org/10.20853/32-4-2558>
- Maree, JG 2019, 'Narrative research in career counselling: The career construction interview', in S Laher, A Fynn & S Kramer (eds.), *Research methods in the social sciences*, Wits University Press, Johannesburg, pp. 186-202. <https://doi.org/10.18772/22019032750.17>
- Maree, N & Maree, K 2021, 'The influence of group life-design-based counselling on learners' academic self-construction: A collective case study', *South African Journal of Education*, vol. 41, no. 3, a2051. <https://doi.org/10.15700/saje.v41n3a2051>
- McGroarty, B 2022, *Defining 'mental wellness' vs 'mental health'*, viewed 12 October 2023, <<https://globalwellnessinstitute.org/global-wellness-institute-blog/2021/02/23/industry-research-defining-mental-wellness-vs-mental-health/>>
- McIlveen, P & Patton, W 2007, 'Narrative career counselling: Theory and exemplars of practice', *Australian Psychologist*, vol. 42, no. 3, pp. 226-235. <https://doi.org/10.1080/00050060701405592>
- McMahon, M & Watson, M 2020, 'Career counselling and sustainable decent work: Relationships and tensions', *South African Journal of Education*, vol. 40, no. 1, a1881. <https://doi.org/10.15700/saje.v40n1a1881>
- Mead, E 2020, *Strengths and virtues: Personal strengths defined (+ list of 92 personal strengths)*, viewed 05 July 2022, <<https://positivepsychology.com/what-are-your-strengths/>>
- Melnichuk, T 2022, *Top five soft skills that every employee needs in the 21st century*, viewed 15 October 2022, <<https://www.forbes.com/sites/forbeshumanresourcescouncil/2022/07/06/top-five-soft-skills-that-every-employee-needs-in-the-21st-century/?sh=58d7f4f356c8>>
- Miglianico, M, Dubreuil, P, Miquelon, P, Bakker, AB & Martin-Krumm C 2020, 'Strength use in the workplace: A literature review', *Journal of Happiness Studies*, vol. 21, pp. 737-764. <https://doi.org/10.1007/s10902-019-00095-w>
- Morgan, B 2010. 'Career counselling in the 21st century: A reaction article', *Journal of Psychology in Africa*, vol. 20, no. 3, pp. 501-503. <https://doi.org/10.1080/14330237.2010.10820406>
- Neale, P 2020, *Emotional intelligence: Why we need it now, more than ever*, viewed 15 October 2022, <<https://www.forbes.com/sites/forbescoachescouncil/2020/12/01/emotional-intelligence-why-we-need-it-now-more-than-ever/?sh=6843ba823df3>>

- Niemiec, R 2014, *What's missing in your career*, viewed 13 October 2022, <<https://www.viacharacter.org/topics/articles/what%27s-missing-in-your-career>>
- Niewenhuis, J 2022, 'Qualitative research designs and data-gathering techniques', in K Maree (ed.), *First steps to research*, 3rd edn., Van Schaik Publishers, Pretoria, pp. 80-116.
- O'Hara, S 2018, 'Autoethnography: The science of writing your lived experience', *HERD: Health Environments Research & Design Journal*, vol. 11, no. 4, pp. 14-17. <https://doi.org/10.1177/1937586718801425>
- Parton, D 1980, *Working 9 to 5*, RCA Records, New York.
- Peterson, C & Seligman, MEP 2004, *Character strengths and virtues: A handbook and classification*, Oxford University Press, New York.
- Preston, L & Van der Merwe, W 2021, *SIAS document less paperwork, more teaching*, Van Schaik Publishers, Pretoria.
- Savickas, ML 2005, *The theory and practice of career construction*, American Psychological Association, Washington DC.
- Savickas, ML 2015, *Life-design counselling manual*, viewed 23 June 2015, <https://www.wc.k12.wi.us/cms_files/resources/savickas%20life%20design%20manual.pdf>
- Savickas, ML 2019, *Career counselling*, 2nd edn., American Psychological Association, Washington DC.
- Shu, E 2020, 'Extending the (scientific) document: Autophenomenography as a docupoetics of the natural history archive', *Axon: Creative Explorations*, vol. 10, no. 1, pp. 1-21.
- Statistics South Africa (StatsSA) 2022, *South Africa's youth continue to bear the burden of unemployment*, viewed 13 August 2022, <<https://www.statssa.gov.za/?p=15407#:~:text=According%20to%20the%20Quarterly%20Labour,stands%20at%2034%2C5%25>>
- Stauffer, B 2022, *What are 21st-century skills?*, viewed 14 October 2022, <<https://www.aeseducation.com/blog/what-are-21st-century-skills>>
- Supriatna, M 2020, 'Adolescent's career maturity', *Proceedings of the International Conference on Educational Psychology and Pedagogy - 'Diversity in Education'*, Bandung City, West Java Province, Indonesia, May 02, 2019, pp. 232-235.
- The Global Wellness Institute n.d., *Industry research: Defining 'mental wellness' vs 'mental health'*, viewed 13 October 2022, <<https://globalwellnessinstitute.org/global-wellness-institute-blog/2021/02/23/industry-research-defining-mental-wellness-vs-mental-health/>>
- Van Laar, E, Van Deursen, AJ, Van Dijk, JA & De Haan, J 2020, 'Determinants of 21st-century skills and 21st-century digital skills for workers: A systematic literature review', *Sage Open*, vol. 10, no. 1, pp. 1-14. <https://doi.org/10.1177/2158244019900176>
- VIA Institute on Character n.d., *Character strengths*, viewed 20 October 2022, <<https://www.viacharacter.org/character-strengths>>
- Villacís, JL, Naval, C & De la Fuente, J 2022, 'Character strengths, moral motivation and vocational identity in adolescents and young adults: A scoping review', *Current Psychology*, vol. 42, pp. 23448-23463. <https://doi.org/10.1007/s12144-022-03427-x>
- World Health Organization (WHO) 2021, *Adolescent mental health*, viewed 31 August 2022, <<https://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health>>

Chapter 6

- Abrams, AA, Carden, K, Teta, C & Wågsæther, K 2014, 'Water, sanitation, and hygiene vulnerability among rural areas and small towns in South Africa: Exploring the role of climate change, marginalisation, and inequity', *Water*, vol. 13, no. 20, a2810. <https://doi.org/10.3390/w13202810>

- Barr, A, Coates, E, Gomez de la Cuesta, G, Biggs, K, Le Couteur, A & Wright, B 2022, 'A mixed methods evaluation of the acceptability of therapy using LEGO® bricks (LEGO® based therapy) in mainstream primary and secondary education', *Autism Research*, vol. 15, no. 7, pp. 1237-1248. <https://doi.org/10.1002/aur.2725>
- Benque, L 2021, 'Realizing children's rights in South Africa', *Humanium*, viewed 10 October 2022, <<https://www.humanium.org/en/south-africa/>>
- Business Tech 2021, *South Africans have become poorer over the last 6 years: Government*, viewed 12 October 2023, <<https://businesstech.co.za/news/finance/503297/south-africans-have-become-poorer-over-the-last-6-years-government/>>
- Care for Education 2020, *Six Bricks overview*, viewed 12 October 2023, <<https://www.carefored.co.za/six-bricks>>
- Centres for Disease Control and Prevention (CDC) 2018, *Health-related quality of life (HRQOL): Wellbeing concepts*, viewed 10 October 2022, <<https://www.cdc.gov/hrqol/wellbeing.htm>>
- Childhood Education International (CEI) 2022, *Well-being: Because safe, healthy children are ready to learn*, viewed 12 October 2023, <<https://ceinternational1892.org/well-being/>>.
- Constitutional Court of South Africa 2022, *Section 28-children*, viewed 12 October 2023, <<https://www.concourt.org.za/index.php/children-s-rights>>
- Definitions.net n.d., *LEGO®*, viewed 12 October 2023, <<https://www.definitions.net/definition/LEGO%C2%AE>>
- Department of Basic Education (DBE) 2021, *The DBE's E³ Programme develops teachers and empowers youth as WhatsApp line grows*, viewed 12 October 2023, <<https://www.education.gov.za/E3WhatsAppLine.aspx>>
- Department of Health (DoH) 2014, *The national health promotion policy and strategy: 2015-19*, National Department of Health, Pretoria, viewed 12 October 2023, <<https://www.knowledgehub.org.za/system/files/elibdownloads/2019-07/National%2520health%2520promotion%2520policy%2520and%2520strategy%25202015%2520-%25202019.pdf>>.
- De Villiers, K 2021, 'Bridging the health inequality gap: An examination of South Africa's social innovation in health landscape', *Infectious Diseases of Poverty*, vol. 10, no. 1, p. 43. <https://doi.org/10.1186/s40249-021-00804-9>
- Emmons, KM & Chambers, DA 2021, 'Commentary: Policy implementation science - An unexplored strategy to address social determinants of health', *Ethnicity & Disease*, vol. 31, no. 1, pp. 133-138. <https://doi.org/10.18865/ed.31.1.133>
- Global Peace Index (GPI) 2018, *Measuring peace in a complex world*, viewed 12 October 2023, <<https://www.economicsandpeace.org/wp-content/uploads/2020/08/Global-Peace-Index-2018-2-1.pdf>>.
- Health and Welfare Sector Education and Training Authority (HWSETA) 2022, *Sector skills plan 2022-2023*, viewed 12 October 2023, <https://www.hwseta.org.za/wp-content/uploads/2022/04/43293_HWSETA_Sector_Skills_Plan_2022.2023-LR.pdf>
- Horikoshi, R 2020, 'Teaching chemistry with LEGO® bricks', *Chemistry Teacher International*, vol. 3, no. 3, pp. 239-255. <https://doi.org/10.1515/cti-2020-0017>
- Kesselman, B 2021, 'Civil society steps in to fight SA's "hidden hunger" revealed by COVID-19', *Mail & Guardian*, 24 September, viewed 12 October 2023, <<https://mg.co.za/thoughtleader/opinion/2021-09-24-what-can-be-done-about-our-hidden-hunger-pandemic/>>
- Lachman, P 2020, 'Where to make a difference: Research and the social determinants in paediatrics and child health in the COVID-19 ERA', *Paediatric Research*, vol. 89, no. 2, pp. 259-262. <https://doi.org/10.1038/s41390-020-01253-0>
- Le Dé, L, Gaillard, JC, Gampell, A, Loodin, N & Hinchliffe, G 2021, 'Fostering children's participation in disaster risk reduction through play: A case study of LEGO® and Minecraft', *International Journal of Disaster Risk Science*, vol. 12, no. 6, pp. 867-878. <https://doi.org/10.1007/s13753-021-00375-1>

References

- Maphumulo, WT & Bhengu, BR 2019, 'Challenges of quality improvement in the healthcare of South Africa post-apartheid: A critical review', *Curationis*, vol. 42, no. 1, a1901. <https://doi.org/10.4102/curationis.v42i1.1901>
- Matangira, L 2022, *Foundation Phase initiative (Six bricks): Endless ways to learn through play*, viewed 12 October 2023, <<https://www.unicef.org/southafrica/stories/foundation-phase-initiative-six-bricks-endless-ways-learn-through-play>>.
- Parliamentary Monitoring Group 2015, *Rural schooling/multi-grade schools/farms schools/non-viable schools; inclusive education implementation; special needs schools: Department briefing*, viewed 12 October 2023, <<https://pmg.org.za/committee-meeting/21135/>>
- Reddy, S 2020, *Supporting healthy, happy children: Care and support for teaching and learning*, UNICEF, viewed 12 October 2023, <<https://www.unicef.org/southafrica/stories/supporting-healthy-happy-children>>
- Republic of South Africa (RSA) 2022, *Integrated School Health Programme*, viewed 12 October 2023, <<https://www.gov.za/about-government/government-programmes/schoolhealth>>
- School Guide 2022, *South Africa's definitive school guide from enrolment to graduation: School fees & quintiles*, viewed 12 October 2023, <<https://www.schoolguide.co.za/for-parents/school-review-guidelines/1036-education-guide/10975-school-fees-quintiles.html#:~:text=Schools%20in%20each%20province%20are,schools%20represent%20the%20least%20poor>>.
- Statistics South Africa (StatsSA) 2021a, *Statistical release P0141. Consumer price index*, viewed 12 October 2023, <<http://www.statssa.gov.za/publications/P0141/P0141December2021.pdf>>
- Statistics South Africa (StatsSA) 2021b, *Statistical release P0318, General household survey 2021*, Statistics South Africa, Pretoria.
- Statistics South Africa (StatsSA) 2022, *Wellbeing of children in SA is vital for a brighter future. Wellbeing of children in SA is vital for a brighter future*, viewed 12 October 2023, <<https://www.statssa.gov.za/?p=14038>>
- Sterne, M 2021, 'The true state of South Africa's schools', *Mail & Guardian*, 03 October, viewed 12 October 2023, <<https://mg.co.za/education/2021-10-03-the-true-state-of-our-schools/>>
- The LEGO Foundation® 2022, *World mental health day: How play can support children's mental health*, viewed 12 October 2023, <<https://learningthroughplay.com/how-we-play/world-mental-health-day-how-play-can-support-children-s-mental-health>>
- The Royal Society of Medicine 2022, *Promoting health and wellbeing through children's education*, viewed 12 October 2023, <https://www.rsm.ac.uk/latest-news/2022/promoting-health-and-wellbeing-through-children-s-education/?gclid=Cj0KCQjwkt6aBhDKARIsAAy eLJ3-ctyTX3hej4X4jFyUjgTcqmn2sQoGA1vsZA-PCgTzYyKUr8JgKlaAv7BEALw_wcB>.
- TimesLIVE 2022, *Crime stats: Children under siege*, viewed 12 October 2023, <<https://www.timeslive.co.za/news/south-africa/2022-02-18-crime-stats-children-under-siege/>>
- United Nations Children's Fund (UNICEF) n.d., *Situation of children in South Africa*, viewed 12 October 2023, <<https://www.unicef.org/southafrica/situation-children-south-africa>>
- United Nations Children's Fund (UNICEF) 2020, *Worlds of influence: Understanding what shapes child well-being in rich countries*, Innocenti Report Card 16, viewed 12 October 2023, <<https://www.unicef-irc.org/publications/pdf/Report-Card-16-Worlds-of-Influence-child-wellbeing.pdf>>
- Walsman, A, Zhang, M, Kotar, K, Desingh, D, Farhadi, A & Fox, D 2022, 'Break and make: Interactive structural understanding using LEGO® Bricks', *Lecture Notes in Computer Science*, vol. 13688, pp. 90-107. https://doi.org/10.1007/978-3-031-19815-1_6
- Western Cape Government (WCG) 2022, *First 1000 days, grow, love and play*, viewed 12 October 2023, <<https://www.westerncape.gov.za/first-1000-days/>>
- World Health Organization (WHO) 2022a, *Social determinants of health*, viewed 12 October 2023, <https://www.who.int/health-topics/social-determinants-of-health#tab=tab_1>.

- World Health Organization (WHO) 2022b, *World Health Day 7 April 2022: Our planet our health*, viewed 12 October 2023, <<https://www.who.int/campaigns/world-health-day/2022>>.
- World Health Organization (WHO) 2022c, *Child health*, viewed 12 October 2023, <<https://www.afro.who.int/health-topics/child-health>>.
- World Population Review 2022, *Gini coefficient by country 2022*, viewed 12 October 2023, <<https://worldpopulationreview.com/country-rankings/gini-coefficient-by-country>>.
- Zenk, L, Hynek, N, Krawinkler, SA, Peschl, MF & Schreder, G 2021, 'Supporting innovation processes using material artefacts: Comparing the use of LEGO® bricks and moderation cards as boundary objects', *Creativity and Innovation Management*, vol. 30, no. 4, pp. 845-859. <https://doi.org/10.1111/caim.12459>

Chapter 7

- Africa Unit for Transdisciplinary Health Research (AUTHeR) 2022, viewed 17 October 2022, <<https://health-sciences.nwu.ac.za/auther>>
- Africa Unit for Transdisciplinary Health Research (AUTHeR) 2022a, *Social Greenhouse™*, viewed 17 October 2022, <<https://health-sciences.nwu.ac.za/auther/social-greenhouse%25C2%25AE>>
- Aldred, R 2011, 'From community participation to organisational therapy? World cafe and appreciative inquiry as research methods', *Community Development Journal*, vol. 46, no. 1, pp. 57-71. <https://doi.org/10.1093/cdj/bsp039>
- Armstrong, D 2017, 'Wicked problems in special and inclusive education', *JORSEN*, vol. 17, no. 4, pp. 229-236 <https://doi.org/10.1111/1471-3802.12402>
- Baum, F, MacDougall, C & Smith, D 2006, 'Participatory action research', *Journal of Epidemiology and Community Health*, vol. 60, no. 10, p. 854. <https://doi.org/10.1136/jech.2004.028662>
- Bell, S & Morse, S 2008, *Sustainability indicators. Measuring the immeasurable?*, 2nd edn., TJ International, Cornwall.
- Carr, W & Kemmis, S 2003, *Becoming critical: Education knowledge and action research*, Routledge, London.
- Cargo, M & Mercer, SL 2008, 'The value and challenges of participatory research: Strengthening its practice', *Annual Review of Public Health*, vol. 29, pp. 325-350. <https://doi.org/10.1146/annurev.publhealth.29.091307.083824>
- Chambers, R 1994, 'The origins and practice of participatory rural appraisal', *World Development*, vol. 22, no. 7, pp. 953-969. [https://doi.org/10.1016/0305-750X\(94\)90141-4](https://doi.org/10.1016/0305-750X(94)90141-4)
- Fernandez, ME, Ten Hoor, GA, Van Lieshout, S, Rodriguez, SA, Beidas, RS, Parcel, G, Ruiters, RA, Markham, CM & Kok, G 2019, 'Implementation mapping: Using intervention mapping to develop implementation strategies', *Frontiers in Public Health*, vol. 7, a158. <https://doi.org/10.3389/fpubh.2019.00158>
- Fouché, C & Light, G 2011, 'An invitation to dialogue: 'The World Café' in social work research', *Qualitative Social Work*, vol. 10, no. 1, pp. 28-48. <https://doi.org/10.1177%2F1473325010376016>
- Gachie, W 2020, 'Higher education institutions, private sector and government collaboration for innovation within the framework of the Triple Helix Model', *African Journal of Science, Technology, Innovation and Development*, vol. 12, no. 2, pp. 203-215. <https://doi.org/10.1080/20421338.2019.1631120>
- Hanlin, R 2022, 'How can innovation and technology address social exclusion, equity and poverty?', *Mail & Guardian*, viewed 17 October 2022, <<https://mg.co.za/opinion/2022-05-24-opinion-how-can-innovation-and-technology-address-social-exclusion-equity-and-poverty/>>
- Kajikawa, Y, Tacao, F & Yamaguchi, K 2014, 'Sustainability science: The changing landscape of sustainability research', *Sustainability Science*, vol. 9, no. 4, pp. 431-438. <https://doi.org/10.1007/s11625-014-0244-x>

References

- Kitzinger, J 1994, 'The methodology of focus groups: The importance of interaction between research participants', *Sociology of Health & Illness*, vol. 16, no. 1, pp. 103-121. <https://doi.org/10.1111/1467-9566.ep11347023>
- Lang, DJ, Wiek, A, Bergmann, M, Stauffacher, M, Martens, P, Moll, P, Swilling, M & Thomas, CJ 2012, 'Transdisciplinary research in sustainability science: Practice, principles, and challenges', *Sustainability Science*, vol. 7, no. 1, pp. 25-43. <https://doi.org/10.1007/s11625-011-0149-x>
- Morse, S & McNamara, N 2013, *Sustainable livelihood approach: A critique of theory and practice*, Springer Science & Business Media, Dordrecht.
- Moss Kanter, R 2009, *Leadership yoga: Innovation advantages from seeing disadvantage*, viewed 01 October 2022, <<https://hbr.org/2009/11/leadership-yoga-innovation-adv>>
- Moss Kanter, R 2010, *Seven truths about change to lead by and live by*, viewed 01 October 2022, <<https://hbr.org/2010/08/seven-truths-about-change-to-l.html>>
- Niesing, CM 2016, 'A conceptual framework for sustainable community development', PhD thesis, North-West University, Potchefstroom.
- Niesing, CM & Bester, P 2019, 'Bridging the community technology gap: The Social Greenhouse™', *Triple Helix International Conference Proceedings A Catalyst For Change: Discover the Impact of Science and Technology on Regional Innovation and Socio-Economic Development*, 09-11 September, Cape Town, pp. 9-11, viewed 08 June 2023, <<https://www.triplehelixassociation.org/wp-content/uploads/2020/01/thc2019-proceedings-v1.0.pdf>>
- Niesing, CM, Bester, P, Spies, MO, Matsietso, DJ, Thomas, M, Smit, K & Liwewe, K 2019, 'Operationalisation of university community engagement activities towards reciprocal relationships', *Triple Helix International Conference Proceedings A Catalyst For Change: Discover the Impact of Science and Technology on Regional Innovation and Socio-Economic Development*, Cape Town, South Africa, 09-11 September, 2019, pp. 7-8, viewed 08 June 2023, <<https://www.triplehelixassociation.org/wp-content/uploads/2020/01/thc2019-proceedings-v1.0.pdf>>
- Nyumba, T, Wilson, K, Derrick, CJ & Mukherjee, N 2018, 'The use of focus group discussion methodology: Insights from two decades of application in conservation', *Methods in Ecology and Evolution*, vol. 9, no. 1, pp. 20-32. <https://doi.org/10.1111/2041-210X.12860>
- Online Etymology Dictionary 2022, *Community*, viewed 01 October 2022, <<https://www.etymonline.com/word/community>>
- Participatory Methods Website 2022, *Participatory action research*, viewed 01 October 2022, <<https://www.participatorymethods.org/glossary/participatory-action-research>>
- Peek, S 2022, 'Learn what a decision matrix is and how to use it for your business', *Business News Daily*, viewed 01 October 2022, <<https://www.businessnewsdaily.com/6146-decision-matrix.html>>
- Ramnath, L 2015, 'The effectiveness of poverty reduction strategy in post-apartheid South Africa', MCom thesis, University of KwaZulu-Natal, Durban.
- Republic of South Africa (RSA) 2022, *National development plan 2030*, viewed 01 October 2022, <<https://www.gov.za/issues/national-development-plan-2030>>
- Rittel, HW & Webber, MM 1973, 'Dilemmas in a general theory of planning', *Policy Sciences*, vol. 4, no. 2, pp. 155-169. <https://doi.org/10.1007/BF01405730>
- Scott, V, Schaay, N, Schneider, H & Sanders, D 2017, 'Addressing social determinants of health in South Africa: The journey continues', *South African Health Review*, vol. 2017, no. 1, pp. 77-87, viewed 11 October 2022, <<https://journals.co.za/doi/pdf/10.10520/EJC-c80ea0402>>
- Scribbr 2021, *What is a focus group | step-by-step guide & examples*, viewed 01 October 2022, <<https://www.scribbr.com/methodology/focus-group/#:~:text=A%20focus%20group%20is%20a,a%20type%20of%20qualitative%20research>>
- Senge, P 2014, *Creating desired futures in a global economy*, viewed 01 October 2022, <<https://www.solonline.org/news/200718/Free-Article-by-Peter-Senge--Foundations-for-Leadership-.htm>>

- Steger, C, Klein, JA, Reid, RS, Lavorel, S, Tucker, C, Hopping, KA, Marchant, R, Teel, T, Cuni-Sanchez, A, Dorji, T & Greenwood, G 2021, 'Science with society: Evidence-based guidance for best practices in environmental transdisciplinary work', *Global Environmental Change*, vol. 68, a102240. <https://doi.org/10.1016/j.gloenvcha.2021.102240>
- The LEGO Foundation® 2022, *About us: The LEGO Foundation*, viewed 12 October 2023, <<https://learningthroughplay.com/about-us/the-lego-foundation>>
- Van Breda, J & Swilling, M 2019, 'The guiding logics and principles for designing emergent transdisciplinary research processes: Learning experiences and reflections from a transdisciplinary urban case study in Enkanini informal settlement, South Africa', *Sustainability Science*, vol. 14, pp. 823–841. <https://doi.org/10.1007/s11625-018-0606-x>
- Velthuizen, A 2012, 'A transdisciplinary approach to understanding the causes of wicked problems such as the violent conflict in Rwanda', *TD: The Journal for Transdisciplinary Research in Southern Africa*, vol. 8, no. 1, a5. <https://doi.org/10.4102/td.v8i1.5>
- Wong, E 2022, *What are wicked problems and how might we solve them?*, Interactional Design Foundation, viewed 01 October 2022, <<https://www.interaction-design.org/literature/article/wicked-problems-5-steps-to-help-you-tackle-wicked-problems-by-combining-systems-thinking-with-agile-methodology>>

Chapter 8

- Agbagbla, F 2018, *A professional development programme for Ghanaian kindergarten teachers to implement an indigenous play-based pedagogy*, viewed 12 October 2023, <https://repository.up.ac.za/bitstream/handle/2263/69988/Agbagbla_Professional_2018.pdf?sequence=1&isAllowed=y>
- Atkinson, S, Bagnall, A, Corcoran, R, South, J & Curtis, S 2020, 'Being well together: Individual subjective and community wellbeing', *Journal of Happiness Studies*, vol. 21, no. 5, pp. 1903–1921. <https://doi.org/10.1007/s10902-019-00146-2>
- Barr, A, Coates, E, Kingsley, E, De la Cuesta, G, Biggs, K, Le Couteur, A & Wright, B 2022, 'A mixed methods evaluation of the acceptability of therapy using LEGO® BRICKS (LEGO®-based therapy) in mainstream primary and secondary education', *Autism Research*, vol. 15, no. 7, pp 1237–1248. <https://doi.org/10.1002/aur.2725>
- Cameron, K 2021, 'Applications of positive organizational scholarship in institutions of higher education', in ML Kern & ML Wehmeyer (eds.), *The Palgrave handbook of positive education*, Palgrave Macmillan, Cham, pp. 741–766.
- Care for Education 2020a, *Six Bricks*, viewed 15 October 2022, from <<https://www.carefired.co.za/six-bricks>>
- Care for Education 2020b, *Six Bricks enhancing parent-child engagement*, viewed 15 October 2022, <<https://www.carefired.co.za/post/six-bricks-enhancing-parent-child-engagement>>
- Carpenter, D 2017, 'Collaborative inquiry and the shared workspace of professional learning communities', *International Journal of Educational Management*, vol. 31, no. 7, pp. 1069–1091. <https://doi.org/10.1108/IJEM-10-2015-0143>
- Collet, K, Ngece, S, Mackier, E & Rodgiers, S 2019, *Promoting holistic well-being of novice and student teachers: A handbook for school communities*, Self-published, Cape Town, pp. 1–38.
- Darling, S, Dawson, G, Quach, J, Smith, R, Perkins, A, Connolly, A, Smith, A, Moore, C, Ride, J & Oberklaid, F 2021, 'Mental health and wellbeing coordinators in primary schools to support student mental health: Protocol for a quasi-experimental cluster study', *BMC Public Health*, vol. 21, no. 1, a1467. <https://doi.org/10.1186/s12889-021-11467-4>
- Doyle, F, Morawska, A, Higgins, D, Havighurst, S, Mazzucchelli, T, Toumbourou, J, Middeldorp, C, Chainey, C, Cobham, V, Harnett, P & Sanders, M 2022, 'Policies are needed to increase the reach and impact of evidence-based parenting supports: A call for a population-based approach to supporting parents, children, and families', *Child Psychiatry & Human Development*, vol. 54, no. 3, pp. 891–904. <https://doi.org/10.31234/osf.io/732ws>

References

- Edmentum 2022, *The #1 curriculum and assessment partner for educators*, viewed 15 October 2022, <<https://blog.edmentum.com/play-based-learning-what-it-and-why-it-should-be-part-every-classroom>>
- Emerald Publishing 2022, *How to... use ethnographic methods & participant observation*, viewed 01 October 2022, <<https://www.emeraldgrouppublishing.com/how-to/observation/use-ethnographic-methods-participant-observation>>
- Gravett, S, De Beer, JJ & Du Plessis, E 2019, *Becoming a teacher*, Pearson, Cape Town.
- Hasan, H & Kazlauskas, A 2014, *Activity theory: Who is doing what, why and how Faculty of Business*, Papers (Archive), viewed 15 October 2022, <<https://ro.uow.edu.au/buspapers/403>>
- Hopper, E 2020, *Maslow's hierarchy of needs*, viewed 15 October 2022, <<https://www.thoughtco.com/maslows-hierarchy-of-needs-4582571>>
- Humphreys, K & Enqvist, J 2022, 'Voicing resilience through subjective well-being: Community perspectives on responding to water stressors and COVID-19', *Ecology and Society*, vol. 27, no. 2, a39. <https://doi.org/10.5751/ES-13192-270239>
- Joubert, I 2021, 'Learning about myself and others as citizens through play', in J Van Heerden & A Veldsman (eds.), *Re-imagining teaching and learning through play*, Van Schaik Publishers, Pretoria, pp. 63-79.
- Kitching, AE 2017, 'A relationship-focused approach to the co-construction of enabling spaces for learning, development, and well-being', in I Eloff & E Swart (eds.), *Understanding Educational Psychology*, Juta, Cape Town, pp. 229-236.
- Koskinen-Koivisto, W & Lehtovaara, T 2020, 'Embodied adventures: An experiment on doing and writing multisensory ethnography', in L Lõhdesmõki, E Koskinen-Koivisto, V Čeginskas & A Koistinen (eds.), *Challenges and solutions in ethno-graphic research: Ethnography with a twist*, Routledge, London, pp. xx-xxix.
- Lõhdesmõki, L, Koskinen-Koivisto, E, Čeginskas, V & Koistinen, A 2020, *Challenges and solutions in ethno-graphic research: Ethnography with a twist*, Routledge, London.
- Louw, DAP & Louw, A 2022, *Child and adolescent development*, 3rd edn., Psychology Publications, Stellenbosch, pp. 569-636.
- Monteiro, V, Carvalho, C & Santos, NN 2021, 'Creating a supportive classroom environment through effective feedback: Effects on students' school identification and behavioural engagement', *Frontiers in Education*, vol. 6, a661736. <https://doi.org/10.3389/educ.2021.661736>
- Niedderer, K, Holthoff-Detto, V, Van Rompay, T, Karahanoğlu, A, Ludden, G, Almeida, R, Durán, R, Aguado, Y, Lim, J, Smith, T, Harrison, D, Craven, M, Gosling, J, Orton, L & Tournier, I 2022, 'This is me: Evaluation of a boardgame to promote social engagement, wellbeing, and agency in people with dementia through mindful life-storytelling', *Journal of Aging Studies*, vol. 60, a100995. <https://doi.org/10.1016/j.jaging.2021.100995>
- Play Unlocks Essential Skills, 2021, viewed 01 October 2022, <<https://learningthroughplay.com/why-play/play-unlocks-essential-skills>>
- Ruggeri, K, Garcia-Garzon, E, Maguire, Á, Matz, S & Huppert, F 2020, 'Well-being is more than happiness and life satisfaction: A multidimensional analysis of 21 countries', *Health and Quality of Life Outcomes*, vol. 18, no. 1, a192. <https://doi.org/10.1186/s12955-020-01423-y>
- Skeen, S, Ahmad, J, Bachman, G, Cluver, L, Gardner, F, Madrid, B, Miller, K, Tomlinson, M, Sherr, L & Levy, M 2022, 'Supporting parents of adolescents: A powerful and under-utilised opportunity to influence adolescent development', *Vulnerable Children and Youth Studies*, vol. 18, no. 1, pp. 1-9. <https://doi.org/10.1080/17450128.2022.2088915>
- Starr, DR 2010, 'Employee assistance programs', in S Walfish (ed.), *Earning a living outside of managed mental health care: 50 ways to expand your practice*, American Psychological Association, Washington DC, pp. 90-93. <https://doi.org/10.1037/12138-018>

- Steffenak, A, Carlsson A, Opheim, E & Sandsdalen, T 2021, 'Community-based support for children who are next-of-kin for a parent experiencing illness or disability – A scoping review', *BMC Health Services Research*, vol. 21, a1250 <https://doi.org/10.1186/s12913-021-07270-x>
- Stephen, C 2017, *Nurturing citizenship in the early years*. University of Stirling: Andressa Maria Gadda, Centre for Child Wellbeing and Protection, University of Stirling, pp. 1–37, viewed 01 October 2022, <https://www.gcph.co.uk/assets/0000/6278/Nurturing_Citizenship_in_the_Early_Years.pdf>
- Surjono, S, Yudono, A, Setyono, D & Putri, J 2021, 'Contribution of community resilience to city's livability within the framework of sustainable development', *Environmental Research, Engineering and Management*, vol. 77, no. 4, pp. 33–47. <https://doi.org/10.5755/j01.irem.77.4.29184>
- United Nations Children's Fund (UNICEF) 2021, *Empowering parents and caregivers to support learning and a safe return to school: Ongoing pandemic response, recovery and long-term resilience must consider parents and caregivers if we are to reach every child*, S Fuller & JK Brown (eds.), viewed 01 October 2022, <<https://www.unicef.org/eca/stories/empowering-parents-and-caregivers-support-learning-and-safe-return-school>>
- United Nations Children's Fund (UNICEF) 2022, *Foundation Phase Initiative (Six Bricks): Endless ways to learn through play: A joint initiative by the Department of Basic Education, UNICEF South Africa, the LEGO Foundation* and Care for Education in implementing the concept play-based learning in Grades R to 3 using manipulatives*. (Matangira, L), viewed 01 October 2022, <<https://www.unicef.org/southafrica/stories/foundation-phase-initiative-six-bricks-endless-ways-learn-through-play>>
- Van Heerden, J & Veldsman, A 2021, *Rethinking learning through play*, Van Schaik Publishers, Pretoria.
- Yoo, H 2019, 'In Gottman, J. M., & Gottman, J. S. 2018. 'J. M. Gottman, & J. S. Gottman (2018). The science of couples and family therapy: Behind the scenes at the Love Lab. New York, NY: W.W. Norton & Company, 340 pp., \$35.', *Journal of Marital and Family Therapy*, vol. 45, no. 1, pp. 186–187. <https://doi.org/10.1111/jmft.12342>

Chapter 9

- Anon 2002, *What is wellness?*, viewed 24 August 2022, <<https://www.globalwellnessday.org/about/what-is-wellness>>
- Care for Education (C4Ed) 2020, viewed 11 October 2022, <<https://www.carefored.co.za/six-bricks>>
- Cooper, R & Lilyea, B 2022, 'I'm interested in autoethnography, but how do I do it?', *The Qualitative Report*, vol. 27, no. 1, pp. 197–208. <https://doi.org/10.46743/2160-3715/2022.5288>
- Creswell, WJ 2013, *Qualitative inquiry & research design: Choosing among five approaches*, 3rd edn., SAGE Publications, London, pp. 152–155.
- Department of Cooperative Governance and Traditional Affairs 2022, *Profile: Ngaka Modiri Molema District (2022)*, viewed 11 October 2022, <https://www.cogta.gov.za/ddm/wp-content/uploads/2020/07/PROFILE_Ngaka-Modiri-Molema-SG-ed-25-June-2020.pdf>
- Ellis, C 2007, 'Telling secrets, revealing lives: Relational ethics in research with intimate others', *Qualitative Inquiry*, vol. 13, no. 1, pp. 3–29. <https://doi.org/10.1177/1077800406294947>
- Engeström, Y, Miettinen, R & Punamäki, R 1999, *Perspectives on activity theory*, Cambridge University Press, Cambridge, pp. 19–38.
- Equal Education Law Center (EELC) n.d., *Inclusive education: Learners with learning barriers the right to an equal and quality education*, viewed 11 October 2022, <<https://eelawcentre.org.za/wp-content/uploads/2016/08/Inclusive-Education-Final.pdf>>

- Hanline, MF, Milton, S & Phelps, PC 2010, 'The relationship between preschool brick play and reading and maths abilities in early elementary school: A longitudinal study of children with and without disabilities', *Early Child Development and Care*, vol. 180, no. 8, pp. 1005-1017. <https://doi.org/10.1080/03004430802671171>
- Hokkanen, S 2016, 'To serve and to experience: An autoethnographic study of simultaneous church interpreting', PhD thesis, University of Tampere, viewed 11 October 2022, <<http://urn.fi/URN:ISBN:978-952-03-0232-0>>
- Kamdar, B & Patel, A 2019, *Designing for children 2019: Play and learn- investigating Six Bricks as an effective and affordable design for early skills development of communication through play*, viewed 11 October 2022, <https://www.designingforchildren.net/Full_Final-Submissions/papers/Binal%20Kamdar/Binal-Kamdar-Investigating-Six-Bricks-as-an-effective-and-affordable-design-for-early-skill-development-of-communication-through-play.pdf>
- Maree, K 2012, *First steps in research*, 1st edn., Van Schaik, Pretoria.
- Maree, K (ed.) 2019, *First steps in research*, 3rd edn., Van Schaik Publishers, Pretoria.
- Matangira, L 2022, *A joint initiative by the Department of Basic Education, UNICEF South Africa, LEGO Foundation® and care for Education in implementing the concept play-based learning in Grades R to 3 using manipulatives*, viewed 11 October 2022, <<https://www.unicef.org/southafrica/stories/foundation-phase-initiative-six-bricks-endless-ways-learn-through-play>>
- McAvinia, C 2016, *Online learning and its users: Lessons for higher education*, Chandos Publishing, Oxfordshire, pp. 59-100.
- Méndez-López, MG 2013, 'Autoethnography as a research method: Advantages, limitations and criticisms', *Colombian Applied Linguistics Journal*, vol. 15, no. 2, pp. 279-287. <https://doi.org/10.14483/udistrital.jour.calj.2013.2.a09>
- Nieuwenhuis, J 2019, 'Qualitative research designs and data-gathering techniques', in K Maree (ed.), *First steps in Research*, 3rd edn., Van Schaik Publishers, Pretoria, pp. 80-116.
- Penn State. Department of Agricultural Economics, Sociology, and Education 2022, *What is community engagement*, viewed 11 October 2022, <<https://aese.psu.edu/research/centers/cecd/engagement-toolbox/engagement/what-is-community-engagement>>
- Ramos, T 2022, 'Challenges for teachers in special-needs-inclusive classrooms', *We Have Kids*, 23 July, viewed 12 October 2023, <<https://wehavekids.com/education/Top-Challenges-Teacher-Face-in-Special-Needs-Inclusive-Classrooms>>
- Smothers, A 2020, *Transdisciplinary and interdisciplinary approaches*, Department of Cooperative Governance and Traditional Affairs, Pretoria.
- South Africa Human Rights Commission (SAHRC) 2018, *South Africa Human Rights Commission annual report for the year ended 31 March 2018*, viewed 12 October 2023, <<https://www.sahrc.org.za/home/21/files/Annual%20Report%202018.pdf>>
- Wolfgang, CH, Stannard, LL & Jones, I 2001, 'Block play performance among preschoolers as a predictor of later school achievement in mathematics', *Journal of Research in Childhood Education*, vol. 15, no. 2, pp. 173-180. <https://doi.org/10.1080/02568540109594958>
- Zosh, JM, Hopkins, EJ, Jensen, H, Liu, C, Neale, D, Hirsh-Pasek, K, Solis, SL & Whitebread, D 2017, *Learning through play: A review of the evidence (white paper)*, The LEGO Foundation®, Billund.

Chapter 10

- Bacharach, S & Cook, RT 2017, 'Introduction: Play well, philosophize well!', in RT Cook & S Bacharach (eds.), *LEGO® and philosophy: Constructing reality brick by brick*, John Wiley & Sons, Hoboken, pp. 1-4.
- Britt, R 2020, *LEGO® as a wellness brand? Why the F\$%k not?*, viewed 16 July 2022, <<https://www.yahoo.com/lifestyle/LEGO®-wellness-brand-why-fuck-201003546.html>>

- Care for Education 2022, *Six Bricks*, viewed 15 June 2022, <<https://www.carefored.co.za/six-bricks>>
- Christiansen, NB 2019, *Encouraging progress made in 2019: A letter from the CEO*, viewed 15 September 2022, <https://www.LEGO.com/cdn/cs/aboutus/assets/blt835cedd90b0f233b/The_LEGO_Group_201_Sustainability_headlines.pdf>
- Coxhead, E n.d., *Home*, viewed 12 October 2023, <<https://www.emilycoxhead.com/>>
- Einstein, A n.d., *Imagination is more important than knowledge*, viewed 12 October 2023, <<https://www.goodreads.com/quotes/556030-imagination-is-more-important-than-knowledge-for-knowledge-is-limited>>
- Ellis, C, Adams, TE & Bochner, AP 2011, 'Autoethnography: An overview [40 paragraphs]', *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*, vol. 12, no. 1, a10. <https://doi.org/10.17169/fqs-12.1.1589>.
- Headon, A 2019, *Build yourself happy*, Dorling Kindersley, Penguin Random House, Slovakia.
- Herman, S 2012, *The LEGO Group*, Remember When, Barnsley.
- Howell, S 2019, 'Description of the South African context', in W Heitmeyer, S Howell, S Kurtenbach, A Rauf, M Zaman & S Zdun (eds.), *The codes of the street in risky neighbourhoods: A cross-cultural comparison of youth violence in Germany, Pakistan, and South Africa*, viewed 15 September 2022, <<https://link.springer.com/content/pdf/10.1007/978-3-030-16287-0.pdf>>
- Hustle Con Media 2022, *The toy-making giant is making a new pitch to adults, emphasizing LEGO's as the key to unlocking calm*, Hustle Con Media, viewed September, <<https://thehustle.co/01172020-LEGO-s-wellness/>>
- Kim, L 2023, *50 Quotes on success and innovation by Elon Musk*, viewed 12 October 2023, <<https://medium.com/marketing-and-entrepreneurship/50-quotes-on-success-and-innovation-by-elon-musk-22c5dd456570>>
- Lähdesmäki, T 2021, *Challenges and solutions in ethnographic research*, Taylor & Francis, s.l.
- Lane, E & Dessent-Jackson, L 2020, *Could LEGO soon become a wellness brand for stressed-out adults?*, viewed 15 September 2022, <<https://www.menshealth.com/uk/mental-strength/a30762342/LEGO-mental-health/>>
- Lee, J 2021, *Deconstructing LEGO: The medium and messages of LEGO play*, Springer Nature, s.l.
- Mathee, A, Moyes, J, Mkhencele, T, Kleynhans, J, Language, B, Piketh, S, Moroe, E, Wafawanaka, F, Martinson, N, McMorro, M, Tempia, S, Kahn, K & Cohen C 2021, 'Housing quality in a rural and an urban settlement in South Africa', *International Journal of Environmental Research and Public Health*, vol. 18, no. 5, a2240. <https://doi.org/10.3390/ijerph18052240>
- Mind 2022, *Mindfulness*, viewed 15 September 2022, <<https://www.mind.org.uk/information-support/drugs-and-treatments/mindfulness/about-mindfulness/>>
- Nemiro, J 2021, 'Building collaboration skills in 4th- to 6th-grade students through robotics', *Journal of Research in Childhood Education*, vol. 35, no. 3, pp. 351-372. <https://doi.org/10.1080/02568543.2020.1721621>
- Ngcuka, O 2022, 'South Africa adopts marine plastic pollution treaty ahead of UN environmental meeting', *Daily Maverick*, viewed 15 August 2022, <<https://www.dailymaverick.co.za/article/2022-02-17-south-africa-adopts-marine-plastic-pollution-treaty-ahead-of-un-environmental-meeting/#:~:text=Almost%2080%2C000%20tonnes%20of%20plastic,in%20South%20Africa%20per%20annum>>
- Pfizer Inc. 2022, *What is wellness?*, viewed 15 August 2022, <<https://www.pfizer.com/health-wellness/wellness/what-is-wellness>>
- Rodrigues de Oliveira, D, Wilson, D, Palace-Berl, F, De Mello Ponteciano, B, Fungaro Rissatti, L, Sardela de Miranda, F, Piassa Pollizi, V, Fuscella, J, Mourão Terzi, A, Lepique, A, D'Almeida, V & Demarzo, M 2021, 'Mindfulness meditation training effects on quality of life, immune function, and glutathione metabolism in service healthy female teachers: A randomized pilot clinical trial', *Brain, Behaviour, & Immunity - Health*, vol. 18, a100372. <https://doi.org/10.1016/j.bbih.2021.100372>

References

- Rural Health Information Hub (RHlhub) 2022, *What is rural?*, viewed 15 September 2022, <<https://www.ruralhealthinfo.org/topics/what-is-rural>>
- Somerville, E 2020, *LEGO® launches first book for adults promoting mindfulness and wellbeing*, viewed 15 September 2022, <<https://inews.co.uk/culture/LEGO®-new-book-build-yourself-happy-wellbeing-mindfulness-340600>>
- Statistics South Africa (StatsSA) 2022, *Investigation into appropriate definitions for urban & rural areas for SA (Discussion document)*, viewed 12 October 2023, <https://www.statssa.gov.za/?page_id=5134>
- Sustainable Society Foundation (SSF) 2012, *Sustainable Society Index: SSI-2012*, Uitgeverij De Vijver, Utrecht.
- The LEGO® Group 2019, *Sustainability progress 2019*, viewed 15 September 2022, <https://www.LEGO®.com/cdn/cs/aboutus/assets/blt835cedd90b0f233b/The_LEGO®_Group_2019_Sustainability_headlines.pdf>
- The LEGO® Group 2022, *The history*, viewed 15 September 2022, <<https://www.LEGO®.com/en-us/aboutus/LEGO®-group/the-LEGO®-group-history/>>
- United Nations Children's Fund (UNICEF) & LEGO Foundation®: South Africa 2022, *Learning through play: UNICEF and the LEGO Foundation® engages with parents and caregivers to use the power of learning through play to give children the best possible start in life*, viewed 12 June 2022, <<https://www.unicef.org/southafrica/partnerships-children/LEGO®-foundation-learning-through-play>>
- URBANET 2020, *Infographics: Urbanisation and urban development in South Africa*, viewed 15 September 2022, <<https://www.urbanet.info/infographics-urbanisation-in-south-africa/>>

Index

#

21st-century skills, 24–25, 27–29, 31–32, 34, 45–46, 100–101, 111, 199

A

active engagement, 49–50, 60–61
adolescents, 20, 65, 93–100, 102, 105–108, 118

C

character strengths, 100–102, 105, 107
citizenship, 154–155, 157
community development, 130–132, 140–142
community engagement, 12, 18, 20, 133, 135, 137, 153, 171–176, 178–180, 182, 184, 186–188, 194
community wellness, 153–160, 162–164, 166–170

D

developing social skills, 58
development of 21st-century skills, 27, 46
disease burdens, 119
diverse needs, 93–96, 98–100, 106–107

E

education, 3–10, 12–13, 18–20, 23–26, 29, 33–34, 47–57, 59, 61, 63, 67–69, 72, 77, 81, 93, 104–105, 110–121, 131, 136, 150, 153, 155, 157–158, 160–161, 171–176, 181, 187–188, 191, 193–194, 196, 198, 200
empowering teachers, 154, 156

H

health promotion, 5, 19, 73, 100, 113, 132, 136–137
health, 3–5, 10, 12, 18–21, 23–25, 33–34, 45, 47–54, 56–57, 60–61, 63–77, 79–82, 85–86, 89–94, 97, 100–101, 109–122, 124–125, 129–132, 134–138, 140, 142, 144, 146, 148, 150, 153, 156, 159, 161, 171, 175, 191–196, 199, 201

L

LEGO®, 3–6, 8–10, 12, 14, 16, 18–20, 23–24, 26–32, 34, 36, 38–42, 44–47, 52, 54–55, 59–61, 63–64, 66, 68–72, 74–76, 78, 80–82, 84–100, 102–109, 115, 120–124, 127, 129, 142, 153, 169, 171, 191–203
lifelong wellness, 24, 27, 31, 45

M

mental health, 5, 10, 12, 18–19, 24, 45, 48–51, 53–54, 56–57, 60–61, 64–77, 79–82, 85–86, 89–92, 94, 100–101, 111, 117, 120, 156, 159, 195–196, 199
mental wellness, 48, 57, 59–60, 93–94, 96–98, 100–102, 104, 106–108, 112

N

narrative career counselling, 93–98, 100, 102, 104, 106–108

P

parents, 10, 26, 77, 114–115, 118–119, 123–124, 143, 149, 154–157, 160–161, 169, 176, 192, 201–202
play, 3, 5–7, 9, 14, 16–17, 19, 24, 26–31, 34, 37, 40, 45–46, 48, 54–55, 58–59, 63–65, 69, 71, 73–74, 80–81, 86, 97, 104, 108, 112, 114–115, 117, 120, 131, 155, 157–159, 161–162, 166, 169, 174–175, 181, 183–187, 192, 194–195, 197, 199–201
play-based education, 5
play-based, 3, 5, 26–30, 34, 46, 48, 54–55, 58–59, 69, 81, 120, 157–159, 161
promoting teaching and learning, 4, 194

R

rural area, 180, 187

S

Six Bricks®, 3–14, 17–19, 23–24, 26–32, 34, 36, 38, 40, 42, 44–50, 52, 54–60, 63–64, 66, 68–72, 74–76, 78, 80–86, 88, 90–93, 104, 106, 109–111, 113–116, 120–125, 129–138, 140, 142–147, 149–151, 153–164, 166, 168, 170–176, 178–188, 191–200, 202–203

Index

social determinants of health, 109
Social Greenhouse®, 129–143, 145,
147–151
South Africa, 3–10, 12, 14, 16, 18–20,
23, 43–44, 47, 55, 59, 61, 63–68,
72, 78–79, 81, 90, 93–94, 98,
105, 109–111, 113–120, 129, 131,
153–154, 160–161, 171–172, 175,
177, 188, 191–193, 196–201, 203
South African context, 4, 7, 9, 63, 66, 92–93,
104, 106, 110–111, 118–122, 125, 131, 176,
191–199, 202–203
special needs school, 175
supporting children in communities, 153,
157, 161
sustainable education, 191
sustainable future, 192–193, 197
sustainable projects, 130
sustainable wellness, 191, 194, 196–199

T

teaching and learning, 4, 9, 23, 26–29, 31,
33–34, 45–50, 52, 54, 56, 58, 60,
120, 122–123, 150, 172, 174, 182–186,
194, 203
traditional games, 63, 65, 68–76, 78–81, 85,
90–92
transdisciplinary, 109, 129–132, 134–140, 142,
144, 146, 148, 150, 171–174, 176, 178,
180, 182, 184, 186, 188, 194

W

wellness, 3–7, 10, 12, 19, 23–24, 26–28,
30–34, 36, 38, 40, 42, 44–49, 57,
59–61, 63–68, 77, 93–102, 104, 106–110,
112–117, 120–123, 129, 153–160, 162–164,
166–176, 178, 180, 182, 184, 186, 188,
191–199
wicked problems, 134, 136–137

'Learning is not the learning of facts, it's rather the training of the mind to think'

– ALBERT EINSTEIN.

This thought-provoking quote summarises and highlights the chapters presented in this scholarly book. South Africa faces a literacy crisis preventing young learners from attaining crucial creative thinking and problem-solving skills.

Children continuously learn, and their brains are still forming and developing. To ensure optimal development, learners need to be provided with the opportunity to grasp concepts essential for further learning, such as describing colours and rote counting, to name two aspects being taught using the LEGO® Six Bricks methodology and games designed for use with the bricks to encourage these skills.

This book outlines the need to introduce innovative teaching and learning modes in South Africa by employing the Six Bricks teaching methodology to stimulate learners to learn while enjoying the learning process. Making learning fun is essential for encouraging children (and adults) to interact with one another in a positive manner.

The authors illustrate that the concept of Six Bricks is designed to stimulate learners of all ages in the classroom to attain skills, knowledge and the mindset needed for success in life. The chapters in this book explicitly illustrate how Foundation Phase learners can benefit from the Six Bricks methodology to achieve the requisite literacy areas and pre-reading skills in a way that involves learning while having fun. The authors explain how various games were employed using LEGO® bricks to encourage learning through play. The book also covers the introduction of the LEGO® Six Bricks teaching methodology in the Mpumalanga province of South Africa, along with the team at the Africa Unit for Transdisciplinary Health Research (AUTHer) at North-West University, South Africa.

The book represents a significant contribution to the field of educational sciences and presents well-worth reading and research material for scholars by scholars.

**Prof. Margaret Williams, Department of Information Technology/Centre for Community Technology,
Faculty of Engineering, Nelson Mandela University, Gqeberha, South Africa**

This book provides interesting insight into the rollout of an innovative programme initiative in South Africa by using relatively low-cost, simple and familiar manipulatives in educational contexts, demonstrating wide application and popularity. The authors' description of implementing a vast programme of LEGO® methodologies and activities deliberates the creative and innovative drive behind the movement for social change. Each chapter introduces unique contexts and challenges teachers and learners face, giving the reader insights into the less commonly reported issues in the Global South. These issues are described in detail with reflections and insights from practitioners embedded in the movement for change. Where they are detailed, the LEGO® methods provide guidance and inspiration for practitioners in education and well-being contexts worldwide.

This book is a celebration of the positive experiences with LEGO® as part of the Six Bricks initiative in South Africa. It comments on reviews, conceptualisation and practical applications of LEGO® methodologies. This book offers a rich source of information from a series of case studies observing educators' experiences with the challenges faced in South Africa regarding health, education and well-being while engaging with the LEGO® methodologies. The Six Bricks initiative is presented as a powerful tool to address societal inequities and give a voice to those who are not always heard. The experiences of educators reflect positive feedback and engagement with LEGO® methodologies, allowing equally accessible learning and well-being. When focusing on practical applications, this scholarly book provides insights and experiences which suggest that Six Bricks and associated methodologies have scope to be applied in areas of challenge, crisis and conflict around the world.

**Dr Sean McCusker, Department of Social Work, Education and Community Wellbeing,
Faculty of Health and Life Sciences, Northumbria University, Newcastle, United Kingdom**



aosis.co.za



Open access at
[https://doi.org/10.4102/
aosis.2023.BK427](https://doi.org/10.4102/aosis.2023.BK427)



ISBN: 978-1-77995-293-6