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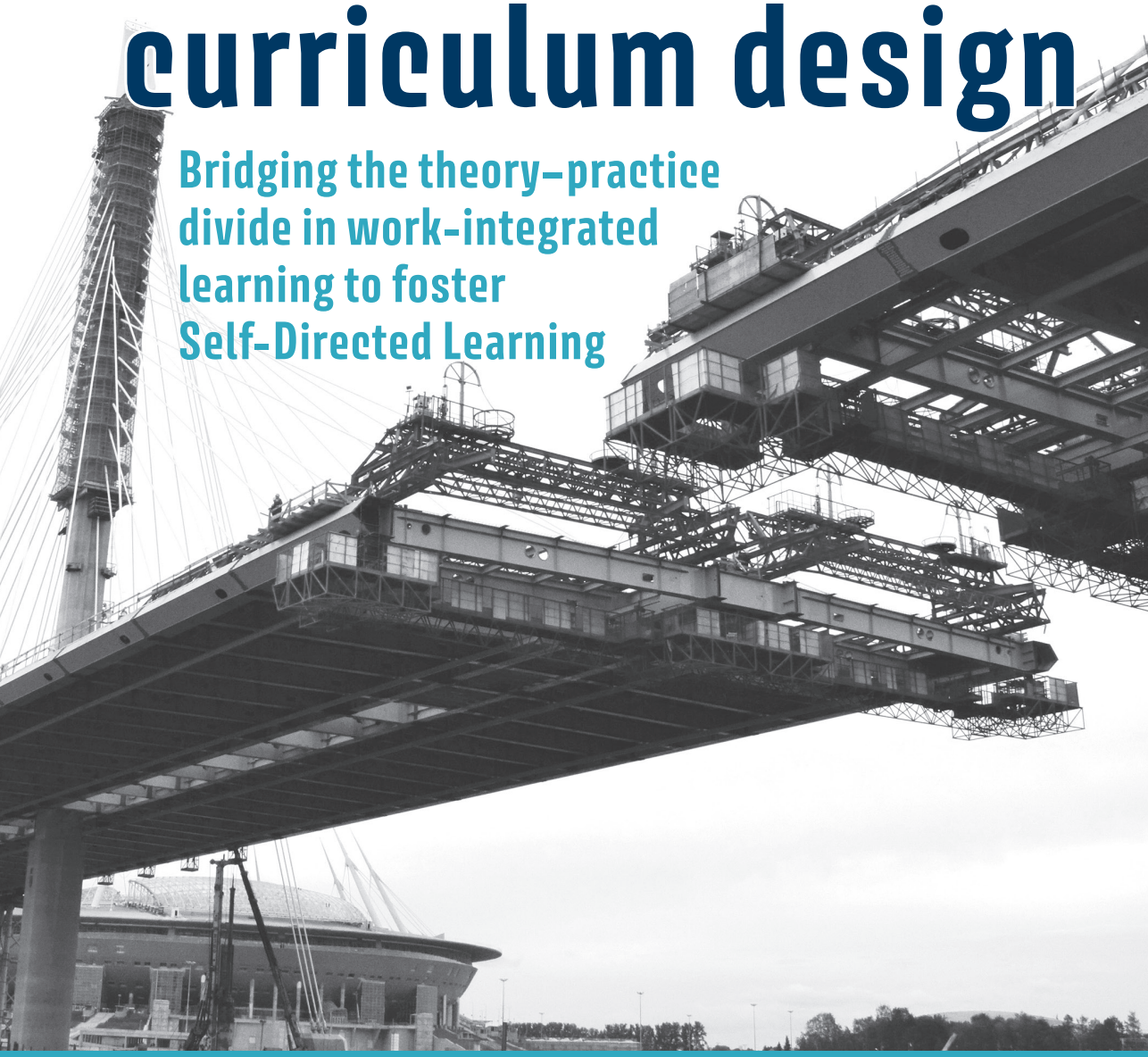
Volume 12

Innovative curriculum design

Bridging the theory–practice divide in work-integrated learning to foster Self-Directed Learning



Edited by

Neal Petersen, Adri du Toit, Elsa Mentz & Robert J Balfour

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Neal Petersen
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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 AOSIS Scholarly Books' 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 and were independent of the volume editor, 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 revision 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

Employers frequently report a mismatch between the skills demanded in practice and the knowledge and skills that graduates develop in university programmes for future teachers or health care professionals. The dissonance between the preparation of theory and the practical components during initial qualifications is frequently called the 'theory–practice divide'. This divide can be regarded as one of the main reasons why novice practitioners, such as teachers and health care professionals, do not cope and consequently leave their professions (Department of Higher Education and Training [DHET] 2012, p. 27; Du Toit 2022, p. 10; Gravett et al. 2017). The attrition of novice professionals, by implication, means that they were students before they started working. Those who finished their studies are successful because, according to a Universities South Africa (USAf) (2018) report, 70% of students are first-generation students, and the dropout rate of first-year students is high. Numerous studies indicate that first-year students struggle to enculturate in the new social environment and manage the academic content. Though many factors may contribute to this state of affairs, one persistent factor is that most students are not self-directed learners. In contrast, Arends and Petersen (2018) state that students perceive having positive social interactions as one of the factors that keep them from abandoning their studies. Universities South Africa (2018) state:

> As universities, we are not able to take away the problems relating to the schooling system or problems of financial stresses suffered by our students. But universities can still do something: they can change how teaching and learning happens, how students are orientated to the first-year entrants, how tutorials are managed, and how students receive academic advice. (p. 5)

With this vision in mind, North-West University (NWU) has been presenting work-integrated learning (WIL) excursions to first-year student teachers since 2016. From 2021, the first-year students of the Faculties of Health Sciences and Law (not reported in this volume) were also included. The excursion project follows a mixed-method (QUAL:quan) design-based approach. This volume reports on the fifth cycle of design-based research (DBR) (see ch. 1). One of the design principles of the excursions is based on cooperative learning (CL), where students work in heterogeneous groups to learn from each other. Another design principle is that the entire two-day synchronous virtual online excursion's activities are driven by problem-based learning (PBL). For the education students, PBL was constructed on a video diary depicting the many challenges a principal had to manage in a dysfunctional school. Both CL and PBL are effective teaching and learning (T&L) strategies that can contribute to fostering first-year students' self-directedness. This book, with the financial aid of the University Capacity Development Grant, therefore contributes to the scholarship of self-directed learning (SDL). This scholarly book, to impact education and health sciences praxis, is the 12th volume in the NWU Self-Directed Learning Series.

The target audience is scholars in the field of SDL and WIL within education and health care education.

This book complies with the DHET's standards for original content and contains more than 50% previously unpublished works, and no part thereof was plagiarised. All ethical standards were observed during the research and the NWU Faculty of Education Research Ethics Committee and the NWU Registrar both granted their approval.

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Contents

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

List of abbreviations and acronyms

AL	active learning
ALTC	Australian Learning and Teaching Council
AR	augmented reality
AS	activity system
BA	Bachelor of Arts; Bachelor's degree
BHSc	Bachelor of Health Sciences
BSC	Bachelor of Social Care
CHAT	cultural-historical activity theory
CHPE	Centre for Health Professions Education
CL	cooperative learning
CPD	continuous professional development
CTL	Centre for Teaching and Learning
DBE	Department of Basic Education
DBER	design-based educational research
DBR	design-based research
DHET	Department of Higher Education and Training
DMIS	developmental model of intercultural sensitivity
DVC	Deputy Vice-Chancellor
EASA	Education Association of South Africa
ECE	early childhood education
ED	educational development
EEP	end-of-the-excursion rating poll
EL	experiential learning
EPP	engaging participant pedagogies
EVT	expectancy-value theory
F & A	'Famine and Abundance' game
FAGP	'Famine and Abundance' game plan
FAIMER	Foundation for Advancement of International Medical Education and Research
FIE	Frontiers in Education
FSI	Foreign Service Institute

GBL	game-based learning
HART	Hypertension in Africa Research Team
HE	higher education
HEI	higher education institution
HELTASA	Higher Education Learning and Teaching Association of South Africa
HoTS	higher-order thinking skills
HPE	health professions education
IA	intercultural awareness
IAS	interaction attentiveness scale
IC	interpersonal communication
ICC	intercultural communicative competence
ICDM	intercultural competencies dimensions model
ICM	intercultural competence model
ICS	intercultural communication sensitivity
ICT	information and communication technology
ICTs	information and communication technologies
ICwS	Institute of Commonwealth Studies
IDI	intercultural development inventory
IDIA	intercultural development inventory assessment
IK	indigenous knowledge
IKS	indigenous knowledge system
IKSs	indigenous knowledge systems
IMICC	integrated model of intercultural communicative competence
IMKS	indigenous mathematical knowledge system
IMKSs	indigenous mathematical knowledge systems
IRS	impression rewarding scale
IS	intercultural sensitivity
ISDM	intercultural sensitivity developmental model
ISMT	intercultural sensitivity measurement tool
ISS	intercultural sensitivity scale
IT	information technology
JMC	*Journal of Mathematics and Culture*
LM	learning motivation
LMS	learning management system
LMSs	learning management systems
MENA	Middle East and North African
MA	Master of Arts; master's degree

MLOER	multimodal learning and open educational resources
MMA	multimodal assessment
MRT	mixed-reality technology
MRTEQ	Minimum Requirements for Teacher Education Qualifications
MS	Microsoft
NABT	National Association of Biology Teachers
NGO	non-governmental organisation
NRF	National Research Foundation
NSTF	National Science and Technology Foundation
NTA	National Teachers Awards
NWU	North-West University
OER	open educational resource
OERs	open educational resources
OERQ	open-ended reflective questionnaire
OLE	online learning environment
OOEQ	online open-ended questionnaire
PBL	problem-based learning
PDD	principal's digital diary
PDDP	principal's digital diary problems
PDF	portable document format
PERQ	post-excursion open-ended questionnaire
PhD	Doctor of Philosophy; doctoral degree
P&I	planning and implementing
PMIC	process model of intercultural competence
POL	process-orientated learning
PoP	pedagogy of play
PoPs	pedagogies of play
PPC	person-process-context
PTS	perspective taking scale
PTT	preparedness to teach
SA	South Africa
SAAFECS	South African Association of Family Ecology Consumer Science
SAM	Society for Advanced Management
SAQ	self-assessment questions
SARSP	South African Research Scholar Programme
SCT	social-constructivist theory
SDL	self-directed learning

SDLI	self-directed learning instrument
SDMA	self-directed multimodal assessment
SM	self-monitoring
SMS	self-monitoring scale
SoTL	scholarship of teaching and learning
S.P.E.C.I.A.L.	situated learning, play, embodied interactive learning, connectivism and social learning, and immersive assessments for learning
SPP	superpowers
STEAM	science, technology, engineering, art, and mathematics
STEM	science, technology, engineering, and mathematics
T&L	teaching and learning
TEP	teacher education programme
UCDG	University Capacity Development Grant
UCDP	University Capacity Development Programme
UCL	University College London
UDL	universal design for learning
UJ	University of Johannesburg
UK	United Kingdom
UKZN	University of KwaZulu-Natal
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
USA	United States of America
UWC	University of the Western Cape
VE	virtual excursion
VR	virtual reality
WHO	World Health Organization
WIL	work-integrated learning
ZPD	zone of proximal development
ZPTD	zone of proximal teacher development

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Foreword

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Professional education, often referred to as applied sciences (such as education and health care), has three vital bridges to breech. It is with these three 'bridges' in mind that the research reported on in this book has emerged. As higher education institutions (HEIs) in South Africa rapidly moved from face-to-face teaching and learning to remote emergency teaching and learning at the beginning of the pandemic in March 2020, these initial movements eventually matured and fostered deep deliberation on the part of academics and researchers. These deliberations focused on understanding how the myriad lessons learned from the switch could inform new modes of teaching–learning, our programmes, and the various disciplinary fields in which we work. The authors draw on their joint work in a very innovative virtual excursion to explore important elements of professional education.

The first bridge to be addressed is that academic programmes seek to prepare students for the specific real-life problems they will face in their future worlds of work in education and in health care settings while addressing the recurring lament of scholars and practitioners in both fields that there should be integration and synergy between the theorical and practical elements of such programmes – commonly known as the theory–practice divide (Kessels & Korthagen 2001). As someone who has worked in teacher education and in health education for many years, I, like my peers in the two fields, have had to respond to criticisms that universities preface theory in our programmes leading to new teachers or health care practitioners not being ready for the practical aspects of classroom teaching (Darling-Hammond & Baratz-Snowdon 2005; Jones et al. 2016) and health care practice settings (Higgs & Titchen 2001).

A second criticism is that universities in South Africa have a responsibility to ensure that first-year students – especially those who are traditionally described as first-generation students – are adequately integrated and enculturated into the higher education environment. First-year students are, in the words of Turner (1967), in a liminal space 'betwixt and between'

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the familiar world of school and the unfamiliar world of the university with different discourse and knowledge-making practices and an unfamiliar intuitional culture. Innovative curriculum designs and pedagogical interventions which address the social isolation, academic preparedness and resilience of students can help ameliorate student dropout, retention and persistence. In a developing country like South Africa, where dropout rates are close to 47% and only about a third of students graduate in the minimum time, such interventions are vital.

Then there is the dilemma of preparing students in current programmes for a future world of work which is largely unknown. Curriculum and training have to take cognisance of the current needs and conditions in education and health settings while imagining what future needs and conditions may require. The recent coronavirus disease 2019 (COVID-19) pandemic has taught us that the future is unpredictable and fast-changing. Graduates will need to develop the kinds of competencies, knowledge and dispositions that enable them to emerge from their professional education programmes sufficiently skilled for the current world of work and equipped with a transformative and agentic mindset to cope with what they may face in an unknown future.

In this respect, the authors in this book address the twinned goals of addressing the theory–practice gap and developing self-directed learning (SDL) competence through deliberation on important issues in professional education in the disciplines of education and health sciences. They do this by interrogating curriculum design, evaluating the value of online excursions as a pedagogy of immersion, improving WIL, reimagining assessment practices for the promotion of student agency and developing 21st-century transversal competencies.

The chapters in this book reflect the authors' deep reflection on perennial issues in the disciplines of education and health care and showcase how they deliberate on their revision of curriculum and innovative pedagogies in a fast-changing world. The chapters reflect the maturation of immersive online and virtual teaching and learning experiences to include a careful blend of the 'social presence, cognitive presence and teaching presence' (see Garrison, Anderson & Archer 2000) to enable student competence in taking 'primary charge of planning, continuing and evaluating their learning experiences' (Merriam, Caffarella & Baumgartner 2007).

I am confident that this book, as part of a series on virtual excursions, points those of us who work in professional education to ways in ways in which we can begin to imagine other innovative pedagogical interventions as we make choices about how we educate the professionals of the future. This is an ongoing task that requires adeptness of thought and action – attributes that are evident in the chapters of this book.

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Chapter 1

Reimagining work-integrated learning excursions to decrease the theory–practice divide

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Abstract

Work-integrated learning (WIL) has become an imperative component in the preparation of university students for the realities they will face in practice after graduation. This chapter provides insights into how WIL excursions have morphed and developed at the North-West University (NWU), with a focus on efforts made to contribute to narrowing the theory–practice divide. The study followed a design-based research (DBR) format. We briefly outline previous cycles of WIL excursions at this university, which provided a foundation for the analysis and exploration of the problem that informed the current cycle of design-based educational research (DBER).

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In particular, the problem guiding this study was how WIL excursions can be re-imagined to sensitise students to the complexities of their future careers in order to narrow the theory–practice divide.

The chapter then reports on the design and construction of the 2022 WIL excursions as part of first-year student teachers' preparation for their profession. The evaluation and reflection phase of the DBER was informed by qualitative data that were collected from 1,424 first-year student teachers who attended the twelve virtual WIL excursions offered in 2022. The virtual format supported the collection of qualitative data in the form of online polls and an open-ended questionnaire. All students were invited to voluntarily comment and reflect on their experiences and thoughts about their participation in the excursion. A thematic analysis of students' understanding, views and perceptions regarding the theory–practice divide in teacher preparation and how it might affect them was conducted. The findings provided additional insights into how excursions must be constructed to sensitise and prepare students for the realities they will face in their careers in future.

Introduction

> '[*D*]eep thinking, courageous actions and human compassion' are only some of the requirements expected from teachers, and consequently teaching 'is a profession for really smart people on the lookout for a challenge.' (Jansen 2014, n.p.)

Constructing sound teacher preparation programmes is therefore vital, as future teachers are responsible for promoting learning in their learners (Esau & Maarman 2021, p. 7). Teacher preparation programmes should not only include knowledge content but also prepare students regarding pedagogical requirements, assessment practices, administrative and disciplinary responsibilities, among others, to enable them to face challenging realities in their future classrooms.

The school context in South Africa is exceedingly diverse and often much more complex than students are aware of. Consequently, many student teachers have misconceptions about what the teaching profession entails – and why their preparation as teachers has to be so extensive. Student teachers' preconceived notions about the requirements for becoming a good teacher are based on what Lortie (1975) termed the 'apprenticeship of observation'. Students' notions in this regard are informed by the actions and behaviour of their teachers, which students observed while they were school learners themselves. Nevertheless, what they observed was often just the tip of the iceberg as they discounted the comprehensive planning and preparation foundational to proficient teaching. Though not always the case, many students are not privy to

abundant examples of good teaching because of a lack of resources, underqualified teachers and several other barriers to education (Esau & Maarman 2021, p. 2). Therefore, often, a significant gap exists between what students believe is required and what they need to be well prepared for a teaching career. The gap is referred to as the theory–practice divide. Employers frequently report a mismatch between the skills demanded in practical school environments and the knowledge and skills which graduates develop in higher education programmes (Department of Higher Education and Training [DHET] 2012, p. 27; Du Toit 2022, p. 10; Gravett et al. 2017, p. 370). Conversely, beginner teachers themselves often report that they feel 'ill-prepared to cope with all the challenges in and around the classroom' (Esau & Maarman 2021, p. 4). This indicates that teacher preparation programmes must be constructed purposely to help student teachers reflect on their own inadequacies, identify the challenges they might face in their future careers and consider how these could be managed (Esau & Maarman 2021, p. 6). It is vital to understand first-year students' grasp of the impact of the theory–practice divide on their preparation as future teachers. Bridging the theory–practice divide is an ongoing and pivotal concern in teacher preparation programmes.

The theory–practice divide is, however, not limited to teacher preparation but is also a concern across various other faculties of higher education institutions (HEIs). For example, a similar divide between what is expected in practice and how students are theoretically prepared for their future careers has been reported in faculties of Economic and Management Sciences (Brinkmann 2015), Engineering (Wolff et al. 2022) and Health Sciences (Kerthu & Nuuyoma 2019). Universities must, therefore, be cognisant of this divide and continuously endeavour to traverse or narrow this divide.

The problem is that students are often unaware of this divide, placing the onus on universities – and principally lecturers who prepare students for their future careers – to judiciously plan strategies to diminish that gap. To bring theoretical student preparation programmes closer to the reality they will face in their careers one day, WIL is a minimum requirement for several qualifications in South Africa, including for teacher education (DHET 2018, p. 14). The practical learning associated with WIL includes learning *in* practice as well as learning *from* practice. According to the policy (DHET 2018):

> [*L*]earning *from* practice includes the study of practice, using discursive resources to analyse different practices across a variety of contexts, drawing from case studies, video records, lesson observations, etc., in order to theorise practice and form a basis for learning *in* practice. (p. 11)

Learning *from* practice is typically aligned to WIL, whereas practical teaching – when students go to schools to teach under the supervision of

a mentor teacher – is an example of learning *in* practice. Both of these contribute to better aligning theoretical teacher preparation programmes to what is happening in real-world school classrooms. Hence, WIL programmes offer an ideal opportunity for sensitising students to the complexities of their future careers, as well as the existence and potential impact of the theory–practice divide thereon. Moreover, WIL programmes offer a space in university curricula for lecturers to purposely address and better prepare students for overcoming the theory–practice divide. The question that persists regards how curricula should be adapted so that this can be accomplished, while university lecturers involved in WIL programmes are continuously challenged to adapt, redesign or even re-imagine these offerings to keep up with emerging changes.

This chapter reports on how the WIL excursions at NWU have been adapted and re-imagined to keep up with emerging challenges and changes since its inception in 2016 as part of the university's efforts to bridge the theory–practice divide. The question that directed this study was: 'How can WIL excursions be re-imagined to sensitise students to the complexities of their future careers to contribute to narrowing the theory–practice divide?' The discussion up to this point in the chapter contributes to the first of the three stages of the educational design research process outlined by McKenny and Reeves (2019, p. 83), which scaffolded the research reported on – that is, analysis and exploration of the problem that needed investigation. Insights from this DBR study will be used to inform future adaptations to the WIL excursions in an effort to keep up with changes and thus decrease the theory–practice divide for upcoming teachers.

The next section explains the context and background of the study.

Context and background of the work-integrated learning excursions

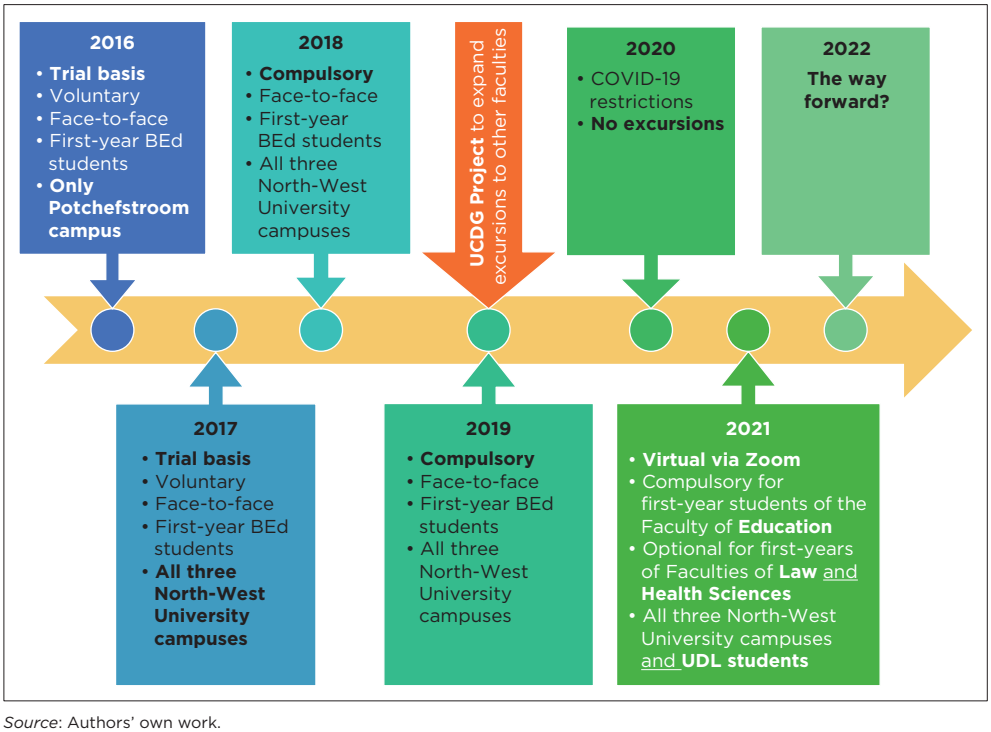
This section informed the second phase of the DBR for the 2022 cycle of the WIL excursion, namely the design and construction process, as proposed by McKenny and Reeves (2019, p. 85). A conceptual model that might address the problem identified and discussed in the previous section is developed in this (second) phase, which involves the 'purposeful consideration of available knowledge' (McKenny & Reeves 2019, p. 85). As a starting point, the main adaptations made to the core design of previous WIL excursion cycles at NWU, as part of the Faculty of Education's attempts to decrease the theory–practice divide, were 'purposefully considered' to provide context and background for the current investigation. The unique learning needs of first-year students, as the intended beneficiaries of these excursions, are subsequently explained as additional 'available knowledge' that informed the DBR. The section concludes with the theoretical

underpinnings that drove us to continuously explore ways in which the curriculum can be innovatively adapted to narrow the theory–practice divide.

Main adaptations made to work-integrated learning excursions: 2016–2019

Figure 1.1 presents a graphic timeline and overview of the major adaptations that were made to the WIL excursions since their introduction in the NWU Faculty of Education teacher preparation programme in 2016. Introducing excursions in the larger WIL programme was part of the faculty's attempts to bridge the theory–practice divide from its inception (De Beer, Van der Walt & Bunt 2020, p. 192). Its core purpose was to sensitise students to the complexities of the teaching profession and:

> [*T*]o facilitate learning related to the different roles of the teacher, for example, the teacher as a facilitator of learning, critical reflective practitioner, agent promoting social justice and being an inclusive teacher. (p. 194)



Source: Authors' own work.
Key: BEd, Bachelor of Education degree; NWU, North-West University; COVID-19, coronavirus disease 2019; UCDG, University Capacity Development Grant; UDL, universal design for learning.

FIGURE 1.1: Timeline of the main adaptations made to the work-integrated learning excursions at the North-West University.

The initial excursion was based on a model with a similar purpose that was used by the University of Johannesburg (UJ) since 2007 (De Beer & Petersen 2022, p. 40).

The first excursion was implemented on a trial basis for a heterogenous group comprising 150 first-year Bachelor of Education degree (BEd) student teachers from only the NWU Potchefstroom campus (Figure 1.1). Students volunteered to participate and the 'first-come, first-included' principle was used. Only one face-to-face excursion was held, spanning over three days.

Buttressed by the successes of the 2016 WIL excursion, a more expanded excursion was organised for 2017 to include first-year BEd students from all three NWU campuses (Potchefstroom, Vanderbijlpark and Mahikeng). The second excursion followed a similar face-to-face format, spanning three days and accommodating 150 students. An open invitation was extended to all first-year BEd students from all three campuses to participate. Participation was voluntary, and the first 50 students from each campus who registered attended the excursion (Figure 1.1). A new goal of the 2017 excursion was to create an opportunity where students from all three campuses could truly feel as if they belonged to the NWU 'family' and experience it as a unitary institution, striving to develop shared goals and values. Again, despite a few tensions (or dramatic collisions, discussed in ch. 2) – which were mostly expected, such as differences in opinion, what constitutes acceptable social behaviour, food preferences and language preferences – the reflective feedback from students and staff alike was positive and optimistic.

The success of the second WIL excursion in sensitising the students to the complexities of the teaching profession and contributing to narrowing the theory–practice divide was of such significance that the 2018 WIL excursion was designed as a compulsory event. This meant that all first-year BEd students from all three NWU campuses had to attend one of the face-to-face WIL excursions organised in 2018 (Figure 1.1). Again, the overall feedback after the 2018 excursions was heartening.

The 2019 WIL excursions followed much the same pattern as the 2018 ones but particularly aimed to provide 'a supportive community of practice, where student teachers and teacher educators can jointly explore the complexities of the teaching profession and focus on the affordances of being a self-directed learner' (Petersen, De Beer & Mentz 2020, p. 119). Six excursions were held in 2019, in which 1,700 students participated overall (Petersen et al. 2020, p. 143). Up to and including the 2019 events, the WIL excursion programme developers intended to 'create cognitive dissonance in the student teachers, which serves as a catalyst to question their own emerging identities as teachers, their assumptions, attitudes and dispositions'

all of which impact these student teachers' development towards eventually being self-directed teachers (Petersen et al. 2020, p. 116). Developing and fostering first-year student teachers' self-directed learning (SDL) abilities as a foundation for their undergraduate studies and in preparation for their journey as lifelong learners underpinned all activities in the excursion (Petersen et al. 2020, p. 122).

The sustained successes of the WIL excursions up to this point, reinforced by positive feedback and findings from participants (De Beer et al. 2020, 2022), bolstered the perceived constructive potential of the WIL excursions to narrow the theory–practice divide for student teachers (De Beer & Gravett 2020, p. 355). This set in motion the drawing up of a University Capacity Development Grant (UCDG) project at NWU in 2019, funded by the DHET, that bolstered support for the WIL excursions (Figure 1.1).

Intended expansion of the work-integrated learning excursions across faculties

The UCDG project included expansion on two levels: (1) to include first-year students from the faculties of Law and Health Sciences and (2) aims for curriculum transformation. Among others, it aimed to 'equip its graduates to address contextualised challenges of twenty-first-century society' and 'engage students with various aspects, such as curriculum content selection, scaffolding, sequencing and assessment practices that will enhance student access and success' (DHET 2021–2023, p. 4). In addition, contributing to attempts to address several perennial problems that higher education, and specifically NWU, faced, the UCDG project included the following three objectives (DHET 2021–2023, pp. 46–47; Geldenhuys & De Beer 2022, pp. 18–19):

- To foster a sense of belonging and unity for students and staff across the three campuses (Potchefstroom, Vanderbijlpark and Mahikeng) and sensitising students to inclusivity and intercultural issues.
- Aligning the excursions with the NWU goals for the 'First-Year Experience' through developing activities that will enhance students' comprehension of just how complex the professional environment can be, as well as their critical reflexivity understanding and skills.
- Emphasising the importance of SDL and sensitising students and facilitators to its valuable contribution to learning in the 21st century, as SDL is a key outcome of the education policy of NWU.

Furthermore, based on the successes of the aforementioned Faculty of Education WIL excursions, the UCDG project aspired to broaden this positive potential. Work-integrated learning excursions were therefore expanded to include the first-year students from the faculties of Law and

Health Sciences to 'strengthen the nexus between quality, success and equity, benefiting staff, students and curricula beyond the target groups specified in the project' (DHET 2021–2023, p. 4). While the excursions for the faculties of Law and Health Sciences were not compulsory, it was initially designed to accommodate 300 students per faculty (Figure 1.1). In contrast, the Faculty of Education excursions are compulsory for all first-year BEd students (around 2,300–2,600 students per year) as part of their first-year WIL module, including a credit-bearing assessment component. The excursions were therefore presented and designed per faculty to address the needs of their students to overcome the theory–practice divide in different professions. Narrowing the theory–practice divide for students across various faculties at the university was, therefore, a foundational goal of the UCDG project.

Reimagining work-integrated learning excursions at the North-West University: 2020 and beyond

Regrettably, the well-conceived UCDG project could not immediately be implemented. The major impact of the global COVID-19 pandemic, which brought face-to-face interaction to an abrupt halt at the start of 2020 and disrupted physical interactions for many months, was an unexpected watershed event. Its impact was greater than anyone could have predicted or imagined and acutely disrupted much more than education at universities (Balfour 2022, p. 4). Restrictions on physical interactions, utilisation of shared spaces and uncertainties around health and safety issues resulted in the cancellation of the excursion in 2020 (Figure 1.1).

Teacher educators involved in the WIL excursion then had not only to adapt but totally re-imagine, reconsider and redesign the approach to the excursion to overcome limitations placed on face-to-face interactions. Consequently, staff had to consider 'support for student-connectedness and engagement, exploration of credible approaches to and software for assessment, and expanding the availability to accessible teaching–learning support, teaching resources, and learning support' (Balfour 2022, p. 11). Having considered, weighed, debated, discussed and disregarded many of these and other issues, the team eventually adapted the Faculty of Education's WIL excursions to be offered in a synchronous virtual space in 2021 (Figure 1.1).

Careful consideration was given to maintaining and attaining the original goals of the excursions to foster SDL and a sense of belonging, sensitising students to the complexity of the teaching profession and preparing them in ways that would reduce the theory–practice divide. The synchronous virtual WIL excursions were purposely designed to include and involve

students as co-creators of the learning experience – in other words, to move the emphasis from *teaching* to *learning* (Havenga & Du Toit 2022, p. 134). The virtual excursions were designed to be 'engaging, student-centred, and real-life learning experiences for students in a virtual space' to overcome possible feelings of isolation and disengagement that are often associated with online learning (Havenga & Du Toit 2022, p. 135). De Beer and Petersen (2022, pp. 39–54) provide a detailed analysis and discussion of the redesign of the excursions from face-to-face to virtual synchronous 'face-to-screen' experiences. They elucidate the adaptations and redesign of implementation methods used to ensure the design features of the re-imagined excursions would still:

- be characterised by a pedagogy of play (PoP)
- utilise problem-based learning (PBL) – and cooperative learning (CL) to support the development and enhancement of SDL skills
- maintain a sense of personal connection
- ensure the realisation of cognitive, social and teaching presence in the online environment
- and foster social learning (De Beer & Petersen 2022, pp. 48–50).

The 2021 WIL excursions included intentional efforts to bridge the theory–practice divide for student teachers, as was evident in the selection and implementation of particular activities. An overview of these is included in Table 1.1. Several insights emerged from the analysis of data and students' and facilitators' reflections on the 2021 WIL excursions and the activities embedded therein. For example, it emerged that 'teacher educators experienced a much deeper and more focused engagement and reflection amongst student teachers in the virtual excursions, compared to the face-to-face excursions' (De Beer & Petersen 2022, p. 54); however, group work embedded in PBL and COL was not realising as effectively as it could (Havenga & Du Toit 2022, p. 148).

Based on these insights, the Faculty of Education team heeded the advice from De Beer and Petersen (2022, p. 53) for DBER, that additional refinements and 'adaptations had to be made based on data obtained during the series of twelve education excursions to ensure optimal learning'. As part of the current DBR, we would keep in mind the lessons learned from all the previous WIL excursion cycles, but especially the 2021 virtual excursion cycle, when redesigning the 2022 offering.

Subsequent to the 2021 virtual WIL excursions, Olivier and Kunene (2022, p. 124) concluded that 'it is clear that there seems to be more research necessary at different levels of education, disciplines, as well as geographical and social contexts' to continuously improve our offerings. They reiterated that student agency is a key aspect to keep in mind, as they are the intended beneficiaries of the excursion programme (Olivier &

TABLE 1.1: The intended contribution of core activities in the 2021 BEd work-integrated learning excursions to narrowing the theory–practice divide.

Core activities in the excursion	Rationale for the activity	How activities were intended to narrow the theory–practice divide
Principal's video diary: Dramatised video depicting several challenges experienced in South African schools	• Contextualises the need for teacher preparation • Driver for subsequent discussions in the rest of the excursion	• Sensitising students to the existence and extent of the theory–practice divide • Expanding their understanding of the depth of their own misconceptions regarding what their profession would entail
Engaging pedagogies: Being resourceful agents of change (alternative resources, shoestring or frugal approaches) Breaking the 'chalk-and-talk' cycle (transmission mode) of teaching	• Preparing students to teach in under-resourced schools or with limited budgets • Developing sense of agency to take responsibility for making learning interesting and meaningful • Introducing and emphasising engaging pedagogies to unlock the affective domain as part of learning • Unlearning lecture-type teaching that many of them were exposed to in their own schooling	• Sensitising students to the fact that they might have to teach at a school with limited or very different resources than what they expect or what they experienced in their own schooling • Igniting students' creativity and resourcefulness to overcome limitations of a lack of or unsuitable resources • Bolstering students' understanding of the need for innovative and interactive learner-centred teaching–learning methods to foster SDL • Expanding students' insights into the resources that they could develop themselves to contribute to interesting and meaningful lessons for their future learners
The 'Famine and Abundance' game	• Sensitising students to become inclusive practitioners • Developing students' understanding of the socio-economic divide and how to handle this in their classrooms	• Broadening students' grasp of the variations in socio-economic and cultural diversity they might encounter in their classes one day • Providing deeper understanding and affective perceptiveness to prepare student teachers to handle such differences with considerately • To reflect on their own biases and stereotyping and convert it into personal and professional learning goals

Source: Authors' own work.
Key: BEd, Bachelor of Education degree; SDL, self-directed learning.

Kunene 2022, p. 125). Similarly, Geldenhuys and De Beer (2022), when reflecting on the 2021 virtual WIL excursions, noted that:

> [*K*]nowing who our students are and recognising that many of our students might have difficulties transitioning and persisting in the first year are important considerations to ensure better integration in the university environment. (p. 25)

When planning the 2022 WIL excursions, it was, therefore, necessary to explore more deeply who our first-year students are and how they comprehend the theory–practice divide in education to enable the design of meaningful curriculum innovations.

First-year students' unique learning needs

The unique learning needs of first-year students, as the intended beneficiaries of these excursions, was another unit of 'available knowledge' (McKenny & Reeves 2019, p. 85) that we had to purposefully consider when constructing the 2022 WIL excursion cycle. Most first-year students finish secondary school the year preceding their entry into university and typically conform to a phase referred to as emerging adulthood. It is a turbulent and ambiguous transitional phase 'where complex forms of thinking, including self-reflection, are developed' (Hägg & Kurczewsca 2022, pp. 36, 37) in which lecturers play critical roles as co-constructors of learning, to guide and facilitate the more complex and independent learning required of first-year students.

Lecturers have to guide students in determining their own learning needs and goals, resolving problems, self-motivation and taking more responsibility for their own learning – all of which contribute to SDL (Du Toit-Brits 2019, p. 3). According to Reyneke and Botha (2019, p. 315), SDL contributes to bridging the gap between theory and practice for student teachers and is therefore imperative in first-year students' education. However, first-year students are often ill-prepared to sustain SDL and struggle to adjust to becoming more independent learners (Cameron & Rideout 2022, p. 668). The construction of learning experiences to support the development of students' SDL while enabling guiding opportunities in the process is thus critical.

The programme, therefore, had to be purposely constructed to include such learning experiences, in the form of activities and experiences that would sensitise students toward the usefulness of socially-just practices and pedagogies, to contribute to the goal of providing first-year student teachers 'with a more nuanced/better understanding of the complexity of the teaching profession' (Petersen et al. 2022, p. 1) within the wider faculty and university goal to foster these students' SDL abilities. The developers endeavoured to design a programme that would sensitise these students to their own inadequacies or misconceptions regarding the profession, and

subsequently build on that understanding to help students unlock their own learning needs to prepare them as future teachers (Petersen et al. 2022, p. 2). In this regard, Universities South Africa (USAf 2018) state:

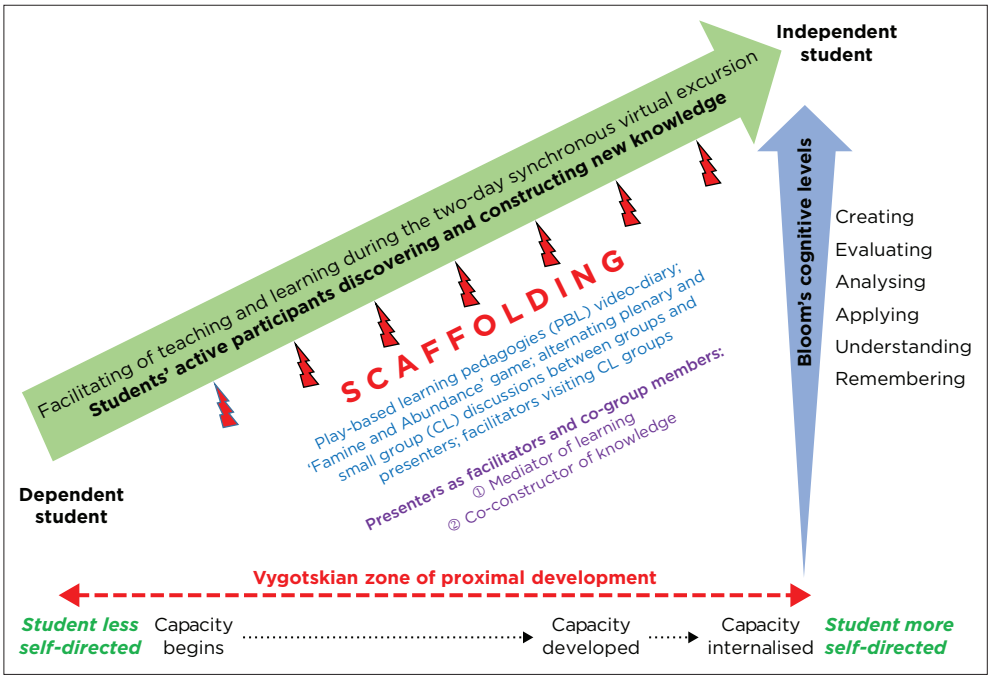
> As universities, we are not able to take away the problems relating to the schooling system or problems of financial stresses suffered by our students. But universities can still do something: they can change how teaching and learning happens, how students are orientated to the first-year entrants, how tutorials are managed, and how students receive academic advice. (p. 5)

The excursion project at NWU, with the three faculties involved, aimed to realise the vision of USAf, as is reflected in the research that was conducted and is reported in this book.

Theoretical framework: Social constructivism across the zone of proximal development

The broader excursion utilised DBER to improve on the different cycles on a year-to-year basis (2016–2022) and is strongly rooted in the social-constructivist theory, based on the work of Vygotsky (1978) and his claim that learning takes place in a space which he called the zone of proximal development (ZPD). Bryant and Batein (2015, p. 17) describe a social-constructivist approach to learning where learners make sense of information in their lived experiences when they construct knowledge through their interactions with others, including texts, social media and other resources. Oldfather and West (1999, p. 91) in Bryant and Batein (2015, p. 17) note, 'social constructivism is not a method, it is a view of learning that provides a theoretical base for making decisions about pedagogy and curriculum'. During this learning process, students make sense of new learning content based on two levels, firstly on a social plane and secondly on an interpersonal plane where the new knowledge is internalised, assimilated and applied in new contexts (Vygotsky 1978) (see ch. 2, on how immersion pedagogy on the Vygotskyan stage was scaffolded during the excursion). In terms of the ZPD, it means that learning took place socially, with the help of more knowledgeable others (facilitators and peers) to move from a state of dependence to a state of independence where the task is mastered and optimal learning can take place (Figure 1.2). Wood, Bruner and Ross (1976) coined the metaphor of 'scaffolding' to refer to the support provided by the more knowledgeable others. Wood et al. (1976) claim that effective scaffolding should involve 'a series of functions', namely:

> [*R*]ecruitment, which includes enlist[*ing*] the problem solver's interest in and adherence to the requirements of the task; simplifying the task by reducing the number of constituent acts required to reach a solution; keeping [*the children* {*students*}] in pursuit of a particular objective, maintain[*ing*] direction by making it worthwhile for the learner to risk a next step; and marking critical decisions to solve the problems at hand. (p. 98)

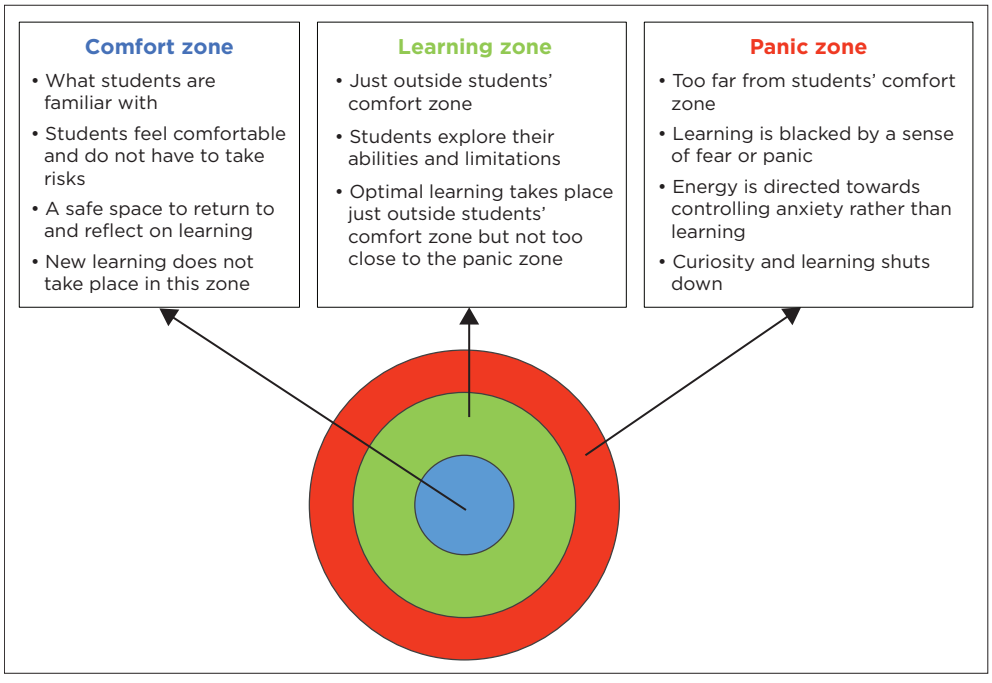


Source: Adapted from Petersen (2018, p. 1126).

FIGURE 1.2: Facilitating the excursion across the zone of proximal development.

Bryant and Batein (2015) accordingly advise that facilitators must work to maximise interactions between learners and content through efficient communication channels while designing an educational online environment in order to optimise learning in the ZPD. During the design process of the excursion programme the university lecturers applied the practices recommended by Bryant and Batein (2015). Figure 1.2 depicts how scaffolding took place during the excursion across the ZPD and how students' self-directedness can be fostered in the process.

Students who participate in the excursions come from diverse backgrounds (including the three different NWU campuses, as well as differences in language, race, religion, gender and cultural diversity, to name but a few); however, they are expected to work in small heterogenous groups of five. As developers of the excursions, we were cognisant of the fact that working in diverse groups may create some discomfort for some students. For this reason, the excursion was also constructed with the learning zone model in mind. The learning zone model was originally conceptualised by Vygotsky, but was more recently developed and popularised by Senninger (2000). The model has three zones that impact if, or how, learning will take place in each (see Figure 1.3). According to the model, learning does not take place in a comfort zone, because a



Source: Developed by the authors based on Senninger's (2000) model.

FIGURE 1.3: An overview of the concepts in the learning zone model.

person knows exactly what they need and what to do to achieve it. Students have to leave their comfort zones and move into the learning zone 'in order to get to know the unknown' (Senninger 2000). In the learning zone, students' existing knowledge and skills are challenged, enabling them to learn new information and skills. Even though entering the learning zone may initially be unsettling, it offers students opportunities for development and growth. The zone 'on the other side' of the learning zone – in other words, furthest removed from the students' comfort zone – is referred to as the panic zone (Senninger 2000). When learning exceeds the scope of what students are accustomed to and what they could expect to understand, it may make them feel stressed out or overwhelmed, resulting in a state of panic, fear or alarm. Positioning students in this zone may be detrimental and discouraging, or even traumatic (Senninger 2000), and will prevent optimal learning from taking place (Figure 1.3). The excursion designers had to invite students 'to leave their comfort zone, value their decision, take them seriously and give them support so they will not enter their panic zone' (Senninger 2000, n.p.). The excursion programme was therefore planned and structured to create a safe space (outside students' comfort zones, into a learning zone) where they are scaffolded in their ZPD's. This structuring

allowed students to participate in small heterogenous group discussions freely, voice their opinions, and provide feedback in the plenary sessions.

The model developed for the 2022 BEd work-integrated learning excursion

The design or development phase of the DBR cycle reported here was informed by all the information presented up to this point in the chapter. The core problem that guided the research was how WIL excursions could be re-imagined to sensitise students to the complexities of their future careers in order to narrow the theory–practice divide. Based on this problem, the literature reviewed and previous implementation cycles of the WIL excursions in the Faculty of Education, the following excursion model or programme was designed for the 2022 WIL excursion:

1. Attendance of the WIL excursion would be compulsory for all first-year BEd (education) students (contact and distance) registered for the qualification in 2022, from all three campuses.
2. As we were uncertain how long the restrictions related to the COVID-19 pandemic would still be in place, we had to plan for a virtual event rather than a face-to-face event.
3. The specialist digital support team would provide digital and technical support when hosting the virtual WIL excursions. Having technical support freed the facilitators to get deeply involved in the teaching–learning elements of the programme and also allowed us to objectively observe students' reactions and interactions on the Vygotskyan stage (discussed in depth in ch. 2).
4. The Zoom online platform was selected for hosting the excursions, as it was deemed user-friendly and easy to master. Our Zoom licence at the time only covered up to 250 participants and 50 breakaway rooms per session, so we had to divide students into sub-groups to facilitate this. This meant we had to offer twelve excursions in total.
5. To keep students' attention span, and to accommodate the distance students who are often part-time students with jobs, each of the twelve 'single' excursions would run over two consecutive days: Day 1 would be a morning session from 08:00–12:00, and Day 2 would be an afternoon session from 13:00–17:00.
6. The same core activities that have formed part of the excursion design for various reasons (Table 1.1) would be maintained to support meaningful learning and to contribute to narrowing the theory–practice divide. In particular, the Faculty of Education team wanted to develop and foster students' SDL abilities (discussed in ch. 3) and their enjoyment of learning using play-based pedagogies (see ch. 4). One new addition to the core

activities was included, namely entrepreneurial learning (see ch. 6 for in-depth discussion of this issue and the rationale for its inclusion).
7. Students would be expected to work in small heterogenous collaborative groups, and Zoom's function to randomly allocate no more than five students to each breakaway room was used for this purpose. The same groups would be kept throughout the two days of the excursion, and each group would submit a single group assignment. Details of the design and implementation of these assignments are disseminated in Chapter 7.
8. A separate, dedicated eFundi site (the Sakai learning management system at NWU) was created to support administration and guidance for students.
9. A detailed Excursion Learning Guide (Petersen et al. 2022) was developed and made available to students on the eFundi site to guide them through the whole excursion.
10. To ensure that no student would be left behind, generous mobile data bundles were purchased and sent to each student for use to log in via the internet to attend the virtual excursion and to complete their formal assignment for the excursion.
11. To ensure continuity and expert inputs, a core team of two teacher educators served as key facilitators for the majority of the excursions. A formal invitation was extended to all Faculty of Education staff to observe and facilitate group sessions.
12. In addition, as part of our efforts to narrow the theory–practice divide and enhance their SDL skills, we explored students' critical reflective skills, which could be used in their critical reflective approach to practice (see ch. 5). We also intended to deepen our students' intercultural sensitivity – which is already awakened to some extent by some of the activities aiming to make them more inclusive practitioners (see ch. 8).
13. The specialist digital support team served as 'objective others' to invite all first-year students to participate in the research (data-collection) aspects of the excursion. They distributed the invitation to participate, together with informed consent documents, and collected the data using polls and online questionnaires. They anonymised the data and collected it into data sets for further analysis by the researchers. Detail on how and which data were collected is included in the research methodology section.

The current chapter reports primarily on the development of the BEd (teacher preparation) WIL excursion developed for 2022. However, as part of the UCDG project, other faculties (Law and Health Sciences) also developed their own excursions. Chapter 9 of this book, therefore, reports on how the Faculty of Health Sciences approached and implemented their excursion. In the next section, however, we narrow the focus to report on the evaluation of the implementation of the 2022 BEd WIL excursion.

Research methods used for evaluation and reflection in the design-based research

The third phase of the educational DBR cycle outlined by McKenny and Reeves (2019, p. 83) is 'evaluation and reflection'. This section therefore reports how we evaluated the design and implementation of the 2022 WIL excursion and what insights we gained from the data and reflecting on the findings.

Methodology and paradigm

A mixed-methods methodology, based on a pragmatic paradigm, was used in the overall DBR study investigating the implementation of the 2022 BEd WIL excursion. Within this larger study, various scholars conducted more directed investigations – each with a particular emphasis, purpose, and research design. These investigations contributed to the overall insights of the larger BEd excursion investigation and are reported in Chapters 2–8 of this book. Overall, qualitative data were collected from students through various methods: open-ended reflection questionnaires, polling questions, and the artefacts produced by the small collaborative groups for their formal assessment (see Table 1.2). The self-directed learning instrument (SDLI) of Cheng et al. (2010) was used to collect quantitative data before and after the WIL excursion (see ch. 3). The current chapter therefore only refers to some of the qualitative components of the larger research study (see Table 1.2).

Research design

Design-based educational research was used for the larger study and the reporting of the current chapter. On the other hand, the more focused studies reported in subsequent chapters each utilised research designs suited to their particular investigations. Design-based research is highly suitable for use in educational contexts and allows researchers to engage in iterative studies to explore and expand insights that can be utilised to buttress educational practices (Armstrong, Dopp & Welsh 2020, p. 40). In the larger study reported in the current chapter, the excursion aimed to prepare students better as self-directed agents, enabling them to address the complexities of their future careers and therefore contribute to narrowing the theory–practice divide. Armstrong et al. (2020, p. 42) contend that the knowledge developed during DBR by researchers can be 'separated into two categories: (1) tangible, practical outcomes and (2) intangible, theoretical outcomes'. According to the same authors, the tangible outcomes include the development of curricula and interventions to improve educational practice. In terms of the excursion, the innovative

TABLE 1.2: An overview of qualitative data collected during the work-integrated learning excursion in 2022.

Time period	Core excursion activities	Data-collection instruments	Identifier code	Purpose	No. of students	Chapters referring to/ using data
Day 1	Introduction and welcome	Poll 1: Preparedness to teach	PTT	To explore students' apprenticeship of observation	1,632	–
	Principal's digital diary	Poll 2: Problems identified in dramatisation	PDDP	To reflect on the issues in the video but also students' own experiences of their own school days	667	Chapter 2 Chapter 7 Chapter 8
	Engaging pedagogies	Poll 3: Student experiences of engaging pedagogies	EPP	To expose students to active teaching–learning strategies (breaking the 'chalk-and-talk' cycle) and shoestring or frugal approaches	1,286	Chapter 4
Day 2	Superpowers	Poll 4: Superpowers	SPP	To reflect on students' own strong points (superpowers) as a future teacher	975	Chapter 1 Chapter 5 Chapter 6
	The 'Famine and Abundance' game	Poll 5: F & A game	FAGP	To gauge the emotions of students (empathy) and the importance of social justice issues for teaching practice	1,652	Chapter 4
	Entrepreneurial learning	Poll 6 Poll 7	ELP1 ELP2	Determining students' perceptions and understanding of entrepreneurial learning and its value	1,512 1,368	Chapter 6
	End-of-the-excursion rating	Poll 8	EEP	Students rated the excursion and mentioned highlights and problems experienced during the excursion	1,175	Chapter 1 Chapter 6
Two weeks after the last BEd excursion	Assessment of learning	Multimodal assessments submitted (video, animation)	MMA	To determine the reflection abilities by assessing the assignment product (artefact)	440	Chapter 7
		A post-excursion reflective open-ended questionnaire	PERQ	To listen to their voices and experiences of the various aspects discussed or reflected during the excursion and enable the identification of aspects related to SDL	148	Chapter 3 Chapter 4

Source: Authors' own work.

Key: BEd, Bachelor of Education degree; PTT, preparedness to teach; PDDP, principal's digital diary problems; EPP, engaging participant pedagogies; SPP, superpowers; F & A, 'Famine and Abundance' game; FAGP, 'Famine and Abundance' game plan; ELP1, entrepreneurial learning 1; ELP2, entrepreneurial learning 2; EEP, end-of-excursion rating poll; MMA, multimodal assessment; PERQ, post-excursion reflective questionnaire; SDL, self-directed learning.

excursion programme has relevance. The intangible outcomes aim to develop a better understanding of the theory underpinning educational research to contribute to constructing increasingly better and more relevant learning experiences for our student teachers. This is also relevant because the researchers wanted to gain insights into the understanding and experiences of first-year students regarding the complexities of their future careers, related to the theory–practice divide. Two book publications emanated from the research conducted on excursions between 2016 and 2021. The current chapter introduces the reporting of the research conducted on and findings from the 2022 WIL excursion, in particular that of the Faculty of Education.

The process of DBR can include various steps. McKenny and Reeves (2019, p. 80) outline three core processes which can include multiple (sub-) cycles or micro-cycles of (1) analysis and exploration, (2) design and construction and (3) evaluation and reflection:

- During the analysis and exploration micro-cycle, 'collaboration with practitioners is sought to shape a better understanding of the problem to be addressed' (McKenny & Reeves 2019, p. 90). In the excursion, the main problem was how students could be sensitised about the complexities of their professions to contribute to narrowing the theory–practice divide. We consulted literature on the experiences of excursions presented by UJ, as well as other sources referring to the previous cycles of the WIL excursions conducted at NWU. This was described in the introduction and problem statement sections of the current chapter.
- The design and construction micro-cycle entails theoretical and real-world knowledge of the design processes, design cognition, design thinking, design mindsets and design expertise utilised. In practice, this micro-cycle 'involves, and makes transparent, a deliberative–generative process that yields a well-considered intervention which is grounded in both theory and reality' (McKenny & Reeves 2019, p. 126). For the current chapter, this cycle involved the deliberations and activities that constituted the 2022 BEd WIL excursion programme or 'model'. These were described in detail in the sections preceding this one.
- The evaluation and reflection micro-cycle is a continuous, iterative (non-linear) process that happens before, during, and after the implementation of the intervention. The aim of this micro-cycle in the research reported in the current chapter was to obtain insights into the intervention through implementing the excursion, collecting various sets of data during its planning and implementation and making meaning by analysing the data (McKenny & Reeves 2019, p. 161). Subsequent to the development of findings, recommendations were formulated for the upcoming cycle to develop the 2023 excursion.

Figure 1.4 depicts the cycles of the excursions from 2016–2022 as an iterative DBR, based on the work of Armstrong et al. (2020, pp. 42–43).

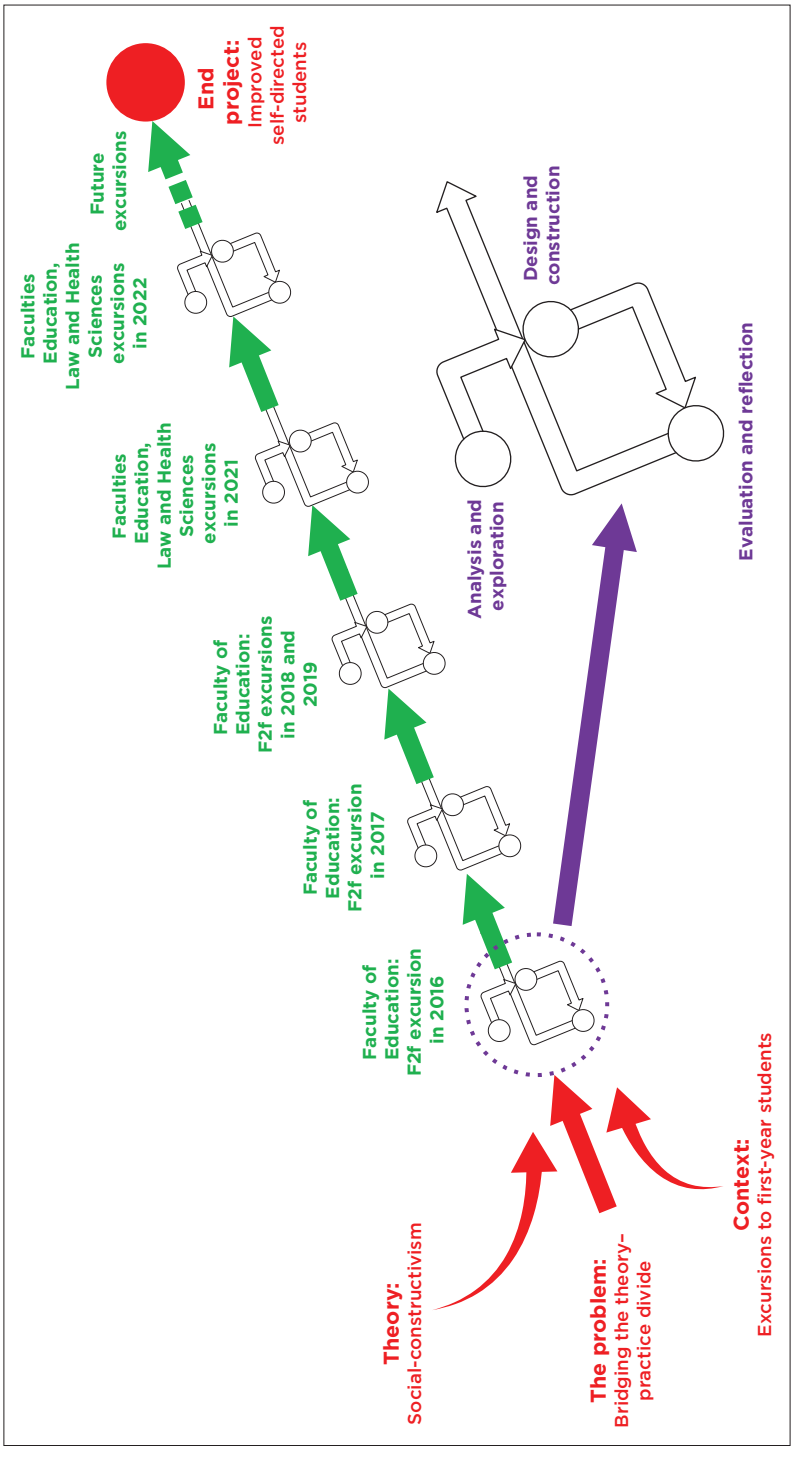
Ethical matters, data-collection instruments and consent

The excursion project complied with all the ethical approvals required by NWU. Ethical clearance was obtained from the EDU-REC committee, valid for all chapters of this book (ethics number: NWU-01013-21-A2). In addition, we obtained the approval of the NWU gatekeeper for conducting research with students from this institution (gatekeeper permission number: NWU-GK-21-065). All subsequent chapters in this book conducted more focused research studies embedded in the larger study and are covered by these ethical and gatekeeper permissions.

The population for all registered first-year BEd students in 2022 was 2,581, of which 2,200 students registered to attend the excursions. The research introduction, request for voluntary participation, and handling informed consent were managed by the specialist digital support team as objective observers in the study. Of the 2,200 students who attended the 12 WIL excursions, 1,424 voluntarily completed informed consent forms. Quantitative and qualitative data were collected at various points before, during, and after the excursions (see Table 1.2) and were utilised for various focused studies reported in Chapters 2–7 of this book. The SDLI of Cheng et al. (2010) was the only instrument administered to collect quantitative data, to determine first-year students' perceptions of their own SDL abilities before and after the excursion, reported in Chapter 3 in particular. An overview of the variety of qualitative data-collection tools, when it was applied and for which reasons are presented in Table 1.2. Table 1.2 also indicates where these data sets were used in the various focused studies reported in subsequent chapters of this book. The identifier codes allocated to each data set were used in reporting the findings regarding the BEd WIL excursion in Chapters 1–7 of this book. The Faculty of Health Sciences collected and reported a separate set of data for their excursion, as reported in Chapter 9.

Data-analysis

In the current chapter, we used thematic analysis to make meaning of the data collected to evaluate the implementation of the 2022 excursion. Kiger and Lara Varpio (2020) argue that thematic analysis is an effective yet adaptable method to analyse qualitative data and that it can be used in various paradigmatic or epistemological perspectives. The same authors



Source: Adapted from Armstrong et al. (2020, p. 43).

FIGURE 1.4: The iterative cycles of developing the work-integrated learning excursions from 2016–2022.

also contend that thematic analysis is a useful technique of analysis to try to grasp the experiences, reflections and actions of research participants. This technique is, therefore, relevant for the current study where the first-year students' experiences of and in the excursions were explored. The basic steps used in thematic analysis are gaining familiarity with the data and then creating codes which will be used to generate themes (Kiger & Lara Varpio 2020). Deductive coding was used in this study.

The findings reported in the next section are based on the evaluation of the implementation of the overall excursion, followed by the ensuing recommendations that were developed for use in future cycles of excursions. Each of the focused studies embedded within the larger study reports their own particular findings and results in subsequent chapters. Note that Chapter 10 of this book provides valuable concluding insights as an overview of the various studies that were constructed around WIL excursions at the NWU in 2022.

Findings

We set the stage by describing the findings regarding the first-year BEd students' cognisance of the theory–practice divide in teacher preparation (Theme 1). Next, we describe and discuss the findings regarding the challenges that were experienced during the 2022 excursion and how these conceivably hindered the bridging of the theory–practice divide (Theme 2). We conclude our findings section by describing the insights gained from the successes reported in the overall 2022 excursion and how these contributed to narrowing the theory–practice divide (Theme 3). To support the reporting of the findings, a few direct quotations from students are included. In particular, data from the superpowers poll (referred to by the acronym SPP), as well as from the end-of-excursion rating poll (EEP), were used, as described in Table 1.2.

First-year students' cognisance of the theory–practice divide in teacher preparation

As part of the reimagining of the WIL excursions, we needed to explore and reconsider who our first-year students – the intended recipients of the learning – are. To contribute to addressing the research question, we needed to understand students' grasp of the theory–practice divide in teacher preparation to enable future curriculum innovations in this regard.

Findings based on students' comments in the 'superpowers poll' (SPP) indicate that many only became cognisant of the theory–practice divide

early in the excursion programme. This was evident from numerous responses, including:

> 'Made me realise that teaching is not as easy as I thought it was, but it takes even more effort to make a good teacher.' (Student teacher, May 2022, SPP)

> 'I've realised that there's a lot I've yet to learn about being a teacher and that there will always be challenges I'll face, but they will only make me a better teacher, and there's always more to learn from, and teaching isn't as easy as people think.' (Student teacher, May 2022, SPP)

It emerged that most students needed to be made aware of how complex the teaching profession is in practice – in other words, their expectations of what teaching entails were not aligned with what would be expected of them in practice. Many students learned that they would have to adapt their initial perception of teaching as an 'easy career'. One participant, for example, noted that the WIL excursion programme '[…] gave me a broader idea of what to expect [as a teacher] and that not everything will be as easy as it may have seemed watching teachers growing up' (Student teacher, May 2022, SPP).

This statement was echoed in the responses of several other students. Reaffirming Lortie's (1975) theory about students' 'apprenticeship of observation', the first-year student teachers in the current investigation held preconceived low expectations about the requirements for becoming a proficient teacher based on what they experienced in their school careers.

Findings from the end-of-excursion poll additionally indicated that students experienced the WIL excursion programme as a positive contributor toward traversing this theory–practice gap. For example, several students noted it as a highlight in the WIL excursion:

> '[*It*] prepared me for the problems that I might face as a teacher.' (Student teacher, May 2022, EEP)

> 'I actually appreciated it because it prepares us of what we're going to go through.' (Student teacher, May 2022, EEP)

> '[…] it prepared me for the future so that when I am finally a teacher, then I will know what to expect.' (Student teacher, May 2022, EEP)

Although there were a few students who did not seem to grasp the magnitude of the theory–practice divide, overall, the findings show that the WIL excursion was successful in providing these future super teachers 'with a reality check into the lived experience of teachers' (Reyneke & Botha 2019, p. 315). The intended sensitising of students in the WIL programme to this divide was therefore realised for many of them. Several of the subsequent chapters report on more nuanced attempts to narrow the theory–practice divide for first-year student teachers.

Insights gained from the challenges related to the 2022 excursion

Several codes and categories contributed to the development of this theme when analysing the overall excursion data. The most prominent categories that limited students' success in the larger study of the excursion, and therefore conceivably hindered our efforts to bridge the theory–practice divide, were challenges related to access and administrative issues.

Access challenges

Despite our best efforts to ensure that all students would have access to the online excursions by providing data bundles for internet access, connectivity challenges were still one of the most recurrent complaints from students. A few of their responses in this regard in the end-of-excursion poll reflect these:

> 'Only thing was the connectivity with one of our team members – it rained in her location. Oh, and then that I'm still waiting for my [...] data.' (Student teacher, May 2022, EEP)

> 'I did not receive data, and load shedding was also a problem.' (Student teacher, May 2022, EEP)

> 'I did not hear about the characteristics of the learning environment because of the network.' (Student teacher, May 2022, EEP)

Adding to the connectivity problem was the fact that the electricity supply in our country is intermittent – with scheduled 'load shedding' – where certain towns or municipalities would have no electricity for a number of hours at a time. Therefore, part-way through an excursion, the power would go out for some students, or even on the campus from which the virtual excursion was presented. On campus, it would then take a few minutes for the backup generators to kick in while students were waiting with dead air. However, not all students would have backup plans for electricity, and when those students had load shedding during an excursion they would miss out on large parts of the excursion. One student said: 'Load shedding was the only problem because I did not get a chance to attend the whole virtual excursion' (Student teacher, May 2022, EEP). This meant that some, or even much, of the critical learning that we constructed as part of the excursion would not reach those students. On the other hand, it was heartening to see that some students really 'went the extra mile' and tried to overcome challenges to attend the excursion, as shown in these examples:

> 'I did not get the data for the virtual excursion and the link for yesterday and today's class. I had to go an extra mile to attend the excursion.' (Student teacher, May 2022, EEP)

> 'Didn't receive the link to join, my excursion was [*scheduled*] on the 11–12 April, had to join today [*14 April*] through a link I got from a friend, and [/] also didn't receive data.' (Student teacher, May 2022, EEP)

From this and previous quotes, it is also evident that quite a few students complained of not receiving their data or receiving it too late, pointing to the administrative challenges we experienced in handling such a large group of students.

☐ Administrative issues

Some administrative challenges were also a result of the load shedding of electricity supply in South Africa, others because of poor time management, and yet others because of some students 'disappearing' for part of the excursion, as shown in the following quotes:

> 'I had a problem with groups because yesterday I was late because of load shedding, so I didn't know which group I was in.' (Student teacher, May 2022, EEP)

> 'I missed the information today because I was 1 hour late.' (Student teacher, May 2022, EEP)

> 'Working with group members that didn't join in the second half of the excursion.' (Student teacher, May 2022, EEP)

The knock-on effect of not knowing which group to join, or joining late, or group members who disappear, contributed to administrative problems. Staff spent more time sorting out and helping groups to form functional units than supporting the intended reflective learning and skills development, which was supposed to contribute to narrowing the theory–practice divide. The unexpectedly heavy administrative load also required additional administrative tasks and time from the specialist digital support team. If future excursions are presented digitally, more careful consideration and prior planning regarding administration will have to be conducted before the start of such excursions.

Another administrative issue was the struggle the facilitators needed to appoint more senior students or additional staff as facilitators during the breakaway group sessions. In past excursions, facilitators contributed meaningfully to guide and support small-group discussions that contributed to better understanding and deep reflection (De Beer et al. 2020, p. 204). In 2022, as the excursions took place towards the closing stages of the COVID-19 pandemic, it was exceedingly difficult to find senior students to commit time voluntarily to serve as student-facilitators. As a result, we had only a handful of facilitators in each excursion to service 50 groups at a time. Some of the following comments from students indicate that the

dearth of facilitators – who could have supported and guided the small-group discussions – contributed to students not understanding what to do and, therefore not benefiting from the intended learning:

> 'Some of the things we were asked to discuss, I did not understand them fully.' (Student teacher, May 2022, EEP) – lack of facilitators

> 'Getting to discuss some activities as I did not understand some of the questions.' (Student teacher, May 2022, EEP)

The challenges related to access and administrative issues could not all have been conceived, and some of these will become less troublesome when excursions are not presented in a virtual environment. We will, however, keep these insights in mind when considering the design of the 2023 excursion – especially if some or parts of it will be facilitated in an online environment. Some of the subsequent chapters report other, more directed challenges experienced in the excursion and related to their research foci. Yet, despite some challenges, many more positive feedback comments were received than negative, judging by students' responses in the various data-collection polls, as briefly alluded to in the subsequent section and reported in depth in Chapters 3–7.

Insights gained from the successes reported in the 2022 excursion

Numerous codes and categories contributed to developing this theme. The categories that most significantly contributed to the success of the excursions in narrowing the theory–practice divide are more nuanced understandings of the teaching profession, constructive groupwork and enjoyment of learning. The overall rating that students gave the excursion as a learning experience concludes these findings.

More nuanced understandings in preparation for the teaching profession

Several of the directed studies embedded in the larger study reported that first-year students developed a more nuanced understanding of particular aspects related to their future careers as teachers. A few students gave explicit feedback noting that the excursion truly opened their eyes to the challenges that they have to be(come) prepared for. These students' comments indicate that they are now (after the excursion) mindful of the complexities in the teaching profession:

> 'Where we as the future teachers were given a chance to point the challenges that are faced at school, I actually appreciated it because it prepares us of what we're going to go through.' (Student teacher, May 2022, EEP)

> 'I enjoyed and learned a lot about how to be a better teacher and how to help children to achieve the best they possibly can. I learned about different creative ways to teach children and different perspectives of all the students. I found Prof. Neal and Dr Adri very informative and helpful and I felt that I can now go to a school knowing more about the challenges we as teachers in South Africa face and also all the challenges in the classroom like gender inequality, socio-economical backgrounds, poverty and so on, and how to treat the children so that they don't feel left out and so that they feel they have a future despite their circumstances.' (Student teacher, May 2022, EEP)

The current chapter additionally reported, as a key finding, that students became much more aware of the existence and significance of the theory–practice divide in teacher education. Chapter 2 of this book reports nuanced understandings of the complexity of the teaching profession, while Chapter 3 reports students' expanded understanding of the need to set their own learning goals and their realisation that they have to take responsibility for their own learning. Chapter 5 reports insights into understanding of the role of teachers as agents of change, contributing to inclusion and social justice. Chapter 6 explains how first-year students can be nudged towards becoming knowledgeable about entrepreneurial learning and fostering students' understanding of this content as having broader value than only for economic gain.

☐ Constructive groupwork

Interestingly, in contrast to the challenges that some students linked to groupwork, for other students groupwork emerged as one of the aspects that they enjoyed and believed contributed most to their learning experience in the excursions. This aspect is unpacked and reported in detail in Chapters 3 and 7.

☐ Enjoyment of learning

Another profound category in the successes of the excursion was the enjoyment of learning. Many of the students noted how much fun they had and how much they enjoyed parts or the whole of the excursion, but that it was also a valuable learning experience. For example:

> 'The videos made the excursion fun and enjoyable. I loved that it was not boring and that initiatives were used during the excursion.' (Student teacher, May 2022, EEP)

> 'It was fun and not "boring". We learned valuable things.' (Student teacher, May 2022, EEP)

The pedagogy of play, situational interest and enjoyment of learning are discussed in depth in Chapters 3 and 4. Enjoyment of learning was also

evident in the assessment that contributed to the excursion, as described in Chapter 7. In addition, but still linked to the enjoyment of learning, many students commented that they believed that what they learned in the excursion would be transferable and useful in their profession one day. This finding indicated that the activities included in the excursion – and the way in which the overall programme was structured – contributed to preparing these students as future (super) teachers, thereby narrowing the theory–practice divide. Evidence informing this finding are, for example:

> '[…] learning about how can I ensure that my learners gain great skills and how can I make my class fun while learning.' (Student teacher, May 2022, EEP)

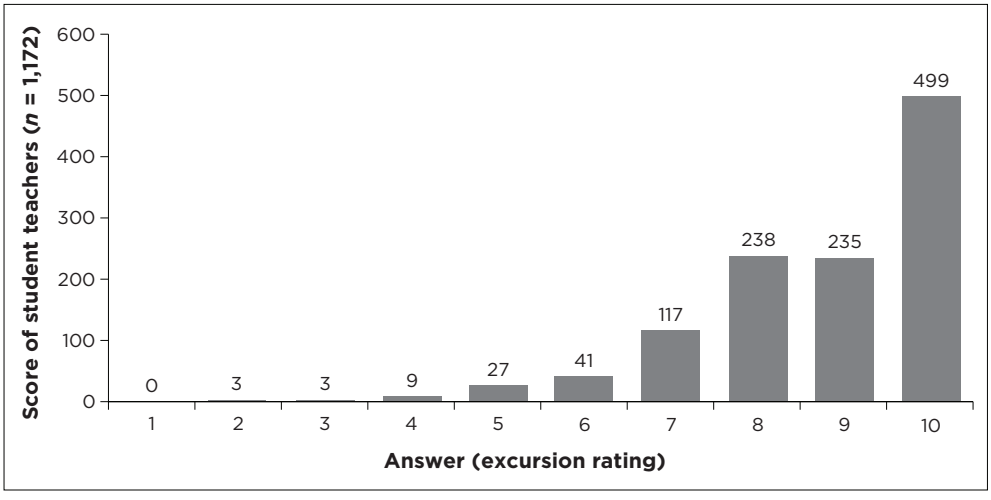
> 'My highlights are getting to know that teaching requires creativity and that a classroom does not have to be an uptight environment it can be made fun also that learners learn more when they are engaged in the lesson, they can also be able to use what they have learned in the real world and come up with innovative ideas that will not only benefit them but benefit others as well.' (Student teacher, May 2022, EEP)

Can we then declare that the excursion was a success, based only on this overview of 'successes' in Chapter 1? Perhaps not. Therefore, to end our argument convincingly, we present the numerical ratings given by students for the WIL excursion as a contributor to their preparation as future super teachers.

Overall experience ratings of the 2022 excursion

Even though 2,200 students participated in the twelve excursions, a total of only 1,172 students answered the following question as part of the end-of-excursion poll at the end of the excursion: 'On a scale of 1 (very poor) to 10 (excellent), how would you rate this virtual excursion?' The results indicated that the students overwhelmingly experienced the excursions as positive. A total of 972 students (82%) regarded the excursion as very good to excellent, rating it as an 8, 9 or 10 out of 10 (Figure 1.5).

This overwhelming positive rating of students' own experiences of the excursion was heartening and buttressed our belief that the programme was meaningful and contributed valuable preparation for real-world practice for these student teachers. Subsequent chapters in this book add insights into how finer foci contributed to making the 2022 BEd WIL excursion a meaningful learning experience that took first-year student teachers outside of their comfort zones and into a zone of optimal learning.



Source: Authors' own work.
Note: The question being asked here was: How would you rate the excursion? Answers are on a scale from 1 (very poor) to 10 (excellent).
FIGURE 1.5: First-year students' overall rating of the twelve individual excursions.

Conclusion

Though there will always be room for improvement, we have provided convincing evidence that the re-imagined 2022 WIL excursions sensitised students to the complexities of their future teaching careers in various ways. The activities included and the way the programme was structured contributed to narrowing the theory–practice divide for these student teachers, linking their learning experiences to what they will encounter in practice one day. Offering the excursion in the first year of these student teachers' journey toward becoming future super teachers provided a sturdy foundation for the construction of subsequent meaningful learning toward that end goal. We, therefore, made a few general recommendations towards improvement.

Face-to-face excursions will not have networking and access challenges that were experienced in the 2022 virtual excursions. Therefore, one key aspect – administrative planning and support – needs to be reconsidered and refined for future WIL excursion cycles. Firstly, administrative planning to plan, manage and organise access and attendance of individual students is needed. Furthermore, administrative support in the distribution of information, handling of enquiries and also providing supportive facilitation of groupwork is needed to allow a deeper focus on the intended teaching–learning and skills development aimed at narrowing

the theory–practice divide. Refinement and strengthening of administrative support will ensure that students and teacher educators can focus on developing these future teachers for complex but rewarding careers.

As the overall book reports mainly on the excursions of the Faculty of Education, it enjoyed predominance in this chapter. Correspondingly, the subsequent chapters (chs. 2, 3, 4, 5, 6, 7 and 8) are based on the information unpacked in this chapter. They all relate to the curriculum innovations applied to the BEd WIL excursions as part of efforts to bridge the theory–practice divide between teacher preparation and teaching practice in the South African school context. The activities conducted in the WIL excursion of the Faculty of Health Sciences are described in Chapter 9. Finally, Chapter 10 draws from across the chapters those insights of particular relevance to SDL research in higher education. It considers the implications of these for curriculum design and professional practice in relation to the opportunities afforded by online excursions for the purposes of providing WIL experience for students.

Chapter 2

Immersion pedagogy on the Vygotskyan stage: The affordances of role immersion during the first-year student excursion

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Abstract

A trap that should be avoided in pre-service teacher education programmes (TEP), such as the Bachelor of Education (BEd) programme, which is the context of this chapter, is that it should not only be defined in terms of modules and credits but also by a vision of what the qualification should mean. Integrative learning is needed to ensure that future teachers will, as self-directed learners, be able to flourish in a complex 21st century, where they will inspire new generations through their inclusive and professional behaviour. Creative approaches and curriculum innovation are needed to overcome the theory–practice divide, which is well-documented in the

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research literature. In this chapter, one such teaching intervention or curriculum innovation is described to better connect theory and practice: an excursion for first-year student teachers. In this chapter, the excursion is argued from the perspective of immersion pedagogy and how the excursion provides a learning context that could enhance both self-directed learning (SDL), as well as the professional development of neophyte teachers. I argue the case of professional development from Derrida's notion of 'différence'. The excursion's leitmotif of 'becoming a super-teacher' is contextualised, as well as how engaging pedagogies such as role-play and case studies are used to scaffold learning. The conceptual chapter uses social constructivism as a theoretical lens and explains how the excursion becomes a Vygotskyan stage where student–teacher learning is scaffolded across the zone of proximal development (ZPD). This is supported by a conceptual framework, building on constructs such as immersion pedagogy, role-play and role immersion, integrative learning, and embodied, situated and distributed cognition. The chapter also comments on the problem that such innovation often goes against the grain of the structural features of university campus life and makes recommendations on how impediments related to such excursions could be addressed.

Introduction

Huber and Hutchings (2004) make a compelling statement that higher education institutions (HEIs) should ensure that their qualifications are defined not just in terms of modules and credits but, more importantly, by a vision of what the degree should mean. Teacher education institutions are often criticised as being ineffective in preparing student teachers for the complexities of the teaching profession (De Beer & Gravett 2020). One of the reasons provided is that it is distant from practice. Research literature refers to the 'theory–practice divide'. Lampert (2010, cited in Gravett et al. 2016) showed 'that novice teachers [often] complain that their [...] courses at university [provided] too much theory and not enough practical knowledge'. The critique is frequently echoed by the mentors of novice teachers once the latter group find employment in schools. Kessels and Korthagen (1996, p. 2, cited in Gravett et al. 2016) refer to 'the gap between our words and the students' experiences that we cannot bridge'. This theory–practice divide results in young teachers suffering from 'practice shock' when faced with the reality and responsibility of the demands of the teaching profession (Stokking et al. 2003). Darling-Hammond (2006) and Scherff and Singer (2012) shed further light on the theory–practice divide by identifying three fundamental problems associated with learning to teach, namely (1) the problem of the so-called apprenticeship of observation (Lortie 1975), where student teachers mimic the behaviour of the teachers that they had; (2) student teachers should not only learn to *think* like

teachers, but also to *act* like teachers; and (3) teaching is complex, and student teachers need to develop more nuanced understandings of such complexity. Another potential weakness of TEP was noted by Bleach (2000) and Hargreaves (1994), who noted a lack of attention to the emotional growth of student teachers and their role in helping students resolve conflicts. The question should be asked whether the formal Bachelor of Education (BEd) qualification adequately addresses these concerns.

Part of the complexity of scaffolding the process of developing a professional identity among student teachers is that it is a career-long project (Mockler 2011). I would like to shed light on the journey of *becoming* a teacher, and *being* a teacher, by using Derrida's (1982) notion of 'différence'. According to Derrida, the process of identification is in part the 'definition and re-definition of the "other" in relation to the self' (Mockler 2011, p. 3, cited in Gravett et al. 2016). As the student teacher develops a better understanding of the ideal ('super') teacher, this should be accompanied by critical self-reflection on how the 'self' measures up against the idealistic 'super teacher'. In this journey of becoming a teacher, the professional development of the student teacher should occur across three domains, namely (1) personal experience, (2) professional context and (3) the external political environment in which the work of a teacher is located (Mockler 2011).The first of these domains, personal experience, relates to the personal lives of the student teachers, framed by status, race and gender, and also the 'apprenticeship of observation' as described by Lortie (1975). Personal identity is therefore 'formed and reformed constantly over the cause of a career and mediated by a complex interplay of personal, professional and political dimensions of teachers' lives' (Mockler 2011, p. 1). *Being* a teacher implies a professional identity which is demonstrated in the decisions and approaches they make related to curriculum design, pedagogy and assessment (to mention but a few). This excursion can, at best, claim to assist in the development of a nascent professional identity in teachers by focusing specifically on the domain of personal experience. *Being* a teacher, however, assumes a 'unique embodiment' of what it means to 'be' a teacher (Clandinin et al. 2006). The excursion aims to develop the desired 'habits of mind' in student teachers that are associated with being a 'super teacher'.

Smagorinsky, Cook and Johnson (2003, p. 1400, cited in Gravett et al. 2016) 'note that teacher educators are often viewed as "aloof within the ivory tower, espousing ideals and the principles that govern them"'. Higher education institutions often focus intensively on 'learning *in* practice', through work-integrated learning (WIL) or school experience, in an attempt to address the theory–practice divide. However, the excursions (whether face-to-face or virtual) provide an opportunity to 'learn *from* practice', which could also address this theory–practice divide and could give future

educators better insights into the complexities of the profession. During school experience or WIL, the student teachers find themselves in the coalface of teaching and learning, and the mistakes made have a ripple effect, often negatively impacting the learners. For example, so many alternative conceptions are fuelled by student teachers' underdeveloped pedagogical content knowledge (De Beer & Gravett 2020). In contrast, the excursion provides a 'safe space' (without school learners) where student teachers are sensitised to other ways of seeing, thinking and acting. Schön (1987) speaks of creating a 'low-risk setting for novice learning', and the excursion provides such a low-risk learning space. Through an excursion curriculum underpinned by problem-based and CL practices, student teachers are confronted by the unknown and the unfamiliar, and they can, as self-directed learners, set learning goals for themselves.

However, my experience at the University of Johannesburg (UJ) (2007–2015) and the North-West University (NWU) (2016–2022), where such excursions are provided, is that these professional development excursions ask for creative engineering of learning programmes, as formal campus qualification programmes are not always conducive to such innovation. As Huber and Hutchings (2004, p. 4) rightly point out, such 'integrative learning goes against the grain of many structural features of campus life'. In the case of face-to-face excursions, students engage off-campus for three days in the excursion activities, and not only is it disruptive in terms of the official university calendar and time-table, but it also comes at huge financial costs (e.g. transport, food and accommodation). Furthermore, the safety of students is always a concern, as travelling and activities such as hiking in nature are part of the face-to-face excursion. The NWU engaged in virtual excursions since 2021 – motivated by the coronavirus disease 2019 (COVID-19) pandemic – and although students engage in the excursions online, it still results in disruptions to timetables, assessment schedules and other problems such as connectivity issues (further exacerbated by the 'load shedding' of electricity that South Africans experience). However, these costs and disruptions should be weighed against the costs of the school experience or WIL and the affordances they holds in addressing the theory–practice divide.

As mentioned, the scaffolding of learning across the ZPD during the excursion assists the student teacher in comparing the idealised 'super teacher' to the 'self' (Derrida 1982).

The theoretical framework underpinning the excursion: Social constructivism

The excursion programme is built around social-constructivist principles and scaffolding student teachers' learning across the Vygotskyan (1978) ZPD. Warford (2011) applied this construct of Vygotsky to teacher education

and refers to the zone of proximal teacher development (ZPTD). What is especially useful in Warford's work are the four stages that he identified for scaffolding learning across the ZPTD, as shown in Table 2.1.

It is important to take notice of what Veresov (2004) calls 'the hidden dimension' of Vygotsky's work. This hidden dimension sheds light on a particular design principle of the excursion. Vygotsky referred to two *categories* in his ZPD theory, namely, learning on inter-psychological and intra-psychological levels. Students first construct knowledge together (the 'inter-psychological' category, or 'expert-other assistance' in Table 2.1) and then at the 'intra-psychological' level, where 'internalisation' takes place (the third stage in Table 2.1). Veresov (2004, p. 14), however, shows that the word 'category' should be traced back to pre-revolutionary Russian theatre, where the word literally meant 'a dramatic event, a collision of the characters on stage'. Firstly, the roots of Vygotsky's work could therefore be found in drama and role-play, but secondly, the conflicts – or what Veresov (2004) refers to as 'dramatical collisions' – are scaffolds that could lead to powerful learning. The pedagogies utilised during the excursion, therefore, hold affordances to catapult refection and deep learning (De Beer & Petersen 2022). The excursion can consequently be seen as a Vygotskyan stage where, as De Beer and Henning (2011, p. 203) describe it, 'pre-service teachers play out social dramatical collisions'.

Although learning occurs in collaboration with others, it is crucial to remember that each student has authority over their own learning. Self-directed learners are free to choose their own learning objectives and to initiate, direct and assess their own learning (Petersen, De Beer & Mentz 2020).

TABLE 2.1: How Warford's stages of scaffolding learning across the zone of proximal teacher development forms the theoretical framework for the excursion.

ZPTD stage	How it is structured in the excursion programme
Self-assistance stage	Prompting is needed to determine student teachers' initial views and experiences; reflections that address the 'apprenticeship of observation' (Lortie 1975)
Expert-other assistance	In all the excursion activities, student teachers construct knowledge collectively. The role-play scaffolds their understanding of other peoples' perspectives, and during cooperative learning, they are expected to use theoretical lenses to interrogate practice, thereby addressing the theory–practice divide. Often 'dramatical collisions' (Veresov 2004) occur, which could scaffold reflection and learning. Students need to set goals for themselves as self-directed learners.
Internalisation	The excursion programme makes provision for self-reflection, where students have to formulate individualised learning goals and formulate their own teaching and learning philosophy. This refers to the intra-psychological category of Vygotsky.
Recursion	Only traces of this 'theory to practice' stage can be observed during the excursion itself, but would hopefully be demonstrated during WIL experiences later in the BEd programme

Source: Adapted from Warford (2011).
Key: BEd, Bachelor of Education degree; ZPTD, zone of proximal teacher development; WIL, work-integrated learning.

The value of immersion pedagogy, and role immersion

Immersion pedagogy has its roots in language education. With language immersion, students are taught a second language, with the language taught being primarily used (Lyster & Tedick 2014). This would mean that students engage in learning, hearing, and speaking in a language different from their mother tongue, and in the process, acquire competency in the second language. Lyster and Tedick (2014), however, warn that this is no simple task and that:

> [*C*]urricular content itself must not be simplified to the point of short-changing students [...] to ensure comprehension, experienced teachers rely on a wide range of instructional strategies that facilitate the learning of curricular content through the immersion language. (p. 211)

Chahine (2013) is but one of many scholars who researched the role that immersion within authentic contexts could play in enhancing learning in fields other than language education. Maxwell and Chahine (2013) looked at how cultural immersion could lead to the achievement of ethnomathematics outcomes. These authors showed how students from the United States of America (USA) engaged with local (cultural) communities in Morocco and South Africa, respectively, to learn how local people solve daily problems utilising indigenous knowledge (IK). The Northern American students' interaction with IK holders in authentic (foreign) contexts provided a powerful learning opportunity. Chahine and De Beer (2021) researched the affordances of immersion in authentic cultural contexts to learn about indigenous knowledge systems (IKSs). The latter authors advocate for immersion from an embodied, situated and distributed cognition perspective (see the 'Embodied, situated and distributed cognition' section).

Similarly, Buchanan and Palmer (2016) explored the role of immersion in a history course. What makes the work of Buchanan and Palmer (2016) so relevant to the excursion intervention described in this chapter is the affordances of role-play as a learning tool (see the 'Role-play and role immersion' section). Carnes (2014) coined the term 'role immersion' as an engaging form of role-play. Buchanan and Palmer (2016) reflect on such role immersion as follows:

> By trying to achieve character objectives, students unlock emotional forces that allow for intense work and achievement. (p. 86)

Role immersion, therefore, supports deeper, reflective, and more meaningful learning.

In this chapter, I argue that the excursion is also building on an immersion pedagogy, where student teachers are required to learn not only to *think* like teachers but also to *act* like teachers (Darling-Hammond 2006).

The student teacher is immersed within a leitmotif of 'being a super teacher'. By engaging in various learning activities, the student teachers need to utilise theory to interrogate practice and also to reflect on their own biases and learning needs as future teachers. Tillema (2000, p. 586) highlights the fact that '[…] immersion into the realms of practice would have a realistic and adaptive effect upon reconstruction of initial beliefs', and the excursion holds affordances to replace students' naïve beliefs with more nuanced views. The programme exposes the student teachers to the complexities of the profession, and through case studies (see the 'Case-based teaching and learning during the excursion' section) and role-play (see the 'Role-play and role immersion' section), they are immersed in the world of work of a teacher as described in sections to follow. But, for such an excursion to yield the necessary results, the warning of Lyster and Tedick (2014, p. 211) should be considered, as it is indeed no simple task, and the design principles for such multifaceted curricular innovation (refer to ch. 3) should be carefully considered.

The excursion as immersion pedagogy, and interrogating cases and role immersion by the student teachers

During the face-to-face excursion, two powerful pedagogies are used, namely case studies (see the 'Case-based teaching and learning during the excursion' section) and role-play (see the 'Role-play and role immersion' section). As mentioned earlier, this is aligned to the original context of Vygotsky's construct of 'category' and how the conflict that occurs between characters in a drama on stage (Veresov 2004) could be used as a scaffold in the learning process during the 'Vygotskyan stage created by the excursion'.

Case-based teaching and learning during the excursion

Case-based teaching holds affordances in teacher education and was extensively utilised during the face-to-face excursions. In a case study, an ill-structured, complex problem is explored, and this real-life predicament encourages debate and provides the opportunity to explore the consequences of actions (Gravett, Merseth & De Beer 2013). Good cases are intended to promote debate and discussion, and they elicit strong and emotional responses from readers by invoking their own values and ideas (Gravett et al. 2013). As such:

> Shulman (2002, p. 2) [*sees*] cases as 'a way to bridge the abstract nature of principles and teaching standards to classroom practice'. She [*further states*] that [*cases*] 'tell vivid, often moving stories, and give life to abstract principles, and are

> more likely to be remembered'. Cases [*provide a*] 'multidimensional representation of the context, the participants and the reality of the situation'. (p. 372)

Merseth (1996, p. 725) is of the opinion that case-based teaching allows student teachers to explore the 'complex and messy problems of practice'. A case should always paint a dilemma, which Cuban (2001, p. 10, cited in Gravett et al. 2016) describes as 'messy, complicated, and conflict-filled situations that require undesirable choices between competing, highly prized values that cannot be simultaneously or fully satisfied'. Kunselman and Johnson (2004) highlight the value of cases to afford student teachers opportunities to put themselves in the shoes of the teacher. Gravett et al. (2016) highlight other benefits of case-based teaching. These include the promotion of critical-thinking, the growth of practical knowledge through reflection and the creation of a connection between educational theories and practice. It therefore serves as an effective pedagogy to address the concerns referred to earlier (listed by Darling-Hammond 2006; see the 'Introduction' section), that the apprenticeship of observation should be addressed, that student teachers should think and act like teachers, and that they should develop nuanced understandings of the complexity of the profession.

During the face-to-face excursions, students are provided with several case studies imbued with dilemmas that could be analysed from various perspectives. This is also true of the online virtual excursion, as the video (the video diary of the principal) could also be seen as a dramatised case study. These case studies deal with diverse aspects of the profession, such as the professional conduct of the teacher, inclusion in the classroom, classroom management, instructional practice, and interpersonal relationships among staff, learners, and administrators. Aligned to the work of Merseth (1996), there are three purposes for the use of cases in the excursion programme, namely (1) as exemplars or models of best practices, (2) to provide opportunities to analyse complex teaching–learning situations and (3) to stimulate reflection and develop reflective practice amongst student teachers.

Role-play and role immersion

Role-play, which requires students to play the role of a character in a scenario, has been well-researched. Authors such as Buchanan and Palmer (2016), Westrup and Planander (2013), as well as Huber and Hutchings (2004) commented on the affordances of role-play as a pedagogy. Role-play can be defined as 'a learning activity in which participants act out a set of defined role behaviours or position with a view to acquiring desired experiences' (Westrup & Planander 2013, p. 201). One of the advantages of role-play is that it increases the number of perspectives in a particular scenario.

It encourages participants to view a problem or situation from perspectives other than their own (Sogunro 2004; Westrup & Planander 2013). Not only does it provide the opportunity for students to reflect on their own perspectives but also to become conscious of other students' interpretations and perspectives on an issue. Research shows that role-play holds affordances to assist in critical reflection and to facilitate conceptual (deep) understanding (Sogunro 2004). It also provides the student teacher with a more nuanced understanding of the complexity of teaching. Alkin and Christie (2002) have shown that role-play could additionally be used to develop skills in conflict resolution.

Dramatising the cases

During the face-to-face excursions, the facilitators experimented with combining case-based teaching and role-play by asking students to dramatise cases.[1] This was done by structuring the activity according to the five elements of CL (Johnson & Johnson 1994; Petersen, Golightly & Dudu 2019):

1. Arguably the most important element of CL is positive interdependence, or the 'sink or swim together' principle. Johnson and Johnson (1994, p. 2) describe positive interdependence as occurring 'when students perceive that they are linked with group mates in such a way that they cannot succeed unless their group mates do (and vice versa) and/or that they must coordinate their efforts with the efforts of their group mates to compete a task'.
2. Individual accountability requires each group member to demonstrate responsibility and accountability for their segment of the work in order to achieve the common goal.
3. The third element that underpinned the CL activity of dramatising the cases is face-to-face promotive interaction. This refers to individual members of the group supporting other members in order to reach the shared goals of the group.
4. A fourth element is interpersonal and small-group skills. This refers to social skills, such as effective communication in the group and resolving conflict effectively.
5. Group processing refers to the process of self-reflection and group-reflection in order to determine if, and how well, the goals were achieved and whether changes are needed to the strategy.

In the face-to-face WIL excursions, the activity was designed and implemented as follows:

1. This was done in a different format in the online virtual excursion, with student teachers engaging with the school principal's video-diary.

☐ Studying the case

Students first had to study the case in their groups to determine what the problem or dilemma is that the case portrays. As a group, they had to reflect on the case and put themselves 'in the shoes' of the protagonist. In most cases, the protagonist is a teacher dealing with a highly perplexing challenge in education. The cases explored during the excursion were chosen to 'practice such professional skills as interpreting situations, framing problems, generating various solutions to the problems posed and choosing among them' (Sykes & Bird 1992, p. 482).

☐ Writing a screenplay

Next, the groups had to write a screenplay for the case. The screenplay had to be true to the dilemma highlighted by the case, but student teachers had the liberty to change the context, characters and discourse of the case. The reason for this leeway is that such a strategy provides the teacher educator with insight into the perspectives of the student teachers, which otherwise might not emerge. Teacher educators address the 'apprenticeship of observation' by asking students to write a screenplay to present the case in a dramatic form, which in turn assists student teachers to 'think about their personal and social dilemmas, explore issues and situations, and formulate possible solutions to these' (De Beer, Van der Walt & Bunt 2020, p. 198; O'Neill & Lambert 1989).

☐ Casting and practising the play

Students then had to execute the task of casting (making sure that every student – in a CL fashion – played a role that contributed to the successful completion of the learning task). Students were given an opportunity to practice their play prior to the performance in front of the entire group of students. De Beer et al. (2018, p. 176) quoted the doyenne of drama in education, Dorothy Heathcote, who advised that teacher educators should 'always look for the precise dramatic pressure that will lead to a breakthrough, to a point where the students have to look at the problem in a new way'. Drama could play an important role in conceptual change. The dramatised cases provided the teacher educators with a better understanding of student teachers' preconceived ideas about teaching. This active learning also provided a context for critical self- and group-reflection (Gravett et al. 2013).

☐ Reflection on the dramatised cases

After every dramatised case, the group of student teachers reflected on the case and the dilemma it presented. Huber and Hutchings (2004, p. 1)

make the statement that 'learning should be greater than the sum of its parts', and this was definitely the experience of teacher educators during this learning activity. De Beer et al. (2020, pp. 209–212) indicated that the reflection following the activity assisted student teachers to develop deeper insight into the dilemmas of becoming a teacher in the 21st century, developing metacognitive knowledge and reflective skills, developing understanding and empathy for the work of the teacher, coming to a conclusion and appreciation of the benefit that CL holds, and developing skills as a self-directed learner.

Embodied, situated and distributed cognition

The importance of the affective domain in learning has recently received attention in neuroscience research. Immordino-Yang and Damasion (2007) point out that:

> In teaching students to minimize the emotional aspects of their academic curriculum and function as much as possible in the rational domain, educators may be encouraging students to develop the sorts of knowledge that inherently do not transfer well to real-world situations. As prefrontal damage patients show, knowledge and reasoning divorced from emotional implications and learning lack meaning and motivation and are of little use in the real world. (p. 9)

This assertion becomes clearer when focusing on the research of Dubinsky, Roehrig and Varma (2013), which showed that the combination of sensory perception, motor tasks and emotional involvement will reinforce neural synapses and strengthen learning. Synaptic strength is influenced by a person's regular activities, including exercise, stress and social engagement (Dubinsky et al. 2013). Gallese and Lakoff, (2005, cited in Chahine 2013, p. 434) further emphasise the role of multimodal and motor-sensory learning with 'bodily movement, use of manipulatives, acts of drawing pictorial displays, verbal language, [and] use of written symbols play a role in understanding concepts'. Chahine (2013, p. 435) further states that 'high-level cognitive processes are fundamentally galvanised by multimodal sensorimotor actions that operate above and beyond the brain'. Modalities are described by Brown and Bryce (2010, p. 33) as 'different ways of sharing meaning [...] where different abilities, senses, and muscles convey understanding or connotation'.

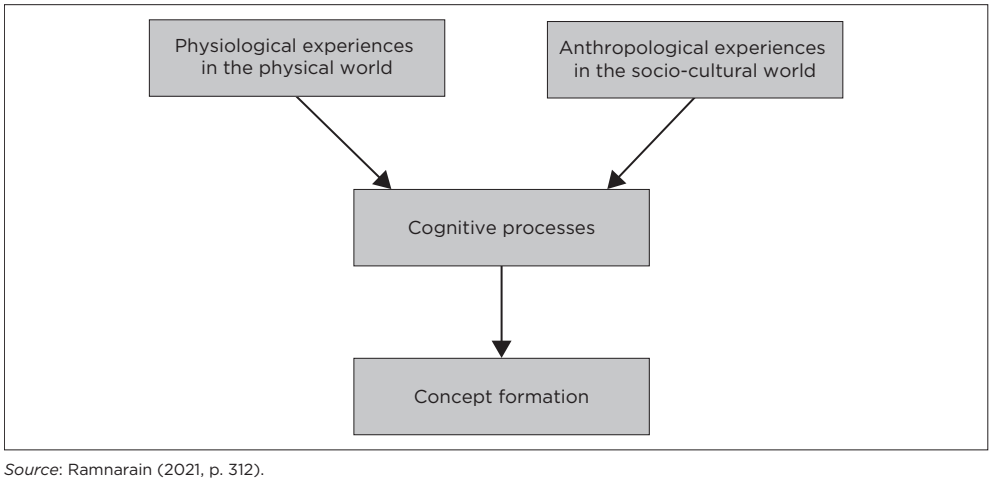
Hardy-Vallée and Payette (eds. 2008) developed the framework of embodied, situated and distributed cognition, which also underpins the excursion. This framework posits 'that cognitive processes are not limited to the symbolic processing of internal information structures, but are in fact embedded physiologically in action, situated in the socio-cultural world and distributed among agents, artefacts and external structures'

(Ramnarain 2021, p. 312). Cognitive processes (neural processes in the brain) are stimulated by physiological experiences in the physical world and anthropological experiences in the socio-cultural world. Figure 2.1 provides Ramnarain's (2021, p. 312) take on embodied, situated and distributed cognition.

Embodied, situated and distributed cognition is also a framework for the excursion. Learning is scaffolded through multimodal (embodied) activities (utilising a pedagogy of play [PoP], where student teachers engage with the learning task as *Homo ludens* [the playing human] [Huizinga 1955]). Learning is contextualised (situated) within a problem-based excursion curriculum. In addition, CL (distributed cognition) assists in bridging the theory–practice divide by providing student teachers with more nuanced understandings of the complexity of the teaching profession.

By engaging in physiological and anthropological experiences, tensions often arise; but this, I claim, could support cognition and learning. This is easier to achieve during the face-to-face excursions but could also be addressed in virtual online excursions. The Veresovian 'dramatical collision', as 'category' in Vygotsky's social-constructivist theory (SCT), could foster deep personal reflection. The excursion curriculum is structured to increasingly facilitate more psychological and social discomfort – or 'disequilibrium' (Lewin 1999) – compared to the more sterile university classroom. De Beer and Henning (2011) state it well:

> In the retreat [*excursion*] context they [*student teachers*] would 'do' the curriculum in a different way; they would 'play' on a safe 'stage' and their scripts would be about the macro-social challenges that a teacher has to face in the micro-context of his/her classroom [...] In the role they take on, students invoke their feelings and emotions, and have cognitive, emotional as well as visceral experiences. (p. 207)



Source: Ramnarain (2021, p. 312).

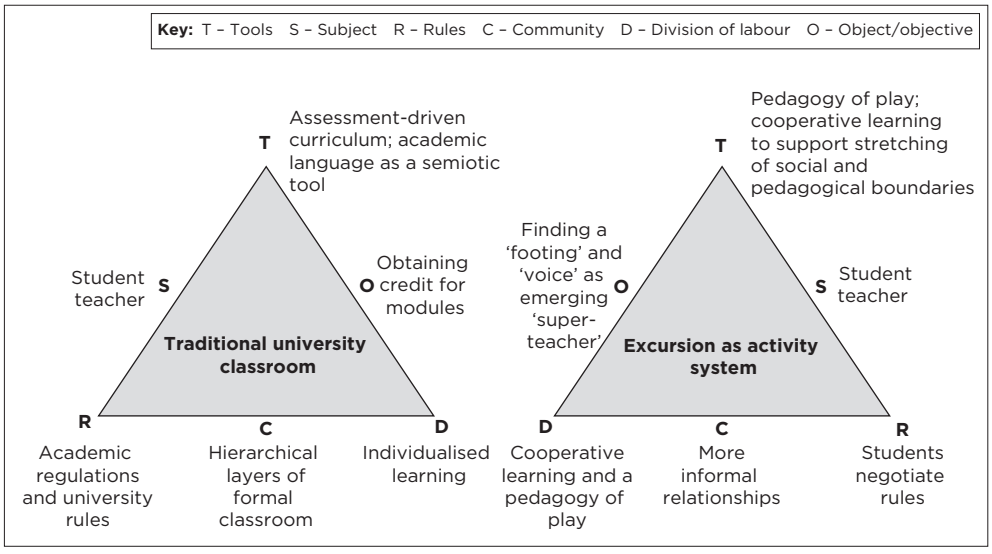
FIGURE 2.1: The integration of cognitive, physiological and socio-cultural systems.

Earlier on in this chapter, reference was made to the fact that such excursions as a form of integrative learning often go against the 'grain of many structural features of campus life' (see the 'Introduction' section). The Deputy Vice-Chancellor at NWU, Professor Robert J Balfour, one of the editors of this volume in the NWU Self-Directed Learning (SDL) Book Series, occasionally received letters of complaint from disgruntled parents after excursions because students from different campuses were brought together for integration, and because of the very critical and honest discourse that became the hallmark of the excursion programme. This, of course, also needs to be viewed in the context of South Africa as a relatively young democracy with a negative history of human rights infringements. As part of the leitmotif of 'becoming a super teacher', a strong focus is placed on the teacher as an inclusive practitioner during the excursion. Student teachers are required to ask themselves those critical questions – 'Am I a racist?' or 'Am I homophobic?', and so on – as these would negatively impact inclusive practices in these future teachers' classrooms. A very conservative (white) parent, as but one example, wrote to the DVC about the fact that his daughter was expected to work in a group with predominantly black students during the excursion and how this impacted her 'constitutional right of freedom of association'. Teacher educators, who acted as facilitators during the excursions, were also occasionally put in stressful situations where they had to defuse explosive conflicts ('dramatical collisions'). One such 'dramatical collision' is described by De Beer, Petersen and Dunbar-Krige (2012, p. 105), where a UJ excursion prompted a student to investigate her own 'confusion about her own racialised self and identity and how this may impact her work as a teacher in a multiracial and multilingual context'. The excursion therefore effectively addresses the concern of Hargreaves (1994) that TEPs often do not address students' emotional development or how to deal with conflict resolution.

A cultural-historical activity theory perspective, conclusion and recommendations for improving the curriculum innovation

Viewing the excursion from a cultural-historical activity theory perspective

To utilise the construct of an activity system (Engeström 1987), the excursion programme (both the face-to-face and online versions) could be seen as an activity system that supports the curriculum of the BEd programme; thus, the university classroom as another activity system. De Beer et al. (2012)



Source: Based on Engeström (1987).

FIGURE 2.2: A cultural-historical activity theory perspective on the excursion (both face-to-face and online virtual excursions).

showed how these two activity systems differ considerably in nature. The latter authors used the different nodes of an activity system to highlight the differences between the excursion and the formal university classroom as complementary activity systems (also see Figure 2.2).

The 'subject' in the two activity systems

The student teachers can be viewed as subjects in the activity systems. The behaviour of first-year students on campus (in the formal lecture room as activity system) can best be described as 'surviving in the academic jungle – passing tests, submitting assignments on time and obtaining admission to the examination' (De Beer et al. 2012). On the contrary, student teachers during the excursion:

> [*H*]ave to find their own educational voice; each student is expected to express his/her educational philosophy and formulate a vision statement [...] constructing a map of their own individual journey and professional growth as teachers. (p. 99)

By thinking and acting as a teacher during the excursion activities, the neophyte teacher starts to develop an own 'professional voice'. Qualitative data collected since these excursions commenced at the UJ in 2006 show that many students over the past fifteen years indicated that the excursion made them realise that they had made the right career choice. The excursion

facilitates the metamorphosis from being a student to being a neophyte teacher.

☐ The 'tools' in the two activity systems

In the formal university classroom, teaching and learning are often:

> [C]haracterised by the use of mostly academic discourse with the lecturer following an assessment-driven curriculum. This academic language and the vocabulary of the curriculum becomes the semiotic tool or mediating artefact. (De Beer et al. 2012, p. 99)

In contrast, the excursion as activity system uses a PoP, in which student teachers' 'social and pedagogical boundaries are stretched or expanded, in the way that the activity theorist Engeström uses the term, requiring students to shift their understanding of social issues' (De Beer & Henning 2011, p. 204). As *Homo ludens* [the 'playing human'], students (in CL fashion) jointly construct knowledge (the 'inter-psychological' category in Vygotsky's theory) during the excursion programme. This often leads to conflict or disequilibrium, and this 'dramatical collision' might result in reflection and deep learning (Vygotsky's 'intra-psychological' category).

☐ The 'object' in the activity systems

Despite the lofty goals set in pre-service TEP, underpinned by the Minimum Requirements for Teacher Education Qualifications (MRTEQ) (Government Gazette 2015), the focus of many first-year students is to pass the examination and obtain credit for a module (De Beer et al. 2012). However, during the excursion, the student teacher is confronted with the notion of becoming a 'super teacher'. De Beer and Petersen (2022) express their surprise at how powerful this construct is and how student teachers embrace the construct of becoming a 'super teacher'. Students' learning and professional development are scaffolded to think and act as teachers during the excursion programme – perhaps more so than during the lectures on campus. De Beer, Petersen and Dunbar-Krige (2012, p. 108) state that 'the excursion provides an opportunity to shift students' learning from focusing solely on assessment tasks as encapsulated in first-year modules to envisage a professional trajectory for themselves as teachers'.

☐ The 'rules' in the activity systems

Some fundamental norms of university culture, rules, and regulations must be followed, even in the most relaxed university classroom. During the excursion as activity system, in contrast, students themselves negotiate rules, and these rules govern their interactions with each other. Such rule negotiation is very important, as research shows that one of the major

reasons for teacher attrition is the tensions among staff. Whitelaw, De Beer and Henning (2008, p. 25) showed that many schools can be considered as 'pseudo-communities of practice' in terms of staff relationships, and that 'the nature of micro-socio-political relations within the school as institution and the positioning of novices within hierarchical structures inhibited their interaction with other teachers and contributed to their isolation'. Again, the excursion and the characteristic 'dramatical collisions' provide students with the skills to negotiate rules and navigate conflicts – probably far better than is the case in the more sterile university classroom. Also, the disequilibrium that students might experience during conflict situations in excursions might assist in formulating specific learning goals for themselves as self-directed learners.

☐ The 'community' in the activity systems

De Beer et al. (2012, p. 100) show that the excursion as activity system is characterised by a more relaxed atmosphere and more informal relationships as compared to the university classroom with its 'hierarchical layers' where 'many first-year students view themselves as being insignificant'. Students come to know the teacher educators (the 'professors') as people who were also once teachers and who share a joint occupation, rather than the more hierarchical structure with power-relations that typifies campus life.

☐ Lastly, the 'division of labour'

The formal university classroom is often characterised by individualised learning, whereas the excursion programme embraces CL (De Beer et al. 2012; De Beer & Petersen 2022). Utilising a PoP, students get the opportunity to embrace 'the other' in relation to themselves (Mockler 2011, p. 3). Important is the fact that – in both the face-to-face and virtual excursions – there is a strong focus on the student teachers thinking and acting like teachers.

■ Recommendations in terms of addressing the challenges accompanying such curriculum innovation

From the earlier discourse, it should be clear that the excursion is a unique activity system, which builds habits of the mind, and through its emotional appeal it acts as a catalyst for integrative learning (Huber & Hutchings 2004, p. 2). As Huber and Hutchings (2004, p. 2) show, 'when students become passionate about their learning, when a topic ignites enthusiasm, integration is more likely to happen'. However, the 'collisions' that also

accompany the excursion push the boundaries of what Vygotsky (1978, p. 87) described as the ZPD to its outer limits. De Beer and Henning (2011) pose a valid question on whether the same outcomes (as envisaged for the excursions) cannot also be achieved in the university classroom. They conclude that:

> [...] the games are not likely to have yielded the same results, had the work been done in the campus curriculum. The main reason for that is that the stage (in a Vygotskyan sense) cannot be set in such a deliberate way, facilitating the appearance of the 'dramatical collisions' as witnessed in the data. (p. 224)

Hyland and Heschkel (2010) argue that institutions themselves, with their firmly cast curricula and bureaucratic rules, often form a barrier to student learning. Teacher education institutions therefore need to look for transformative and innovative strategies to support student learning, and to address the theory–practice divide. Kuh (2008) coined the term 'high-impact educational practices', which includes aspects such as first-year experiences, learning communities, collaborative projects and community-based learning. Excursions as such a high-impact educational practice hold affordances to address some of the perennial issues facing pre-service teacher education. However, it needs to be acknowledged that it poses significant institutional challenges too.

One of the challenges facing teacher education institutions is the high cost of such face-to-face excursions. In 2021, in response to the global COVID-19 pandemic, NWU started to engage in virtual online excursions. Virtual online excursions are far cheaper than the face-to-face excursions, and the only expenses were technical support and providing students with data to participate. This was a resounding success, as demonstrated by Petersen, Mentz and De Beer (2022), who found that all four of the self-directed learning instruments (SDLIs) (Cheng et al. 2010) four domains exhibited statistically significant improvement as a result of the virtual online excursions. These domains are learning motivation, planning and implementing, self-monitoring and interpersonal communication. One of the design features of the virtual online excursion was gamification, and Bunt, De Beer and Petersen (2022) showed how student teachers responded positively to such a pedagogy and how gamification enhanced the learning process. The problem was that the online environment did not result in the same level of discomfort or 'dramatical collisions', and this is an aspect that would warrant further research. One possible solution might be to look at the affordances of mixed-reality technology (MRT) in future. Milgram and Kishino (1994) first introduced the construct of MRT, which enables physical world enhancement through augmented reality (AR) and digital world interactivity through virtual reality (VR). Vasilevski and Birt (2020) show that such MRT could create an immersive learning environment. The latter authors (Vasilevski & Birt 2020) state:

> The aim is to extend existing course learning outcomes of professional skill development in real-world environments, by focusing on strategic and analytical thinking abilities using situated authentic learning, self-analysis and reflective learning skills. (p. 2)

Despite the affordances that technology holds, research also shows that the lack of physical interaction and the face-to-face presence of people in online learning environments may lead to students feeling isolated (Coman et al. 2020).

Not excluding the affordances that virtual and AR technology hold to enhance student engagement in online learning platforms, the face-to-face excursions do set a Vygotskyan stage that addresses both cognitive and affective outcomes. The face-to-face excursions further provide the opportunity for students to find their own 'voice' and 'footing' as young teachers. There are various ways of addressing the high costs of these excursions. The UJ, for example, created a module code for the excursion, and students were expected to pay a nominal fee for the module as part of their overall registrations. The student fees were further supplemented by funding that the university made available. In the case of NWU's virtual excursions, the university successfully applied for a University Capacity Development Grant (UCDG) from the DHET that covered the costs of the excursion.

Another aspect that needs attention, is how some of the design elements of the excursion could be transferred to the university classroom. Research conducted over the past fifteen years has shown how the PoP supports SDL and how the leitmotiv of 'becoming a super teacher' catapults professional development. The excursion subscribes to prolepsis, a technique whereby a learning opportunity is 'structured in a way that assumes that the students know more than they actually do' (Van Lier 2004, p. 153). According to De Beer and Gravett (2020), the teacher educator can investigate the ideal gap between the student teacher's actual and potential development by employing a proleptic approach to teaching. The question that still needs to be explored is to what extent such pedagogies and prolepsis materialise in the university classroom.

Conclusion

In conclusion, the first-year student excursion (both face-to-face and virtual online) is an example of what Huber and Hutchings (2004) call 'institutional scaffolding' – courses that invite students to develop multiple perspectives, develop problem-solving abilities, and develop agency to make a difference in society. The excursion provides a unique learning space for students to work on their own professional identities. As Mockler (2011, p. 7) states,

'the process of articulating one's professional identity is in essence about teachers developing own personal philosophy of education that grows out of who they are, what they believe', and the student excursion provides a platform for such introspection. Despite the published benefits of these excursions, innovative approaches would be needed to ensure their sustainability in the long run.

Ethical clearance

Ethical clearance was obtained and described in Chapter 1.

Chapter 3

Affordances and barriers of face-to-face and virtual online excursions to foster self-directed learning in pre-service teacher education: Distilling design principles

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Abstract

This chapter reports empirical findings on student teachers' self-directed learning (SDL) during an online virtual excursion. The research reported on is guided by the research question: To what extent do the design principles of the excursion contribute to counteracting the barriers that might prevent fostering SDL in virtual learning environments? Design principles guide the rhizomic development of the excursion programme; the excursion is revised annually, based on the empirical data and findings of the previous year's excursion. This chapter sheds light on the cognitive, communication and environmental barriers that might inhibit SDL in an online environment. The authors then show how design principles underpinning the excursion attempted to overcome such barriers. One specific design principle is discussed in depth, namely, the use-value of the leitmotif of becoming a super teacher and how it could enhance student motivation. This was a mixed-methods study, and the SDL instrument was used to collect quantitative data, which is reported in this chapter. The emphasis, however, falls on the qualitative data that show that the online virtual excursion holds affordances in enhancing SDL, as students are expected to set learning goals for themselves, to manage and take responsibility for their own learning. Given the rhizomic development of this design-based research (DBR), we use the third-generation cultural-historical activity theory (CHAT) as a lens to juxtapose the current virtual online excursion with the former face-to-face excursion to highlight differences in the affordances and tensions in the two activity systems. The two activity systems should be seen mutually in a research context, as insights gained from the one could inform the design principles of the other activity system.

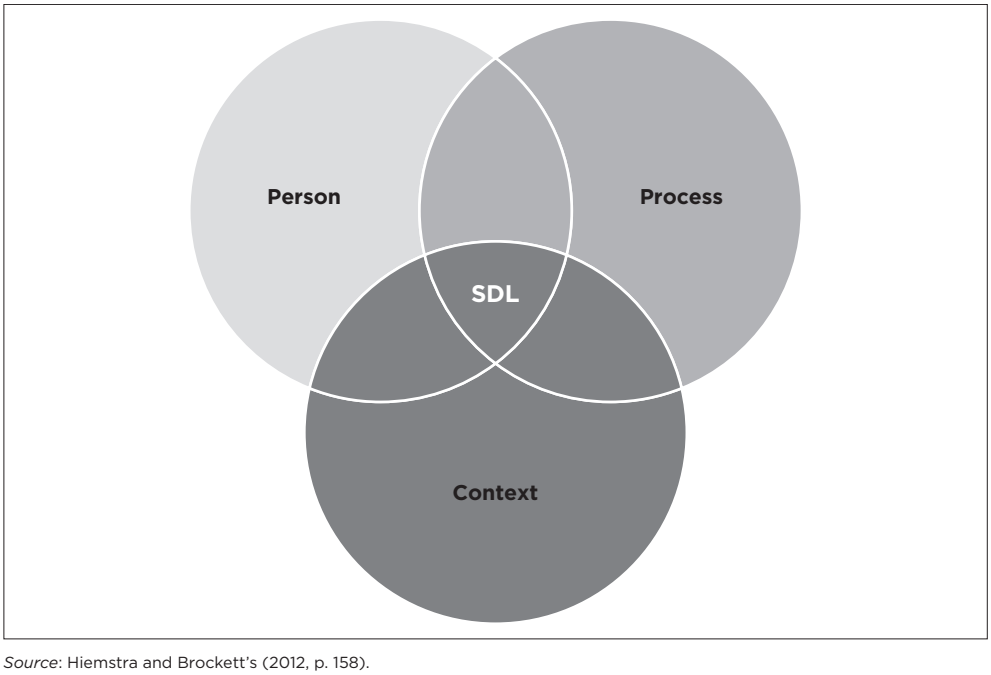
Introduction

When the coronavirus disease 2019 (COVID-19) pandemic and the resulting national lockdown restrictions and safety measures prevented the annual face-to-face excursions from occurring in 2020, the North-West University (NWU) Faculty of Education, South Africa, had to reinvent the 2021 excursion, as it had to be reconsidered and conducted in an online environment. As one of the outcomes of the excursion is to sensitise student teachers to the affordances of SDL in pursuing their own professional development goals, SDL underpinned all the design principles of the virtual online excursion. Based on the success obtained with the virtual online excursions in 2021, the basic format of the excursion was maintained in 2022, but with an intention to address some of the barriers to learning that emerged from the data-analysis in the 2021 virtual excursion

programme. Among the problems flagged in 2021 was the aspect of emotional engagement in the online environment, establishing a learning space that would support 'dramatic collisions' (see ch. 2) and improving the effectiveness of cooperative learning (CL) in breakaway groups (Lubbe & Petersen 2022). There was also an added focus on entrepreneurial learning (see ch. 6).

Self-directed learning as key to the design of the excursion

Sun et al. (2022) state that online learning holds the potential to make learning more student-centred. However, to maximise learning gains in an online environment, students should be scaffolded in demonstrating the characteristics of a self-directed learner. Self-directed learning therefore becomes the *sine qua non* in the online learning environment. We were guided by the insights of Hiemstra and Brockett (2012) when designing the excursion, as they developed the person-process-context (PPC) model for SDL (see Figure 3.1).



Source: Hiemstra and Brockett's (2012, p. 158).
Key: SDL, self-directed learning.

FIGURE 3.1: Person-process-context model.

An essential element is the further development of the characteristics of a self-directed learner in every student teacher, such as creativity, critical reflection, motivation, resilience and self-concept as part of the *person* dimension in the model, as shown in Figure 3.1 (Hiemstra & Brockett 2012, p. 158). The *process* dimension is also important, as it involves 'the teaching–learning transaction, including facilitation, learning skills, learning styles, planning, organising and technological skills' (Hiemstra & Brockett 2012, p. 158). Often, the context dimension in SDL is marginalised (Merriam 2001). Candy (1991, p. 311) is of the opinion that '[the] term self-direction has misled many into elevating the individual above the collective – but the nature of knowledge and learning inherently puts learners in relationship with others'. The context should, therefore, also consider how CL could be used to enhance SDL. Hiemstra and Brockett (2012) state that:

> [*O*]ne of the most contested aspects of [*SDL*] over the years has been that it focuses on the individual learner without considering the impact of the [*socio-political*] context in which such learning takes place. (p. 159)

In the excursion context, student teachers should explore the significance of factors such as culture, power, gender, political milieu and sexual orientation in terms of teaching and learning in a safe space that the excursion programme provides.

The contexts of a virtual online excursion and that of face-to-face excursions might seem rather different but are underpinned by the same principles, as they aim to enhance SDL. The context of excursions (both face-to-face and virtual) is characterised by a seemingly binary nature, namely that it seeks to provide both a safe and a conflicting space. Petersen, De Beer and Mentz (2020, p. 119) show how the face-to-face excursion 'becomes a laboratory, where student teachers can learn, experiment and interrogate practices with theoretical lenses, but in a "safe" space'. In this space (context), students should feel safe despite the cognitive and emotional dissonance that they might experience as a result of the nature of the learning activities. Research literature published since the start of the COVID-19 pandemic generally show that online learning is often associated with student anxiety, stress and depression. Azmi, Khan and Azmi (2022) relate that virtual learning in the COVID-19 context led to high levels of depression among students in Saudi Arabia. The research by Pennino et al. (2022) indicated that students' learning in the United States of America (USA) was compromised during the COVID-19 lockdown and its resulting online learning because of compromised mental health and increased anxiety. Petersen et al. (2020, p. 119) state that 'a well-structured excursion should be characterised by authentic learning opportunities, characterised by uncertainty and discomfort'. Similar sentiments were expressed by De Beer and Henning (2011, p. 2), who suggested that the face-to-face excursion's learning process should push the social and

pedagogical limits of student teachers in the 'way that the activity theorist Engeström uses the term, requiring students to shift their understanding of social issues by means of play'. Given the context of increased anxiety and stress in a COVID-19 context in an online environment, a fine balance should be maintained between challenging students while still ensuring that they feel safe, creating an environment conducive to fostering SDL while ensuring that barriers to learning are limited. The virtual excursions were therefore built on carefully selected and implemented design principles to counteract possible barriers in order to create an environment to foster SDL. In this chapter, the research question was: To what extent did the design principles of the excursion contribute to counteracting the barriers that might prevent fostering SDL in virtual learning environments?

In the paragraphs that follow, the barriers pointed out by Kohan et al. (2017) are highlighted, but at the same time the authors also indicate which design principles have been introduced to limit the effects of these barriers on fostering the students' SDL. There is also a focus on how becoming a super teacher as leitmotif and design principle hold affordances to enhance learner motivation, which is an important domain in SDL. By possibly prompting SDL through the use of this leitmotif, cognitive and communication barriers, as described in the next section, might be addressed.

Possible barriers to self-directed learning in an online environment and design principles to counteract the barriers

Refining existing or distilling new design principles is a rhizomic process, and we were guided not only by the data and findings of the 2021 virtual excursion but also by research literature in the field.

Song and Hill (2007) indicated that online learning situates control of learning with the learner and enhances SDL. However, Kohan et al. (2017) showed that the online environment poses a number of possible barriers to fostering SDL, namely, cognitive, communication and environmental barriers. The barriers identified by Kohan et al. (2017) are a useful cluster of a more comprehensive list of barriers identified by authors such as Muilenburg and Berge (2005).

Cognitive barriers

Cognitive barriers could include aspects such as 'information overload' and a 'lack of focus on learning (mind-wondering)' (Kohan et al. 2017, p. 119). Kohan et al. (2017, p. 119) state that 'mind-wondering means diversion of attention and focus from the main task'. The online learning environment

could expose the students to vast volumes of information, which could lead to an information overload. A context should be created that would limit cognitive barriers to learning. The design principles of this virtual online excursion aimed to filter information and to ensure that student teachers do not get lost in the detail:

- It was a synchronous virtual event where they maintained a sense of personal interaction and connection to keep their attention on the issue at hand ('be present in the moment').
- The virtual excursion was characterised by a pedagogy of play (PoP) and gamification, which allowed the students to engage as *Homo ludens* [the playing human] to keep them actively involved in the learning task, which lowered the risk of them experiencing a cognitive overload.
- Literature shows that problem-based learning (PBL) holds affordances to enhance SDL and should underpin learning in the online environment (Barrows 1983; Ozuah 2001). In order to prevent the students from experiencing the excursion as overwhelming, it was first introduced with a seventeen-minute-long video. The video is a dramatisation that portrays a diary of some of the challenges a newly-appointed principal struggles with at a troubled school. The different scenarios in the video diary depict different authentic ill-structured challenges that are common in many South African schools (which many of the students can identify with). This video diary served as the driver of all the small-group breakaway sessions where the students had to reflect on the problem and propose possible solutions.
- The literature (Johnson & Johnson 2019) also shows that CL holds affordances to enhance SDL. The small-group breakaway sessions were conducted in CL fashion, applying the five principles coined by Johnson and Johnson (1994) (see ch. 2). The CL sessions kept students engaged, and they were also monitored by a facilitator who could have popped into the breakaway rooms at any time to listen in and provide further probing, scaffolding the groups to find answers to the particular problem under discussion.
- A user-friendly learning guide and short videos about CL were also provided to student teachers to better contextualise the learning activities.

All of these points were included in the design and attempted to address cognitive barriers in the online environment.

Communication barriers

Communication barriers in an online environment are another important aspect which should be addressed in the learning intervention. Kohan et al.

(2017) indicate that there often exists ambiguity in the online learning space, with inconsistency between the expectations of students and their teachers or lecturers. Frequently, the respective roles of lecturers and students in the online learning space are not clearly defined, and this could also be a result of the inability to communicate these roles and expectations:

- To avoid the occurrence of these ambiguities, one of the design principles was that the excursion was a synchronous learning opportunity. During the planning phase, the authors were cognisant of the fact that the students should see the lecturers or presenters as facilitators in real-time, as communication in real-time could mitigate the communication barrier. The roles were clearly articulated so that the presenters acted as facilitators of learning while the students were also co-creators of knowledge.
- Another communication barrier to SDL is the inadequate writing skills of students. Students have to communicate with classmates and lecturers, and many students are anxious about their 'formulation of ideas and their effective textual expression' (Kohan et al. 2017, p. 120).
- In a synchronous context, such as in this online excursion, students might even be more anxious about their communication skills, especially in a language with which they are uncomfortable. Our experiences of previous excursions are that a lot of students felt hesitant to verbally communicate their points of view in English during plenary sessions. In South Africa, a country with twelve official languages, only a small percentage of students have English as their home language, and we therefore had to plan to address this barrier. During the 2022 virtual excursion, the presenters acknowledged this as a challenge and motivated the students to speak or write in the chat box irrespective of the correctness of English grammar or spelling. The presenters provided a safe place by providing assistance as needed.

By addressing potential communication barriers, we hope to promote the interpersonal communication (IC) domain of SDL (Cheng et al. 2010).

Educational environment barriers

When looking at the educational environment barriers, Kohan et al. (2017) show that students often lack the necessary preparation and skills for adaptation to a virtual learning space. For some students the move from a face-to-face learning space to an online learning space is accompanied by anxiety and self-doubt, and therefore the necessary support structures should be built into the online learning platform.

The virtual excursion was designed to include the three essential components of the online environment: cognitive presence, social presence,

and teaching presence (Fiock 2020). During the planning session, our assumption was that the 2022 cohort of first-year BEd students should not experience online learning as problematic or challenging based on their exposure to online learning during their Grades 11 and 12 years during the COVID-19 pandemic.[2]

While the previous three sections deal specifically with the design principles to mitigate the barriers mentioned by Kohan et al. (2017), the following section specifically describes how the context, conducive to fostering SDL, can be created. An important design principle for a successful virtual online excursion is to create a safe learning space for professional development. Next, we discuss how the leitmotif of 'becoming a super teacher' can also counteract the discussed barriers and possibly enhance SDL.

Designing a conducive context for self-directed learning: The utility value of the 'becoming a super teacher' leitmotif

Dweck (1986) showed that the usefulness of learning content is an important determinant of particular learning behaviours. The virtual online excursion has been built on the concept of 'becoming a super teacher'. Just like a superhero always has certain superpowers, a super teacher should also further develop their individual strengths and set learning goals for themselves (as self-directed learners) in terms of professional development. In various publications (De Beer, Petersen & Van Vuuren 2020; De Beer et al. 2022), the success of the leitmotif of becoming a super teacher has been mentioned, but here we would like to justify it from a utility value perspective.

When students are interested in a topic or field, they will be more academically engaged in the lesson and pay better attention (Harackiewicz, Smith & Priniski 2016). Harackiewicz et al. (2016) show that interest is:

> [*B*]oth a psychological state characterised by increased attention, effort and affect, experienced in a particular moment (*situational interest*), as well as an enduring predisposition to re-engage with a particular object or topic over time (*individual interest*). (p. 2)

In the development of the virtual online excursion, we implemented an ill-structured problem that had to be solved – the video diary shown to them was to contextualise the learning and for which students had to find solutions to the problems faced in a dysfunctional school. The aim of the PBL was to enhance *situational interest* in the student teachers.

2. All students were provided with 10 gigabytes of web-data to use Zoom as a platform for the virtual excursion (see ch. 1).

Such situational interest blends cognitive objectives (such as focused attention and perceived value) with emotive characteristics (such as enjoyment and excitement) (Harackiewicz et al. 2016; Hidi & Renninger 2006). Being in such a state of interest means that 'affective reactions, perceived value, and cognitive functioning intertwine, and that attention and learning feel effortless' (Harackiewicz et al. 2016, p. 2). Furthermore, we introduced novel, ambiguous and surprise elements into the design of the virtual online excursion to provide a context that would grab the student teachers' attention and arouse their interest. This situational interest can be prolonged if the task is meaningful and involving. Learning activities to enhance motivation were built around the construct of becoming a super teacher, as student teachers might find it valuable and meaningful. Research by Harackiewicz et al. (2016, p. 223) highlights the importance of value-related beliefs, which can be defined as 'perceived usefulness and relevance to the student's identity and both short- and long-term goals'. Previously published studies on this topic indicated that students buy into the construct of becoming a super teacher (De Beer et al. 2020, 2022), and by acknowledging the value of the construct, it might enhance the achievement of learning outcomes. For instance, Harackiewicz et al. (2016) demonstrate that when students see the value in their course material, they become more engaged, put in more effort, stick with it longer, and perform better. This perception of the value of learning content also plays an important role in another prominent motivation theory: the expectancy-value theory (EVT).

According to the EVT, a student's subjective task value and expectation of success have a direct impact on their accomplishment choices, effort, perseverance and performance (Sun et al. 2022). The value that students perceive in a construct (in this case, becoming a super teacher) determines its 'attractiveness to pursue' it (Wigfield 1994, p. 50), and this is an important determinant for success.

We therefore claim that the use of the construct of a super teacher holds affordances for enhanced learning engagement. Student involvement, according to Fredricks, Blumenfeld and Paris (2004), has three components: behavioural engagement, emotional engagement and cognitive engagement. Student actions, including effort, persistence, concentration, attention, asking questions and participating in class discussions, are all examples of behavioural engagement (Fredricks et al. 2004, p. 62). Emotional engagement denotes affective reactions by students, including curiosity, boredom and worry. Investing in learning, self-regulation, going above and beyond the call of duty and a propensity for a challenge are all stressed by cognitive engagement (Fredricks et al. 2004, p. 62). The synergy between utility value and student engagement creates the ideal platform for the professional development of the neophyte teacher.

Method

This research was guided by the following research question: To what extent did the design principles of the excursion contribute to counteracting the barriers that might prevent fostering SDL in virtual learning environments?

The methodology part of this chapter will focus on the research paradigm and design, data-collection instruments, sampling, data-analysis through CHAT as a research lens and the ethical considerations that navigated the research.

Research paradigm

Pragmatism was used as the research paradigm for the mixed-methods study reported in this chapter. According to Cherryholmes (1992), Morgan (2007), and Creswell (2014), pragmatism serves as the philosophical cornerstone for mixed-methods research. Firstly, pragmatism is not restricted to any one ontology or epistemology and researchers who use mixed methodologies combine qualitative and quantitative viewpoints to achieve their objective. Secondly, the pragmatist paradigm gives researchers the freedom to select the study methodologies, strategies and procedures that best meet their needs and goals to get answers to the research question.

Mentz and De Beer (2021) indicated that quantitative research to determine the students' SDL gain after an intervention might not be sufficient to report on the full picture of SDL enhancement. This is especially the case if the intervention is only over a short period of time, as was the case with the virtual excursions stretching over two days (eight hours). They found that the use of CHAT as a lens to interpret mixed-method data to determine the effect of the intervention on students' SDL provides a more nuanced understanding of the environment and the factors influencing SDL.

Reporting on our findings, we therefore use CHAT to conduct a secondary analysis of the findings. The affordances of face-to-face excursions have been reported in many publications (De Beer & Henning 2011; De Beer, Petersen & Dunbar-Krige 2012; De Beer et al. 2020). More nascent research has been conducted on virtual online excursions as well (De Beer et al. 2022), and in this chapter, the findings will be unpacked, and the online virtual excursions will be compared with face-to-face excursions, using CHAT as a research lens. Cultural-historical activity theory is a versatile meta-theoretical framework that can help the researcher comprehend data from complex activity systems, as demonstrated by Mentz and De Beer (2019).

Such a complex and strong meta-theoretical framework and lens are required, given the complexity of SDL and all the variables at play in learning environments. In this CHAT analysis, we specifically look at the barriers which can lessen the fostering of SDL in the two activity systems and establish whether there is a 'contradiction of control' (McNeil 2013). These findings might be useful in designing excursion contexts that can best foster SDL for future excursions.

Research design

Based on the weight of the qualitative and quantitative data and the fact that it is collected concurrently or sequentially, various mixed-methods typologies exist. Combining qualitative and quantitative research in one study or across the stages of the research process is known as a fully mixed sequential dominant status design, where the quantitative and qualitative phases take place one after the other at a stage or across stages (Leech & Onwuegbuzie 2009). This study applied a fully mixed sequential dominant status design where qualitative data have the dominant status (QUA:quan).

Measuring instruments and data-gathering instruments

The fundamental premise of mixed-methods research is to rely on a variety of data sources to achieve a comprehensive grasp of the study problem rather than relying solely on a qualitative or quantitative research methodology (Creswell 2014). Quantitative data originate from close-ended data sources like tests, questionnaires or psychological instruments, whereas qualitative data are acquired from open-ended sources that typically do not have predesigned responses (Creswell 2014).

Qualitative data were collected by means of an open-ended questionnaire completed two weeks after the excursion with the submission of participants' group assessment task, as well as polling questions during the course of the excursions (see ch. 1). The qualitative data collected shed more light on students' experiences of cooperative- and problem-based learning in the context of online virtual excursions.

We used the self-directed learning instrument (SDLI) (Cheng et al. 2010) to gather quantitative data about students' perceptions of their SDL abilities as a pre- and post-test. The SDLI has 20 questions on a 5-point Likert scale, developed to cover four domains – learning motivation (LM), planning and implementing (P&I), self-monitoring (SM) and IC. Learning motivation can be defined as (Cheng et al. 2010, p. 1155, cited in Petersen et al. 2020):

> The inner drive of the learner as well as external stimuli that drive the desire to learn and to take responsibility for one's learning, planning and implementing as the ability to independently set learning objectives, and to use appropriate learning strategies and resources in order to effectively achieve learning goals, self-monitoring as the ability to evaluate one's learning process and outcomes, and to make progress and [...] interpersonal communication as the ability of learners to interact with others to promote their own learning. (p. 132)

Population, sampling and participants

The virtual excursion was compulsory for all contact and distance first-year BEd students. A total of 2,200 students, representing all three campuses of the NWU, registered for the excursions in 2022. Even though the attendance of the excursion was compulsory, all students were invited to participate in the data-collection process. Only those students (n = 1,424) who provided their informed, voluntary consent were requested to complete the data instruments. A disappointing development was that from the 1,424 students who provided consent, 1,118 completed the pre-SDLI, only 115 completed the pre- and post-SDLI and only 148 completed the qualitative post-excursion reflective open-ended questionnaire (PERQ). There were four polling questions posed to the students during the excursions and participation therein varies between 1,175 and 1,652 students (see Table 1.2 in ch. 1).

Data-analysis

The reliability of the four questionnaire domains was first assessed when analysing the quantitative data. For each domain of the SDLI, means, scores and standard deviations were calculated. The NWU Statistical Consultation Services analysed the SDLI data and reliability was established before a paired-sample test was conducted to identify any practically significant differences between the pre- and post-tests.

Thematic data-analysis was used to analyse the qualitative data. During a thematic analysis process, the different data sets are grouped according to their similarities by using Saldaña's (2009) process of coding. The process includes coding and categorisation, resulting in the emerging themes. We have utilised a combination of both the inductive and deductive approaches, as described by Schadewitz and Jachna (2007). While the deductive technique begins with a theoretical framework and uses the facts to verify or refute the notion, the inductive approach involves using the evidence to produce ideas or themes. The emerging themes helped us to make sense of the data and refine the findings. The findings were further analysed by using CHAT as the research lens and were presented in thick descriptions.

Next, we provide a brief discussion of some of the ethical considerations that guided the research.

Ethical considerations

Two aspects with regards to ethical considerations were adhered to. Firstly, the national and international guidelines, and those of the institution where this study was done, were followed. Secondly, ethical clearance was obtained and described in Chapter 1.

Results and findings

Quantitative results

Before conducting a paired-sample test to identify any practically significant variations between the pre- and post-test, the reliability of the SDLI was first established.

With regards to the reliability of the questionnaire, we obtained a good overall Cronbach's alpha (α) value of 0.912, as indicated in Table 3.1, with all factors above 0.7 indicating an acceptable reliability.

The descriptive statistics for the four factors of the SDLI (pre- and post-test) are shown in Table 3.2 with the data of the paired *t*-test to determine if there are any practical significant differences between the pre-test, before the excursion, and the post-test after the excursion. From a possible 2,200 students who participated in the excursions, only 1,400 provided consent to use their data. The completion of the pre- and post-tests was not compulsory, and even though they provided consent for their data to be used, they still had to complete both the pre- and the post-test to be included in the paired *t*-test. Unfortunately, only 115 students completed the pre- and post-test and only those data could be used in the analysis of the results; thus, the indications provided need to be treated tentatively.

TABLE 3.1: Reliability of self-directed learning instrument.

Factor	Cronbach alpha (α)
LM	0.859
P&I	0.882
SM	0.886
IC	0.736
Overall	0.912

Source: Authors' own work,
Key: LM, learning motivation; P&I, planning and implementing; SM, self-monitoring; IC, interpersonal communication.

TABLE 3.2: Mean, standard deviation and *d*-value for questions of the self-directed learning instrument (pre-test and post-test).

Domain	Statement	*n*	Pre-test		Post-test		*p*-value	*d*-value (Practical significance)
			Mean	Standard deviation	Mean	Standard deviation		
Learning motivation	S01: I know what I need to learn	115	4.02	0.93	4.29	0.98	0.02	0.23
	S02: Regardless of the results or effectiveness of my learning, I still like learning	115	4.38	0.83	4.57	0.76	0.05	0.19
	S03: I strongly hope to constantly improve and excel in my learning	115	4.66	0.75	4.64	0.80	0.78	0.03
	S04: My successes and failures inspire me to continue learning	115	4.67	0.77	4.65	0.73	0.85	0.02
	S05: I enjoy finding answers to questions	115	4.50	0.82	4.44	0.84	0.45	0.07
	S06: I will not give up learning because I face some difficulties	115	4.68	0.70	4.64	0.77	0.71	0.03
Total LM	–	**115**	**4.49**	**0.65**	**4.54**	**0.57**	**0.48**	**0.07**
Planning and implementing	S07: I can pro-actively establish my learning goal	115	4.20	0.85	4.30	0.88	0.38	0.08
	S08: I know what learning strategies are appropriate for me in reaching my learning goals	115	4.24	0.84	4.33	0.82	0.31	0.10
	S09: I set the priorities of my learning	115	4.37	0.80	4.48	0.77	0.28	0.10
	S10: Whether in the classroom or on my own, I am able to follow my own plan of learning	115	4.24	0.88	4.17	0.94	0.52	0.06
	S11: I am good at arranging and controlling my learning time	115	3.93	1.03	4.00	0.95	0.50	0.06
	S12: I know how to find resources for my learning	115	4.00	0.96	4.09	0.92	0.39	0.08
Total P&I	–	**115**	**4.16**	**0.68**	**4.23**	**0.68**	**0.38**	**0.08**
Self-monitoring	S13: I can connect new knowledge with my own personal experiences	115	4.11	0.91	4.17	0.96	0.64	0.04
	S14: I understand the strengths and weaknesses of my learning	115	4.24	0.91	4.36	0.90	0.26	0.11
	S15: I can monitor my learning progress	115	4.13	0.87	4.22	0.94	0.41	0.08
	S16: I can evaluate on my own my learning outcomes	115	4.07	0.92	4.12	0.97	0.62	0.05
Total SM	–	**115**	**4.14**	**0.78**	**4.22**	**0.78**	**0.37**	**0.08**
Interpersonal communication	S17: My interaction with others helps me plan for further learning	115	4.14	0.95	4.31	0.87	0.13	0.14
	S18: I would like to learn the language and culture of those whom I frequently interact wit	115	4.40	0.87	4.38	0.93	0.86	0.02
	S19: I am able to express messages effectively in oral presentations	115	3.74	1.02	3.94	0.91	0.05	0.18
	S20: I am able to communicate messages effectively in writing	115	4.33	0.84	4.37	0.84	0.65	0.04
Total IC	–	**115**	**4.15**	**0.69**	**4.25**	**0.68**	**0.21**	**0.12**
Total SDL	–	**115**	**4.23**	**0.63**	**4.31**	**0.59**	**0.29**	**0.10**

Source: Authors' own work, based on the self-directed learning instrument of Cheng et al. (2010).
Key: LM, learning motivation; P&I, planning and implementing; SM, self-monitoring; IC, interpersonal communication.

It is clear from the low *d*-values obtained (see Table 3.2) that no practical significant differences were obtained between the pre- and post-tests of student responses, in contrast to the findings obtained in the 2021 cohort (Petersen, De Beer & Mentz 2022). It can, however, be noted that extremely high mean scores were obtained from students on all items even before the start of the excursion. Only two questions (S11 and S19) have a mean score slightly below 4, and in the post-test those scores both increased, leaving only S11 still having a mean score slightly below 4. This implies that students were of the opinion that they are highly self-directed even before the start of the excursions. There is an improvement in mean scores in the post-test in all four domains and on most of the questions in each category (see Table 3.2).

An interesting observation is that this cohort of students displayed higher mean scores in eighteen of the 20 questions of the SDLI in the pre-test, compared to the 2021 cohort (see Petersen et al. 2022, p. 90). A possible reason might be that the COVID-19 pandemic enhanced SDL among the 2022 cohort of students, who experienced two school years of hybrid learning.

Qualitative data

The findings of the qualitative data will we unpacked on two levels. The first part describes if and how the design principles contributed to overcoming the three barriers (cognitive, communication and environmental) described by Kohan et al. (2017), while the second part focuses on three themes that might have contributed to fostering the students' SDL and counteracting learning barriers. The PERQ was used as the data source reported further.

Overcoming cognitive barriers

In order to determine if the design of the excursion overcame the possible cognitive barriers identified by Kohan et al. (2017), we analysed the data to determine any reference to cognitive barriers faced by the students. The data indicated that the students appreciated the video shown at the beginning of the excursion that depicted the challenges the principal faced. The manner in which the video was implemented and discussed, using CL and PBL strategies, indeed played a role in reducing potential cognitive barriers, especially with regard to a lack of focus. Participants indicated that it provided an optimal learning experience. We identified three *sub-themes* in how cognitive barriers were addressed.

Positive affective outcomes were achieved, such as enjoyment, interest and motivation, that counteract cognitive disengagement

Students described the excursion as fun and enjoyable (PoP). This finding is evident in the following comments made by the students.

> 'I experienced interaction with my fellow education students and it was fun and interesting.' (Student teacher, May 2022, PERQ)
>
> 'I enjoyed the videos, because they gave me motivation on how to overcome the challenges I'll face in my classroom in the near future.' (Student teacher, May 2022, PERQ)

The problem-solving approach led to engaged learning, as one student commented:

> 'The experience was good because they gave us problems to solve, those problems are things we as future teachers should not do. The problems were not only for us to solve and get marks but for us to work on our [super]power to make sure we don't face those problems.' (Student teacher, May 2022, PERQ)

Cooperative learning creates peer interaction that counteracts cognitive disengagement.

It is clear from the data that an overwhelming number of student participants who completed Question 6 of the open-ended questionnaire had a positive experience working in groups. Student responses indicate that it added to their learning and the reliance on group members to find solutions to the problems during the breakaway sessions. This assisted students in not experiencing an information overload because peer interaction was used as a good scaffold to support learning.

> 'During the virtual excursion I got exposed to teamwork and how to manage my time effectively. I got very participative group members which made everything so easy for everyone because they were engaging and keeping the communication going.' (Student teacher, May 2022, PERQ)
>
> 'It [*working in CL groups*] pratically made us feel as we are teachers.' (Student teacher, May 2022, PERQ)
>
> 'It was the best experience because I gained more knowledge regarding other people's views and ideas in the group, we shared different opinions and everyone was given a chance to put their views. In our group, we made sure that we collaborate more often and that we didn't have a problem regarding not being on the same campus with other members.' (Student teacher, May 2022, PERQ)

It is also clear from these quotes that the students enjoyed working with other group members, listening to and respecting other opinions and cultivating a sense of belonging as NWU students. A few students indicated that connectivity or network issues and loadshedding played a role in not having an effective CL experience. In the entire open-ended questionnaire

(*n* = 148), there were 54 references made to network, 20 to electricity load shedding, and seven mentioned online connectivity problems. We are therefore of the opinion that the scaffolding of CL was done well and reduced information overload. However, connectivity, network and load shedding contributed to an increase in the cognitive load of the students who experienced these challenges.

> 'I faced many challenges during the virtual excursion which are load shedding and connection problems, but I made sure that I overcome these problems by changing where I was sitting the previous day so that I will be able to attend the virtual excursion.' (Student teacher, May 2022, PERQ)

> 'It was tricky to be in a group where fellow members are further away and communication is based on social media and phone calls. Sometimes others experience network connectivity problems and we all have different daily schedule.' (Student teacher, May 2022, PERQ)

The downside of the CL experience in the excursion is that there are a number of students who reported less-than-ideal experiences. As was expected from students working in a group, there were some complaints that not everyone participated. Nine students (*n* = 148) reported that not everyone participated in their groups. A further five students reported that group work was the worst experience without specifically mentioning why. In some cases, poor communication was a result of connectivity or load shedding problems, but in other cases, some students simply did not take part in the discussions.

> 'It was very bad [...] students refused to participate.' (Student teacher, May 2022, PERQ)

> 'Communication and commitment can be better.' (Student teacher, May 2022, PERQ)

> 'We had one member who did not participate at all, but overall, it was fun meeting other students from different campuses, although I was the only one from Vaal campus better.' (Student teacher, May 2022, PERQ)

In spite of continuously referring back to the video diary and that students' group roles should shift with each breakaway session, some students acknowledged the fact that they were easily distracted by social media. Mind-wondering was therefore still a barrier during this virtual excursion for some students, as is evident in the following comment:

> 'I easily get distracted by social media and lose time by spending it there rather than on my schoolwork. I need to cut on social media and use my time wisely and productively better.' (Student teacher, May 2022, PERQ)

The factors that appear to have either prevented or distracted students from participating more fully led us to consider educational and environmental barriers in more detail in the sections to follow.

Educational and environmental barriers

Kohan et al. (2017, p. 120) showed that the 'majority of students had trouble using limited opportunities'. The same authors make the assumption that successful students in virtual schools make the most of their time constraints. We argue that, during a synchronous virtual event such as the excursion, participants might experience more pressure because they have to participate in real-time in a particular time slot. They should therefore be able to understand the problem first, in order to have critical group discussions, look for suitable resources and come up with solutions, all within the allowed time slot. Question 11 in the open-ended questionnaire asked: 'Which factors impede your learning?'. We identified three sub-themes.

Time management

A number of students indicated that they should work on their time-management skills. One student, for example, noted:

> 'Time management. Recently I've noticed that sometimes I lose track of time and find myself panicking at the last minute. If I could manage my time properly, I would save myself a lot of unnecessary stress. That is what I'm working on right now, doing things on time.' (Student teacher, May 2022, PERQ)

A few students indicated that they have a tendency to procrastinate, which consequently causes stress and anxiety. One example of a response relating to this issue is as follows:

> 'I procrastinate sometimes but I'm working on it now. This will help me to complete my work on time and give me plenty of time to check my mistakes.' (Student teacher, May 2022, PERQ)

Adaptibility

Kohan et al. (2017) also argue that adapting to new learning environments and to new technologies is essential if a successful virtual learning environment is to be created. The fact that so many students mentioned that they initially struggled but overcame their difficulties also indicates the degree of adaptability of students to the new learning environment.

> 'It was difficult at first to get everyone to be determined and committed but in the end we all were, we managed to finish the assignment and submit on time everyone participated.' (Student teacher, May 2022, PERQ)

Focus on product and not the process

Lizzio, Wilson and Simons (2002), indicated that students who understand what a severe workload and assessment represent will be more likely to

engage in superficial learning. As presenters, we experienced that students were so concerned about the group assessment to be submitted two weeks after the excursion that, in some cases, it caused a distraction from focusing on the problem that they had to solve. This was evident in verbal questions from students during the plenary sessions and in the chat box, such as 'What is the assignment all about?', 'Where can we find more information?', or 'Is it a group task?'. This is despite the fact that a pre-video recording about the assessment was available, as well as a detailed explanation in the learning guide.

Other barriers, some of which are less tangible because they might not have been expressed as confidently or concretely, relate to communication skills possessed by students and how this affected participation with each other and facilitators.

Communication barriers

The design of the excursion paid special attention to overcoming the communication barriers discussed by Kohan et al. (2017). From the analysis of the qualitative data, a number of themes were identified in relation to communication. Of these, the overwhelming view of the students was that they learned to communicate better, that communication in their groups sharpened their decision-making skills and provided them with confidence to communicate and participate in group discussions. The opportunity for them to cooperate and communicate with strangers not only provided valuable opportunities to practise listening and communication skills but also to understand and respect each other.

> 'Communication is the key to everything. Listening to my peers better.' (Student teacher, May 2022, PERQ)

> 'The part where we had to work as a team because it was building my confidence and my communication skills better.' (Student teacher, May 2022, PERQ)

Fostering self-directed learning and overcoming barriers as evident from the qualitative data

From the further analysis of the qualitative data, three sub-themes were identified in terms of fostering SDL: (1) setting learning goals, (2) taking own responsibility and (3) the importance of a professional development trajectory.

Setting their own learning goals

Students realised that they had to set their own learning goals. Only a few participants replied after the intervention that they did not set learning

goals for themselves during or after the intervention. The learning goals that students mentioned range from improvement of computer skills, communication, listening and interpersonal skills (teamwork skills) and critical-thinking to creative thinking skills, which also include problem-solving skills. One participant also set the goal to graduate *cum laude*, another to learn a second language and also a few would like to read more books to be more knowledgeable about the profession. All these goals can be clearly linked with the excursion.

Students were expected to have computer skills to join the excursion, to navigate themselves through breakaway rooms, and to switch on and switch off their cameras and microphones and still stay connected. Those who did not have the necessary skills clearly realised that they had to set themselves learning goals to improve these skills. Our initial assumption that computer skills should not be a challenge to our students was thus misguided, because some of them still struggled with it. This became evident when one of the students commented:

> 'I have actually drawn a few goals that include developing digital/computer skills. I believe that in this time and era of 4IR it is important for a teacher to possess these skills so that he/she can be able to pass the knowledge to their students. The world is changing to more digital.' (Student teacher, May 2022, PERQ)

Another student pointed out:

> 'Computer skills because I was lacking on it since I did not do computers at high school.' (Student teacher, May 2022, PERQ)

Under the finding of communication barriers, some students indicated that they need to work on their communication skills. Based on some of the comments made by the students, another learning goal set by them is the improvement of communication, listening and interpersonal skills. The fact that they have to work in groups, having to voice their opinion and providing feedback to the group made them realise how important good communication and listening skills are. Setting these learning goals, therefore, clearly contributed to fostering their SDL. One student expressed the following:

> 'After the excursion I started to realise that communication skills are really needed to be a teacher and without good communication skills you cannot be a good teacher.' (Student teacher, May 2022, PERQ)

A few students also mentioned that the excursion resulted in them setting goals for themselves in terms of critical-thinking and creative thinking. It also relates to those setting goals to enhance their problem-solving skills. During the excursion, the emphasis was on problem-solving and finding creative and innovative solutions to problems. It seems as if this design principle let them realise the importance of creative and innovative thinking for the ever-emerging problems in education.

Taking responsibility for own learning

The realisation that students have to take responsibility for their own learning can clearly be seen in the answers of students after the excursion. They were of the opinion that the excursion motivated them to study more, to work hard to achieve their goals and look for answers themselves. They learned that they should be responsible and accountable for their own learning without blaming others for their challenges. They also mentioned the fact that the excursion empowered them to do better and take ownership of their actions:

> 'The excursion made me realise that I am responsible for my own studies and that no one will check up to see if I am doing my work like they did in high school. This empowered me to take own responsibility for my learning because no one else will do it for me. This will guide my learning in the future to work hard and know that I am doing this just for me and by knowing that it will motivate me to improve my work and learning daily.' (Student teacher, May 2022, PERQ)

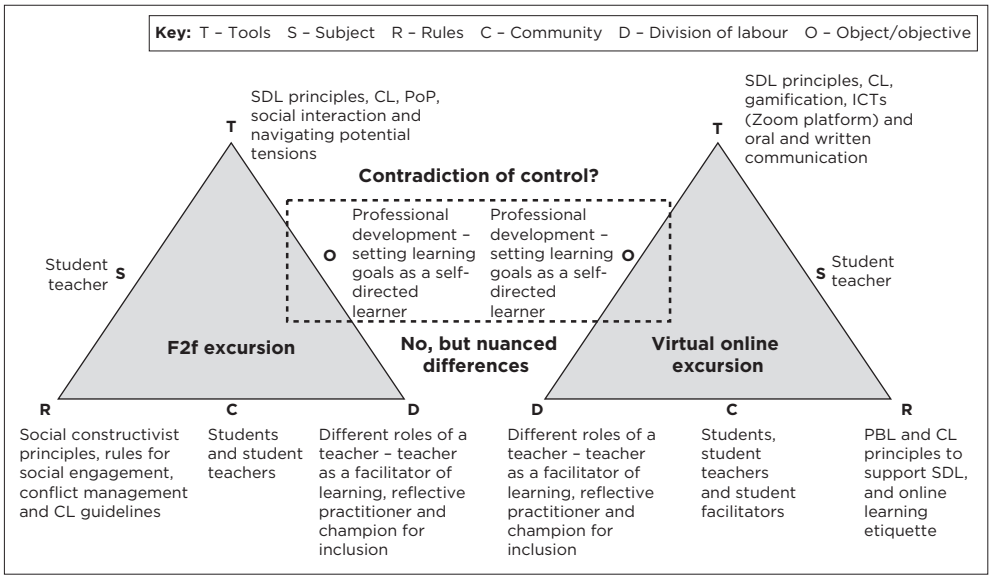
Developing a professional development trajectory

The last theme that evolved from the qualitative data on fostering SDL is the students' realisation that they should develop a personal trajectory for their own professional development. Students mentioned the fact that the excursion taught them a lot in terms of knowledge and skills, but the most important matter is the fact that they realised that there is always room for growth and improvement. Because of the flexible learning environment in schools, no teacher should stop learning after they have graduated. A remark by one student speaks to this sub-theme:

> 'I have also started to read more and watch online videos about the teaching profession so that I can get an overview and expectations.' (Student teacher, May 2022, PERQ)

A finer analysis of the data through a cultural-historical activity theory lens: Comparing the face-to-face excursions with the virtual online excursion

Work on virtual online excursions is nascent research, which saw a rhizomic development from face-to-face excursions. It is thus important to compare findings from both face-to-face and virtual online excursions when distilling design principles. As alluded to earlier, CHAT will now be used to do a finer analysis of the findings and to compare face-to-face and virtual online excursions as two activity systems (see Figure 3.2). The following section is predominantly based on the qualitative findings where the barriers to learning in a face-to-face excursion were compared with the barriers to learning in a virtual online excursion.



Source: Authors' own work.
Key: F2f, face-to-face; SDL, self-directed learning; CL, cooperative learning; PoP, pedagogy of play; ICTs, information communication technologies; PBL, problem-based learning.

FIGURE 3.2: Contrasting the barriers to learning in the face-to-face excursion (activity on the left) and virtual online excursion (activity on the right).

In both activity systems, the first-year student teacher is the subject (S), and the object (O) is to support the setting of learning goals for their own professional development. The qualitative data show that the online excursion (activity system on the right) might be more conducive to fostering SDL compared to face-to-face excursions. Petersen et al. (2020, p. 135) showed that with face-to-face excursions, 'some evidence exists that student teachers were aware of their own learning needs, but student teachers expected the pre-service programme to address these needs'. In the case of the virtual online excursions, there is clear evidence that the context foregrounded the importance of the setting of personal learning goals as self-directed learners. However, as explained later, both activity systems are supportive of SDL, though there seem to be qualitative differences. The tools (T) in both activity systems are CL and a PoP, which has been framed in gamification in the virtual online excursion. However, the data show that oral and written communication by the individual student teacher plays a more important role as a tool in the online environment (second activity system) compared to face-to-face excursions. Previous findings showed that student teachers sometimes 'hide' in the groups during face-to-face excursions (De Beer et al. 2020), whereas communication is much more centre-staged in the online learning environment. The qualitative data showed that many student teachers set

learning goals related to communication skills in the second activity system. However, the online platform is more 'sterile', not characterised by the 'dramatical collisions' (Veresov 2009) that often present themselves in face-to-face excursions (also see ch. 2). One of the tools needed during the face-to-face excursion is to navigate the learning space characterised by tensions. Although students engage in groups in breakaway venues on the Zoom platform, there are not the same personal conflicts that arise during face-to-face excursions (De Beer & Henning 2011). A tension that existed between the tools (T) and object (O) is the issue of connectivity that some of the students experienced, further hampered by the load shedding that South Africa is facing. Rules (R) in both activity systems are similar, although there are finer nuances. Rules for conflict management need to be negotiated during the face-to-face excursions, whereas the virtual online environment is less demanding, only requiring basic online etiquette from the student teachers. In both activity systems, the community (C) includes the student teachers and teacher educators. However, for the online learning environment to be optimal, student-facilitators are also employed to assist student teachers in their group work. A problem experienced was that very few senior students were willing to act as facilitators, and this might be a reason why the data showed that some groups experienced problems with time management and why some students were distracted by social media. The division of labour (D) refers to the various roles that teachers hold, including those of learning facilitator, inclusive practitioner, critical reflective practitioner and change agent.

McNeil's (2013) construct of the 'contradiction of control' warrants more attention. This refers to a potential misalignment between the two objects (O) of the juxtaposed activity systems. The data reported on in this chapter, when juxtaposed with data on face-to-face excursions in previous years (Petersen et al. 2020), show that there is not a major contradiction of control. Both face-to-face and online excursions can foster SDL amongst student teachers (although it does seem as if the online context does it better than the face-to-face environment). However, there are nuanced differences in terms of the learning goals set in the two activity systems. Past face-to-face excursions, characterised by 'dramatic collisions', resulted in learning goals set in developing practices as an inclusive teacher (Sebotsa, Petersen & Speight Vaughn 2020). The authors (2020, p. 312) showed that 'student teachers reported an understanding of and respect for diversity in the South African classroom', and that 'the excursion provides a fertile learning space to address personal biases and preconceived ideas' (p. 317). In the face-to-face excursion, encounters with social justice matters created an uncomfortable atmosphere that helped student teachers realise their own hurdles to teaching diversity (Sebotsa et al. 2020, p. 319). In the online virtual context, learning goals were set in

terms of mainly information communication technology (ICT) skills and communication skills.

The CHAT analysis shows that design principles, although very similar for both face-to-face and virtual contexts, do need to be flexible and nuanced to respond to the different barriers arising in the two activity systems.

Conclusion

Both face-to-face and virtual online excursions hold affordances to enhance SDL. As De Beer and Gravett (2020, p. 353) indicate, involving student teachers 'in challenging, authentic situations, throwing them in at the deep end (prolepsis), holds affordances for their professional development as future reachers'. The data show a difference, though, in terms of the type of learning goals set by students. The face-to-face excursion provides a contested learning space, where 'dramatical collisions' (Veresov 2009) result in many students setting learning goals for themselves as inclusive practitioners. Sparked by experiences during the excursion, the student teacher reflects on their own personal biases and skills and not on those of other learners. The online virtual excursion provides a platform to emphasise learning about ICTs and developing essential skills, such as communication skills and time management. Our first recommendation is that work-integrated learning (WIL) excursion programme developers should apply their minds to design principles to ensure the best of both worlds and how the learning context could be made even more conducive to SDL.

The findings show that the PPC model of Hiemstra and Brockett (2012) is a useful heuristic when planning excursions. A second recommendation is to encourage students to develop self-directed learning skills (the '*person*' dimension). The learning opportunities should be designed in a way that considers the teaching-learning transaction, facilitation, learning skills, learning styles, planning, organising, and technological skills (the '*process*' dimension), as well as creating a binomial context to strike a balance between creating conflict, disruption, and dissonance, while at the same time providing a safe, learning environment for professional development. An important design principle is to ensure that the leitmotif supports student learning, and in this case, the construct of becoming a super teacher underpinned the learning tasks. This was distilled based on insights from EVT.

From the data, it is apparent that the current design principles managed to address most of the barriers mentioned by Kohan et al. (2017). However, from this discussion it is clear that barriers were not completely eradicated. One example was that the summative assessment task

distracted some students from active participation during the online excursion. When rethinking the design principles guiding the 2023 excursions, attention should be given to overcoming the assessment barrier and ensuring that the emphasis shifts from achievement to skills development. Furthermore, learning tasks and contexts that will promote the development of communication and ICT skills should be further developed. The design principles that underpinned the 2022 online virtual excursions did address possible learning barriers, but there is clearly a need to still further refine these design principles.

Chapter 4

Students' experiences of game-based learning to foster self-directed learning

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Abstract

This chapter unpacks the design principles proposed for game-based learning (GBL) in a self-directed learning (SDL) environment in more detail. A focus of the design principles is based on how GBL pedagogies can be used to produce engaging learning experiences in a synchronous virtual environment to foster SDL. Game-based learning pedagogies recognise the need to develop real-world relationships between the subject material presented and students' experiences. Engaged teaching praxis or engaged

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pedagogy stems from a teaching philosophy based on the concept that teaching and learning (T&L) are participatory, where both students and facilitators are co-constructors of knowledge. Qualitative data from open-ended questionnaires and polling questions were used as data sources and were analysed by using the cultural-historical activity theory (CHAT) as a research lens. Some of the findings include students evoking feelings of anger and desperation, which points to negative meta-emotions leading them to plan better. Other students expressed their empathy and joy, which refers to positive meta-emotions contributing to the development of intrinsic motivation. Game-based learning, as introduced in this study, can contribute to fostering students' SDL.

Introduction

The shift towards constructivist pedagogies may be traced back to the recent surge of literature (Lund & Stains 2015; Theobald et al. 2020) and the focus on active forms of learning rather than passive and didactic approaches to T&L. Educators and scholars across the globe, such as Deslauriers et al. (2019) and Owens et al. (2020), are generally aware of these efforts to promote active learning. In this chapter, we will explore how GBL, as a type of engaging pedagogy, was introduced and we will highlight how it fosters SDL. Self-directed learning is important, as Karatas and Arpaci (2021) agree that SDL skills are essential in the 21st century's complicated and rapidly evolving world. Literature on how GBL can enable engagement while also supporting learning in authentic learning environments and how it can foster SDL is discussed further in the text. In the context of this chapter, an authentic learning environment refers to a video diary shown to the student teachers at the onset of the synchronous virtual excursion discussed in most chapters of this volume.

Background to engaged learning

Recent theories of active learning, in which students play an active role in their own learning, provide the foundation for engaged learning. As a term, 'engaged learning' is used interchangeably with 'active learning', 'meaningful learning' and other constructivist stances (Vahed & Rodriguez 2021). Students who take initiative in their learning, which links to SDL (Knowles 1975), cultivate new ways of thinking and learning and generate original concepts and insights via collaborative discussion and project work. When referring to participating in the learning process, we mean actively generating knowledge from experience, interpreting meaning and interacting with instructors and peers where all role-players are co-constructors of knowledge. In line with constructivist theories of education,

new information is acquired via a process of meaning-making in which individuals engage in collaborative bargaining over shared experiences of the world (Jonassen, Peck & Wilson 1999). The North Central Regional Educational Laboratory in the United States of America (USA) proposed the idea of 'engaged learning' (Vahed & Rodriguez 2021). Engaged learning ultimately aims to develop self-reliant students and team players (De Jong 2019). Hamari et al. (2016, p. 172) 'conceptualized engagement as the simultaneous occurrence of elevated concentration, interest, and enjoyment encapsulating the experience of flow'. The same authors described flow as 'a state of mind characterised by focused concentration and elevated enjoyment during intrinsically interesting activities'.

During the excursion, various engaging pedagogies such as cooperative learning (CL), problem-based learning (PBL) and GBL were used to make sure that engaged learning takes place. Petersen, Golightly and Dudu (2019) have expounded:

> [*E*]ngaging pedagogies as any inductive teaching–learning strategy such as PBL, CL, or contextualised learning, where the learners or students are actively involved in the learning process while developing 21st-century skills. (p. 145)

This chapter reports on how GBL can be used to foster SDL.

Learners become self-reliant and team players through tackling real-world, multidisciplinary challenges, such as those presented in the aforementioned virtual excursion (more on which will be provided). Students in CL groups are expected to take on specialised responsibilities and work collaboratively (Vahed & Rodriguez 2021) to find solutions to individual problems posed to them during the breakaway sessions and to complete the group assignment after the excursion. In the context of our virtual excursion held in 2022, in order to aid students in their quest for information and understanding, the university teachers, as presenters and facilitators, play the role of both guides and co-investigators of knowledge (De Jong 2019). That implies that the varied viewpoints of the co-participants serve as a medium for the acquisition of knowledge via language (Vahed & Rodriguez 2021). In most cases, optimal learning can take place when group members are immersed in the group activity while interacting with their peers and a larger community (De Jong 2019).

Human learning is a reciprocal two-way process, including interaction and sharing of knowledge (Caldwell-Harris 2022). Facilitators may assist students to develop the skills and dispositions required to engage in disciplinary discourse (also known as 'knowledge about a discipline') by immersing them in authentic activities and real problem assignments with rich conceptual implications and motivating them to discover and explore (Caldwell-Harris 2022). In terms of the design of the excursion, the video diary, depicting the real challenged faced in a troubled school, was the

driver of all the activities during the virtual excursion. In one of the activities, to make students aware of social justice issues, the students played the virtual 'Famine and Abundance' (F & A) game. The paragraphs that follow describe how GBL was used in an SDL environment.

Integration of game-based learning with a self-directed virtual excursion environment

Vygotsky's explanation of social constructivism (1978) provides the theoretical framework for this excursion. According to Vygotsky, crises – moments of tremendous upheaval – affect students' minds and brains over the course of their development (Kozulin 2002). In Vygotskian terms, when students join the virtual excursion, they enter the crisis phase. By putting students in a situation where they must deal with the complexities and messiness of teaching, we are scaffolding their learning across the zone of proximal development (ZPD) (Vygotsky 1978). In addition, they have to deal with the fact that their own prejudices and preconceptions sometimes lead them to the 'othering' of people who are different from themselves (Harron, Petrosini & Jenevein 2019). The excursion programme was designed to introduce the student teachers to the challenges of the profession. Even though the topics covered during the excursion are also covered in the lecture halls on campus, we contend that the synchronous virtual excursion creates a safe learning environment (see ch. 1, Figure 1.3) where students can connect emotionally and cognitively with the learning content. The virtual excursion introduces future teachers to engaging pedagogies like GBL. In addition, the activities were planned so that the student teachers might consider their own development via metacognitive reflection (Fung et al. 2019).

Because technology in a virtual excursion offers a captivating source of interactive tools that can be used for educational purposes, such as taking notes, participating in discussion forums, gaining access to supplementary resources, software and applications, and can facilitate interactions between students and facilitators and ultimately promote engagement and SDL (White & Robertson 2015; Williams, Karousou & Mackness 2011). The authors wished to gauge these experiences with the technology to see if the SDL of students could be fostered. It has been shown that students who make effective use of information technology (IT) in their studies are more inclined to contribute and engage in academic activities that include active cooperation with other students (Laird & Kuh 2005; Pacheco et al. 2020). This kind of cooperation encourages a closer connection between students, facilitators and the material covered by stipulating that students' engagement with academics will rise in proportion to the amount of time they spend interacting with various forms of technology (All, Castellar &

Van Looy 2021; Mehdinezhad 2011). Students are given the opportunity to participate in a community of learners because of the limitless possibilities for collaboration that the technology makes available. This leads to an increase in the students' achievement of learning outcomes, such as critical-thinking and individual student development, as they become more engaged with the material that is being taught (Hamari et al. 2016; Kuh 2009; Pike, Kuh & McCormick 2011).

On the other hand, Gosper et al. (2011) looked at how students use technology and which learning tools they prefer. While attending college, students were more likely to utilise email, learning management systems (LMSs), YouTube and podcasts to supplement their education than to use social networking sites.

Self-directed learning has been acknowledged and investigated for decades (Knowles 1975; Tough 1979); nevertheless, the digital revolution has pushed it to the forefront, and its context has altered with the inclusion of technology in contemporary learning pathways. Self-directed learning is necessary for the 21st century and, as such, is a cornerstone of the virtual excursion environment and, by extension, GBL.

Barnes, Marateo and Ferris (2007, p. 2) stated: 'Net Geners need self-directed learning opportunities, interactive environments, multiple forms of feedback, and assignment choices that use different resources to create personally meaningful learning experiences'. This highlights the importance placed on developing SDL skills among 21st-century students. It is suggested that a technology-rich learning environment (such as a virtual excursion) may provide students with many chances and tools to learn independently, as long as they have the expertise to not only choose relevant resources but also to properly manage and apply the information they find and use (Fahnoe & Mishra 2013). The degree to which a user is successful in their studies is directly related to the degree to which they are able to take advantage of the SDL opportunities presented by social media and other technologies (including the freedom to decide what, when and for how long to study) (Tullis & Benjamin 2011). It has been argued that SDL is the most effective way to grasp the inner workings of educational systems and the connections between technology and the learning process (Candy 2004). Though the literature review reveals widespread consensus on the potential impact of current technological affordances on SDL, there is a dearth of empirical data about the effects of technology usage on SDL. This research intends to contribute to filling this void of technological use and SDL by investigating the experiences of students in relation to GBL in a virtual excursion environment and how it can affect students' ability to learn independently, and how this, in turn, affects their motivation to learn.

The F & A game, presented as an interactive virtual activity, was introduced to the students to expose them to GBL as an engaging pedagogy (cf. Bunt, De Beer & Petersen 2022). Each student was electronically assigned a passport of a country and, based on the fiscal strength (growth development product) and the human development index of that country, each student received an amount of money in digital world dollars. Students could use this money to buy food items electronically via electronic cards indicating the picture and price of each food item. First-year students were granted 10 minutes to play the game individually, after which they were invited to reflect on their experiences and how playing the game made them feel (meta-emotions described later on). After playing the game individually, small-group discussions took place where the students had to share their feelings on the amount and types of food that they were able to buy. Living in an unequal country like South Africa (World Bank 2022), teaching in diverse classrooms is a given, and students then had to discuss how they will accommodate learners across the socio-economic spectrum (the 'haves' and 'have nots') and discuss the implications for T&L. This can be regarded as the receiving and responding level of Krathwohl's taxonomy (see subsequent sections) because these levels 'include listening and speaking to others, respectfully' (Mirza & Mahboob 2021, p. 486).

It is with the aforementioned GBL activity (the F & A game) in mind that the following research question was formulated: How do student teachers experience game-based learning to foster their SDL while attending a synchronous virtual excursion?

The following section elaborates on the various concepts relating to GBL and the affective domain.

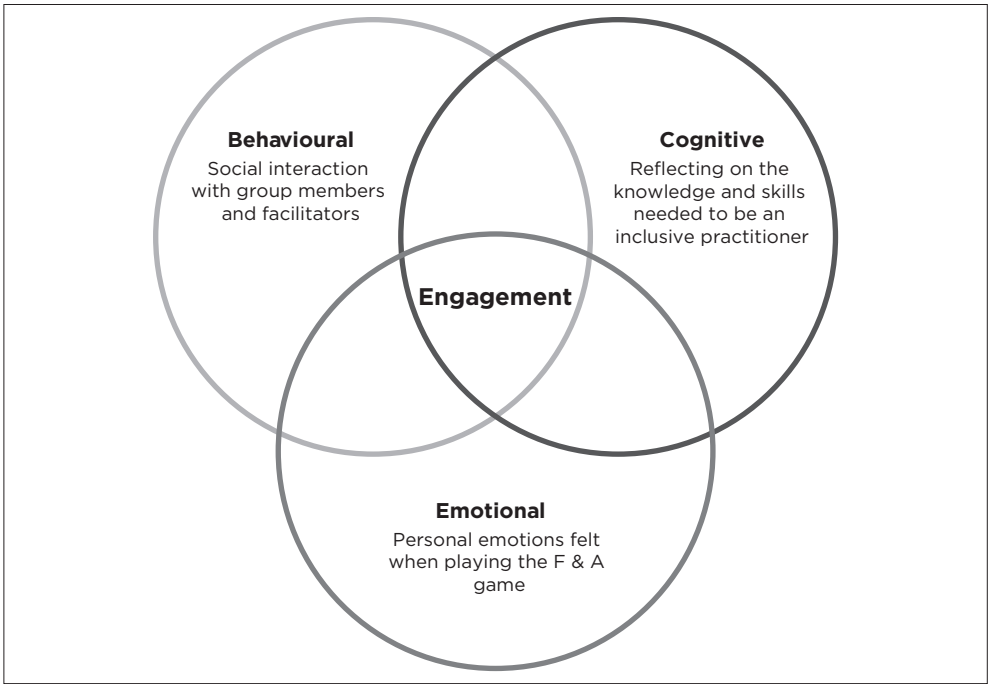
Game-based learning can unlock emotions: The affective domain of teaching and learning

As mentioned earlier, Hamari et al. (2016) claim that the conceptualisation of engagement can be regarded in terms of the elements of concentration, interest, and enjoyment. We argue that the elements of enjoyment signify delight and, therefore, 'emotions' and the 'affective domain' cannot be separated from GBL. Fredricks, Blumenfeld and Paris (2004, p. 60) emphasise the multifaceted nature of engagement as behavioural, emotional and cognitive and describe each as follows:

- Behavioural engagement is based on the concept of participation; it encompasses both academic and social or extracurricular activity and is seen as critical for obtaining good academic achievements and avoiding dropout.

- Emotional involvement is thought to develop bonds to an institution and impact the desire to perform the job and, according to some research, includes both good and negative emotions to professors, classmates, academics and schools [universities].
- Cognitive engagement is based on the concept of investment; it includes the time and energy put into thinking about and processing information.

Parallels can be drawn from what Fredricks et al. (2004) called 'positive and negative reactions' to what Bailen, Wu and Thompson (2019) refer to as 'negative-negative or positive-positive' meta-emotional experiences. Dissatisfaction and rage (negative) or interest and satisfaction (positive) are examples of meta-emotions (Toh & Kirschner 2020). The motivational power of the positive-positive meta-emotional pattern, as discussed by Deci and Ryan (2013), is characteristic of a self-directed learner. The negative-negative meta-emotion of discontent might encourage students to plan for the future (e.g. to take ownership of learning in terms of SDL). The Venn diagram in Figure 4.1 depicts the three facets of engagement (Fredricks et al. 2004) and how it manifested while the student teachers played the F & A game. A discussion on the need to teach for the affective domain follows after Figure 4.1.



Source: Authors' construction based on the work of Fredricks et al. (2004).
Key: F & A, 'Famine and Abundance' game.

FIGURE 4.1: Venn diagram depicting the three facets of engagement and its manifestation while students played the 'Famine and Abundance' game.

In a study conducted by Mirza and Mahboob (2021), when students moved to online learning during COVID-19, they indicated that the affective domain was minimally attended to. According to the same authors, the affective domain 'needs to be taught more explicitly than ever to inculcate empathy, integrity, motivation, confidence, communication, time management, teamwork, advocacy, and respect' (Mirza & Mahboob 2021, p. 485). The authors of this chapter argue that student teachers should also possess the same affective skills after graduating as teachers. Buma's (2018) research highlights that even though an emphasis on the affective domain in teaching in South African schools is important, it is still neglected in favour of teaching for the cognitive domain. In this regard, Gibbons (2000) refers to Mode 1 and Mode 2 knowledge production. Mode 1 knowledge production focuses on the subject content or discipline knowledge, while Mode 2 knowledge production refers to teaching the content and linking it to the everyday lives of the learners, or 'context-sensitive teaching' (Gibbons 2000, p. 159). This unwillingness to teach for the affective domain was true even before COVID-19. Mirza and Mahboob (2021, p. 485) described how the 'five levels of the affective domain namely: receiving, responding, valuing, organising and characterisation, can be taught (facilitated) to some extent' in an online environment (based on Krathwohl's [1964] taxonomy). In line with the research of Mirza and Mahboob (2021), who described how different T&L strategies can be used and facilitated virtually to sensitise the student teachers to the importance of the affective domain, we planned for the infusion of these levels when the student teachers played the F & A game, anticipating positive results similar to those achieved by Mirza and Mahboob (2021, pp. 485–487; see Table 4.1).

The following section seeks to integrate the previously discussed GBL in a self-directed virtual excursion environment, primarily through a constructivist lens.

Research methodology

The focus of this chapter is on the experiences first-year student teachers had while being introduced to GBL as an engaging pedagogy during a virtual excursion. Chapter 1 gives an overview of the methodology of the wider excursion project, which used a mixed-method (QUAL:quan) design-based study. The current chapter reports only on the qualitative findings of the student experiences regarding GBL in answering the following research question: How do students experience GBL to foster their SDL while attending a synchronous virtual excursion?

TABLE 4.1: Krathwohl's levels of the affective domain and how the 'Famine and Abundance' game can be used to teach the affective domain.

Levels of the affective domain	What the level entails according to Mirza and Mahboob (2021, pp. 485–487)	Strategies used by Mirza and Mahboob (2021)	Scaffolding of F & A game in WIL excursion	How the F & A game can contribute to teaching for the affective domain
Receiving and responding	These levels 'include listening and speaking to others, respectfully'	Life stories in the form of case studies, videos, and narratives can be used to guide discussions which can result in powerful reflections	Students play the F & A game individually, after which they work in small heterogeneous groups (CL) to share their experiences and emotions while listening to the views of others	Both the introductory video and playing the game individually make the students aware of equity and social justice issues by sharing their emotions through describing their feelings in one word
Valuing	'The third level of the affective domain is valuing that can be facilitated using problem-solving situations to help students value emotions'	Online PBL can be successfully conducted using synchronous collaboration tools such as a chat function, shared whiteboards, video conferencing, and group browsing. Real-time facilitators can also engage students and facilitate learning.	This level can be developed by watching the video from the onset, then playing the game alone, participating in small-group discussions, and providing comments in the plenary sessions. Facilitators (lecturers and Honours students) pop into the various breakaway rooms to scaffold optimal learning.	• By listening to others and putting themselves in the shoes of others, they might realise that they have biases or stereotypes towards others • In this course, students develop an awareness of diversity and social justice problems, which will inform their future teaching
Organisation and character-isation	• The goal of an organisation is to reconcile conflicting values, start the process of creating an internally consistent value system, and bring disparate values together • By using a value or group of values, the person is characterised by having a set of values that guides their behaviour	Reflective writing can be used to teach these levels. Through writing, students can reflect on behaviours they have been taught, improve their attitudes, gain virtues, and integrate ideals.	Social justice matters were one of the topics for the assessment. As a group, students had to reflect on the video diary, read wider on the topic, and design a multimodal assessment artefact (video, animation).	These are first-year students starting their journey (professional development) as future teachers. The F & A game aims to sensitise students about the complexities of teaching and motivate them to realise their biases and tendency to stereotype others. Students are encouraged to convert these into personal learning/developmental goals, and actively work towards achieving being successful inclusive practitioners.

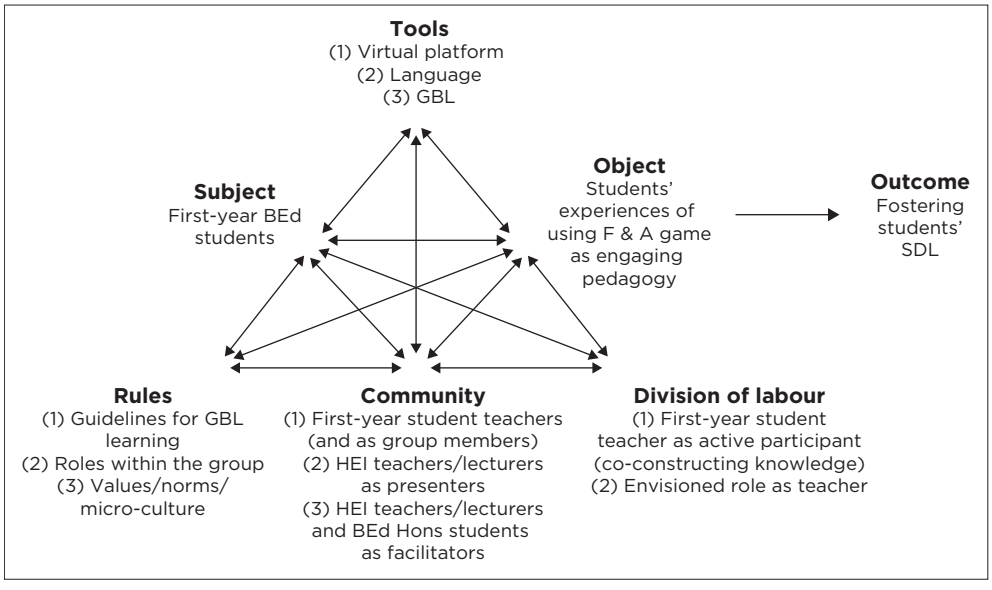
Source: Authors' own work.
Key: F & A, 'Famine and Abundance' game; WIL, work-integrated learning; CL, cooperative learning; PBL, problem-based learning.

The following paragraphs describe how GBL was scaffolded across the ZPD during the virtual excursion and how CHAT was used as the research lens.

Data for the F & A game were collected in the form of anonymous qualitative responses in an online poll ('Famine and Abundance' game plan [FAGP], *n* = 1,652), which simply asked students to use one word to describe how this activity made them feel, followed by a request for them to justify their answer. A second data set was collected in the post-excursion reflective open-ended questionnaire (PERQ) (*n* = 148) (see also ch. 1).

Data in this chapter were analysed using the third-generation CHAT (Engeström 1987) as a research lens. Cultural-historical activity theory is portrayed as a triangle with different elements forming the activity system (AS), and the whole AS is used as a unit for analysis (Hasan & Kazlauskas 2014), which consists of the following elements (nodes), the subject, object, tools, community, division of labour and rules. Figure 4.2 represents the AS of the virtual excursion with a focus on GBL and is described further.

Hasan and Kazlauskas (2014) indicate that there is an interdependence between the subject and object in an AS. In this AS, the first-year Bachelor of Education degree (BEd) students formed the subject of the AS, and the



Source: Adapted from Engeström (1987).
Key: BEd, Bachelor of Education degree; GBL, game-based learning; F & A, 'Famine and Abundance' game; SDL, self-directed learning; HEI, higher education institution; Hons, Honours degree.

FIGURE 4.2: The different elements of the activity system depicting students' experiences of game-based learning to foster their self-directed learning while attending a synchronous virtual excursion.

object focused on the experiences of first-year students of GBL as an engaging pedagogy to foster SDL.

Tools are mediating artefacts that can either be material or conceptual in nature (Foot 2014; Harvey & Nilsson 2022). Languages can be regarded as conceptual tools that were used in discussions during the small-group breakaway sessions.

According to Foot (2014), the community is made up of persons inside an AS who have the same goal as the subject. In this AS, first-year BEd students, university teachers and honours students as facilitators formed part of the community.

As defined by Sannino and Engeström (2018), 'the rules' are the norms that govern how members of an AS interact with one another. The rules refer to the guidelines that were given to students on how the gaming principles of the F & A game had to be implemented within a classroom setting.

Both the horizontal separation of tasks and the vertical separation of roles within an AS are examples of division of labour (Sannino & Engeström 2018). The horizontal division refers to the shared roles of the individuals within the community where all first-year students participated in finding solutions to problems during their small-group discussions. They also had to envisage themselves as future teachers as facilitators where they were exposed to real-life situations of the problems of an under-resourced school (video diary; see also ch. 1). This points towards the vertical division of labour.

Engeström (1987) and Harvey and Nilsson (2022) indicate that contradictions within ASs can occur within a single element (or node) as well as between different elements (nodes) within an AS. Identifying contradictions points out positions within the AS where development can take place (Sannino & Engeström 2018). When these inconsistencies are resolved, the AS as a whole undergoes a metamorphosis that paves the way for the production of a more complex object in the future (Engeström & Sannino 2010). Harvey and Nilsson (2022, p. 702) agree when saying, 'identified contradictions can thus work as a driving force of development in an activity system'.

Ethical clearance was obtained as described in Chapter 1.

Findings and discussion

After applying thematic data-analysis (see ch. 1, Table 1.2) using the data collected through the poll (FAGP) and the PERQ on students' experiences of participating in GBL to foster their SDL, two themes emerged and are described further.

Emotional involvement of student teachers in the game

The findings from the data are consistent with the literature, which indicates that GBL results in students' full immersion within an activity (Shernoff 2013). Depending on the amount of money that students received in world dollars, it evoked feelings of (1) anger and desperation, which points to negative meta-emotions, or (2) empathy and joy, which refers to positive meta-emotions (Bailen et al. 2019). These feelings can also be linked to the 'value' level (see Table 4.1) of the affective domain because the students cannot relate (show compassion) to their own experiences or put themselves into the shoes of others. Learners who had less world dollars to spend felt depressed or even hurt, as students report (note: quotes from students are rendered verbatim):

> 'I had 2 dollars only. I immediately felt sad and depressed as I never even had a choice on what to eat. My circumstances only allowed me to eat bread. I felt hungry.' (Student teacher, May 2022, FAGP)

> 'I was honestly hurt to see others purchasing nice food, whereas I did not have money to buy what I wanted. I would have loved to be like others.' (Student teacher, May 2022, FAGP)

Another student used their own experience of a lack of money in the game to link it to the role of being a teacher in future; this indicates a contradiction within the node of role division within the AS, as well as reflection translating the experience to their future teaching as a self-directed person:

> 'I could only buy one slice of bread and that is not enough to fill my tummy and I as a teacher need to be aware of this situation in my classroom to be prepared and help my learners.' (Student teacher, May 2022, FAGP)

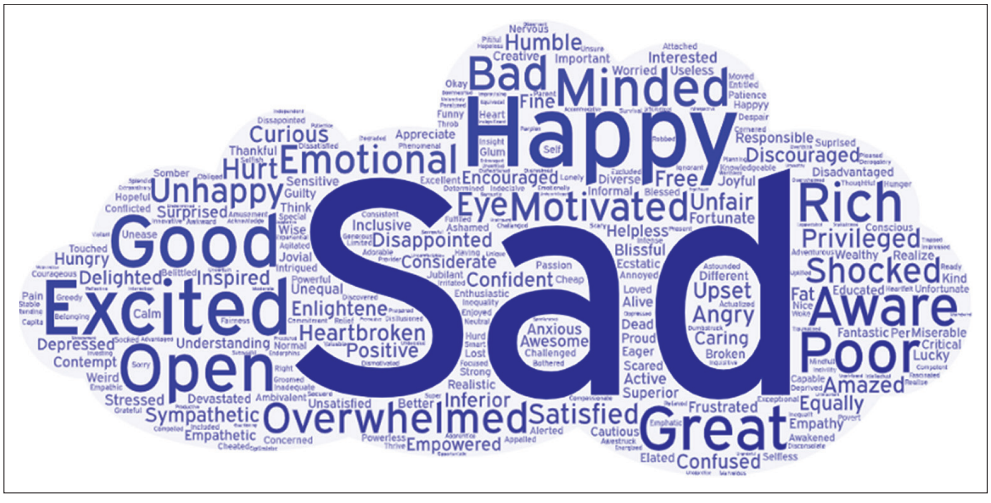
On the other hand, students who received a large amount of money in the game expressed empathy with their fellow students in their groups, which indicates a contradiction within the community node. One student indicated:

> 'I had a lot of money and I couldn't decide what to buy. I felt bad afterwards because my colleagues didn't receive as much.' (Student teacher, May 2022, FAGP)

The F & A game was played virtually, and the word cloud discussed further (Figure 4.3) indicates that the game awakened several emotions – mostly negative feelings such as sadness (negative meta-emotions). The words in the word cloud were from responses in the polling question (FAGP): 'In ONE WORD, describe how this activity made you feel?'. These findings are in line with what Mullins and Sabherwal (2020) found, that GBL involved learners. Al-Azawi, Al-Faliti and Al-Blushi (2016) and Konics (2021) further indicated that the emotional involvement (activation of the affective domain) caused by GBL can encourage

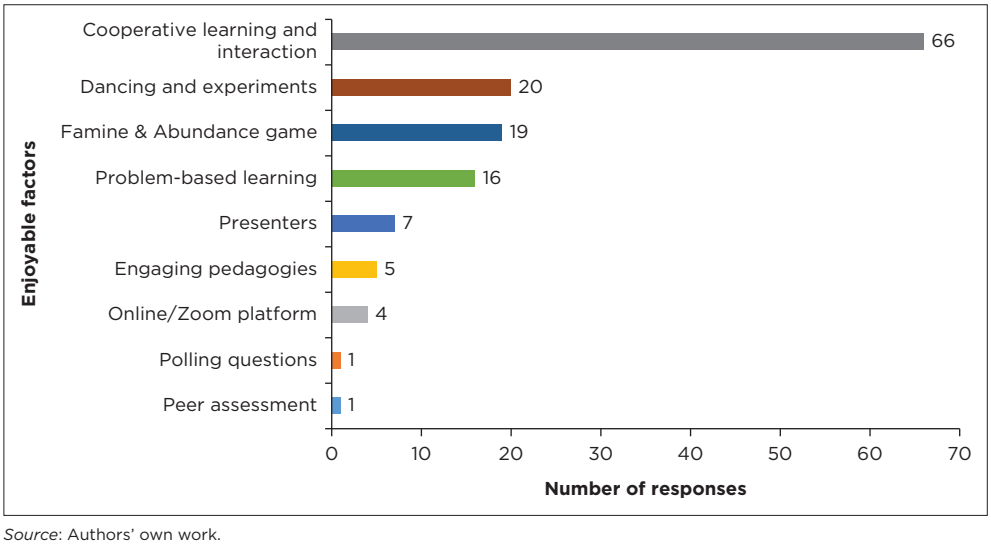
students to stay engaged and motivated throughout a learning experience to foster their SDL.

The overall experience of students in the excursion, as reflected in the data from the PERQ, indicated a highly positive and enjoyable learning experience (see Figure 4.4).



Source: Authors' own work.

FIGURE 4.3: Word Cloud depicting the emotions felt by the students after playing the 'Famine and Abundance' game.



Source: Authors' own work.

FIGURE 4.4: First-year students' overall rating of the activities they enjoyed most.

Some of the comments made by students with regards to playing the F & A game, in the PERQ, include:

> 'The part of playing that Famine and Abundance game was fun but at the same time it was eye-opening.' (Student teacher, May 2022, PERQ)

> 'The gaming part because it symbolises the sharing spirit within a person.' (Student teacher, May 2022, PERQ)

Students' awareness of socio-economic and inequality issues

According to the World Bank Report of March 2022, assessing sources of inequality in different countries revealed that South Africa is one of the most unequal countries in the world (World Bank 2022). It is therefore important to expose the student teachers to issues of inequality, social justice and diversity matters, as this is what they will encounter in their future classrooms. These are issues that are difficult to handle for most teachers because it makes them feel helpless not to know how to deal with inequality issues. Mullins and Sabherwal (2020) found that GBL involved the learners emotionally (affective domain) as well as cognitively (the cognitive domain). The FAGP poll asked students whether they think that socio-economic factors (such as diversity and inequality) are important to consider during teaching, and 1,628 (98.5%) of the responses were 'yes'. The data thus indicated that an overwhelming number of students were aware that learners in South Africa come from different socio-economic backgrounds, which might have an influence on their classroom teaching. One student commented:

> 'You have to be aware of socio-economic factors in order to understand what children or people are going through in different backgrounds.' (Student teacher, May 2022, FAGP)

One student linked the socio-economic factors to their own reality when recalling socio-economic inequality from their own experience:

> 'It took me back to the reality of teaching and the context of the school, where one would literally see a learner without a jersey during winter.' (Student teacher, May 2022, FAGP)

Another student linked this game to their own background when reported:

> 'It made me feel a bit sad as I am also coming from a poor background and teachers mistreated me due to that, but on the other point it was so great to have this topic discussion.' (Student teacher, May 2022, FAGP)

And then, the same student linked it to the teaching profession, indicating:

> '[...] so that the teacher knows what kind of learners are there in class so that they are treated equally, with respect, and are not being discriminated [*against*].' (Student teacher, May 2022, FAGP)

Students were also able to propose possible solutions to include all learners within a classroom when teaching. The thought processes behind proposing solutions imply reflection and may contribute to their self-directedness. This indicates a tension in the node of role division as the students were able to use the experience that they gained in the F & A game and link it to their future teaching careers. One student referred to building projects within a classroom situation and how a teacher could ensure that all learners were included:

> 'As a teacher, you will deal with kids that come out of homes where money is not a problem and also with kids that suffer in poverty. In all of these challenges, you will have to realise that not all of your kids will be able to participate in projects consisting of a lot of money therefore you have to make some changes as a teacher and do what will be relevant for all.' (Student teacher, May 2022, FAGP)

Another student also proposed possible solutions which may be an indication of their agency to take ownership, showing signs of becoming an inclusive practitioner (which was one of the aims of the excursion):

> 'So that the teacher can be accommodative to each learner, and this gives the teacher an opportunity to be creative and come up with resources to activities done in class that can be easily accessible to every learner and affordable or even things of that do not cost a thing.' (Student teacher, May 2022, FAGP)

It will not be a true representation of the data not to refer to the students who said 'no' (1.5%) in the polling question (FAGP) referred to above. Of the 25 'no' responses, there were actually only three students who appear to be very naïve, believing that these socio-economic factors will not play a role in their future teaching career (see the 'Contradictions occurring between elements [or nodes]' section). This finding is evident from remarks like:

> 'Because they [*socio-economic factors*] have nothing to do with teaching.' (Student teacher, May 2022, FAGP)

> 'Because focusing on other socio-economic issues is not important.' (Student teacher, May 2022, FAGP)

> 'Facilitators [*referring to teachers*] should rather focus on teaching.' (Student teacher, May 2022, FAGP)

Findings through the cultural-historical activity theory lens

We will probe possible reasons for the findings when we examine them through a CHAT lens. The synchronous virtual excursions, as a type of simulated teaching–learning to learn from practice, can be regarded as the AS. Engeström (2007) is of the opinion that simulated situations within an AS require members of the community to use the tools of the system to

anticipate solutions within real-life situations. In the context of this chapter, real-life situations can be transferred to the time these first-year BEd students will teach one day. Based on Engeström's (2007) work, Harvey and Nilsson (2022) emphasise the role that an AS can play in analysing the inconsistencies (tensions) that inevitably exist in students' learning activities.

In terms of CHAT, we contend that the various elements of the AS complement one another to translate into positive, engaging learning experiences that can assist in fostering their SDL. We argue that the way in which the F & A game was scaffolded (Table 4.1) during the excursion programme enabled the students to discuss solutions for possible contradictions within their breakaway groups. We based this argument on the work of Miles (2020, p. 8), who contended that ASs are essentially perpetually evolving, that contradictions do arise, but that the subjects are able to resolve them and can utilise and develop SDL skills in the process.

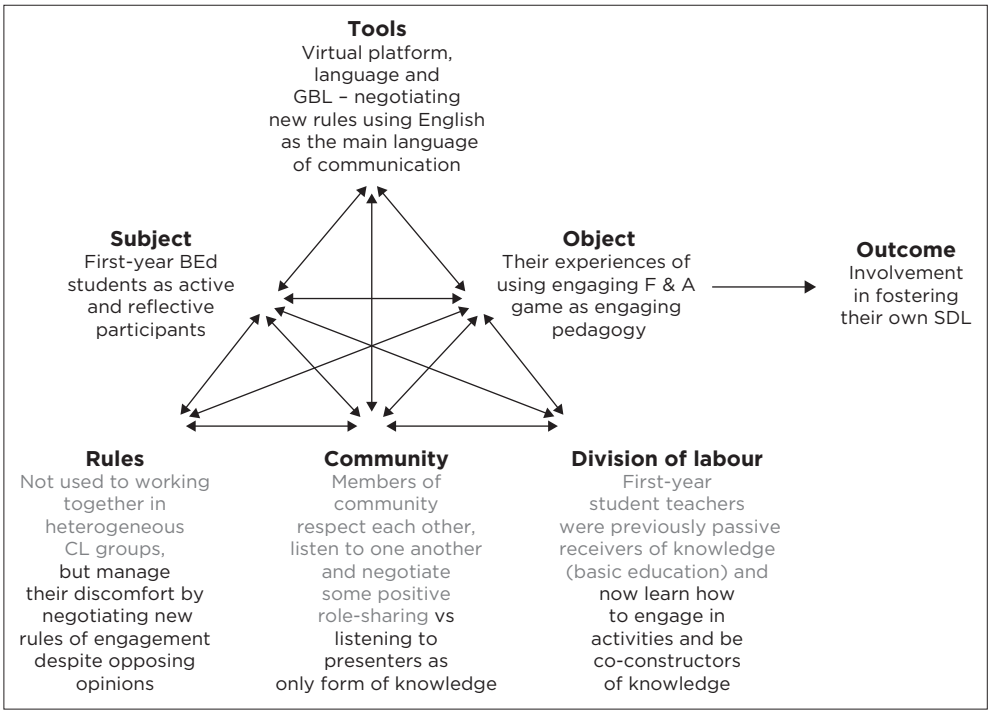
Harvey and Nilsson (2022) indicate that contradictions can occur within a single element (or node) as well as between different elements (nodes) within an AS and will be discussed next.

Contradictions occurring within a single element (or node)

In this regard, we refer to a study by Harvey and Nilsson (2022), who discovered how the participants in their study had a conflict within one element (node) of the AS. In their argument, they contest that participants possess two opposing values in the object of the AS. Using their argument of conflict or tensions within an element, we argue that during the excursion the students were in a new online learning environment, working in CL groups with members that they did not know before. Because of the heterogeneous nature of the groups, there were also opposing value systems, which were especially relevant when they played the F & A game. Most students surely experienced some discomfort, but most of them overcame it based on the overall positive experiences reported. One student's remark has relevance:

> 'It was the best experience because I gained more knowledge regarding other people's views and ideas in the group, we shared different opinions, and everyone was given a chance to put their views. In our group, we made sure that we collaborated more often and we didn't have a problem regarding not being on the same campus with other members.' (Student teacher, May 2022, PERQ)

Based on the work of Garrison (2016) and Vangrieken et al. (2017), we argue that the group members, despite probably coming from different backgrounds and possibly holding opposing values, negotiated rules (see Figure 4.5) of engagement through reflection and problem-solving.



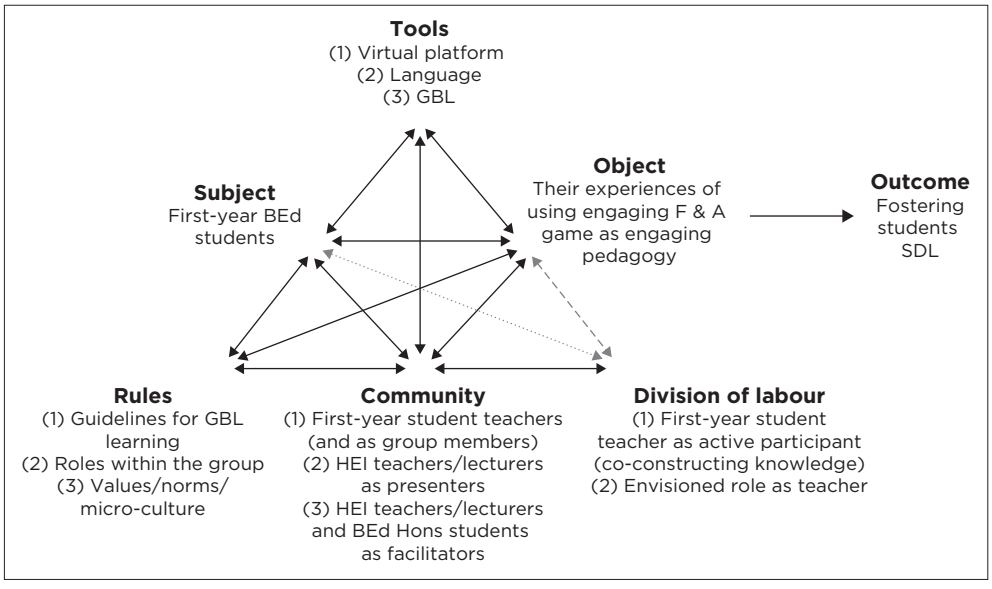
Source: Authors' own work.
Key: BEd, Bachelor of Education degree; GBL, game-based learning; F & A, 'Famine and Abundance' game; SDL, self-directed learning; CL, cooperative learning.

FIGURE 4.5: Contradictions experienced by students and their adaptation to operate optimally in the activity system resulting in a more positive experience of the excursion.

This created a safe place for them to voice their opinions (see Figure 1.3), which was evident when the presenters and facilitators popped into the breakaway rooms and listened to group members' discussions, as well as students' eagerness to provide feedback in the plenary sessions. Figure 4.5 also indicates some other minimal contradictions in a single node and how they overcame them. Underneath each heading in the figure is an indication of the tensions and solutions, signifying a problem-solving mindset and, therefore, possibly fostering their SDL skills. Students were able to identify socio-economic inequalities and could think of possible solutions which they can implement in their classrooms in future to address these inequalities and to act as inclusive practitioners. As indicated previously, this indicates a tension within the division of labour node.

Contradictions occurring between elements (or nodes)

The few students who claimed that issues of social justice have nothing to do with teaching practice can also be described through a CHAT lens.



Source: Authors' own work.
Key: BEd, Bachelor of Education degree; GBL, game-based learning; F & A, 'Famine and Abundance' game; SDL, self-directed learning; HEI, higher education institution; Hons, Honours degree.

FIGURE 4.6: Contradictions experienced by students resulting in a more negative experience of the excursion.

We argue that these students might have felt uncomfortable (out of their comfort zones; see ch. 1) discussing these delicate or tough issues or topics. In terms of the levels of the affective domain (Table 4.1), a possible explanation for these students' reactions can be an indication that they do not value the role that socio-economic factors play in society. Their beliefs may be rooted in spending their entire school career in a homogenous school where most of the learners were from similar socio-economic backgrounds. From a contradiction perspective, we argue that these students experienced discomfort on two levels: (1) between the subject and division of labour, where the student does not understand the complexities of teaching the teaching profession (represented by the grey dotted line in Figure 4.6) and (2) between the division of labour and the object, where the student teacher cannot relate their own experiences to teaching in future (represented by the grey dashed line in Figure 4.6).

Conclusion

This chapter explored student teachers' experiences of GBL within a synchronous virtual environment to foster SDL. Exposing student teachers to the affective domain (teaching to the 'heart'), like playing the F & A game, created a learning experience where student teachers got an

opportunity to put themselves in the shoes of 'others' that are 'more' or 'less' fortunate or privileged than they are. Teaching–learning experiences like this may create opportunities to reflect on the realities of a typical South African classroom. The study demonstrates that GBL activities, such as the F & A game used in this instance, may influence the meta-emotional responses (as described in the 'Emotional involvement of student teachers in the game' section) of students within the virtual excursion environment. Findings indicated that the students overwhelmingly experienced the GBL as positive and that it sensitised them to become inclusive practitioners to treat all learners equally. Fun and delight were the two most common descriptors for the activity in the free-form questions. Reflecting on future actions and implications of learning on their teaching can be a sign of taking ownership of their own learning needs and therefore contributed to fostering their SDL skills.

Chapter 5

Exploring strategies to foster first-year students' critical reflection towards social justice praxis in a work-integrated learning experience

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Abstract

Teachers who critically reflect on their practice can challenge the way their teaching meets the learning needs of their learners and thereby implement socially-just praxis. This study explored the way an activity involving reflection, as part of a work-integrated learning (WIL) excursion programme for first-year Bachelor of Education (BEd) student teachers, fostered

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critical reflection and how the programme can be adapted to deepen the level on which student teachers reflect. We report on the first two of four phases of design-based research (DBR) to evaluate and improve the way this specific activity fosters critical reflection on practice. The activity was based on a digital diary depicting several challenges experienced by a principal, which served as an ideal opportunity to foster critical reflection in support of social justice praxis. To gauge student teachers' reflective levels, their responses to the digital diary video submitted in an electronic poll were measured using an existing four-level typology. Findings from the literature and on the evaluation of student teachers' reflective levels offer suggestions for a component to strengthen support for deeper critical reflection by first-year student teachers, equipping them for social justice praxis. As is typical in DBR, these findings can, in collaboration with the programme designers, be implemented and evaluated in the following year in a revised version of the excursion programme, as the last two phases of a first DBR cycle.

Introduction

Reports on the poor standard of education in South Africa often lay the blame at the door of institutions offering initial teacher education programmes (TEP) (Spaull 2013, p. 3). Apart from gaps in teachers' pedagogical content knowledge (Spaull 2019, p. 8; Taylor 2019, p. 263), reference is also made to teachers' incapacity to deal with the challenges they are faced with in schools daily (Mouton, Louw & Strydom 2013, pp. 34–36). These challenges include poor socio-economic circumstances resulting in learner diversity (Du Plessis & Mestry 2019, p. 52).

In the diverse South African context, education underpinned by ethical and moral principles will consider learner diversity and issues of socially-just practice that provide all learners equal opportunity for success, irrespective of racial, economic or cultural background or diverse school contexts (Van Deventer, Van der Westhuizen & Potgieter 2015). Preparing for 21st-century teaching, student teachers should also embrace long-term teaching aims that reach beyond the classroom walls (Bullough 2011; Okogbaa 2017). Bullough (2011, p. 27) views teaching aimed at preparing learners for success beyond the classroom setting as a moral teaching practice that contributes to the well-being and successful lives of the citizens of a country. In line with the literature (Acquah & Commins 2015, p. 791; Joseph 2016, p. 42), the transformation of education and consequent lifelong impact on learners will greatly depend on the way higher education institutions (HEIs) equip student teachers with critical reflective competence through which they can continuously use to gauge the way their own decisions and actions adhere to principles of moral and social justice praxis.

As part of WIL, the North-West University (NWU) in South Africa employs WIL excursions with the intent to make students aware of the complexities of teaching practice. However, creating this awareness will not guarantee a change in students' perceptions of and approach to practice. Higher education institutions, therefore, need to design and evaluate strategies that foster critical reflective competence and a critical reflective approach to teaching practice to contribute to the transformation of education. Thus, the aim of the investigation was to explore strategies to foster critical reflection on practice-related issues through this WIL excursion to prepare student teachers for social justice praxis.

This chapter first motivates the problem in the context of the aims of this WIL excursion programme (see ch. 1), after which we ground issues related to the problem in the literature. We then report on the first two of four phases of DBR to explore the way the WIL excursion fostered critical reflection on practice. Finally, findings from the literature and these two DBR phases inform suggestions for a component to strengthen support for deeper critical reflection by first-year students and thereby equip them for social justice praxis. As is typical in DBR, these findings can, in collaboration with the programme designers, be implemented and evaluated in a subsequent revised version of the excursion programme as the last two phases of the first cycle of this DBR.

Problem statement

Unrealistic assumptions of education and the role of teachers in the South African context exist among student teachers (Botha & Rens 2018, p. 6). These assumptions are often based on experience from the context they grew up in (Botha & Rens 2018, p. 5), ranging from highly functional schools to a school context where teachers often do not even turn up for work (Msosa 2020, p. 1). Prior experience is contextually bound and can distort perspectives (Larrivee 2000, p. 296). While HEIs have the responsibility to lay the foundations with student teachers for moral teaching (Bullough 2011), it is important to foster students' critical reflective competence at the onset of their studies. This competence will not only enable them to question their assumptions of moral teaching and the realities of practice, but it will also create an awareness of the gaps in their knowledge and skills that need to be addressed to ensure their eventual teaching practices support social justice praxis.

To attain the outcomes of the WIL excursion programme, pre-service teachers have to acknowledge their roles as 'super teachers', as agents of change (Petersen et al. 2022, p. 3), implying that they critically reflect on their assumptions of practice and recognise the realities of practice in which they should bring about change through 'superpowers'

(Petersen et al. 2022, p. 3). Another core aim is developing 'a better understanding of the role of the teacher as an agent of change, striving for inclusion and social justice' (Petersen et al. 2022, p. 3). We anticipated that meeting this aim would alert student teachers to the importance of social justice praxis, grounded in Freire's ([1970] 2005, p. 51) definition of praxis as 'reflection and action upon the world to change it'.

Schoonen, Woods and Kruger (2020, p. 204) describe social justice praxis as 'critical reflection on experiences of social (in)justice to inform relevant, sustainable and contextualised action (change and transformation)'. A change in perspectives of what social justice education entails within the diverse South African context is crucial (Sinwell 2022). In a country described as one of the most diverse in the world (World Population Review 2023), it is forthcoming that establishing social justice praxis through creating an inclusive learning environment in which learner diversity is acknowledged and accommodated will be one of the biggest challenges South African student teachers are faced with once they start teaching. It is therefore imperative that student teachers are equipped with the necessary critical reflective competence to promote social justice praxis.

Problem-based learning (PBL) was one of the drivers of the virtual excursion, through showing the students a video in the form of a 'principal's digital diary' (PDD) on the first day of the excursion. Visual recordings of scenarios from practice reflect the principal's narrated diary that shows several challenges experienced by the principal at a hypothetical dysfunctional school. These challenges include social justice issues related to moral and ethical practice and language diversity. The video offered an ideal opportunity to support critical reflection and create an awareness of social justice praxis with the student teachers. After watching the PDD video, students were grouped randomly, using the Zoom breakaway room function, to discuss possible solutions to some of the educational challenges portrayed in the video. Students were invited to reflect on the PDD in an activity referred to as the 'Superpowers Poll' (SPP), which asked: 'How did yesterday's sessions contribute to your development as a future super teacher?'.

The problem identified in practice and supported by the literature is that teachers often do not question their assumptions of practice through critical reflection. If teachers are able to question their assumptions, this will play a crucial role in the meaningful application of theory in practice (Brookfield 2017). It was, therefore, important to first explore how this activity, as part of the WIL excursion, fosters critical reflection on practice. Secondly, based on the aforementioned findings and informed by the literature, we will suggest strategies to foster deeper critical reflection by first-year students.

Literature review

As theoretical grounding and as a rationale for our focus on critical reflection, we first position critical reflection in the context of education on the reflective continuum as explored by various educationists. This is followed by literature that confirms the role of critical reflection in the transformation of education towards social justice praxis. The implication of the reported literature for HEIs, which have the responsibility of preparing pre-service teachers to bring about change in a challenging education milieu, is then explored.

Positioning critical reflection on the reflective continuum

Exploring the roots of reflection takes one to the work of Dewey (1916, 1938), who focused specifically on reflection in teacher education with an emphasis on the way teachers learn through reflective thinking on their experiences. Dewey (1938, p. 9) defined reflection as 'active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends'. Teachers' reflective thinking on their practices should therefore be more than mere thinking about routine actions but result in an awareness of the consequences of one's actions. Reflective thinking thereby motivates teachers to reconstruct their practice to serve the 'larger purpose and the moral growth of the individual and the society' (Rodgers 2002, p. 863). Expanding on the work of Dewey, Schön (1983) highlighted the opportunity for growth through reflection and differentiated between reflection *on* action and *in* action when learning through experience. The work of theorists such as Freire (1979, 1990, cited in ed. Lyons 2010), Habermas (1974) and Mezirow (1991) focuses on the role of reflection in critical consciousness leading to a questioning of actions that may impede social justice. Such a critical consciousness implies critical reflection that leads to an increased awareness, which in turn contributes to changes in thinking and behaviour that are core to self-directed learning (SDL) (Loeng 2020) and transformative learning (Mezirow 2003).

Educationists concerned with the level on which students reflect are continuously exploring strategies to measure reflective levels to support critical reflective competence, which is often linked to reflection on social justice issues (Hoffman-Kipp, Artiles & López-Torres 2003; Smith 2011). Multiple typologies have been developed in attempts to evaluate the level on which students reflect and to gauge the impact of intervention strategies aimed at fostering deeper critical reflection – a few of these are represented in Table 5.1.

TABLE 5.1: Examples of typologies of the levels on which students reflect.

Van Manen (1977, pp. 226–227)	Sparks-Langer et al. (1990, pp. 39–41)	Kember et al. (2008, pp. 372–375)	Bell et al. (2011, p. 10)
1. Technical 2. Interpretive 3. Deliberative rationality/critical reflection	1. Simple, layperson description 2. No descriptive language 3. Events labelled with appropriate terms 4. Explanations with traditional or personal preferences are given as the rationale 5. Explanation with principle or theory given as the rationale 6. Explanation with principle/theory and consideration of contextual factors 7. Explanation with consideration of ethical, moral, or political issues	1. Habitual action 2. Understanding 3. Reflection 4. Critical reflection	1. Habitual action (no conscious thought) 2. Introspection 3. Thoughtful action 4. Content reflection 5. Process reflection 6. Content and process reflection 7. Premise reflection (change in perspective through critical reflection)

Source: Authors' own work.

Van Manen (1977, pp. 226–227) conducted valuable groundwork in this field and identified three levels of reflection in the context of school education that served as a framework for several following typologies. He viewed critical reflection as core to making informed decisions for practice and links the highest level of reflection to 'deliberative rationality' (Table 5.1), where teachers critically evaluate if educational choices are 'worthwhile', considering 'self-determination, community, the basis of justice, equality, and freedom', pointing to the principles of social justice praxis. Influenced by Van Manen's three levels, Sparks-Langer et al. (1990) designed a seven-level framework with a focus on reflective pedagogical processes when becoming a critical reflective teacher. Sparks-Langer et al. (1990, pp. 39–41) note that teacher thinking is linked to the lowest level of their framework when teachers do not use descriptive language when reflecting on a teaching incident and to the highest framework level as critical reflection when teachers consider 'moral and ethical aspects of social compassion and justice'. By considering 'political, ethical, and moral values, beliefs and attitudes', the authors emphasise the role of teachers' critical reflective competence in promoting a social justice praxis, and used various typologies to measure reflection levels (see also Table 5.1). While some typologies used three levels (Van Manen 1977) or four levels (Hatton & Smith 1995; Kember et al. 2008; Larrivee 2008; Ward & McCotter 2004), more fine-grained seven-level typologies were also developed (Bell et al. 2011; Chen, Lumpe & Bishop 2013).

Bell et al. (2011) developed a framework that was influenced by the transformative learning theory of Mezirow (1991, 2003) in an attempt to support the development of reflective practice in the context of business studies. These authors also suggest seven levels of reflection, with 'premise reflection' (Table 5.1) as the highest level, where critical reflection serves as a motivator for a change in perspective over time.

Irrespective of the number of levels, the highest levels of reflection in these typologies are either linked to critical reflection, transformative learning, issues related to social justice praxis, or a change in perspective because of critical reflection, as demonstrated in Table 5.1. Motivated by Mezirow's transformative learning and the case made by Sparks-Langer et al. (1990) for the role critical reflection plays in social justice praxis, HEIs must prepare students to reflect on this level, especially when teachers are expected to act as agents of change to promote social justice praxis to ensure that no learner is left behind.

Critical reflection for the transformation of education toward social justice praxis

Literature mentions the role of critical reflection in transforming teachers' perspectives of practice (Acquah & Commins 2015; Darling-Hammond & Baratz-Snowden 2007, p. 129). Various scholars highlight the role of critical reflection in social justice in education (Dinkelman 2000, p. 195; Gorski & Dalton 2020, p. 365; Schoonen et al. 2020, p. 198). Dinkelman (1999) defines critical reflection as:

> [*D*]eliberation about wider social, historical, political, and cultural contexts of education, and/or deliberation about relationships between educational practice and the construction of a more equitable, just, and democratic society. (p. 332)

Critical reflection is also at the core of Mezirow's (2003) transformative learning theory, through which a critical reflective stance to practice can motivate change in ineffective practice situated within the moral, political and ethical contexts of teaching (Acquah & Commins 2015; Joseph 2016, p. 42; Mezirow 2003, pp. 85–86). Mezirow (2003, p. 61) considers critical reflection as essential for transformative learning and a change in personal assumptions to expectantly lead to more socially-just actions, as illustrated in his definition of transformative learning:

> Transformative learning is learning that transforms problematic frames of reference – sets of fixed assumptions and expectations (habits of mind, meaning perspectives, mindsets) – to make them more inclusive, discriminating, open, reflective, and emotionally able to change. Such frames of reference are better than others because they are more likely to generate beliefs and opinions that will prove more true or justified to guide action. (pp. 58–59)

Factors that may influence one's 'frame of reference' are judged based on 'relevance, appropriateness, and consequences' through critical reflection (Mezirow 2003, p. 61). If faculties of education are serious about delivering teachers who can contribute to the sustained transformation of education towards a social justice praxis, student teachers should be supported in developing a critical reflective competence and a critical reflective stance towards practice. Through critical reflection, student teachers can realise their shortcomings and biases concerning social justice praxis and hopefully convert them into personal and professional learning goals that are core to SDL, as suggested by Knowles (1975).

Praxis is defined by Freire ([1970] 2005, p. 51) as 'reflection and action upon the world to transform it', while Kemmis (2010, p. 10) emphasises that praxis informs moral teaching characterised by commitment and mindfulness. Social justice praxis, therefore, entails critical reflection on social (in)justice in practice to inform change and transformation of practice (Van Deventer et al. 2015). Van Deventer et al. (2015, p. 3) opine that 'teachers who advocate for social justice praxis are agents of change in schools'. In this sense, critical reflection for social justice praxis 'goes beyond simply thinking about our actions and motivations' (Acquah & Commins 2015, p. 791) and rather considers a change in the lives of learners as a result of teaching. However, concern is expressed about whether pre-service TEP adequately prepares teachers for critical reflection on their teaching practice (Šarić & Šteh 2017, p. 75).

Preparing student teachers for social justice praxis through critical reflection

Guiding student teachers in developing a questioning and critical reflective stance towards practice will equip them with the competence to consider all determinants that may affect moral and ethical teaching in support of social justice praxis. Jay and Johnson (2002, p. 76) posit that pre-service teachers should be guided to ask the question: 'What is the best way of understanding, changing, or doing this?'. Finding answers to this question will lead them in defining 'best' practice by considering the consequences of teacher actions and evaluating practice against set goals as well as values and principles of ethical practice (Jay & Johnson 2002, p. 79). Student teachers' critical reflection on and in practice, furthermore, informs them about the knowledge and skills they need to develop to improve their practice (Van Woerkom 2010, p. 340). The ability to critically reflect will, therefore, also support SDL (Rufo 2014, p. 394), which plays a crucial role in continuous and sustained teacher professional development (Šarić & Šteh 2017).

Literature underscores the role that collaborative learning can play in supporting critical reflection (Falcione et al. 2019, p. 1; Huggard, Boland & Goldrick 2014, n.p.; Lucas 2017, p. 257). The motivational role of collaborative learning in support of critical reflection is also generally agreed upon (Laal, Laal & Kermanshahi 2012; Loes & Pascarella 2017, p. 12). Incorporating collaborative reflection in TEP, especially with a focus on practical issues, can therefore enhance student teachers' critical reflective competence and their motivation to engage in critical reflective activities as self-directed learners.

The literature reported earlier strengthens the notion that including individual and collaborative critical reflective activities in TEP can serve to empower student teachers as agents of change in an education system. Calls for HEIs to support student teachers to develop a critical reflective stance towards practice (Badenhorst & Ndlovu 2019, p. 17; Jay & Johnson 2002, p. 79; Van Woerkom 2010, p. 340) motivated us to explore the way the activity involving reflection on the PDD video. As part of the first-year WIL excursion programme, the PDD video fosters critical reflection and how the programme can be adapted to deepen the level on which students reflect, with a specific focus on reflecting on social justice praxis issues.

Research design

This exploratory qualitative study forms part of DBR. Design-based research is implemented in four phases, namely, the (1) analysis of the practical problem, (2) development of a solution informed by existing design principles, (3) testing of the solution in practice and (4) reflection on the findings to inform the design principles of a programme that will be implemented and tested in a subsequent cycle (Amiel & Reeves 2008). This chapter reports on the crucial first two phases of a DBR cycle. Based on the findings of the first two phases, and in collaboration with the programme designers, adaptations can be made to the programme design to improve the way it fosters student teachers' critical reflective competence.

Study population

The WIL excursion is compulsory for all first-year Bachelor of Education (BEd) students from all three campuses of the NWU, South Africa, including students enrolled as distance learning students. All 2,200 students who registered for the excursion in 2022 were invited to participate. By participating in the activity, students gave consent that their responses may be included in the data set. The data used for this study consisted of the anonymised responses of 974 students in the SPP.

Ethical issues

This study qualifies as anonymous research, meaning that at no time were we as researchers able to identify the participants (Stam & Kleiner 2020, p. 3). The anonymised data from students' short reflections on the PDD in the SPP were irrevocably stripped of all direct identifiers such as names and student numbers, and there was no risk of the researchers being able to link the data to any student. Ethical clearance was obtained as described in Chapter 1.

Design-based research – Phase 1: Analysis of the problem

The analysis of the problem included two sub-phases, namely, a theoretical and empirical sub-phase. Firstly, the problem was analysed through an in-depth review of the literature with a specific focus on how to support the development of student teachers' critical reflection. Secondly, data in the form of student teacher reflections on practice-based scenarios were evaluated to determine the critical reflective competence demonstrated by this group of first-year student teachers.

Sub-phase 1: Exploring the literature on strategies to support the development of critical reflection with student teachers

1. As part of the first phase of the DBR (Amiel & Reeves 2008), the literature was explored to identify (a) principles of critical reflection and (b) strategies to foster critical reflection with student teachers.
2. From the literature reported earlier in the chapter, the following core principles emerged as characteristics of critical reflection:
    - Own previously held assumptions and perspectives of teaching practice must be challenged.
    - The primary purpose is to bring about improvement and transformation in professional practice.
    - It supports social justice praxis, with an emphasis on equity and inclusion in a moral and ethical practice with a focus beyond classroom practice.
3. Different strategies are suggested in the literature to support critical reflection, for example, debates and questioning (Walker 2003), collaborative learning (Lord & Lomicka 2007), reflective writings such as teacher reflective journals or diaries (Kruger 2019; Larrivee 2000; Moon 2006). Apart from storytelling and concept mapping, Van Rensburg

et al. (2018) suggest critical incidents as creative strategies to support critical reflection. The PDD video viewed by student teachers in the WIL excursion (see ch. 1) provided such critical incidents that could serve as a trigger for transformative learning through critical reflection.

Šarić and Šteh (2017, p. 69) emphasise that the 'demanding and complex roles faced by the teacher require the ability to reflect critically'. Among various guidelines, they warn that the 'individual characteristics of student teachers such as motivation for reflection and their critical reflective competence' should be recognised in strategies to enhance critical reflection. Motivation driven by a purpose, 'student curiosity' and a 'desire for growth' are fundamental to scaffolding critical reflection. A learning environment should be created where students feel safe to challenge their previously held assumptions and to broaden the limits of their comfort zones (see ch. 1). The WIL excursion that is the focus of this book specifically set out to create such a 'safe space' (De Beer, Van der Walt & Bunt 2020, p. 192). For Šarić and Šteh (2017, p. 69), the central purpose of critical reflection is to explore new solutions and alternative pathways to effectuate the transformation of education.

☐ Sub-phase 2: Exploring the critical reflective competence demonstrated by first-year student teachers

Based on Vygotsky's (1978) zone of proximal development (ZPD), scaffolding students' critical reflection has to recognise the reflective competence of the target student teacher population while supporting them to deepen their critical reflection on practice. The aim of this sub-phase was, therefore, to determine first-year student teachers' critical reflective competence based on their responses to the PDD in the SPP (May 2022). We anticipated the findings to serve as a benchmark for the level on which to scaffold or support critical reflection in the subsequent WIL excursions (in 2023). As part of the DBR, we also needed this benchmark to gauge any possible impact of a revised design implemented in the following year to improve support for critical reflection. The subsequent (2023) implementation of the revised design will make out the last two phases of the DBR, namely the testing of the scaffold for critical reflection (Phase 3) and reflection on the findings (Phase 4).

The students' digital answers to the question posed in the SPP on the PDD served as data for our investigation. We then coded and analysed these reflections to determine the level on which student teachers reflected and specifically to explore the way student teachers were able to reflect on a critical reflective level.

Although student teachers were asked to reflect on all activities offered on the first day, we only focused on reflections that we could link to the PDD (*n* = 467). The scenarios depicted in the PDD video are typical examples of challenges experienced in the South African school context that served as 'discrepant events' with the potential to trigger transformative learning and possible changes in assumptions (Mezirow 2003, pp. 58–59).

Data-collection and analysis

Data in the form of anonymous student teacher responses were received in an Excel sheet from where it was included in a hermeneutic unit created in ATLAS.ti™ (version 22). As suggested by Chi (1997, p. 271), verbal analyses were implemented as a 'method of analysing qualitative data in an objective and quantifiable way' with the goal 'to formulate an understanding of the representation of the knowledge used in cognitive performances and how that representation changes with learning'. This aim concurs with the aim of data-analysis in the context of this study since we set out to formulate an understanding of the representation of student teachers' critical reflective competence (as cognitive performance). Costley and Han (2013) report that this analysis method is especially meaningful in gauging students' cognitive performances in an online context which was the mode of delivery for the WIL excursion in 2022.

ATLAS.ti™ software was used to deductively code the data using the four-level coding scheme suggested by Kember et al. (2008). Although more fine-grained typologies for coding student reflection can be found in the literature (Bell et al. 2011; Chen et al. 2013; Kember et al. 1999), we agreed with Kember et al. (2008) that fewer categories would be easier to synchronise between two coders. As co-researchers, we both used this four-level scale that includes 'habitual action', 'understanding', 'reflection' and 'critical reflection' to code the data (Table 5.1). In a previous study, Kruger (2020) adapted the descriptions of the four reflective categories provided by Kember et al. (2008) to analyse written reflections as part of a WIL reflective journal. This adapted and detailed description of each level was, therefore, suitable to guide us in linking codes to the student teachers' reflections. We again revisited each of these adapted criteria and made further adjustments to match the context of this specific WIL excursion while taking care to keep the criteria grounded in Kember et al.'s (2008) definitions for each category. A summary of these descriptions is set out in Table 5.2. Motivated by the agreement in the literature that reflection on ethical or moral aspects of practice resembles critical reflection (Acquah & Commins 2015; Joseph 2016, p. 42; Mezirow 2003, pp. 85–86), we added these concepts to our code book. Therefore, apart from the criteria for critical reflection suggested by Kember et al. (2008), we coded all texts showing a consciousness of moral and ethical practice

TABLE 5.2: Levels of reflection and adapted criteria for each level based on the levels of Kember et al. (2008, pp. 372–375) and adapted by Kruger (2019, pp. 60–62, 2020, p. 302).

Reflection levels as codes	Criteria for each level/code
Habitual action	• PDD content is reported without significant thought • Answers the question without attempting to understand what is asked • Paraphrasing/summarising/repeating information without real understanding
Understanding	• An attempt to understand the topic or concept • Student teachers may search for underlying meaning, but still not reflected upon • Concepts are understood as theories without being related to personal experiences or real-life context • Rely heavily on what the lecturer has said • Accurately reporting the content of digital diary content with understanding, but without a personal response
Reflection	• Reflect on understanding • Able to relate understanding to personal experiences • Give examples of applications in practice • Experiences are considered and successfully discussed with regard to what has been viewed • A personal insight into the complexities of practice • Reflect on the implications of practice beyond the classroom context
Critical reflection	• Highest level of reflection implies the transformation of a perspective • Demonstrates recognition and change of presumptions • New information/experience disrupts the current belief system, forcing students to reconstruct or reform their beliefs **Criterium added by coders:** Ethical or moral principles as a motive for a change in teacher's actions (Farrell 2015; Sparks-Langer & Colton 1991; Valli 1997)

Source: Authors' own work.
Key: PDD, principal's digital diary.

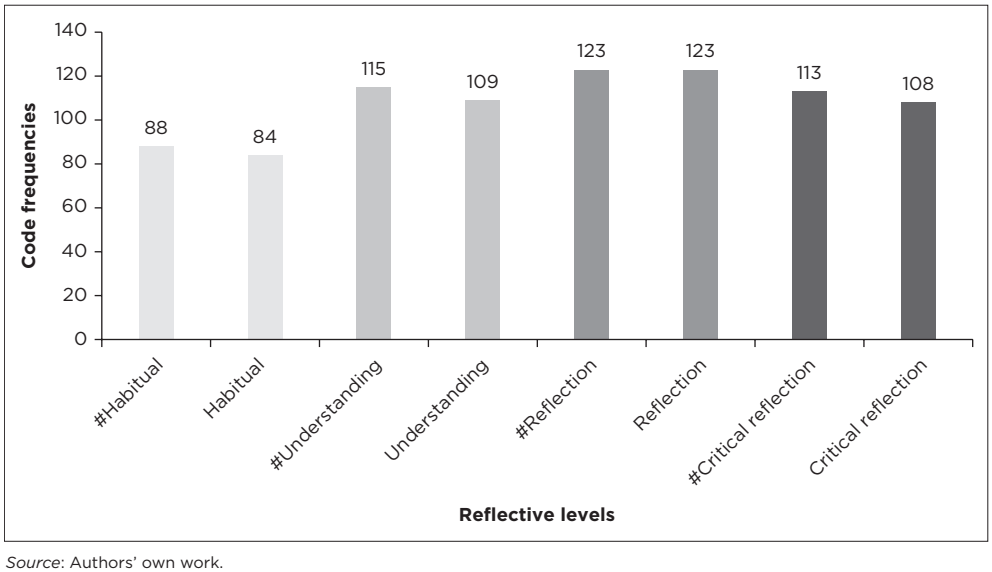
as critical reflection. This code was also linked to evidence that student teachers are set on challenging their perspectives of practice that is requisite to the transformation of education (Farrell 2015; Sparks-Langer et al. 1990; Sparks-Langer & Colton 1991; Valli 1997).

As suggested by Zhang and Wildemuth (2005, p. 3), we assigned codes to text that represented a single code. No text was linked to more than one of the four codes on the four-level scale. However, free codes were also created as these emerged from the data-analysis and are discussed as subcategories related to the relevant reflective levels.

Before commencing with the coding process, we developed a shared understanding of the criteria for each of the four reflective levels as the four main codes to be linked to students' written reflections (Kember et al. 2008, pp. 373–375) (Table 5.2). After coding 100 students' reflections, we checked for concurrence in the relationship between the reflective levels in the two coding sets. After reaching an agreement based on a new shared understanding of criteria relevant to each level, we independently recoded the data using the agreed-upon criteria for linking codes to quotations.

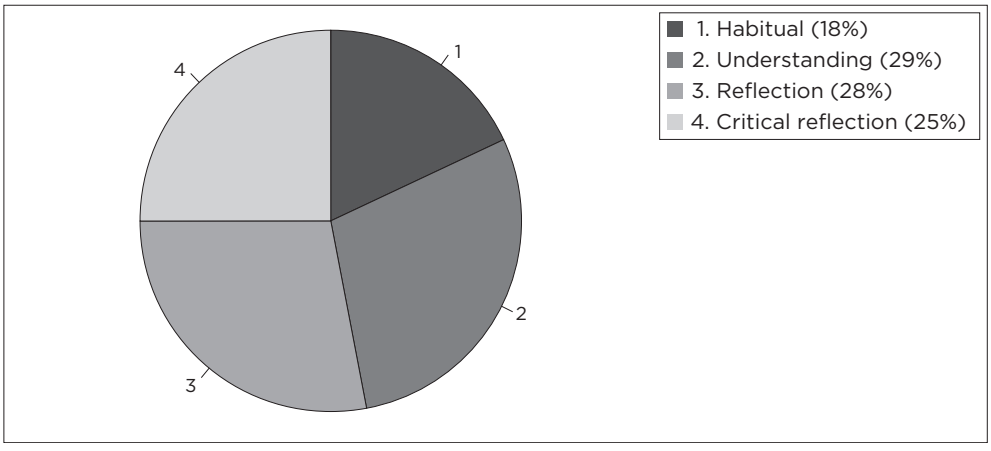
After coding the first 500 students' responses by evaluating each response to the reflective levels of Kember et al.'s (2008) model, we agreed that we have sufficient information to determine the students' level of reflection in this first DBR phase to serve as a benchmark for repeating the same process in the revised scaffold in the third phase of the DBR. It is important to note that before this reflective activity, no specific teaching or scaffolding of critical reflective competence was provided. Out of 500 student reflections, we could only link 467 reflections to the four-category levels as some students responded with single words or irrelevant texts that can be attributed to a poor understanding of the activity or ignorance of what reflection entails. Although the number of students responding with irrelevant text is concerning, we only included meaningful text in the data set as we aimed to determine the level of reflection to serve as a benchmark. Through verbal analysis (Chi 1997), we quantified the qualitative data by using the four categories of reflection (Kember et al. 2008) to investigate the way the reflective activity fostered critical reflection. Figure 5.1 shows the code frequencies for each reflective level based on the two coding sets.

The small margins between the frequencies for the two sets confirmed that we reached a shared understanding of the criteria for the different levels of reflection. The fact that students mostly wrote one or two short sentences to describe their experience of the way the activity contributed to their development as 'future super teachers' (Petersen et al. 2022, p. 3) and the well-defined four-category scheme could have contributed to the low margins between the coding sets of the two researchers. The average between the code frequencies for the two coding sets for each reflective level was computed as illustrated in Figure 5.2.



Source: Authors' own work.

FIGURE 5.1: Number of codes linked to the four reflective levels by the two coders.



Source: Authors' own work.

FIGURE 5.2: Average percentages of the frequencies for the four reflective categories.

It should be noted that these percentages (Figure 5.2) are not regarded as an accurate representation of the levels on which student teachers reflected. Apart from acknowledging researcher bias in the quantification of the qualitative data, this process merely served to create a benchmark for comparing and understanding the impact of a scaffold for student teachers' critical reflective competence in future. Motivated by the literature (Acquah & Commins 2015, p. 791; Joseph 2016, p. 42; Mezirow 2003, pp. 85–86), we anticipate that fostering this competence will better equip student teachers for social justice praxis.

Findings on the coding of the data to the four categories

The findings show a surprisingly small margin between the code frequencies for the four levels based on the adapted typology of Kember et al. (2008) (Table 5.2), which served as categories that are subsequently discussed.

Habitual action

Kember et al. (2008, p. 373) view habitual action as non-reflection that relates to a surface approach. We coded text as habitual action when the student responded to the question 'without attempting to reach an understanding of the concept or theory that underpins the topic' (Kember et al. 2008, p. 373). Although the margin between the categories is not significant, this category shows the lowest frequency percentage (18%). The following are typical examples of quotations coded as habitual action:

> 'It gave me more knowledge about teaching.' (Student teacher, May 2022, SPP)

> 'I have learned many things to be a good teacher to learners.' (Student teacher, May 2022, SPP)

Despite lacking reflection, quotations on this level however showed that students experienced this activity as positive:

> 'Yesterday's lesson imparted me with some knowledge, good values, and skills.' (Student teacher, May 2022, SPP)

> 'It was good, I learned a lot about teaching.' (Student teacher, May 2022, SPP)

Although habitual actions are regarded as non-reflective, positive or negative feelings about a learning situation can trigger the reflection process (Peltier, Hay & Drago 2005, p. 252). Quotations on this level showed appreciation for the collaborative learning in the breakaway groups:

> 'Yesterday's session was amazing, and I was able to cooperate with others.' (Student teacher, May 2022, SPP)

Considering that there was no explicit instruction to alert students to the levels on which meaningful reflection takes place, the low frequency for this non-reflection level is promising. Although text on this level is not regarded as reflection, mere thinking about the scenarios can be regarded as the first step towards understanding, reflection and critical reflection (Kruger 2019; Peltier et al. 2005).

Understanding

Kember et al. (2008, p. 373) distinguish text on the understanding level from that on the habitual level by the way a student attempts to reach an understanding of a concept or a topic. Text on this level 'commonly occurs with undergraduates who lack experience'. Text that demonstrated an understanding of the complexities of practice but failed to link these complexities to a practical situation or the implications of these complexities for practice was linked to 'understanding' as demonstrated by the following students' answers:

> 'It contributed a lot as I not only learnt about working in groups, I also learnt the different problems principals face at school.' (Student teacher, May 2022, SPP)

> 'You need to have clear goals and objectives.' (Student teacher, May 2022, SPP)

As the data were collected from first-year students who have never visited schools as part of WIL, we anticipated a high frequency of codes on this level based on students' lack of practice experience. However, the relatively low percentage of reflection on the two lower reflective levels could be attributed to the scenarios depicted in the PDD that specifically focused on social (in)justices that rather motivated mentioning of issues that could be linked to the higher reflective levels.

Reflection

Pitsoe and Maila (2013, p. 211) emphasise the relationship between reflection and understanding. Because of the reciprocity, linking text to these two codes was not always clear-cut. After much deliberation, linking codes to this category was based on the definition of reflection provided by Kember et al. (2008, p. 374). Therefore, text demonstrating an 'interpretation' of the visuals, text relating the content to the student teacher's personal experiences or text mentioning the 'consequences' of teacher actions for practice and education, in general, were linked to this category. This category showed the second highest frequency (28%), which can also be attributed to the content of the visuals that elicited students to reflect on the implications of teacher behaviour for practice, as demonstrated in the PDD video that also served as a criterion for linking text to this level.

Although a thematic analysis was not the aim of the study, it supported our understanding of the aspects that could have served as triggers for reflection and critical reflection. Themes emerging in this category include 'reflections on teacher responsibility', 'complexities of education', 'the value of collaborative learning' and 'reflexivity', whereby students showed an awareness of their shortcomings and the need to gain knowledge and skills to face the challenges they will experience in practice.

Quotations linked to reflection mentioned the responsibilities of teachers, such as demonstrated by the following:

> 'I learned that there is so much you need to look out for to become a super teacher.' (Student teacher, May 2022, SPP)

> 'I've realised that teaching is not just a profession, and it requires dedication, being able to provide solutions, and being able to tackle every challenge that might come your way as a teacher.' (Student teacher, May 2022, SPP)

The second reflection is also evidence of the value of the activity to create an awareness of the input and dedication required from a professional teacher (Šarić & Šteh 2017).

The activity also spurred students to reflect on a teacher's responsibility to choose the most appropriate teaching strategy that will support learners to master the learning outcomes:

> 'I learned that it is important for a teacher to interact with students and that a good teacher leads by example.' (Student teacher, May 2022, SPP)

> 'Yesterday's session was great; it made me realise that teaching has to be done with love to have positive relationships with your learners.' (Student teacher, May 2022, SPP)

The PDD video succeeded in motivating reflection on the teacher's responsibility to acknowledge and accommodate diversity:

> 'It made me realise that as a teacher I will be dealing with different learners, and I must understand them.' (Student teacher, May 2022, SPP)

> 'To be able to understand someone else's circumstance and not to judge.' (Student teacher, May 2022, SPP)

An awareness of mentioned complexities, such as an inclusive approach to education that accommodates diverse learners at the onset of their journey to becoming a super teacher (Petersen et al. 2022), is paramount.

Quite a few students mentioned the value of group discussions on practice issues, as demonstrated in the PDD. Experiencing collaborative learning as a contribution to their development could motivate students to reflect more collaboratively during their studies and as active participants in a practicing community with their colleagues once they enter practice:

> 'I honestly enjoyed yesterday's sessions, learned a lot from other people's points of view, and hope to continue to build my teamwork skill on future assessments. Cooperative learning is essential.' (Student teacher, May 2022, SPP)

> 'It contributed much especially working as a group helped me to learn from others.' (Student teacher, May 2022, SPP)

These reflections clearly confirm the potential of collaborative reflection on practice in the breakaway groups to motivate teachers to challenge their assumptions of what good education entails.

Feucht, Brownlee and Schraw (2017, p. 234) posit that 'reflection becomes reflexivity when informed and intentional internal dialogue leads to changes in educational practices, expectations, and beliefs'. These authors emphasise the role of teacher reflexivity in promoting 'deep professional learning and bringing sustainable change in education'. In some instances, the PDD supported reflection on own shortcomings and the discrepancy between where students are in regards to knowledge and skills, as well as the growth necessary to be(come) a super teacher that was linked to reflexivity:

> 'It showed me that I still need to acquire more skills and knowledge for me to be a good teacher.' (Student teacher, May 2022, SPP)

> 'It made me realise that I need to work on myself if I want to be a teacher.' (Student teacher, May 2022, SPP)

Some of the quotations that were linked to reflection touched on aspects of critical reflection; however, only responses showing an awareness of the principles of ethical and moral practice or reference to a possible change in perspective with the possibility of transformative learning were coded as critical reflection.

Critical reflection

We specifically investigated the way the PDD activity fosters critical reflection that considers the way teaching adheres to ethical, moral and political concerns for teaching practice (Brookfield 2017; Farrell 2015; Sparks-Langer et al. 1990; Valli 1997). The relatively high frequency of codes linked to critical reflection, regarded as the highest level of reflection, was therefore somewhat of a surprise. With the emphasis on scenarios depicting unethical or immoral practices such as teacher misconduct, ignorance of learner diversity, bias concerning gender and sexual orientation, teachers demonstrating a negative attitude towards teaching as well as teachers failing to apply innovative, learner-centred teaching strategies, it is forthcoming that the videos created a consciousness of unethical and immoral practice. This could have served as a 'discrepant event' (Mezirow 2003) that motivated the mentioning of ethical issues and possibly also a changed view of practice. An awareness of own misconceptions of teaching and the need for a changed perception were also linked to critical reflection. Although several quotations could be linked to these criteria, it became evident that greater knowledge of critical reflection and descriptive language skills will strengthen students' ability to provide a clear rationale for their reflections.

Two themes emerged in this category, namely, a *change in perspective* and *principles related to moral or ethical practice*.

A change in own perspective of practice implies the questioning of own previously held assumptions of practice, which can serve as a mover for transformative learning as demonstrated by the following quotations:

> 'Yesterday's session opened a new perspective on teaching and cooperative learning. I realised I still have a lot to learn and skills to acquire.' (Student teacher, May 2022, SPP)

> 'It completely changed my view of what it meant to be a good or superhero teacher. I am learning more than I thought possible and feel positive about my future as a teacher.' (Student teacher, May 2022, SPP)

> 'It taught me that we as teachers play a bigger role in the learner's daily lives than I have thought.' (Student teacher, May 2022, SPP)

According to literature, changes in thinking and perspectives hold value for a change in behaviour that is core to SDL (Loeng 2020).

Quotations demonstrating an awareness of moral and ethical practice endorse social justice and refer to concepts such as recognising diversity and learner equality, teacher professionality and avoiding stereotyping:

> 'Establish a professional relationship with your student and remember that you are a supportive structure for learners of different backgrounds.' (Student teacher, May 2022, SPP)

> 'The impact we have on children and how to provide a safe environment with no stereotypes, as well as how to work with other teachers.' (Student teacher, May 2022, SPP)

Quotations in this category also reflected the aim of the WIL excursion namely, to create a critical awareness of the complexities of practice they need to be prepared for:

> 'It showed me that being a teacher we meet many challenges, but we have to overcome them because we are teaching future leaders.' (Student teacher, May 2022, SPP)

> 'I learned that every school has challenges and that we as teachers have to do our very best to assist every learner positively so they can perform their best.' (Student teacher, May 2022, SPP)

> 'I learned that we are teachers as innovators and that we should be able to make a plan in different situations; I also learned the big effect [*sic*] a teacher can have on a learner's life.' (Student teacher, May 2022, SPP)

These reflections demonstrate a consciousness of the teacher's responsibility to teach with aims beyond the classroom walls (Bullough 2011, p. 27; Okogbaa 2017, p. 83) that reflects a morally sound perspective of the teacher's role. This awareness of the lifelong impact of a teacher on a learner's life demonstrates the value of this PDD activity to foster critical reflective competence in support of a social justice praxis grounded in moral and ethical principles.

Critical reflections also touched on the issue of SDL and the realisation that the four years of study cannot prepare student teachers for all the unexpected challenges they may encounter:

> 'A teacher is a lifelong learner. A teacher will always have to work on their skills and learn new skills to benefit or serve the learners well.' (Student teacher, May 2022, SPP)

Although the frequency for this code was not significant, based on the evidence of the potential of this PDD activity to support critical reflection, we anticipate that a stronger scaffolding for critical reflection will increase the possibility that these reflections will equip student teachers even better for a social justice praxis and transformative learning that will empower them to act as agents of change once they join the teaching profession.

Design-based research Phase 2: Development of a solution

Although student teachers' responses in the SPP video were often short and incomplete sentences to jot down the way the activity contributed to their development as future super teachers, the concepts mentioned frequently referred to criteria related to critical reflection. The relatively

low margins between the non-reflective levels and the reflective and critical reflective levels, even without any scaffold for critical reflection, are mainly because of the nature of the challenges portrayed in the PDD video. These challenges, as well as the collaborative reflection in breakaway groups, clearly motivated critical reflection and should again form part of a revised design. We believe that equipping students with the necessary knowledge of critical reflection before watching the practice-based scenarios demonstrated in the PDD video will have a more lasting impact on student teachers' readiness to take up their roles as super teachers (Petersen et al. 2022, p. 3). In collaboration with the designers and facilitators of the WIL excursion programme, fun and challenging activities can be developed to strengthen the way the programme fosters student teachers' critical reflective competence.

Šarić and Šteh (2017) suggest the following principles be acknowledged in activities aiming to foster critical reflection:

1. Activities must be inclusive of all cultures and the diverse student population of the HEI.
2. Activities should:
    a. create an awareness of the value of critical reflection with students to motivate growth
    b. benefit from student teachers' curiosity
    c. create a willingness to wonder
    d. stimulate open-mindedness
    e. motivate a desire to grow
    f. create an opportunity to critically reflect on own emotions and that of others
    g. take place in an environment where students will feel comfortable to challenge their own views and actions
    h. allow and celebrate student contributions to solutions to transform education

Upon discussions with the programme developers, it emerged that the current activities were already grounded in these principles suggested by Šarić and Šteh (2017). However, no specific scaffolding for critical reflection was provided before the PDD video activity. It is therefore suggested that a component is included at the onset of the first-year WIL excursion programme or in a compulsory module prior to the programme, where critical reflection is explained, its importance is highlighted, and efforts are made to deepen students' potential to reflect critically. Critical reflection on social justice issues, such as reflected in the PDD video, could lay the foundation for the development of a socially-just approach to education throughout their studies and teaching careers. Motivated by the literature reported, we believe that if all student teachers could be guided to use a

social justice lens when reflecting on practice, it could play a crucial role in the transformation of education in South African schools.

Conclusion

Evidence, albeit not significant, of critical reflection by student teachers on the practice scenarios depicted in the PDD video is an indication that the activity is on the right track to support the aims of the WIL excursion programme, namely, to create an awareness of the complexities of practice. However, without a thorough knowledge of the criteria for deep critical reflection and the role it can play in transforming education towards social justice praxis, the sustainability of the impact of this awareness on student teachers' development towards becoming professional teachers, as well as in the rest of their teaching careers, cannot be guaranteed.

The literature and the student teacher reflections furthermore confirm challenges that teacher educators need to consider when striving to support the development of critical reflection. These challenges should be recognised in the design of activities to foster deeper critical reflection on the complexities of practice in support of social justice praxis.

Equipping first-year student teachers with critical reflective skills is a moral obligation of HEIs. This competence does not only prepare prospective teachers for a more social justice praxis, but teachers who critically reflect are often also those who take the responsibility to improve their own teaching practice in the interest of the learners. A critical reflective competence is, therefore, the most powerful superpower that a teacher can have to make a difference in the diverse South African educational milieu.

Chapter 6

Entrepreneurial learning as curriculum innovation toward bridging the theory–practice divide when preparing future 'super teachers'

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Abstract

Entrepreneurial learning is a new exigent addition across all phases of schooling in South Africa, requiring that teacher education be adapted accordingly. This chapter reports on the first cycle of design-based research (DBR) conducted to plan, implement, and evaluate entrepreneurial learning as a novel topic in the North-West University (NWU) teacher preparation programme. Persistent misconceptions exist about what entrepreneurial learning is and what value it contributes to education as part of school education and teacher preparation. Meticulous analysis of this problem and how the novel content should be constructed was needed to enable alignment thereof with curriculum innovation as part of efforts to reduce the theory–practice divide in teacher education. The five customary steps

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of design-based educational research (DBER) were followed to explore this problem, develop and implement entrepreneurial learning for the programme, evaluate it and formulate recommendations for future implementations of entrepreneurial learning in work-integrated learning (WIL) excursions. The qualitative responses were thematically analysed for patterns related to first-year student teachers' views regarding entrepreneurial learning, its contribution to education in general, as well as its contribution to their preparation as future teachers in the WIL excursion. The findings indicate that many first-year students still held misconceptions about the concept and value of entrepreneurial learning before attending the section thereon. However, significant numbers of students experienced the entrepreneurial learning section in the excursion as a positive contributor to their preparation as future 'super teachers' in practice. It is recommended that the design of entrepreneurial learning as part of WIL excursions could be further refined to better align with local contexts and to be more interactive and engaging. These findings underscore the need for continued research to explore the design and development of entrepreneurial learning as part of curriculum innovation in teacher preparation programmes to narrow the theory–practice divide.

Introduction

In recent years, entrepreneurship and entrepreneurial learning have gained prominence in education across the globe (Neck & Corbett 2018, p. 9). The global adoption and expansion of entrepreneurial learning impacted curricula across all levels, including tertiary institutions and schools. The South African Department of Basic Education (DBE) followed this trend. As part of their *Education Sector Plan for 2030*, a so-called 'Blueprint for implementing entrepreneurship education into the National School system' (DBE 2016, p. 3) was tabled in 2016. This plan outlines recommendations for developing and expanding entrepreneurial learning across the South African school curriculum. Two DBE recommendations held significant relevance for the current investigation. The first was that 'entrepreneurship and social entrepreneurship need to be taught as key competencies, and not specific subjects' (DBE 2016, p. 40). The second was that 'it is imperative that teacher training be implemented as soon as possible', with a subsequent clarification that teachers' mindset needs to be enhanced to adopt the benefits of entrepreneurial learning as part of education for all learners, enabling teachers to become positive agents of change (DBE 2016, p. 40). All South African teachers will therefore be required in future to be prepared to some extent to enable them to implement the methodology and pedagogy associated with entrepreneurial learning, to effect the envisioned outcomes of the blueprint document (DBE 2016, p. 39).

As only a few subjects in the school curriculum currently include entrepreneurship content (Du Toit & Kempen 2018, p. 13), entrepreneurial learning in existing teacher preparation programmes was correspondingly scarce. To align with the requirement in the blueprint that 'all teachers will [*have to*] cover entrepreneurship content' and integrate it into all subjects (DBE 2016, p. 41), teacher preparation programmes would have to be adapted to include entrepreneurial learning for *all* future teachers, not only those studying to teach subjects that currently include entrepreneurship content in their curricula. The conundrum facing universities is that programme redesign is a protracted, administration-intensive and slow process. Hence, entrepreneurial learning was recognised as a gap between theory (what existing teacher preparation programmes taught) and practice (what future teachers will be required to teach) that had to be traversed in the teacher preparation programme at NWU. The WIL programme, one of the MRTEQ in South Africa (Department of Higher Education and Training [DHET] 2018, p. 14; see also ch. 1), with the excursion embedded therein, offered an opportunity to better align theoretical teacher preparation to what is happening in school classrooms by introducing entrepreneurial learning to all first-year student teachers at the university.

Its inclusion as part of the excursion programme would have to be carefully constructed to optimally contribute to students' mindset and understanding of entrepreneurial learning, in alignment with the blueprint document. The programme developers, therefore, intended to keep in mind the type of student (first-year students as emerging adults with particular learning needs) and the pedagogical requirements and content linked to entrepreneurial learning when developing this content for the WIL excursion. However, during the initial exploratory stages in the DBR process, we became aware of additional critical issues that would significantly impact our approach toward designing entrepreneurial learning for the excursion programme. In particular, we became cognisant of some misconceptions regarding what entrepreneurial learning (as opposed to 'entrepreneurship' or 'entrepreneurship education') is. Furthermore, several misunderstandings or underdeveloped insights exist regarding the value entrepreneurial learning can contribute toward education at all levels, including schooling and teacher education. Therefore, when developing and designing the entrepreneurial learning content for the WIL excursion programme, a fundamental problem to overcome was the persistent misconceptions that exist about what entrepreneurial learning is and what it can contribute to education at various levels. We had to endeavour to construct an entrepreneurial section in the excursion programme that would be perceived and experienced as a meaningful and valuable contribution to students' teacher preparation.

The following research question was formulated to guide the current investigation and address the problem discussed up to this point: How can entrepreneurial learning be constructed and implemented in an excursion programme to contribute meaningfully to bridging the theory–practice divide for first-year student teachers? The following section unpacks the key concepts that we explored and analysed to inform our understanding of the problem, as mentioned earlier, which provided a foundation for developing and designing entrepreneurial learning for the WIL excursion programme in 2022.

Conceptual clarification and framework

Four core conceptual ideas and how they relate to the problem identified in the introductory section and each other are elucidated. As a starting point, we differentiate *entrepreneurship*, *entrepreneurship education*, and *entrepreneurial learning* to clarify the nuanced differences between these concepts and why we focused on 'entrepreneurial learning' in the current study. We then explore the value attributed to entrepreneurial learning in the South African school context and teacher education. Thirdly, we briefly explain considerations for developing entrepreneurial learning as part of the excursion programme for first-year student teachers. Then a relatively novel term – odigogy – is introduced as a strategy that offers opportunities to navigate the theory–practice divide to foster entrepreneurial learning in first-year students. After that, the conceptual map developed by Hägg and Kurczewska (2022b, p. 43) for guiding entrepreneurial learning in first-year students is presented as the theoretical framework used in the investigation reported in the current chapter.

Concept clarification

The three concepts of entrepreneurship, entrepreneurship education, and entrepreneurial learning are sometimes used interchangeably, resulting in a loss of clarity and nuance of purpose, but also because a lack of differentiation perpetuates misconceptions related to these concepts. The Entrepreneurial Learning Initiative (ELI) (2021, p. 10) describes this issue as '[o]ur ability to embrace entrepreneurship is limited by the ways we define it'. Therefore, before developing content for the excursion, we had to clarify and understand these concepts ourselves.

Entrepreneurship

Entrepreneurship as a concept stems from the French term *entreprendre*. This term can informally be translated to 'undertaking something', 'being enterprising' or 'taking initiative' (Conradie 2011, p. 6). Despite the term

having been in use for decades, there is still no single accepted definition or consensus as to what 'entrepreneurship' is, resulting in a variety of interpretations and understandings thereof (Conradie 2011, p. 6; Sirelkhatim & Gangi 2015, p. 8; Toscher 2019, p. 14). For the current study, Conradie's (2011) uncomplicated definition of entrepreneurship was embraced. He explains that:

> Entrepreneurship is the process when an entrepreneur constructs or seizes a feasible opportunity and, irrespective of the resources that are available at the start, implements his/her plan with success. (p. 6)

This definition indicates that entrepreneurship is an activity that includes several elements, particularly 'a process or plan of action; a person (the entrepreneur); an opportunity; and resources' (Du Toit 2018, p. 3).

Education is needed to prepare entrepreneurs towards successfully structuring and completing these activities. This notion assumes that entrepreneurship *can* be taught and that entrepreneurs are not necessarily born as such – a debate that has been ongoing for years but which most scholars now agree has been settled (Du Toit 2018, p. 232; European Commission [EC] 2014, p. 9). The content developers, therefore, viewed entrepreneurship as something that *can* be *taught* (by teachers or lecturers) and *learned* (by learners and students).

Entrepreneurship education

Entrepreneurship education – that is, education to develop and support entrepreneurship – is sometimes interchangeably referred to as 'enterprise education' or 'entrepreneurial education' in literature (Hägg & Kurczewska 2022a, p. 17; Lackéus 2020, p. 939). Entrepreneurship education can be facilitated through the utilisation of types or approaches *about*, *for* or *through* entrepreneurship, with each approach having a slightly divergent purpose (Du Toit 2021, p. 2; Sirelkhatim & Gangi 2015, p. 5; Toscher 2019, p. 10). The first approach – education *about* entrepreneurship – disseminates general content knowledge about entrepreneurship, entrepreneurs, and activities related to it. The second approach – education *for* entrepreneurship – focuses on developing students' knowledge and skills for use in entrepreneurship in practice, if or when they become an entrepreneur in future (Du Toit 2021, p. 2). Education *through* entrepreneurship is the preferred approach to facilitate learning in this field, as it aligns 'such education to real-life entrepreneurship experiences, based on learning-by-doing, in which learners "become" entrepreneurs as part of the teaching–learning process' (Du Toit 2021, p. 2). Education through entrepreneurship is, however, seldomly evident in the current South African school curriculum (Du Toit & Kempen 2018, p. 4) and has to be constructed on prior learning. For the excursion programme, we would

introduce education *about* entrepreneurship to the student teachers. Despite the divergent purposes of these three approaches to entrepreneurship education, the general perception often persists that they are all the same – as explained in the following paragraph.

Entrepreneurship education is often narrowly or 'conservatively' linked only to new venture creation or starting a business (EC 2014, p. 17; Lackéus 2020, p. 940; Neck & Corbett 2018, p. 22; Toscher 2019, p. 10). This narrow view has resulted in the general and persisting misconception that entrepreneurship education is intended mainly for students in the fields of commerce, business administration or management (Hägg & Kurczewska 2022a, p. 5). In recent research, there is a notable shift to abolish this misconception through definitions and descriptions that describe the broader value and purpose of entrepreneurship education to develop particular competencies, values, and skills, rather than only focusing on its economic value, with a greater emphasis on value-creation (for the entrepreneur as well as for others) (Hägg & Kurczewska 2022a, p. 16; Toscher 2019, p. 10). Yet, general beliefs are slow to change, and many people, within and outside the field of entrepreneurship education, still hold fast to the narrow economic value purpose for such learning.

From a different viewpoint, entrepreneurial *learning* is viewed as 'the underlying mechanism' for enabling entrepreneurship education (Toscher 2019, p. 11). In other words, it is owned by the learner (or student) who chooses to learn about entrepreneurship (for whatever reason).

Entrepreneurial learning

Allocating ownership to students in entrepreneurial learning is undeniably linked to the learner-centredness that is key to such learning. According to Hägg and Kurczewska (2022a, p. 18), viewing 'entrepreneurship as a learning process enables deconstruction of the entrepreneurial process'. Their viewpoint implies that entrepreneurship and the learning process become inextricably linked. Thus, the process of learning and the entrepreneurial competencies that are gained in it – in the form of knowledge, skills, and attitudes – become inseparable (Hägg & Kurczewska 2022a, p. 18; Lackéus 2015, p. 7; Toscher 2019, p. 11). Shifting the focus to competency development means that the skills and values that are developed in entrepreneurial learning have broader value than only for economic or business applications. Increasingly, contemporary research explores and delineates the broader value of entrepreneurial learning competencies – the associated learning and the entrepreneurial way of thinking (or entrepreneurial mindset) is, therefore, valuable to students whether they choose to become an entrepreneur or not (ELI 2021, p. 25; Lackéus 2015, p. 9).

The competencies associated with entrepreneurial learning vary, but the most recurrent ones include 'to think critically and creatively, individually and collectively, to rise above their circumstances, to solve problems, and to better their world' (ELI 2021, p. 20). When students utilise these competencies in pursuit of creating value for themselves or others, it benefits themselves and society in the form of resilience, creativity, collaboration, flexibility, well-being, and life satisfaction (among others) (ELI 2021, p. 4), underscoring the value-creation purpose of entrepreneurial learning. Therefore, entrepreneurial learning can contribute value through 'increased societal resilience, but also individual growth, increased school engagement and improved equality', which encompasses benefits much broader than only job creation (Lackéus 2015, p. 6) or business-orientated pursuits.

Lackéus (2015, p. 23) explains that the 'value-creating entrepreneurial mindset and generic methodology' that is associated with this broader view of entrepreneurial learning can be applied 'to all walks of life' – even to the extent that it can be labelled as 'entrepreneurship as everyday practice'. In the same vein, McGuigan (2016, p. 39) argues that '[c]ommunity activism, intrapreneurship, educational reform, government reform, and similar efforts all demand entrepreneurial thinking and action'. In a country such as South Africa, where unemployment, as well as economic and social problems, are rife, developing an entrepreneurial mindset in learners, with competencies such as problem-solving, good communication skills, and creativity, might be helpful to prepare future citizens who can tackle these issues to create value – not only for themselves but for society in general. Including entrepreneurial learning in the teacher preparation programme was therefore not only informed by the DBE blueprint for entrepreneurship but also aimed to contribute to easing some of the societal woes experienced in South Africa in the long term.

Developing entrepreneurial learning programme content for first-year students

Preparing future teachers with entrepreneurial learning content knowledge and insights would contribute to narrowing the theory–practice divide by providing information they would need when they enter their careers as educators in South Africa. However, student teachers themselves can benefit from entrepreneurial learning, as it 'empowers students with a philosophy of entrepreneurial thinking, passion, and action-orientation that they can apply in their lives, their jobs, their communities, and/or their own new ventures' (McGuigan 2016, p. 39). Introducing entrepreneurial learning will therefore open opportunities for student teachers to better understand and experience the value of entrepreneurial learning for their future

learners, but also for themselves. Hence, developing an entrepreneurial mindset could contribute to the superpowers of these future super teachers, in line with the overall excursion's goals (see ch. 1).

Nevertheless, first-year students often have limited prior content knowledge of entrepreneurship or entrepreneurial learning. They would have to be guided to move from the position of 'novice' to becoming a more knowledgeable or experienced 'expert' learner (Hägg & Kurczewska 2022b, p. 35). Considering that education *through* entrepreneurship is seldomly evident in the current South African school curriculum (Du Toit & Kempen 2018, p. 13), we assumed that most students entering our university will have limited prior knowledge of entrepreneurial learning. Novice learners in any particular field (such as entrepreneurial learning) will initially need some instruction and guidance to avoid cognitive overload (Hägg & Kurczewska 2022b, p. 38). The onus for constructing suitable guidance in this respect would rest on the lecturers facilitating this content (Neck & Corbett 2018, p. 23), who would have to motivate and inspire students' entrepreneurial mindset, skills, and conduct; design and deliver suitable programmes or curriculum content; and continuously reflect on their own practice with an eye on improving similar offerings in future (AdvanceHE 2020, p. 7). Entrepreneurial learning in the WIL excursion programme would therefore necessitate a foundation of suitable guidance to assist first-year student teachers in traversing the envisioned gap between their teacher preparation and the imminent requirement to teach entrepreneurial learning in practice.

Odigogy to guide future teachers in bridging the theory–practice divide

Odigogy is a relatively novel expression proposed and developed by Hägg and Kurczewska (2019, 2020, 2022b). The term 'odigogy' stems from the Greek word '*odigó*', which translates as 'guide' in English (Hägg & Kurczewska 2019, p. 141). These scholars proposed odigogy as a space where students are guided – based on their entrepreneurial proficiency – in the continuum between pedagogy and andragogy. In the odigogy sphere, first-year students can advance from lecturer-based to self-directed learning, supporting their development from novice to expert on particular content (Hägg & Kurczewska 2019, p. 141). Their argument is based on 'the need to address student characteristics', particularly the complexities that first-year students experience in the emerging adulthood phase, together with students' 'level of proficiency in a subject such as entrepreneurship', for which they often have limited prior learning (Du Toit & Kempen 2018, p. 13; Hägg & Kurczewska 2022b, p. 38). The need for lecturers to develop 'a guiding process throughout higher education, which takes place in the

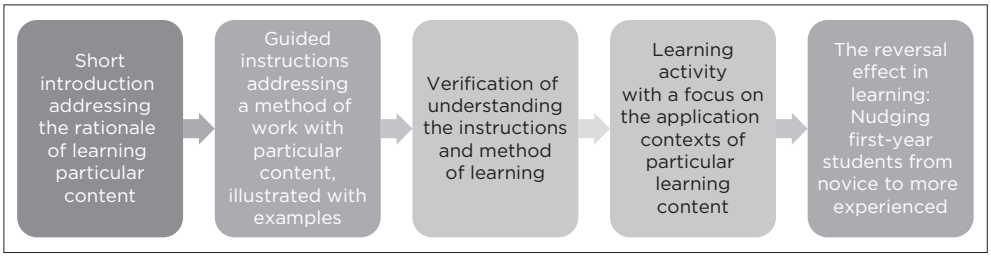
pedagogy–andragogy continuum' is emphasised (Hägg & Kurczewska 2020, p. 766). Thus, odigogy elucidates (Hägg & Kurczewska 2020):

> [*T*]he learning and teaching of entrepreneurship within the context of higher education and discusses how to think when structuring entrepreneurship education, while taking account of the characteristics of university students as emerging adults. (p. 760)

Accordingly, Hägg and Kurczewska (2022b, p. 43) proposed a conceptual map for guiding first-year students in entrepreneurial learning, underpinned by odigogy, toward the reversal effect (Figure 6.1). The reversal effect, embedded in the cognitive load theory (also see ch. 3), 'focuses on the interaction between levels of learners' expertise and the instructional procedures used' to facilitate certain content (Chen, Kalyuga & Sweller 2017, p. 394).

The cognitive load theory outlines the importance of instructional design to facilitate *understanding*, rather than merely learning, based on learners' level of development and capacity to grasp learning (Sweller 1994). Students trying to grasp novel content without suitable prior learning will struggle to process the learning, mainly using short-term memory schemas, which may lead to cognitive overload (Sweller 1994). Thus, an instructional design must consider learners' level of development – for example, first-year students as emerging adults – and their processing capacity. When students have limited prior knowledge of particular content, the instructional design must be scaffolded to enable learning and understanding when processing novel content (which entrepreneurial learning is for many first-year students). Cognitive overload is, therefore, a concern when introducing entrepreneurial learning as novel content to first-year students, especially when simultaneously using novel ways of instruction (Hägg & Kurczewska 2022b, p. 38).

To overcome this concern, Hägg and Kurczewska (2022b, p. 38) propose that the learning process is constructed and guided carefully and aims to use students' long-term memory as the schema for integrating new learning content. These authors also warn that student-centred teaching–learning



Source: Hägg and Kurczewska (2022b, p. 43).

FIGURE 6.1: Conceptual map to nudge first-year students towards the reversal effect.

approaches, such as experiential or PBL, need to be utilised to support the reversal effect. The reversal effect in cognitive load theory refers to using different instructional approaches in combination with learners' level of expertise to attain various outcomes (Chen et al. 2017, p. 394). At the introductory stage, more information and guidance are needed about particular content when students are novices. However, as they become more proficient (or experts), less guidance is needed as students increasingly take responsibility for their learning and understanding (Chen et al. 2017, p. 394). As students' level of expertise increases, 'additional information becomes redundant, resulting in a reduction or reversal of the advantage' of additional guidance (Chen et al. 2017, p. 396), also known as the learning reversal effect. The reversal effect has been demonstrated in studies on technical apprenticeship, mechanical engineering, mathematics curricula, English literature, and other practice-based learning environments (Chen et al. 2017, pp. 394–395). The conceptual map proposed by Hägg and Kurczewska (2022b, p. 43) could be utilised for guiding first-year students in entrepreneurial learning, underpinned by odigogy, toward the reversal effect (Figure 6.1).

This conceptual map or framework (Figure 6.1) can be used for constructing progressive guidance for first-year students to help develop their proficiency in entrepreneurial learning and progressively increase their responsibility for their learning. In other words, it would contribute to our efforts to develop and foster students' transition towards more self-directed learning, in line with the aims of the Faculty of Education and the university. This framework, therefore, guided the current investigation when entrepreneurial learning had to be embedded in the WIL excursion programme to guide (primarily) novice first-year students toward a deeper understanding and more self-directed learning of that particular content.

Designing and implementing entrepreneurial learning for the virtual work-integrated learning excursion

The design of the entrepreneurial learning section as part of the WIL excursion formed part of curriculum innovation. It contributed to efforts to adhere to the DBE's (2016, p. 40) stipulation that 'teacher training be implemented as soon as possible' for entrepreneurial learning in South African schools. It is problematic as very few subjects in the South African high school curriculum pertinently include or even refer to entrepreneurship education (Du Toit & Kempen 2018, p. 13). Entrepreneurial learning is, therefore, a novel concept for most student teachers, contributing to the 'problem' informing this design-based investigation, together with the aforementioned narrow ideas about the limited value of entrepreneurial learning to contribute only to economic goals.

The challenge (or problem) was to design entrepreneurial learning as a meaningful part of curriculum innovation in teacher preparation. The literature indicated that we would have to consider the emerging adulthood phase in which most first-year students find themselves. They were also primarily entrepreneurial learning novices who would require guidance for learning this content. A third underlying consideration was the misconceptions these students might have regarding what entrepreneurial learning entails and its value in education. These issues were pertinent when planning and designing the section on entrepreneurial learning for the WIL excursion.

As entrepreneurial learning was not part of previous WIL excursions, the conceptual map proposed by Hägg and Kurczewska (2022b, p. 43; Figure 6.1) was used as a framework and starting point for designing the new section on entrepreneurial learning. The concepts in Hägg and Kurczewska's (2022b) map were used as numbered 'steps' to structure the design of our novel entrepreneurial learning section. Odigigy was contemplated as the space in which we would have to guide first-year students to become more knowledgeable about entrepreneurial learning as a requirement for their future careers. The design developed and used for implementing the entrepreneurial section in the 2022 WIL excursions is outlined in Table 6.1. Several instructional tools were incorporated in designing a guided problem-based approach for implementation, as outlined in Table 6.1, with more detailed explanations following after that. Each of these 'steps' (the concepts proposed by Hägg and Kurczewska 2022b, p. 43 in Table 6.1) and the reasoning for how each was unpacked in the entrepreneurial section of the WIL excursion are discussed subsequently.

☐ Step 1: Introduction and rationale

The introduction to the rationale for entrepreneurial learning was intended to set the stage for why this (mostly) unfamiliar learning was presented to the students. Three items were used to structure the introduction (Table 6.1). A brief video clip (UNESCO 2015) rationalising the need for education in a changing world to develop learners' alternative skills, such as communication, leadership, teamwork, resourcefulness, perseverance and entrepreneurship, concretely linked the entrepreneurial learning section to the content dealt with in previous sections of the WIL excursion. The intent was to ensure a smooth transition between topics so that entrepreneurial learning would not seem like a stand-alone or 'added on' topic but, instead, that it was as relevant as the previously discussed topics in the excursion.

Next, a succinct overview of Biesta's (2020) theory on the purpose of 'good' education, specifically the subjectification purpose, was unpacked. Biesta (2020, p. 99) expounds the subjectification purpose as 'what

TABLE 6.1: Design of the novel entrepreneurial learning section for the work-integrated learning excursion.

Concepts proposed by Hägg and Kurczewska (2022b, p. 43)	Concepts realised in the design of the entrepreneurial learning section in the WIL excursion
Short introduction addressing the rationale of learning particular content	• Video clip rationalising the need for teaching and learning alternative skills in a changing world • Biesta's theory of the subjectification purpose of 'good education' • Example of William Kamkwamba from Malawi utilising entrepreneurial learning
Guided instructions addressing a method of work with particular content, illustrated with examples	• Introduction of entrepreneurial learning as part of the DBE sector plan • Explaining value and skills related to entrepreneurial learning • Justifying the S.P.E.C.I.A.L. acronym for planning learning environments conducive to entrepreneurial learning
Verification of understanding the instructions and method of learning	• Describing activity and relevance to students' future careers • Video clip explaining the necessity of preparing learners for jobs that do not exist
Learning activity with a focus on the application contexts of particular learning content	In breakaway rooms, students discuss how they could potentially structure or implement S.P.E.C.I.A.L. aspects in their own classrooms for particular subjects
The reversal effect in learning: Nudging first-year students from novice to more experienced	• Groups giving feedback to the whole meeting and lecturers and holding brief discussions • Collecting evidence of experiences post-excursion reflections

Source: Developed by the author, based on Hägg and Kurczewska (2022b, p. 43).
Key: WIL, work-integrated learning; DBE, Department of Basic Education (RSA); S.P.E.C.I.A.L., situated learning, play, embodied interactive learning, connectivism and social learning, and immersive assessments for learning.

[learners] will "do" with [their] identity – and with everything [they] have learned, [their] capacities and competences'. The idea was to sensitise student teachers to the role they could potentially play in developing the subjectification purpose of their future learners' education. This inclusion was intended to indicate to students that broader theory often informs the choices we make in education. In addition, this brief introduction to relevant educational theory was meant to heighten these future teachers' awareness of their role as motivators when they introduce entrepreneurial learning in their own classes in future. This sentiment is supported by Casulli (2022, p. 139), who emphasises the impact of the entrepreneurial mindset on subsequent behaviours.

In the third part of the introduction, William Kamkwamba from Malawi was showcased as an example of 'a learner who chose to do something highly valuable and constructive with the limited entrepreneurial learning he had received' to align with Biesta's (2020) subjective purpose of education. The example of a successful entrepreneur from Africa was intended to convey the message that, even with limited resources and limited education, learners could (potentially) contribute extended value

and solve significant problems if they are inspired to utilise (or 'do something' with) their education (in this case, entrepreneurial learning). The intention was to further motivate the rationale and value for including entrepreneurial learning in teacher preparation – to inspire future teachers to *want* to effectively teach this content to their learners, as proposed by Neck and Corbett (2018, p. 16).

☐ Step 2: Guidance for the method of work

The second step of Hägg and Kurczewska's (2022b) conceptual map requires 'guided instructions addressing a method of work with particular content, illustrated with examples' (Figure 6.1). A three-pronged approach was used for this step when designing and implementing the entrepreneurial learning section in the WIL excursion (Table 6.1). The second step was introduced with the stipulation of the DBE that entrepreneurial learning must be developed and expanded across all school subjects and phases as part of their *Action Plan to 2019: Towards the Realisation of Schooling 2030* (DBE 2016, p. 40). It was meant to create a link to the example of African entrepreneurship in the previous step and also to link more closely to students' personal contexts, as recommended by Hägg and Kurczewska (2022b, p. 34). Referring to the *Action Plan* (DBE 2016), the intended learning associated with entrepreneurial learning and how the DBE expects teachers to implement it in practice was then explained to the first-year student teachers. This was intended to anchor the idea that entrepreneurial learning would be part of these students' future teaching careers, even though they might not have had much formal education therein up to this point (Du Toit & Kempen 2018). In addition, this introduction to step two was intended to guide students toward an entrepreneurial mindset: in other words, having them consider their existing knowledge and perceptions about entrepreneurship and entrepreneurial learning and opening their minds to start thinking about what it actually entails and could mean for their future learners. Developing students' entrepreneurial mindset is critical to entrepreneurial learning and should purposefully be developed therein (Casulli 2022, p. 139).

The second part of guided instruction explained the value of and skills related to entrepreneurial learning. This content was intended to broaden the first-year students' understanding (and not 'merely learning') of the goal of entrepreneurial learning in their future classes. This was based on a persistent misconception reported in the literature, where people believe entrepreneurial learning is equivalent to entrepreneurship education, with the foremost goal of venture creation being the reduction of unemployment (ELI 2021, p. 4; Neck & Corbett 2018, p. 22). That misconception disregards the potential broader value and skills development that is intended in entrepreneurial learning (ELI 2021, p. 11). This part of the guided instruction,

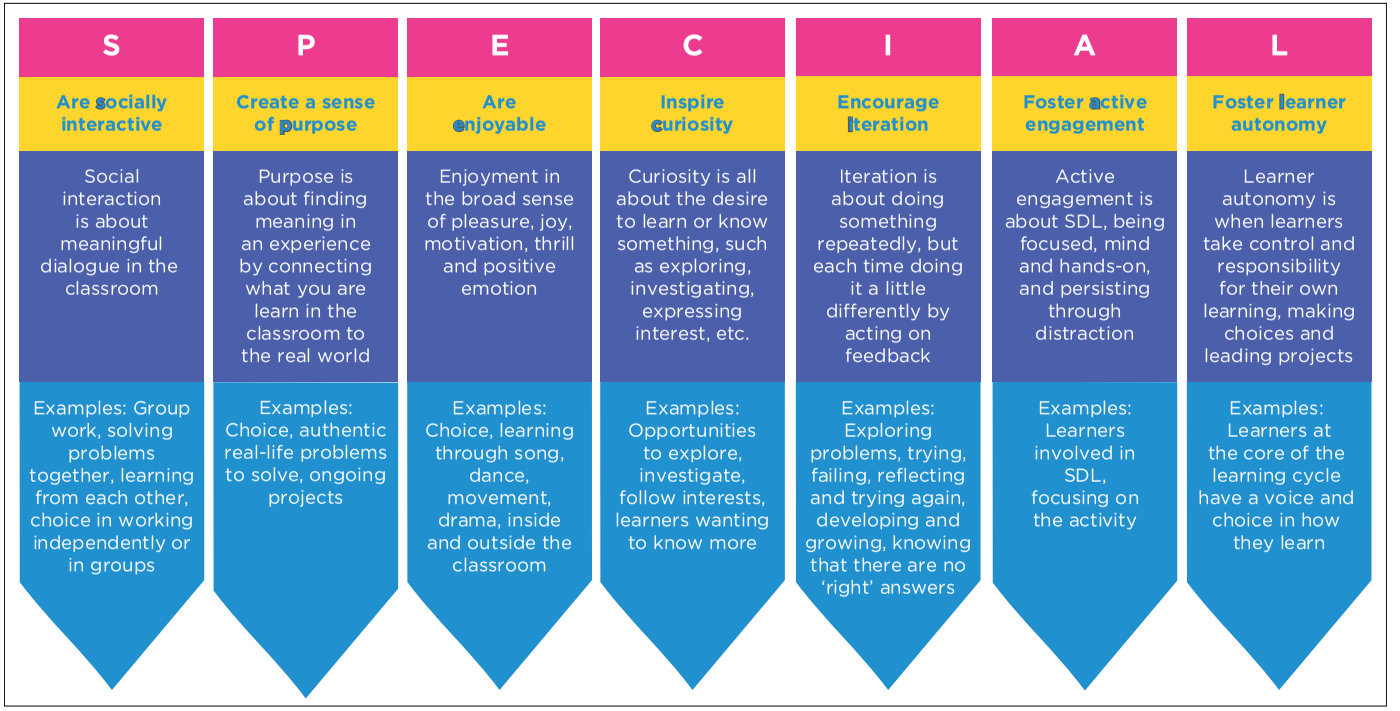
therefore, aimed to overcome the reported misconception and expand first-year students' own understanding of entrepreneurial learning and its associated mindset.

The third part of step two was the most comprehensive aspect of the entrepreneurial learning section in the WIL excursion. It entailed the guided and scaffolded unpacking and explaining of the S.P.E.C.I.A.L. acronym for planning learning environments conducive to entrepreneurial learning (Figure 6.2).

The S.P.E.C.I.A.L. acronym was initially developed by E^3 ('E-cubed'), a non-governmental organisation (NGO) appointed by the DBE to advance and expand entrepreneurial learning in the South African school curriculum. The acronym incorporates seven essential characteristics as part of playful project-based learning to guide the construction and implementation of entrepreneurial learning and the 21st-century skills associated with this learning in South African classrooms (DBE & E^3 2021, p. 24). Such an environment enables social interaction, creates a sense of purpose, supports enjoyable learning, inspires curiosity, encourages learner interaction, fosters active learning engagement and is learner-centred (Figure 6.2). This active, experiential, student-centred learning is preferred in entrepreneurial learning (ELI 2021, p. 23; Hägg & Kurczewska 2020, p. 762; Neck & Corbett 2018, p. 15). The S.P.E.C.I.A.L. acronym contributed guided instruction in the WIL excursion on how future super teachers could plan and construct environments (in their own classrooms) that would be conducive to fostering entrepreneurial learning. In addition, the characteristics included in the S.P.E.C.I.A.L. acronym are closely linked to the elements encompassed in SDL, another coveted characteristic for future learners (ELI 2021, p. 4). This is also evident in the conceptual framework of the DBE and E^3 when they describe entrepreneurial learning as a 'process of designing meaningful learning experiences where learners can engage in the self-directed pursuit of opportunities to create value for others' (2021, p. 33). Therefore, even though SDL appears only once in the visual representation of the acronym (Figure 6.2), it is actually woven into most, if not all, of the S.P.E.C.I.A.L. characteristics.

☐ Step 3: Verification of understanding of instructions

The third step of Hägg and Kurczewska's (2022b, p. 43) conceptual map is to verify that students understand the instructions and method of learning expected (Figure 6.1 and Table 6.1). Only one instructional item was used to support this step in our novel entrepreneurial learning section. The lecturer showed students a video clip (Koch Industries 2019) expounding the necessity of preparing learners for jobs that do not exist, to which entrepreneurial learning contributes, according to the video. The intention



Source: DBE and E[3] (2021, p. 24), published with appropriate permissions.
Key: SDL, self-directed learning.

FIGURE 6.2: The S.P.E.C.I.A.L. acronym used for guided instruction illustrating the characteristics of learning environments.

of including the video at this stage was to reinforce the first-year students' understanding of the broad value, relevance and necessity of entrepreneurial learning as part of their preparation as future super teachers.

☐ Step 4: Learning activity focused on application

The fourth step in the conceptual map proposed by Hägg and Kurczewska (2022b, p. 43) involves utilising a learning activity that focuses on applying particular learning content (Figure 6.1 and Table 6.1). This step was planned and implemented for the entrepreneurial learning section in the WIL excursion, based on the following activity: Students had to discuss and develop suggestions for how they could utilise each of the aspects included in the S.P.E.C.I.A.L. acronym to potentially foster entrepreneurial learning in their future classrooms. The lecturer explained the activity to the students, indicating that students could develop suggestions for applying each aspect in particular subjects or make general recommendations. The intention was to stimulate students' thinking about ways to utilise this learning in their own future classrooms in practice. According to Neck and Corbett (2018, p. 32), the lecturer plays a pivotal role in helping students to 'apply what was previously learned and reflect on and through practice'. Students were randomly subdivided into small collaborative groups using the Zoom application for small-group discussions and assignments throughout the excursion (see ch. 1).

☐ Step 5: Nudging first-year students to become more knowledgeable about entrepreneurial learning

The concluding step in the conceptual map proposed by Hägg and Kurczewska (2022b, p. 43) is to nudge or encourage students from being novices toward becoming more knowledgeable (more 'expert') on a particular topic. In the current study, this topic was entrepreneurial learning, and this step entailed the feedback that students from the small breakaway groups presented to the larger group. It was combined with brief discussions and feedback from the lecturers (in the 'main room') and peers (in the chat box). The inclusion of this step was intended to help gain insights from students' understanding of the content, as well as their experiences of the contribution of this section in the excursion to their development as future teachers. The feedback would include suggestions for further consideration to encourage creativity and applicability in practice.

The newly designed entrepreneurial learning section was implemented as a prominent part of the WIL excursion programme in 2022, for which 2,200 first-year students registered (see ch. 1). The entrepreneurial learning section was facilitated in the second half of the programme's afternoon sessions.

The twelve entrepreneurial learning sessions were presented by the same teacher educator, who was mainly responsible for developing and implementing this novel section.

The evaluation phase of the DBR cycle reported in this chapter is unpacked in the following section.

Research design and methods

This chapter reports the first cycle of DBR for developing, implementing, and evaluating entrepreneurial learning in the WIL excursion programme. The following research question guided the current DBR investigation: How can entrepreneurial learning be constructed and implemented in an excursion programme to contribute meaningfully to bridging the theory–practice divide for first-year student teachers? Design-based research is closely aligned with qualitative research but can also be referred to as an 'interventionist research method' (Hoadley & Campos 2022, p. 211). As is customary in DBR, the lecturer fulfilled the roles of researcher, designer, and teacher throughout the process (Anderson & Shattuck 2012, p. 17). Similar phases to those proposed by various scholars for each cycle of DBR (Anderson & Shattuck 2012; Hoadley & Campos 2022) were utilised in the current study. These were (1) problem-identification based on literature review, (2) planning and designing an intervention, (3) implementing the intervention in a practical educational setting, (4) evaluating the process and (5) developing recommendations based on what was learned. Reflection was essential throughout all the phases of the process. The chapter's research design and methods section now narrows the focus on the fourth step of the DBR that was used as the strategy of inquiry, namely the evaluation of the design and its implementation.

The research was conducted under the umbrella of scientific and ethical approval of the larger WIL excursion project (see ch. 1). The practitioner-researcher in the study (the teacher educator primarily responsible for developing the entrepreneurial learning section) kept a journal of reflective notes of her experiences during its design and implementation. In addition to these reflective notes, qualitative data were collected as evidence of participant agency: All students attending the excursions were invited to voluntarily and anonymously complete online polls and questionnaires (see ch. 1, Table 1.2).

The current chapter utilised data from three of these online polls. The first poll, which students completed voluntarily before the presentation of the entrepreneurial learning section in the excursion, explored students' understanding of what entrepreneurial learning entails (ELP1, 1,512 responses). The second poll, conducted after the section on entrepreneurial

learning, asked students their opinion regarding the value that entrepreneurial learning can contribute to education (ELP2, 1,368 responses). The third poll invited students to comment on the highlights and challenges they experienced in the excursion in the 'end-of-excursion rating' poll (EEP, 1,175 responses). The lecturer's reflective notes and students' feedback were analysed thematically regarding (1) students' understanding of what entrepreneurial learning entails and (2) the value it contributes to education, as well as (3) their experiences regarding the entrepreneurial learning section as part of their preparation as teachers.

The insights gained from these findings were used to develop recommendations for constructing and implementing entrepreneurial learning as part of the 2023 WIL excursion, which will be offered both in-person and virtually to contribute to curriculum innovation efforts to traverse the theory–practice divide in teacher preparation programmes.

Findings and discussion

To start, we present the findings from the two entrepreneurial learning polls to provide insights into how the students viewed entrepreneurial learning and its value in education, which gives an overview of the students' entrepreneurial mindset. That is followed by the findings regarding students' entrepreneurial learning experiences as a contribution to their preparation as future teachers. Quotes from students' responses in the polls are also used to elucidate the evaluation phase of this first implementation cycle, using the poll identifier acronyms previously mentioned. Where relevant, reflective evaluations from the lecturer-researchers' journal entries regarding the design and implementation of the section are interwoven with the findings.

First-year student teachers' views of entrepreneurial learning and its value in education

In response to the question, 'What do you think entrepreneurial learning entails?' posed in a poll before we commenced with the section on this topic (ELP1), a large number of students (n = 421) linked the term to starting or managing a business. For example:

> 'To teach children to think outside the box and come up with their own business ideas and run their own businesses.' (Student teacher, May 2022, ELP1)

> 'Acquiring the necessary entrepreneurial knowledge to improve business performance continuously.' (Student teacher, May 2022, ELP1)

The finding was not surprising, as most students would have little – if any – entrepreneurial learning because of the scarcity of such content in their

school curriculum (Du Toit & Kempen 2018, p. 13). The finding confirms the narrow view of entrepreneurship reported in the literature, that it (and its associated learning) is mainly useful for business or venture creation (Neck & Corbett 2018, p. 22). This indicates that as, teacher educators, we will have to renew our efforts to expand student teachers' grasp and insights into what entrepreneurial learning truly is, as this will contribute to their entrepreneurial mindset, which in turn will contribute to their motivation to teach this content well to their learners.

After the presentation on entrepreneurial learning, students were invited to note what they believed the value of such learning contributes to education in another poll (ELP2). The most notable aspect that emerged from the data was that students (*n* = 306) believe that entrepreneurial learning contributes to skills development, for example:

> 'This is going to equip them [*learners*] with skills that will empower them in the future.' (Student teacher, May 2022, ELP2)
>
> 'To prepare students for uncertain future as we live in an age of unprecedented global and technological transformation.' (Student teacher, May 2022, ELP2)
>
> 'I believe that it can help the economy because if we can teach children more entrepreneurial skills, we could create more jobs for other people who cannot work for themselves.' (Student teacher, May 2022, ELP2)
>
> 'Learners can use the skills learned from entrepreneurial learning to one day start their own business and be entrepreneurs.' (Student teacher, May 2022, ELP2)

Although some students linked the skills development associated with entrepreneurial learning to generally preparing learners for the future, many others continued to link these skills narrowly to starting or managing a business or job creation to this end. Changing the mindset of student teachers to grasp that entrepreneurial learning has much more extensive value than only business-related applications would remain a vital issue to address in future excursions.

The following section reports on the findings related to evaluating this DBR cycle, particularly how the student teachers experienced the novel entrepreneurial learning section in the WIL excursion.

Evaluation of the design and implementation of the entrepreneurial learning section

These findings are reported to align with the framework that scaffolded the design of the entrepreneurial learning section into five steps (Table 6.1). Quotes from students' responses in the EEP (1,175 responses) are included to elucidate these findings, together with some comments from the practitioner-researcher's reflective notes on the process and its implementation.

☐ Step 1: Introduction and rationale

Findings indicate that this step was designed and implemented aptly, as at least 115 students mentioned the entrepreneurial learning section as the highlight of their excursion experiences in the EEP. For example:

> 'Entrepreneurial learning: I got the chance to open my mind to a whole different world of opening the children's minds.' (Student teacher, May 2022, EEP)

> 'The presentation about entrepreneurial learning and how it benefits students in [*their*] daily lives.' (Student teacher, May 2022, EEP)

Both these responses show that students grasped the fact that entrepreneurial learning could potentially benefit their future learners. Therefore, it contributes to valuable education, mirroring findings by Neck and Corbett (2018, p. 22). Analysis of the reflective notes of the practitioner-researcher indicated that the students (in their online and 'main room discussions') most appreciated the portrayal of a successful young African entrepreneur (William Kamkwamba from Malawi, see Table 6.1) as something that they, and potentially their future learners, could relate to. For future cycles of the same step, perhaps examples of successful young South African entrepreneurs would bring the concept closer to home, heightening the motivational rationale for including this topic.

☐ Step 2: Guidance for the method of work

Several students positively experienced the guided instruction step, as reflected in their EEP comments when they (n = 115) mentioned the S.P.E.C.I.A.L. learning as the highlight of their experiences in the WIL excursion. A few of their comments are quoted further in the text.

> 'I enjoyed learning about S.P.E.C.I.A.L. word; it gave me different ideas on how I will interact with my learners when I teach them.' (Student teacher, May 2022, EEP)

> 'The S.P.E.C.I.A.L. word, it stood out because it will be most definitely beneficial in the future [*sic*].' (Student teacher, May 2022, EEP)

> 'The teaching based on S.P.E.C.I.A.L., it prepared me for the future [*to*] do that when I am finally a teacher, then I will know what to expect.' (Student teacher, May 2022, EEP)

> 'S.P.E.C.I.A.L. tool because it prepares me as a teacher.' (Student teacher, May 2022, EEP)

The last two responses included additionally signify that these students believed this learning content – in other words, the acronym and how it can guide teachers to plan for implementing entrepreneurial learning – will contribute to traversing the gap between theory and practice, as it added theoretical learning that will be useful in practice. A few students mentioned the S.P.E.C.I.A.L. acronym as a challenge they experienced in the WIL

excursion but did not justify why they experienced difficulty with this learning, for example:

> 'The part that was problematic was when we were asked to discuss the different special techniques that will be encouraged in the classroom.' (Student teacher, May 2022, EEP)

The practitioner-researcher also noted that on most days, several students positively commented on the session on the S.P.E.C.I.A.L. acronym in the Zoom chat box. She additionally reflected that the acronym provided helpful scaffolding for the many aspects that contributed to fostering entrepreneurial learning and served as a tool that students could easily remember for future use.

☐ Step 3: Verification of understanding of instructions

Though the intention for including the video clip was relevant and valid, the lecturer later reflected that this instructional item (the video) was not aligned with what Hägg and Kurczewska (2022b, p. 42) outlined for this step in the conceptual map for learning. Towards the end of the WIL excursion, the importance of facilitators verifying students' understanding of instructions for learning became increasingly evident as several students commented that they 'did not understand' some or other content presented in the WIL excursion – including, in a few cases, the entrepreneurial learning section:

> 'At the beginning I did not understand what S.P.E.C.I.A.L. was standing for but now I understand and again I am going to use S.P.E.C.I.A.L. method as a teacher when I am going to teach.' (Student teacher, May 2022, EEP)

> 'The letter P [*in the acronym S.P.E.C.I.A.L.*] – I was not able to explain it in my own language.' (Student teacher, May 2022, EEP)

Therefore, more guidance seems required at this odigogical phase of first-year students' learning to align with Chen et al.'s (2017, p. 395) advice for supporting the learning reversal effect. An additional activity or tool, based on active learning strategies, would have to be developed or utilised to verify students' understanding of this concept before moving on to the application activity. This step would therefore require the most revision in subsequent implementations of entrepreneurial learning.

☐ Step 4: Learning activity focused on application

Small collaborative groups of students discussed their suggestions for applying S.P.E.C.I.A.L. aspects (see Figure 6.1 and Table 6.1) in their own classrooms in future in their Zoom breakaway rooms (also see ch. 1). Students returned after a 20-minute interval to present their suggestions to the larger group. The practitioner-researcher initially noted that she was

concerned about including such a 'long' activity during a late-afternoon session towards the conclusion of the excursion, as students' interest and energy might be waning by that time. However, her subsequent reflective notes indicated that students reported that the 20-minute interval was often too short, so they could not finish their discussion. Based on the overwhelmingly positive feedback of students on this activity, future implementations of this activity would probably be allowed as much, if not slightly more, time on the programme. The small-group discussions and presentations in the larger group were perceived as a highlight of the excursion by many students for various activities (as reported in other chapters in this book).

There were also several comments in the EEP specifically referring to students' experiences in the group discussions of the S.P.E.C.I.A.L acronym. The first quote was submitted as a highlight, and the last two comments were made in the poll question that asked about challenges that students experienced:

> 'I enjoyed the last activity the most, where we explained in detail the acronym S.P.E.C.I.A.L.' (Student teacher, May 2022, EEP)

> 'The S.P.E.C.I.A.L., but I understood when we were discussing it.' (Student teacher, May 2022, EEP)

> 'At the beginning, I did not understand what S.P.E.C.I.A.L. was standing for, but now I understand and again I am going to use S.P.E.C.I.A.L. method as a teacher when I am going to teach.' (Student teacher, May 2022, EEP)

From these last two responses, it is evident that the group discussions supported these students' learning, eventually resulting in their understanding of the content. Several of the participants' comments indicated that they would use this learning in their future teaching careers, denoting that this learning may well contribute to their preparation as future super teachers, reducing the theory–practice divide by introducing content they know they will be able to utilise in practice. Still, in the post-excursion discussion between the excursion facilitators, it emerged that we believed we could make this application activity even more interactive and engaging. This idea will be pursued in future implementation cycles.

☐ Step 5: Nudging first-year students to become more knowledgeable about entrepreneurial learning

Several students indicated the discussions and feedback they received as the highlight of their WIL experience, for example:

> 'I enjoyed the part where the word special was abbreviated, and we had to discuss it in our groups. It has given me a light on what I should do when I finally am a teacher.' (Student teacher, May 2022, EEP)

> 'The S.P.E.C.I.A.L. [*section*], I like the ideas that were given to us and the group discussion that followed.' (Student teacher, May 2022, EEP)

The lecturer's notes similarly reflect that she and her co-host (who assisted with facilitating the feedback sessions) were astounded by the depth of students' insight regarding entrepreneurial learning in many of their feedback reports. She also noted that students made interesting, thoughtful, relevant comments, supporting and critiquing their peers' suggestions, in the chat box during these feedback sessions – without the lecturers having to 'nudge' them toward such interaction. This aligns with findings by Hägg and Kurczewska (2022b, p. 40), who noted that as students become more knowledgeable and more confident regarding their own understanding of particular content, they need less guidance and increasingly take responsibility for their own learning.

Further evidence of students' deepening understanding of and confidence regarding entrepreneurial learning was found in their comments in the EEP, a selection of which is included in Table 6.2. These examples show that students' understanding of the value and contribution of entrepreneurial learning – especially as part of their preparation as future educators – has advanced on various levels. From the responses in Table 6.2, it is evident that students believe they developed a greater understanding – not only about entrepreneurial learning *per sé* – but also about its value in contributing to their preparation as future teachers. The end-of-activity discussions and feedback (Step 5), therefore, served well as the 'nudge' required at the end of Hägg and Kurczewska's (2022b, p. 43) process and contributed to overcoming students' initial lack of prior learning, setting in

TABLE 6.2: Responses of student teachers highlighting entrepreneurial learning understanding.

'Talking about entrepreneurial learning, I found it difficult to understand even in the group. I was struggling to come up with answers, but after group discussions [*and*] listening to other groups' responses, things started to become clearer.'	(Student teacher, May 2022, EEP)
'[…] the entrepreneur learning skills […] as a future teacher now I know which skills and attributes I need to be a good teacher.'	(Student teacher, May 2022, EEP)
'The reality of how complex teaching really is has only hit me now, and it makes me even more eager to learn, and it makes me excited for becoming a super teacher.'	(Student teacher, May 2022, EEP)
'The presentation about entrepreneurship I enjoyed this presentation. I'm doing BSTG 111 [*a Business Studies module*], there was information I could not find, but today I learnt and understood what entrepreneurship is and how it contributes [*to*] the economy.'	(Student teacher, May 2022, EEP)
'Entrepreneurship was the highlight [*for me*]. I now understand that there is depth [*and*] meaning in education besides being in front of learners.'	(Student teacher, May 2022, EEP)
'Entrepreneurial learnings topic because I now realised that being a teacher is challenging and you have a lot of work to do besides teaching.'	(Student teacher, May 2022, EEP)

Source: Authors' own work.
Key: EEP, end-of-the-excursion rating poll.

motion the reversal effect in students' learning as students' expertise expanded. In addition, the implementation practices in the current investigation genuinely considered students' level of development (most of them being in the odigogy space). They were constructed to support a shift in the responsibility for learning from the lecturer to the students, specifically resulting in the reversal in learning effect. These findings align with those of Hägg and Kurczewska (2022b, p. 44) and Sweller (1994), indicating some success in implementing this step.

Another significant insight emerged from the student comments in Table 6.2. The third comment in Table 6.2 reflects how this deeper understanding contributed to the student's motivation to continue to explore learning as part of their preparation for their future career. This finding is similar to that of Hägg and Kurczewska (2022b, p. 40), who report that, at this step in their framework, students' motivation for learning shifts from external to becoming more internally driven.

Conclusion

Universities must prepare student teachers exceedingly well to enable them to become 'super teachers'. One way to support this goal is to continuously innovate the curriculum. This chapter explained how the NWU innovated its teacher preparation curriculum by designing and introducing new essential entrepreneurial learning to bridge the theory–practice divide. This content is required for teaching in the South African school curriculum. It also contributes value to the student teachers' lives through the associated entrepreneurial mindset they started to develop. The conceptual map proposed by Hägg and Kurczewska (2022b) provided a valuable framework for the design-based planning and implementation of entrepreneurial learning as curriculum innovation. Students developed a deeper understanding of entrepreneurial learning and valued this learning as part of their preparation as future super teachers. There were, however, some aspects that could be improved. Therefore, recommendations are made for adaptations to the construction and implementation of entrepreneurial learning as part of the 2023 WIL excursion, which will be the subsequent DBR implementation cycle of this curriculum innovation. Before introducing entrepreneurial learning, it is crucial to clarify the concept and its potential value for education to contribute to unlocking students' entrepreneurial mindset before commencing with the topic:

- It will be more meaningful to include examples of successful young South African entrepreneurs to bring the concept closer to home, heightening the motivational rationale of this learning.
- The 'verification of understanding' step needs to be judiciously constructed to expand its contribution to students' grasp of the new

learning content. An additional activity or tool would have to be developed or utilised to verify students' understanding of this concept before moving on to the application activity.

- The programme should be adjusted to allow more time and opportunity for students' interaction, discussions and feedback – involving peers and facilitators – to deepen their understanding of this content.
- Additional or alternative application activities – that are more interactive and engaging should be investigated for application in this section of the excursion.

Chapter 7

Self-directed multimodal assessment of virtual excursions: Affordances for student agency

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Abstract

The use of electronic posters was found to be an effective tool for scaffolding assessment practices that are collaborative and support the development of self-directed learning (SDL) skills within virtual excursions. Focusing on student agency in assessment recognises students as decision-makers whose actions influence assessment methods in both predictable and unforeseen ways (Adie, Willis & Van der Kleij 2018). According to Evans (2013), however, students are not provided with the opportunity to assume this role within assessment in practice. The chapter explores how the self-directed multimodal assessment (SDMA) might be implemented to allow students to develop increasing agency over their learning through assessment. This chapter comprises a review of relevant literature on using e-posters and student-produced videos embedded within cooperative

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learning (CL). The value of posters and videos as multimodal assessment instruments contributing to the development of student agency is central to this research. Qualitative data from students' self-assessments indicated that using SDMA within a CL environment supported positive affectivity and academic development among students. This approach also supported students being able to identify their learning needs and contributed to their self-directedness. Furthermore, the use of SDMA in virtual excursions clearly has the potential to support student agency.

Introduction

Because of the recent coronavirus disease 2019 (COVID-19) pandemic, pedagogies relating to traditional teaching, learning and assessment practices had to be reconceptualised and reinvented (Gamage, Silva & Gunawardhana 2020). This was also the case at the Faculty of Education of the North-West University (NWU), where the first-year student teacher excursions had to transition from a face-to-face environment to a synchronous virtual, online platform (see ch. 2). This transition brought about changes in how assessment was conceptualised and implemented within the excursions (Lubbe, Olivier & Hay 2022). Self-directed multimodal assessment was implemented utilising electronic posters (e-posters) within CL groups.

Lubbe et al. (2022) drew from a rich body of literature on the effectiveness of posters as a medium of multimodal communication and ultimately contributed to understanding how assessment within the context of virtual excursions can successfully be conducted to promote SDL. The current study aimed at further extending the body of scholarship relating to students' agentic engagement.

Since 'fostering students' creative dispositions and agency is a key benefit of introducing multimodal assessment' (Ross, Curwood & Bell 2020, p. 299), this research had a distilled focus on implementing SDMA for greater student agency. To this end, the SDMA involved students in the decision-making processes relating to the artefact that had to be developed. Consequently, literature from posters (including e-posters) and videos (which can include animations and film) as assessment instruments was used as a theoretical guide. Furthermore, this research drew from the literature on SDL, student agency, as well as SDMA. After unpacking these concepts, the analysis of the qualitative data will be presented to reach an understanding of how student agency can be enabled within the context of virtual excursions through SDMA.

Therefore, the aim of this study was to determine the affordances of student agency for learning through SDMA, using first-year students'

perspectives on, and experiences of SDMA. Against the theoretical and conceptual framework backdrop, findings from open-ended self-assessment questions (SAQ) will be presented. Lastly, this chapter contains a discussion of the findings and concluding remarks.

Problem statement

Until recently, research regarding the implementation of SDMA – specifically within the context of virtual excursions in higher education – was relatively unexplored. This is despite the increasing importance of multimodal assessment within higher education (Ross et al. 2020). Even though the reconceptualising of e-posters as an SDMA tool was empirically proven to contribute to the development of several SDL skills, as well as academic development, positive affectivity and social competency (Lubbe et al. 2022), the current research aimed to extend in terms of enabling student agency through SDMA. This prompted the involvement of students in the decision-making process, whereby students had an option between two modalities and two topics for their assessment.

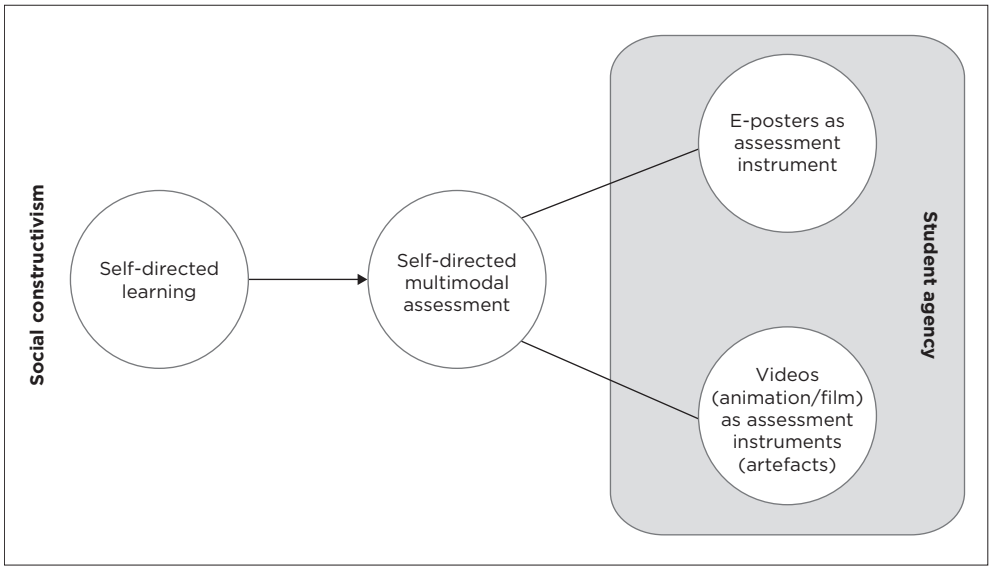
As with the previous virtual excursion, all activities were theoretically underpinned by CL (Lubbe & Petersen 2022) and within the social-constructivist paradigm (Vygotsky 1978). The researcher aimed to develop new insights into the affordances of learning through the implementation of SDMA for student agency, as well as to present practical assessment design guidelines for SDMA in the context of virtual excursions. The question that directed this study was: What are the affordances of learning through SDMA for student agency?

Theoretical and conceptual framework

Self-directed learning, SDMA, the use of e-posters and videos as assessment instruments, as well as student agency are the central concepts that guided the research. Social constructivism formed the theoretical foundation wherein this research was situated (Vygotsky 1978). Figure 7.1 depicts the theoretical and conceptual framework of this study.

According to this theoretical framework, as illustrated in Figure 7.1, social interactions are crucial to the process of learning new knowledge and skills, as well as developing existing knowledge. Social group learning and peer cooperation are crucial learning techniques (Schunk 2012). Additionally, Rannikmäe, Holbrook and Soobard (2020) make the following critical remark regarding social constructivism:

> Social constructivism focuses on a social nature of cognition and suggests approaches that facilitate a community of learners to engage in activity,



Source: Author's own work.
FIGURE 7.1: The theoretical and conceptual framework for this study.

> discourse and reflection, encouraging students to take on more ownership in the putting forward of ideas to share with others and to pursue autonomy with a view to interacting in mutual reciprocity in dealing with social relations. (p. 264)

Evident from Figure 7.1 is the fact that the assessment artefacts were embedded in student agency, as the first-year student teachers had to choose which assessment instrument they were going to construct. Furthermore, SDL is then specifically approached as a learning process within the context of this research.

Self-directed learning

In essence, SDL is a process through which an individual takes ownership of and responsibility for their learning process and learning progress (Knowles 1975). According to Knowles (1975), the process of SDL is when a person as an individual or with the assistance of others can identify their own learning needs, formulate learning goals and evaluate learning outcomes. During this process, an individual can also identify and select a variety of suitable resources and implement strategies for learning. A salient feature to this Knowlesian point of view is the decision-making process through which learning is socially negotiated 'with or without the help of others' (Knowles 1975, p. 18). This is because of the fact that 'learning means and objectives are highly individual; they are differentiated in accordance with their life situation' (Morris 2019, p. 634). Furthermore, the significance of student agency in selecting how their learning and assessment should

take place, as well as what resources are required, is evident from Knowles' (1975) definition.

Self-directed learning is also 'our most basic, natural response to newness, problems or challenges in our environment' (Guglielmino & Long 2011, p. 2), thus enhancing our capacity to adapt and adjust to ever-changing social and environmental factors (Jossberger et al. 2010). Hoffman et al. (2014, pp. 51–52) define adaptability as 'the ability to employ multiple ways to succeed and the capacity to move seamlessly among them'. Therefore, it is not surprising that adaptability is labelled by Ward et al. (2018) as the absolute prerequisite for professional expertise. Hence, SDL is an essential competency for the current, ever- and rapidly changing context we live and work in.

According to Morris (2019, p. 645), the opportunity to develop students' capacity for SDL exists throughout formal education. One unique benefit of learning in a formal educational setting may be having access to a content knowledge expert – the educator – who may serve as a valuable learning resource and who can also serve as a facilitator, helping students develop SDL skills so they can take charge of managing their own unique learning process. In contrast to a lecture-based educational context, where the educator sets the objectives, assigns the tests and paces the material, an SDL setting is different. During the SDL process, the student establishes goals, decides how progress will be measured, specifies the structure and order of activities and a timeframe, identifies resources and asks for feedback (Robinson & Persky 2020). According to Gibbons (2002, p. 12), '[i]n SDL, assessment is an essential means of learning and learning how to learn: improvement flows from students' critical assessment of their own activities'. Lubbe and Mentz (2021) also highlight assessment as a crucial component of the learning process. Within this chapter, the focus is predominantly on the integration of self-direction and multimodality into assessment tasks. Self-directed multimodal assessment can potentially support agentic engagement and will be discussed next.

Self-directed multimodal assessment

The substantial body of research on multimodality and SDL is a foundation for the concept of SDMA. According to Olivier (2021), SDMA is a dynamic assessment process that emphasises student-centred learning, technology enhancement, iterative and forward-feedback, individual and group execution, adherence to multimedia principles and measurement through an authentic task that may include a multimodal artefact. Central to this view is assessment as a communicative act and the use of different modes of representation. Moreover, this implies transformative engagement (Kress 2010) by students towards the transformation of semiotic resources by means of assessment.

The process of combining multimodal resources to create a particular product or artefact is a core component of SDMA (Hafner & Ho 2020). As was noted before, the key to using SDMA in this intervention was to support student agency. As such, the choice in communication mode is one way of potentially supporting agency and this also imparts insights regarding the way knowledge is constructed by them (Jewitt 2013). Furthermore, it is significant that the student plays a vital role in SDMA. Regarding student agency for multimodal assessments, Canale (2019) pertinently states that:

> [*A*]ttending to the learners' situated agency in interacting and making meanings with curricular artefacts offers a unique path to recognizing the learner as a legitimate sign-maker and to recognizing as much of their learning as possible. (pp. 177–178)

Therefore, in this study, the possibility for student agency in the SDMA decision-making process was explored. To this end, students had the option of constructing either a poster or a video (which could also be in the form of an animation or a film) as the SDMA artefact. The following sections will outline aspects of the use of posters and videos as multimodal assessment tasks.

Posters and videos as multimodal assessment instruments

Creating a poster is considered as 'an experiential learning activity that stimulates curiosity and interest, encourages exploration and integration of concepts and provides students with a novel way of demonstrating understanding' (Handron 1994, p. 17). Within this context, group work necessitates cautious planning in terms of assessment weighting because of the increased opportunity for creativity and problem-solving it affords (O'Neill & Jennings 2012). According to Menke (2014, p. 1), students can use e-posters to conduct in-depth research on any given subject and employ more creative methods to present their efforts and findings. Posters can be a great substitute for other methods of involving students in the evaluation process and developing strong communication skills (Berry & Houston 1995), allowing the 'adoption of different approaches and communication styles' (Crawley & Frazer 2015, p. 830). Additionally, posters have the potential to promote teamwork, the development of positive student attitudes, and the examination and dispelling of myths while also offering possibilities for in-depth research (Berry & Houston 1995). Handron (1994) noted that posters can motivate students to exhibit their degrees of comprehension. Within social constructivism, the social element of learning is acknowledged and this may include learning through evaluation (Hassan 2011). The use of e-posters as SDMA instruments contribute to learning collaboratively and has a notable positive impact on perceived student affectivity and social competency (Lubbe et al. 2022).

Student-produced videos are 'digital artefacts that [*can*] demonstrate learning or perceived knowledge' (Campbell, Heller & Pulse 2022, p. 1147). Videos have been used as instructional tools and, more recently, for assessment feedback (Henderson & Phillips 2015). However, few studies report on the use of student-produced videos as alternative assessment tools (Speed, Lucarelli & Macaulay 2018). In cases where student-produced videos were utilised as assessment tools, increased student engagement and deeper learning were reported (Erdmann & March 2014; Ryan 2013). Speed et al. (2018) state that readily available and free video editing software, as well as videoing capabilities of smartphones and electronic devices, allow for student-produced videos to be used as assessment tools. Students actively engage in their learning process when they create videos (Hoogerheide, Loyens & Van Gog 2014). Student-produced videos require that students continuously make decisions, starting with the electronic platform and editing software. Furthermore, students need to decide the extent and details of the information that should be included in their videos. Hence, students are required to be agents of their learning processes.

Student agency

Student agency has been defined through several theoretical lenses, and the general understanding thereof relates to one's behaviour or ability to take consequential decisions and act accordingly (Marín, De Benito & Darder 2020; Nikolaidis 2018; Stenalt 2020; Stenalt & Lassesen 2022). The capability to establish a goal, reflect and act responsibly in order to bring about change is referred to as student agency. It requires that students have these traits in order to positively influence their own life and the world around them (Organization for Economic Cooperation and Development [OECD] 2019, p. 1). Hence, the importance of student agency in supporting students' capacity for lifelong learning is evident (Biesta & Tedder 2007).

The Vygotskian perspective on student agency emphasises the influence of social contexts through which student agency is negotiated (Vygotsky 1978). To this end, Jääskelä et al. (2020) highlight the social underplay of student agency because of the agentic student's involvement in social activities, social construction and reorganisation (Martin 2004) of knowledge. According to Jääskelä et al. (2020), student agency in the higher education context is defined as:

> [...] having access to or being empowered to act through personal, relational, and participatory resources, which allow him/her to engage in purposeful, intentional, and meaningful action and learning in study contexts. (p. 2)

There is increasing focus on the development of student agency in higher education; therefore, it is also becoming increasingly important to support students to become agentic agents in their learning processes

(Marín et al. 2020; Stenalt 2021). Furthermore, the transition to an online learning environment (OLE), as seen, for example, across universities in South Africa during the COVID-19 pandemic, has the potential to support student agency using digital information and communication technologies (ICTs), providing that the ICTs are used to facilitate student-centred teaching and learning (Stenalt 2020).

According to Nikolaidis (2018, p. 35), and meaningful within the social-constructivist context of SDMA, 'agency is not always exclusively associated with the individual who acts'. Bandura (2000) posits that there are three forms of agency, namely personal, proxy and collective agency. In the words of Bandura (2000, p. 75), proxy agency is a socially mediated agency through which 'people try to get other people who have expertise or wield influence and power to act on their behalf to get the outcomes they desire'. The key ingredient to collective agency is 'shared beliefs in their collective power to produce desired results' (Bandura 2000, p. 75). Noteworthy is the fact that students perceived collective agency as 'an emergent group-level property', and it cannot be conceptualised as merely adding the students' individual perceived agency (Bandura 2000, p. 76). Student agency, in general, can also be conceptualised as agentic engagement (Reeve 2013; Reeve & Tseng 2011). Reeve and Tseng (2011) provide the following examples of what agentic engagement looks like, it being when students:

> [*O*]ffer input, express a preference, offer a suggestion or contribution, ask a question, communicate what they are thinking and needing, recommend a goal or objective to be pursued, communicate their level of interest, solicit resources or learning opportunities, seek ways to add personal relevance to the lesson, ask for a say in how problems are to be solved, seek clarification, generate options, [*or*] communicate likes and dislikes. (p. 258)

Specifically relating to student agency and assessment, Emirbayer and Mische (1998) state that potential manifestations of agency can also include resistance, subversion and contention. *Resistance* relates to students purposefully choosing to avoid the task through non-completion. *Subversion* relates to students manipulating the outcome of assessment through choosing to cheat (i.e. plagiarism or abusing chatbots or artificial intelligence software [Debby et al. 2023; Shrivastava 2022]), while contention relates to rejection of feedback, challenging feedback, and rejecting assistance. *Maladaptive* agency relates to purposefully underperforming (Harris, Brown & Dargusch 2018). Acts of resistance, subversion and contention may include the following range of behaviours (Harris et al. 2018):

- 'not to invest the effort needed to produce the student's best work (thereby threatening the validity of the assessment as the task does not accurately reflect what the student knows and can do)

- to avoid the task or aspects of it
- to act in academically dishonest ways (e.g. cheating, plagiarism, copying)
- to reject potentially helpful scaffolding or feedback in relation to the task.' (p. 128)

Self-directed learning posits that an individual is self-directed when goals are set after identifying a learning need. Monitoring the progress of attaining those goals, as well as evaluating results for goal attainment, are also part of the SDL process. However, this can be done with or without the assistance of others (Knowles 1975). Being an agentic student relates to being self-directed, since taking ownership and responsibility through decision-making is key. In higher education, there is an increased focus on involving students in the assessment processes, hence increasing student agency (Lubbe & Mentz 2020). Lubbe and Mentz (2020) found that the participative nature of assessment leads to the development of SDL skills. Student agency can be enabled by creating opportunities to not only apply knowledge (Stenalt 2020) but also to create self-assessment opportunities (Nieminen & Tuohilampi 2020). In this chapter, I demonstrate how student voices come to be articulated and represented by students through their involvement in the decision-making processes related to the SDMA.

Research methodology

Research paradigm

The interpretivist research paradigm underpinned the qualitative research conducted for this chapter. This paradigm was regarded as suitable since 'communication, interaction, and practice' (Tracy 2020, p. 51) are essential for the construction of reality and knowledge, and this would allow for the consideration of diverging participant views. Furthermore, the inductive analysis of students' responses was also informed by this view.

Research design

Understanding the way people's lived experiences are interpreted, how their worlds are constructed, as well as understanding the meaning ascribed to their experiences (Merriam 2009) are the focus of qualitative research. To this end, a basic qualitative research design (Merriam 2009) was followed, which aligns well with the research aim and research question of this research.

Research ethics consideration

National and institutional ethics guidelines and policies were adhered to throughout this research process, and data were only gathered after ethical

clearance and gatekeeping permission were acquired from the relevant ethics committee (ethical clearance was obtained as described in ch. 1).

In spite of the fact that the completion of the work-integrated learning (WIL) assessment task was compulsory, participants were free to choose not to participate in the research component and could withdraw at any point without incurring any consequences. An independent party was responsible for participant recruitment and informed consent. The analysis only included data from participants who gave their informed consent. Throughout the data handling process, anonymity of participants was ensured and ethical data storage processes were followed.

Sampling and data-collection

Since the researcher used all the data from which the participants who attended the WIL virtual excursion and who were willing to take part in the research, this research involved convenience sampling (Tracy 2020). During the WIL excursion, described in previous chapters (see chs. 3–6), a total of 1,624 students provided informed consent, of which 149 self-assessments were randomly selected as the data corpus of this research. The self-assessments consisted of open-ended questions. During the virtual WIL excursion, the first-year student teachers were randomly placed in online CL groups, and students had to construct their assessment artefacts within these groups. Per implication, only one artefact was submitted per CL group. Each group was asked to choose an artefact to create, either an electronic poster (e-poster) or a video (which could also be in the form of an animation or film), as part of assessment of their learning during the virtual excursion. An open-ended self-assessment (see Appendix 1), which formed part of the assessment submission, served as a data-collection tool for this research. Students had to choose between two topics, as depicted in Table 7.1, based on the video diary of the newly-appointed principal (see ch. 1).

Designing an e-poster or a video (which could also be an animation or film) was intended to encourage students to identify issues and briefly summarise potential solutions using text and other modalities in a multimodal context (e.g. pictures). These assessments were evaluated using a predetermined rubric, improving external marker reliability and enabling the marking team to assign grades based on, among others, the quality of the visual presentation, the students' ability to appropriately cite sources and their ability to articulate and defend potential solutions to problems that were identified. The application of the rubric was outlined in a document that was also given to the external markers to increase their trustworthiness. After each of the external markers evaluated the same three assessments, a meeting was held between the author and the markers

TABLE 7.1: Work-integrated learning excursion assessment framework based on two given topics.

Topic: Your group can choose one of the following topics: (1) Entrepreneurial learning or (2) social equality	
Entrepreneurial learning	**Social equality**
Based on your newly-acquired knowledge and understanding of the purpose of education and keeping in mind the school context illustrated in the video diary, develop a tool* that can serve as a reminder to teachers of the characteristics they need to consider creating a S.P.E.C.I.A.L. learning environment in their own classrooms, which will support the overarching purpose of education in South Africa. *The tool can be in the form of a e-poster or an animation, film or video.	Based on your newly-acquired knowledge and understanding of the importance of equity and social justice and keeping in mind the school context illustrated in the video diary, identify a social justice and equity issue that your group would like to address or solve. Your group should develop a report** containing the following components: (a) Define the specific social inequality issue or problem, (b) demonstrate your knowledge regarding the scope of the opportunity associated with addressing this issue or problem, (c) describe your group's proposed solution (solutions may include a new product or service or technology or an innovative way of meeting the need of those affected by the issue or problem), and (d) identify the resources or set of activities required to develop and implement your solution. **The report can be in the form of a e-poster or an animation, film or video.

Source: Author's own work.

to discuss and compare their evaluations. Additionally, peer and self-assessments also formed part of the assessment submission, therefore contributing towards the final mark of the artefact.

For first-year students, designing e-posters and videos (animations or films) as artefacts might be a novel way of assessment; thus, they were assisted and guided in accordance with the guidelines mentioned by Howard (2015). To assist and guide the first-year students, a supporting document was given to them. This guide included information on how to plan their artefacts, resource copyright considerations, selecting an acceptable electronic platform, tips for e-posters, tips for animations or films or videos, how to understand the rubric, how to use the peer and self-assessments, as well as the submission process. As previously mentioned, 149 randomly selected self-assessments of students who provided informed consent were analysed for the purposes of this chapter.

Data-analysis

The data-analysis in this chapter was carried out deductively through a comprehensive review of students' responses to the open-ended questions of the self-assessment (Saldaña 2009). According to Tracy (2020), when conducting inductive research, individual components are first observed, general patterns are then discovered, tentative claims are then put forth and carefully considered, and only then are conclusions drawn. For this chapter, the following SAQ (see Appendix 1) were analysed:

- (Question 2) The assessment was (difficult or easy) to complete, because …
- (Question 3) The part of the assessment which I enjoyed the most, was …
- (Question 4) I could have done a better job if …
- (Question 5) After completing the assessment, I felt … because …
- (Question 6) What I learned most about myself, is …
- (Question 9) Areas where I still need to improve or develop, are …

Prior to being shared with the researcher for pre-analysis reading, all the data were first anonymised. Next, the analysis itself was carried out. This procedure required careful reading and the selection of pertinent quotations, which were then thematically classified. The process of categorising and recategorising under subcategories and, eventually, themes was then carried out (cf. Saldaña 2009). Finally, the researcher was able to discuss broad trends and draw specific conclusions thanks to the synthesis of the data that had been examined.

Trustworthiness

Three fundamental qualitative notions are noted by Tracy (2020) as supporting the reliability of the analysis in research. This specifically refers to context, lengthy explanations and self-reflection. In this sense, the researcher was able to engage in reflective discussion regarding the methodology as well as her own points of view and biases because of the collaborative nature of the data-analysis. The background was explicitly mentioned throughout the reporting of the research to contextualise and locate the data within a particular context. To fully comprehend the intricacies of both the participants and the online environment, the researcher lastly immersed herself within the research context by participating in the sessions of the WIL virtual excursion.

Findings

The results of this study are discussed based on the open-ended SAQ (see §. 4.5). Lastly, recommendations relating to careful planning, implementation and evaluation of SDMA are also presented.

The assessment was (difficult or easy) to complete, because …

These findings are based on Question 2 of the self-assessment. Students had to provide a reason why the SDMA task was either difficult or easy to complete. Table 7.2 contains a brief outline of the findings pertaining to the students' perceived level of SDMA task difficulty and will also be discussed.

Group work dynamics, the *requirements of the SDMA task*, as well as the *online environment* within which the excursion and assessment took place contributed towards students experiencing the SDMA as difficult. Several students indicated that a lack of communication and social skills among group members led to misunderstandings within the group and, ultimately, to a lack of cooperation during the SDMA task:

> '[*W*]e sometimes don't understand the other person well and [*therefore*] we end up having misunderstandings amongst ourselves, also [*this*] made [*it*] hard for us to understand the whole assessment, most importantly poor communication contributed a lot in finding this assessment hard and misinterpreting what is being discussed.' (Student, June 2022, SAQ 2)

The SDMA task required students to be part of the decision-making process, as well as to be critical and self-reflective. However, some students articulated that the SDMA task was difficult because of the complex nature of the task itself. Students also indicated that the questions were difficult to understand and that the task required intensive planning and research.

TABLE 7.2: Codes and themes relating to the perceived level of self-directed multimodal assessment task difficulty.

Difficult or easy	Codes	Themes
Difficult	• Lack of communication	Group work dynamics
	• Group members lacked social skills	
	• Lack of cooperation	
	• SDMA task required critical-thinking	Requirements of the SDMA task
	• Intensive planning	
	• Intensive research	
	• Decision-making	
	• Difficult to self-reflect	
	• Did not understand the questions	
	• Power outages (load shedding of electricity supply)	Online learning environment
	• Lack of cooperation because of network issues	
	• Students on different campuses	
	• Lack of ICT skills	
	• Prefer working alone	Maladaptive agency
Easy	• Clear instructions	Support provided
	• Sufficient background information	
	• Enough time	
	• Cooperation because of different points of view	Nature of the SDMA task
	• Respected each other	
	• Knew what was expected	
	• Not challenging	
	• Multimodality	
	• Authenticity of SDMA task	
	• Decision-making	
	• Had to think outside the box	

Source: Author's own work.
Key: SDMA, self-directed multimodal assessment; ICT, information and communication technology.

Although several students indicated that the SDMA task was difficult to complete, some students stated that the group work made it better and they enjoyed the task:

> 'The animation was difficult but thanks to my groupmates we tried to keep in touch in every detail of the assessment event though our schedules were a problematic factor, the process was inspiring because some of my teammates are from other campuses, but we kept each other's end of the roles we were responsible for.' (Student, May 2022, SAQ 2)

Evident from the participants' responses to Question 2 is the fact that the OLEalso contributed towards the SDMA task's difficulty. Students from all three NWU campuses (Potchefstroom, Mahikeng and Vanderbijlpark) were randomly assigned to CL groups for the duration of the excursion. If students were not familiar with the online collaborative environment, it is not surprising that several students indicated that they found the SDMA task to be quite difficult to conduct. Another contributing factor within the South African context is scheduled power outages, or 'load shedding'. Because of varied load shedding of electricity supply schedules across the country, group members might be affected at any given time. This will influence the degree of cooperation within groups to some extent, and groups would have needed to take load shedding schedules into consideration during their planning. One student also pointed out that they used a laptop for the first time and, therefore, it is not surprising that this student found the SDMA task difficult to finish. Some students indicated that the SDMA task would have been easier to complete as an individual assessment. Since it was individual students in different CL groups who stated that they prefer working alone, it might be because of the fact that students want to be in control of their own marks, which might point toward *maladaptive agency*:

> 'For me the assessment was hard to complete, I personally struggle to work in a group because I want to control my own marks and not depend on a partner.' (Student, June 2022, SAQ 2)

Most of the students articulated that they found the SDMA task easy because of the *support provided* during the excursion (i.e. sufficient background information and clear instructions). Students also stated that enough time was allocated for the completion of the SDMA task:

> 'Was easy to complete because we had a lot of time to complete it, so we were able to think out of the box.' (Student, June 2022, SAQ 2)

Groups had two weeks from the date of their excursion to complete and submit the SDMA task, and supportive guidelines were included in the excursion document that students received. Students felt that the time provided was sufficient for completing the task successfully, allowing enough time for online collaboration and research.

The authentic, multimodal and cooperative *nature of the SDMA task* contributed to students finding the task easy to complete. Students also valued being part of the decision-making process and said:

> 'The topic we chose to discuss for our assessment was one that most of us in the group felt passionate about which made the assessment easier.' (Student, June 2022, SAQ 2)

Since students had to reach a consensus within their CL groups on the artefact they were constructing, relevant group discussions and deliberations had to take place. Many students articulated that the cooperation within their groups enabled them to view aspects from multiple perspectives, as well as respecting group members:

> 'Easy because we were all participating, and we were helping each other we even respected each other. Everyone had a chance to raise their own opinions/ suggestions [*and*] we were able to communicate as a group. We were all doing research and shared them to our group chat. Everyone was playing their role in the group.' (Student, May 2022, SAQ 2)

One student also indicated that the SDMA task was easy to complete because 'it was not much of a challenge' (Student, June 2022, SAQ 2). Because this student did not elaborate on their answer, it is noteworthy that this student also indicated that the social interactions within their group comprised the most enjoyable aspect of the SDMA task. Therefore, it might be that successful cooperation among the group members assisted in the completion of the SDMA task instead of the SDMA task not being challenging.

The majority of the students found the SDMA task easy to complete and indicated that it is because of the support and guidance provided during the excursion, as well as the nature of the task itself. The fact that the SDMA task had to be completed within CL groups largely contributed to the ease with which the first-year students completed the SDMA task. The positive interdependence and promotive interaction enabled shared beliefs amongst group members to produce desired results (artefact), which is an indication of collective student agency.

The students who found the SDMA task difficult to complete indicated that the lack of communication and social skills, as well as the requirements of the SDMA task to be critical and self-reflective, was the cause of the difficulty. The online environment, and related challenges, also contributed to students finding the SDMA task needing help to complete. The few students who indicated that the SDMA task would have been easier to complete as an individual assessment are most probably individualists who are not used to sharing roles and responsibilities within a group context. Although this might be an indication that positive interdependence could be better structured and that the development of social skills should be better supported, it most probably points toward *maladaptive agency*.

Only a few individual students - from different CL groups – stated that the task would have been easier to complete as an individual endeavour. If positive interdependence was poorly structured, more students might have indicated that they prefer to work alone. It might be that if these students had higher-level social skills, they would have been able to negotiate their needs better within their CL groups. This should be taken into consideration and planned for when SDMA tasks are conceptualised for virtual excursions.

In the following section, the findings from SAQ 3 will be presented.

The part of the assessment which I enjoyed the most, was …

Evident from the participants' responses is that problem-solving, sharing ideas, social interactions, multimodality of the SDMA task, conducting research, as well as being part of the decision-making process were the aspects of the SDMA task they enjoyed the most.

The fact that students enjoyed solving problems, sharing their ideas, as well as the social interactions within their CL groups, is an indication that most students enjoyed the cooperative environment within which the SDMA artefacts had to be brainstormed and constructed:

> 'The research about problems we face in schools and the speeches that were shared amongst our group. It gave me an insight into how we can think different or have different perspectives on a topic or subject as teachers.' (Student, May 2022, SAQ 3)

Evident from the quoted text, and from several other responses, is the fact that students highlighted the solving of authentic problems. Authenticity of the SDMA task – and, per implication, problem-solving – seems to have contributed towards students' positive affectivity towards the assessment. The following quote has relevance:

> 'Doing thorough research for our animation and sharing speeches that we wrote pertaining to our topic. This exercise was enjoyable the most as we were exposed to different problem analysation skills and solutions that happen in our schools daily, needless to say that we will also form an exciting part of the education community and make solid changes and betterment.' (Student, June 2022, SAQ 3)

The social interactions within the groups were because of the SDMA task being embedded within CL principles. The fact that most students stated social interactions to be the most enjoyed aspect of the assessment is an indication that the SDMA were successfully embedded within the CL principles. This led to promotive interactions among group members as opposed to competitive or individualistic interactions. Students specifically mentioned that 'having other participants acting according to their roles was the best part because it brought about unity' (Student, April 2022, SAQ 3).

Also evident from participants' responses to SAQ 3, is the fact that students enjoyed the multimodality of the SDMA artefact. The following quote has relevance:

> '[…] I enjoyed creating the poster. I like to be creative and make pictures.' (Student, May 2022, SAQ 3)

Noteworthy is the link between multimodality and decision-making. Students had to choose between two topics and two types of artefacts for the SDMA task. The decision-making processes are driven by the multimodality of the SDMA, and students had to purposefully negotiate and discuss the modality of their artefact within their groups. This led to group members having to conduct research on a specific topic and modality prior to the construction of a specific artefact. Conducting research was also highlighted as a particular aspect of the SDMA task which was enjoyed the most. Not only did students enjoy conducting research for the construction of the artefact, but it motivated them for future and further learning. The following quote has relevance:

> 'The part I enjoyed the most, was getting to view social problems in school from a different perspective. It opened my mind to doing more research about several other problems that we face in school as teachers and students. I enjoyed getting the opportunity to prepare myself for my school-based placement in August.' (Student, June 2022, SAQ 3)

It is therefore evident that the multimodal and authentic nature of the SDMA task, which was embedded within CL, was enjoyed not only for its potential to promote current learning but also for future learning.

Despite the overwhelmingly positive responses, it should be noted that one student indicated that they did not enjoy any part of the assessment task and said:

> 'Truly speaking on my side there's no part of the assessment which I enjoyed the most […].' (Student, June 2022, SAQ 3)

However, this student provides the following reason for not enjoying any part of the SDMA:

> '[…] because I was experiencing network connection problems [*and*] I was struggling with [*the*] internet.' (Student, June 2022, SAQ 3)

Consequently, the negative effects of sufficient access to technology and, by implication, personal contextual factors should be considered carefully in terms of SDMA implementation. Next, data from Question 4 of the self-assessment will be presented and discussed.

I could have done a better job if …

Evident from participants' responses is the fact that students placed the responsibility for doing a better job on one of the following: *Others*,

themselves, or *uncontrolled factors*. Table 7.3 provides a brief outline of the codes and themes relating to this SAQ and will be discussed next.

Evident from Table 7.3 is that some students indicated that they could have done a better job if their group members acted differently. This relates to maladaptive agency and students opting to shift the responsibility for their own performance onto others. From the participants' responses it is evident that some students felt that if their group members had better social skills and were more active, they would have performed better during the SDMA task. Some students also stated that they could have done a better job if their group members provided them with the opportunity to showcase their skills. The following quote has relevance:

> 'I could have done a better job if I was given an opportunity to showcase my creativity [...].' (Student, April 2022, SAQ 4)

It is noteworthy that some group members said that if the resources in the group were better utilised, they would have done a better job, and also stated that the assessment was easy to complete because of the groups working well together and each member 'contributed and provided resources' (Student, May 2022, SAQ 4). Since it seems that their groups were working together well and sharign resources within the groups, the specific resources these students are referring to are unclear. Students also

TABLE 7.3: Codes and themes relating to aspects that prevented students from presenting a better output.

Codes	Themes
• Social skills	Others
• Active group members	
• Given opportunity to showcase skills	
• Members made resources available	
• Easier assessment	
• More time to complete the assessment	
• Less time given	
• Working alone	
• More effort	Self
• More research	
• Made notes	
• More creative	
• Better time management	
• Social skills	
• Understood instructions	
• Better ICT skills	
• Did not self-doubt	
• Network and connectivity	Uncontrolled factors
• Timing of the excursion	
• Face-to-face excursion	

Source: Author's own work.
Key: ICT, information and communication technology.

stated that they could have done a better job if 'the assessment was a little easier to understand or clearer' (Student, June 2022, SAQ 4). Evident from participants' responses is that more time for SDMA task completion was required. Students indicated that more time would have enabled them to have more group discussions and submit a better artefact. One student, however, indicated that they could have done better if less time was given for artefact construction and submission:

> 'I could have done a better job if the time was shorter, because I would work a bit and leave it, because there was too much time.' (Student, June 2022, SAQ 4)

Since students were provided with guidelines relating to the submission dates or deadlines of the artefacts, responses relating to more or less time for the SDMA task most probably link with time-management skills. The student who stated that less time is required also indicated that time management is one of the areas in need of improvement and development.

Lastly, two participants stated that they could have done a better job if they were working independently:

> 'I could have done a better job if I did it alone [...].' (Student, June 2022, SAQ 4)

> 'I could have done a better job if I was working alone because I am not so good with other people since I am not so used to doing a group so that was very challenging for me.' (Student, June 2022, SAQ 4)

Notably, both students identified social skills development as a learning need. Therefore, the cooperative nature of the SDMA task seems to have enabled them to identify areas of development, which is indicative that the excursion contributed in fostering their SDL skills.

The majority of the participants' responses indicate that they could have done a better job with the SDMA task if they took greater ownership and responsibility. Putting in more effort with the SDMA, conducting more research on the chosen topic, taking notes during the excursion, being more creative, as well as managing their time better were specifically highlighted. The following quotations were relevant:

> 'I could have done a better job if I had helped the tech fundi with our animation. I think I could have done more than just provide the information and doing the referencing.' (Student, May 2022, SAQ 4)

> 'I could have done a better job with planning out the task. I could have done bit by bit every day.' (Student, May 2022, SAQ 4)

Furthermore, students indicated that a higher level of social skills would have enabled them to deliver a better output with the SDMA task. The following quotations were relevant within this context:

> 'I could have done a better job if I knew from the get-go that collaboration produces better results and is way more effective than individual effort.' (Student, May 2022, SAQ 4)

> 'I tried communicating better, give out more responses and not be so hard to socialise with.' (Student, April 2022, SAQ 4)

Evident from students' responses is the fact that they grasp the importance of effective communication within the CL groups and the potential thereof to contribute towards improved learning. One student also specifically mentioned that they lied about internet connectivity and left a meeting during a discussion. This might be because this student 'become[s] irritated […] around a lot of people' (Student, May 2022, SAQ 4). The lack of social and small-group skills in this instance prevented optimal engagement and performance and may have been the cause of maladaptive agency.

Some students also indicated that they could have done a better job if they had a better understanding of the instructions and had better ICT skills. The multimodal complexity of the SDMA task necessitated the use of ICT skills, and although students were prompted to choose the CL role which suited their skillset best, students stated that a higher level of ICT skills would have been beneficial. Furthermore, students articulated that self-doubt prevented them from doing a better job:

> 'I did have self-doubt, because most of the times I was afraid to share some of my ideas because I was thinking that they are wrong or maybe they might say they are not related to the topic or something.' (Student, June 2022, SAQ 4)

It might be that students are not used to collaborating with others or that they were exposed to a dysfunctional group. Regardless, sufficient scaffolding should be in place to support the development of social skills during virtual excursions.

Network connectivity, the timing of the excursion, as well as the preference for a face-to-face excursion were factors that were out of students' control. Some students felt that they could have done a better job if the excursion was face-to-face, which would have eliminated connectivity issues. Students mentioned that it would have been better if the virtual excursion took place during a recess. Considering a face-to-face excursion might be the solution to connectivity issues, including power outages, within the South African context.

In the following section, findings from SAQ 5 will be presented.

After completing the assessment, I felt … because …

Evident from the participants' responses is that the assessment enabled the majority of students to learn new knowledge and skills, as well as value the complexity of the teaching profession. Students felt proud and happy

after completing the assessment because they learned new knowledge and skills:

> '[*We are*] proud of our work, because we all did our best and I feel that I have learned something from the whole experience.' (Student, May 2022, SAQ 5)

Several students also articulated that their involvement in the SDMA task, enabled them to gain insight into what is required of teachers. Students indicated that they had been made aware of the complexity of the teaching profession, which might be because of the authentic nature of the SDMA task. Furthermore, the fact that students were now better equipped to make informed decisions in their classrooms someday was also highlighted. The following responses were relevant:

> 'I felt excited to become a future Super Teacher, because after the whole virtual excursion and learning so much about what problems you can get in the schools and deciding on which of the social problems stood the most out for us and what we discussed and learn[*ed*] about, I felt [*it*] helped me a lot, because one day when I go out and teach, I want to make sure that it does not happen in my classroom and that I will know how to address that problem when something like this happens and that I have the right resources and activities which I can use to develop and implement my solution to this problem.' (Student, May 2022, SAQ 5)

Students also valued the CL environment within which the assessment was completed:

> 'I felt informed because I acknowledged all the ideas that every member came up with. Their ideas made me see the importance of teaching and how it does not only influence learners but society in general.' (Student, June 2022, SAQ 5)

Not only did students enjoy the collaborative discussions within their groups, but these discussions contributed to students learning new knowledge and skills. Students were able to listen to other group members' opinions and viewpoints while discussing the SDMA task topics. The ability to see others as resources is an important SDL skill (Guglielmino & Long 2011). The following quote has relevance:

> 'After completing the assessment, I felt relieved because we finished the assessment on time. However, I was also happy and grateful that I got to work with people from a different campus than Potchefstroom and that we could put all our ideas together and that we created a great assessment out of our different ideas.' (Student, May 2022, SAQ 5)

Brainstorming and sharing ideas within the group contributed to positive affectivity amongst several students. Therefore, it is not surprising that some students indicated that they were sad after completing the assessment because they had to say bid farewell to their group members:

> 'After completing the assessment, I felt so sad because this meant it was the end of me and my group members and also, I felt motivated and inspired of meeting people with open minds because already my mind was used to working fast and

> they always saw this thing in me that I didn't realise about myself how I am so good with communication.' (Student, June 2022, SAQ 5)

As previously mentioned, working together within a CL group to complete a complex SDMA task provided a platform for knowledge and skills development. Moreover, it seems that the nature of the SDMA task also provided an environment in which students could have positive inputs into the skills development of others.

Despite the overwhelmingly positive affectivity after completing the assessment, several students indicated that they were happy and relieved because they had multiple tasks to complete. This is not necessarily an indication that these students did not learn new knowledge or skills or that they did not benefit from the cooperative nature of the SDMA task. It is noteworthy that some of these students also identified time management as one of the areas in need of development. The following quotations of the same student are relevant within this context:

> 'I felt good in a way because finally we are done with this whole assessment and now, I can relax a bit and focus on my other assessments and assignments which I neglected for the past few weeks.' (Student, May 2022, SAQ 5)

> 'Most definitely time management [...].' (Student, May 2022, SAQ 9)

Since the findings from SAQ 6 ('What I learned most about myself, is [...]') and SAQ 9 ('Areas where I still need to improve or develop, are [...]) relate to identifying strengths and weaknesses, the findings from both these questions will be collectively discussed in the following section.

Areas where I still need to improve or develop, are ...

The ability to identify your own strengths and weaknesses – hence, establishing possible learning gaps – is a key characteristic of a self-directed learner (Knowles 1978). Students identified areas that need improvement and development. This is crucial for teacher education as, at the start of the WIL excursion, most of the participants indicated that they were ready to go teach at a school. Moreover, teachers are expected to be lifelong self-directed learners who are capable of ongoing self-evaluation to identify professional development areas.

Being able to work well within a group was the aspect most students learned about themselves. Embedding SDMA within the CL principles contributed towards good group dynamics and made students realise that they enjoy working in a group:

> 'What I learned most about myself, is that I can work well with people who want to achieve a common goal. I'm an active participant [...].' (Student, April 2022, SAQ 6)

Learning to work well within a group was also indicated by a couple of students as an area they need to develop:

> 'Working with other people because I am the worse to work with and I am not proud of that, but I am willing to work on that because it is said that teamwork makes the dream work.' (Student, May 2022, SAQ 9)

It is evident that relevant group work skills are needed to take advantage of the benefits of a CL environment. It is noteworthy that group work skills are linked to the ability to trust others:

> 'Areas where I still need to improve is the skill of working in a team and being dependent on other people in your group. I should learn to trust people that they will do their part and have patience [...].' (Student, May 2022, SAQ 9)

Identifying group work skills as an area for development, therefore, does not seem to be because of a lack of positive interdependence or promotive interaction amongst group members but rather a lack of social skills. Students also indicated that they learned to be good at communicating with others, sharing their ideas, respecting the opinions of others, assisting others, as well as being patient. The following quotation has relevance:

> 'I learned that I could communicate with others and share ideas with my group, and I learned that I know how to listen to everyone's point of view [...]' (Student, May 2022, SAQ 9)

Even though good communication and social skills were identified as something that several students were perceived to be good at, the majority of students articulated that communication and social skills are the areas in which they need to improve. Being patient, managing their anger, trusting and listening to others were indicated as areas that should be improved or developed:

> 'Areas where I still need to improve/develop, are patience with other members when working [*in*] a group. Constantly reminding myself that we are all from different backgrounds and work [*and*] communicate differently, is how I am planning to develop my skills in patience and ultimately improving my overall social skills while working with people that I have never met.' (Student, May 2022, SAQ 9)

The social nature of the CL environment within which the entire WIL excursion took place necessitated that students have the relevant social and communication skills for successful social negotiation relating to the SDMA task they had to complete.

Several students shared the sentiment that they are not yet ready for the teaching profession and that they still have much to learn. Even though the students' involvement in the SDMA task strengthened their love of teaching, pedagogical skills, ICT skills, problem-solving skills and

self-confidence were areas that were in need of improvement and development for successful teaching. The following quotation has relevance:

> 'I must become more knowledgeable about various topics regarding teaching strategies and issues in the classroom. I must grow in confidence and develop the necessary skills such as problem-solving [...] to be on top of my work.' (Student, June 2022, SAQ 9)

The fact that many students indicated the need to improve their time-management skills might be because of the comprehensive SDMA task which had to be completed. The nature of the SDMA task necessitated thorough planning. The digital online environment, especially within the South African context, might have contributed to the complexity of the planning process and, ultimately, time management. A definite link is also made to the necessity of good time-management skills for a successful teacher. The following quotations were relevant within this context:

> 'Time-management skills regarding planning. I need to be able to work effectively with my time, since a teacher has a lot of admin and lessons that should be prepared. Thus, time is very precious when you are a teacher.' (Student, June 2022, SAQ 9)

> 'I sometimes find that I will set goals for myself but will not always end up achieving them. I need to improve on my organisational and time-management skills in order to do so, as I can get easily distracted.' (Student, June 2022, SAQ 9)

Lastly, the findings indicate that students identified the need for greater autonomy, critical-thinking and adaptability:

> 'I also need to improve on fostering active engagement as well as fostering learner autonomy as I usually do not move out of my comfort zone and will stick to what I know or has been given to me. I need to start thinking out of the box and start taking control of my learning.' (Student, June 2022, SAQ 9)

> 'I need to improve my adaptability skills because teaching is such a challenging and constantly changing profession, being able to respond successfully in an unpredictable situation is usually seen as a crucial skill for educators' (Student, May 2022, SAQ 9)

All of these are characteristics of a self-directed learner, and the fact that involvement in the SDMA task enabled students to identify these as learning needs has implications for the implementation of SDMA within virtual excursions.

It is evident that these findings point toward increased agentic engagement since students identified learning opportunities. Therefore, the manifold affordances of an intervention such as this were clear, and this provides an impetus for further research-driven exploration.

Discussion

Evident from the data-analysis is that the positive affectivity towards the SDMA can be attributed to the collective agentic engagement among students (see § 5.1). It is significant that the CL environment within which the SDMA had to be conducted contributed towards greater agentic engagement. This points toward the importance of meticulous planning of SDMA tasks within online excursions to support students in becoming agents in their own learning processes (Marín et al. 2020; Stenalt 2021). From the students' responses, it is evident that the students offered input into the SDMA task by communicating what they were thinking and needing, expressing their preferences and generating options for the task. Hence, students showed agentic engagement that contributed to the completion of the SDMA task and the ability to identify learning needs. Students' decision to contribute towards the construction of the chosen artefact actively and constructively was evident.

Noteworthy is the fact that participants highlighted the value of social negotiations when choosing the topic and type of artefact, indicating the presence of collective agency. The presence of collective student agency is also evident through the feeling of unity students experienced within their CL groups (see the 'Problem statement' section in ch. 5). Finally, a few of the participants' responses indicated maladaptive agency to the extent that they would rather prefer to work alone. Maladaptive agency was also evident through students not taking ownership and responsibility for their own shortcomings (see the 'Literature review' section in ch. 5). It is significant, though, that these participants acknowledged that their maladaptive agency is because of their own shortcomings relating to social skills. From the data-analysis, however, acts of resistance, subversion and contention (see the 'Method' section in ch. 3) were not evident. This is noteworthy in terms of curriculum innovation, because such acts of agency may have been prevented through embedding the SDMA task within CL principles, as well the authenticity of the task.

Recommendations

From the review of the implementation of SDMA within this context, it can be recommended that providing choices in terms of focus and type of assessment artefact shows promise and should be considered by facilitators in similar interventions. Furthermore, it is essential that any such assessments reflect authenticity and are multimodal in nature, as this may be supportive of student agency. In this regard, the social aspect of the learning process should also be considered and utilised towards greater student engagement. Since the students in this study felt that content and skills development

took place because of the CL aspect of the SDMA implementation, careful planning towards ensuring the presence of the CL principles within the assessment is also recommended. Emphasising and scaffolding the process of identifying learning needs would also contribute towards effective SDMA. It would therefore be necessary to consider and support all the relevant skills required by students. In this regard, lecturers need to be cognisant of the diverging and dynamic needs and profiles of students when planning SDMA. This is also an aspect that can be addressed by allowing students to submit artefacts requiring varying degrees of technical or social skills. Lastly, it is recommended that authentic SDMA be embedded within CL principles to avert maladaptive agency in the form of resistance, subversion or contention.

Limitations

The demographic profile of this study covered students from the NWU Faculty of Education. Therefore, generalisations about the findings in terms of e-posters, student-produced videos or SDMA cannot be drawn for wider populations. The findings, however, might contribute to a more comprehensive scholarship of e-poster and student-produced videos.

Although the researcher intended to incorporate a multimodal analysis of the developed artefacts as part of this chapter, not enough artefacts could be accessed as a data source. In this regard, all members of a group had to give their informed agreement for the artefact to be utilised for research to comply with research ethical guidelines. The researchers decided not to use student artefacts as a source of data because of the small number of artefacts for which this could be gathered.

Conclusion

This chapter set out to explore first-year students' perspectives on and experiences of SDMA to determine the affordances of learning through SDMA for student agency. In drawing on the theoretical background of SDL, student agency, SDMA and specifically the use of posters and videos as multimodal assessment instruments within the context of social constructivism, an intervention was designed towards the implementation of SDMA for a virtual student excursion. From the analysis of qualitative data derived from student responses, it was evident that using SDMA within a CL environment supported the development student agency. This approach also supported students in being able to identify their learning needs and hence contributed towards their self-directedness. Despite some limitations, the use of SDMA in virtual excursions clearly has the potential to support student agency.

Appendix 1

Designing an e-poster OR designing an animation, film or video

Your assessment should include:

- A suitable title
- Authors' information (full names and student numbers of group members)
- Your group's number, for example, H1
- An introduction
- Entrepreneurial learning tool OR Social equality report
- References
- Justification for choice of topic and assessment (e.g. why your group decided to compile a report on social justice issues by means of an e-poster)

Self-reflection

Submit your self-reflection to the Materials Manager as a Microsoft (MS) Word document (please follow this link to obtain a copy of this assessment in a Word format). Materials Managers should copy and paste all group members' self-reflections on ONE MS Word document, then convert it to a portable document format (PDF) document before uploading on Google Forms.

Please reflect critically on your experience by completing each of the following sentences

1. The excursion was ...
2. The assessment was (HARD or EASY) to complete, because ...
3. The part of the assessment which I enjoyed the most, was ...
4. I could have done a better job if ...
5. After completing the assessment, I felt ... because ...
6. What I learned most about myself, is ...
7. What I learned most about becoming a SUPER TEACHER, is ...
8. I think cooperative learning ...
9. Areas where I still need to improve or develop, are ...
10. One day when I teach, ...

Chapter 8

Demystifying intercultural constructs in a South African context: Virtual excursions as exemplars of curriculum innovations

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If we seek to understand a people, we have to try to put ourselves, as far as we can, in that particular historical and cultural background. […] It is not easy for a person of one country to enter into the background of another country. So there is great irritation, because one fact that seems obvious to us is not immediately accepted by the other party or does not seem obvious to him at all. […] But that extreme irritation will go when we think […] that he is just differently conditioned and simply can't get out of that condition. One has to recognize that whatever the future may

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> hold, countries and people differ [...] in their approach to life and their ways of living and thinking. In order to understand them, we have to understand their way of life and approach. If we wish to convince them, we have to use their language as far as we can, not language in the narrow sense of the word, but the language of the mind. That is one necessity. Something that goes even much further than that is not the appeal to logic and reason, but some kind of emotional awareness of other people.
>
> – Jawaharlal Nehru, during a visit to United States of America (USA) (cited in Adler 1991 p. 63)

Abstract

Intercultural sensitivity (IS) – the skills, attitudes and behaviour needed to effectively communicate with people of various backgrounds – is not merely the ability to know a proper gesture or speak an appropriate utterance in the target language in a specific sociolinguistic situation. Rather, IS also requires critical cultural awareness, that is, dispelling and moving beyond negative stereotypes, prejudice, discrimination and racism by examining underlying power structures of representation. In this chapter, we provide a review of key methodologies and frameworks underlying the intercultural communicative competencies and IS constructs using the self-directed learning (SDL) lens. We further provide evidence to support the hypothesis that deeper, evidence-based understanding of these constructs could inform and strengthen potential curriculum innovation efforts to promote inclusive practices, with a specific focus on virtual excursions for first-year Bachelor of Education (BEd) and Bachelor of Health Sciences (BHSc) students at the North-West University (NWU) in South Africa.

Introduction

Humanity is witnessing extraordinary changes, constantly faced with unprecedented challenges that deepen inequality and cause disruptions for decades to come. Technological disturbances, climate change, intolerance and hate, forced migration of people and pandemics have made our world interconnected; however, we may not be aware of the extent of this connection (Levite & Jinghua 2021). Because the development of communication and transportation has brought different cultures closer together, intercultural communication competence has become essential for survival in today' s society. A globalised economy requires collaboration between people from various cultural backgrounds, and the widespread immigration has made society more culturally diverse (Hajro et al. 2021). While we, as humans, tend to be inherently inclined toward liking and emphasising similarities and disliking and ignoring differences, nevertheless, in our world's global village we co-exist with cultural differences. To survive

and thrive, one should be able to relate, assimilate and accommodate other cultures. Such a premise is more relevant in South Africa, a country of endless diversity and a nation rich in contrast and variety, with eleven official languages spoken by diverse ethnic groups.

Because of the increased diversity in South African classrooms, developing methods to incorporate all learners and guarantee that each child gets an equal chance to make educational advancement remains a major challenge for teachers. More importantly, recognising individual differences as opportunities for enriching learning rather than problems to be fixed can be a daunting task, particularly for novice teachers (Chahine 2018). Therefore, appreciating the benefits of student diversity, and how to learn from cultural differences is a key skill that South African pre-service teachers need to acquire early in their initial preparation programmes.

As endorsed in its *Constitution of the Republic of South Africa Amendment Act 35 of 1997*, South Africa upholds the fundamental principles related to equality, respect for all people, the advancement of human rights and freedom, as well as non-racialism and non-sexism (Moyo & Hadebe 2018). However, within diverse South African classrooms, inclusive and equitable practices are driven by various considerations, such as teacher knowledge, skills and attitudes, classroom environment, pedagogical strategies and the curriculum (Walton & Engelbrecht 2022). Moyo and Hadebe (2018) averred that South Africa needs an education system where teachers are prepared to accommodate learner diversity during their initial training and where students are trained to acquire critical life skills that will enable them to address pressing global issues and respond to the rapid technological change and disruption.

Intercultural sensitivity, the skills, attitudes and behaviour needed to effectively communicate with people of various backgrounds, is not merely the ability to know a proper gesture or express an appropriate utterance in the target language in a specific sociolinguistic situation. Rather, IS also requires critical cultural awareness, that is, dispelling and moving beyond negative stereotypes, prejudice, discrimination, and racism by examining underlying power structures of representation. As such, competence in IS is an essential requirement in an increasingly interconnected world where interacting with people of divergent cultural backgrounds is becoming the norm (Fantini 2021).

Intercultural sensitivity, and synonyms thereof, across disciplines, is not new. Kramsch (2013), a pioneer of the intercultural approach, advocates for a cultural 'third place' where culture is seen as an interpersonal process of negotiating otherness while being fully conscious of personal values and perspectives. Arasaratnam-Smith (2017) observed that intercultural competence scholarship widely references the following models: The *process*

model of intercultural competence (PMIC) (Deardorff 2006), the *integrated model of intercultural communicative competence* (IMICC) (Arasaratnam 2006), the *intercultural competencies dimensions model* (ICDM) (Fantini 2009), the *intercultural competence model* (ICM) (Byram 2012) and the *developmental model of intercultural sensitivity* (DMIS) (Bennett 1986). Increased recognition, both globally and nationally, of the significance of IS and communicative competence in teachers' professional training and development necessitated the launch of innovative curriculum approaches that promote a deeper understanding of cross-cultural differences and support more inclusive, self-directed and reflective practitioners. To address these urgent needs, the Faculty of Education at NWU have responded to this call through curriculum innovation projects to address the issue of diverse student populations, to build student capacity as self-directed learners and to strengthen student intercultural competence, fostering a culture of tolerance and acceptance among students.

The purpose of this chapter is twofold. Firstly, to provide a review of key methodologies and frameworks underlying the intercultural communicative competencies (ICC) and IS constructs using the SDL lens. In this sense, we argue for the use of intercultural tools supporting the empirical evidence of how using critical cultural sensitivity could shed light on the distinctive variations in people's perceptions and reflections across cultural contexts. Secondly, to support the hypothesis that a deeper, evidence-based understanding of these constructs could inform and strengthen potential curriculum innovation efforts to promote inclusive practices, with a specific focus on virtual excursions for first-year Bachelor of Education (BEd) and Bachelor of Health Sciences (BHSc) degree students at NWU. Therefore, the projected goal of this review is to understand the basic tenets of ICC and IS and provide profound insight into the effectiveness of its tools in the context of education to help educators recognise 'the self' and 'the other' as socially constructed, dispelling myths and combatting stereotypes in the process.

This chapter begins with a historic overview of ICC as it emerged within Western contexts and then shifts to the South African context. Following the historical background, the chapter presents prevalent definitions of intercultural competence and introduces key underlying theoretical paradigms and assessment tools focusing attention on teacher education. The chapter also includes an analysis of IS, shedding light on three fundamental developmental models and introducing virtual excursions as exemplars of innovative curriculum interventions that support pre-service teachers' IC. An examination of intercultural competence from an SDL lens is also weaved throughout. The chapter concludes with a discussion of the role of virtual excursions in strengthening pre-service teachers' intercultural communication skills, highlighting the necessity to explore the concept of

intercultural citizenship as a means of decentralising ethnocentric dialogues and blurring boundaries in favour of a collective and diverse world.

Intercultural communicative competence: An overview

In Western societies, ICC has been extensively studied. Early in the 20th-century, Rachel Davis DuBois (1933) advocated a multicultural American identity counter to the mainstream assimilationist philosophy at the time. The United States of America (USA) scholarship on the intersectionality of intercultural studies and cultural competence gained momentum in the 1960s and continues today. Spitzberg and Changnon (2009) and Arasaratnam (2015) jointly provided a comprehensive overview of nearly 60 years of ICC research in Western scholarship.

Because defining and assessing the complexity and unpredictability of human interaction is an ambitious endeavour, it should be no surprise that scholars have various terms, definitions, theoretical frameworks and assessment tools for intercultural competence. Among the many terms used to describe the same phenomenon are multiculturalism, communication competence, multicultural adaptation, cross-cultural awareness, effective inter-group communication, global competence, intercultural communicative competence, IS, international communication, international competence, transcultural communication and others. Extensive literature provided a thorough discussion of prevalent terms, definitions, and themes, including research by Bradford, Allen and Beisser (2000), Fantini (2009), Spitzberg and Changnon (2009). Arasaratram (2015), Arasaratnam-Smith (2017), Deardorff (2006, 2016), Fantini (2000, 2015), Orsini-Jones and Lee (2018), Rathje (2007) and Spitzberg and Changnon (2009) have synthesised the contributions and debates in the field. Deardorff (2016) noted six emergent themes in the literature:

1. The fact that intercultural competence can be assessed.
2. Because of its complexity, intercultural competence needs to be divided into clear and measurable learning objectives and outcomes.
3. Intercultural competence is a lifelong developmental process.
4. Language fluency on its own is insufficient for acquiring cross-cultural proficiency.
5. Intercultural competence needs be intentionally incorporated throughout the curriculum and should include experiential learning.
6. A clear understanding of intercultural competence is needed by educators so they can help their students develop intercultural competence.

Western scholars have differing opinions as to how far back the origins of intercultural communication should or could be traced. Some suggest

there are distinctive and irreconcilable differences between Western and non-Western cultural history (Menocal 2004). In this respect, there was a need to prioritise a third space for intercultural engagement in an attempt to eliminate this false polarity. It is commonly noted that modern Western Eurocentric thought, for example, begins with culturally appropriating ancient Greece and Rome, then skipping several centuries ahead to the 14th–16th-century European Renaissance, 17th–18th-century Enlightenment and the Age of Imperialism from the mid-18th-century until the early part of the 20th-century. Neglected are the contributions from other world traditions from sub-Saharan Africa, Meso-America, East Asia, the Islamic civilisation and others. In this context, Jackson (1984) urged caution against dismissing the distinctions between abridged, unabridged and restricted speech and the need to understand the language's grammatical structure in unison with the people's traditions, habits and communicative modes. Analogously, Arasaratnam (2015) contends that understanding cultural diversity and identity in the technological age necessitates the development of new methodologies and pedagogies to examine and facilitate dialogues related to intercultural communication. Most intercultural communication scholars, however, accept Leeds-Hurwitz (1990) as an authoritative 'traditional' account of the field's modern origins as a scientific discipline as we understand it today.

Leeds-Hurwitz (1990) traced the beginnings of the field of intercultural communication to the observations and scholarship of Edward T Hall (1914–2009) in his capacity training USA diplomats at the Foreign Service Institute (FSI) in the aftermath of the Second World War (WWII), at a time when the USA was establishing its empire and foothold as a global superpower through the use of international aid. Moon (2010), influenced by Foucault' 's (1972) notions of knowledge and power in conjunction with Leeds-Hurwitz's (1990) work on the history of intercultural competence noted that the early ideas on intercultural competence as a scientific field of inquiry revolved around 'they' (Northern Americans) wanting to learn more about 'them' (folks outside North America). The term 'culture' was viewed as synonymous with and confined to the imagined community of 'nation' as understood in its apolitical and ahistorical context (Moon 2010). Moon (2010, p. 35) explained, 'I came to see that intercultural competence developed amidst WWII as a tool of imperialism, in which considerations of social justice and equity were not important'.

Thus, intercultural communicative practice, as emerged in the West, dates its pre-paradigmatic origins to the pioneering work conducted at the USA FSI after WWII. The height of these developments was the publication of Edward T Hall's *The Silent Language* (1959). Hall's primary concern was with writing a book accessible to the public that addresses

culture shock based on the premise that 'culture is communication and communication is culture' (Hall 1959, p. 186). In particular, 'Hall stressed the micro-level aspects of space and time as they affected what we today call nonverbal communication' (Rogers et al. 2002, p. 9).

The next major contribution to the field was made by Hymes (1972) when he coined the term 'communicative competence' as a critique of what he perceived to be Chomsky's (1957) focus on grammar forms. Hymes effectively incorporated socio-cultural and sociolinguistic elements into the ethnography of communication. Hymes' communicative competence contribution can be traditionally seen as a foundation for the inclusion of culture in the communicative approach. After Hymes, two names would become synonymous with the field to date, Bennett and Byram. While Bennett (1993) focused on examining ways in which people from diverse cultures experience and interact with one another, Byram (1997) noticed that there is a lack of inclusion of the roles social identity and cultural competence play in learners' intercultural interactions. Byram also critiques what he saw as the overemphasis on the sociolinguistic aspects of communicative competence at the expense of the intercultural aspects. In describing ICCs, Byram adopted Van Ek's (1986) six competencies model of communicative competence (communicative ability), including *linguistic*, *sociolinguistic*, *discourse*, *strategic*, *socio-cultural*, and *social competence*.

To develop global citizen competencies, Orsini-Jones and Lee (2018) explored and emphasised the need for higher education to integrate telecollaboration in the digital age. In an increasingly interconnected world, there were calls advocating the need for global graduates to recognise and value cultural differences while developing skills allowing them to effectively communicate across multiple contexts and diverse media outlets. Particularly in teacher education programmes (TEPs) and to support pre-service teachers in acquiring beneficial multicultural experiences, thereby developing IS skills, creative excursion and immersion experiences can serve as innovative curriculum exemplars. These experiences promote self-directed problem-solving (Chahine 2021) and foster self-awareness, sensitising student teachers to their own values and biases to social and cultural realities locally and globally. Orsini-Jones and Lee (2015) state:

> The challenge for educators in HE is to encourage students to become critically operational in such a complex world and to equip them with the multimodal multiliteracies and intercultural critical awareness necessary to decode said world. (p. 8)

Therefore, it is essential that, IS be incorporated as a fundamental component of curriculum innovation efforts.

Defining intercultural competence

There are many definitions of intercultural competence and synonyms thereof that are cited in the literature. For example, Bennett (1993, p. 24) described intercultural competence as 'the way people construe cultural difference and [...] experience that accompany these constructions'. In the same vein, Byram (1997, p. 34) defined communicative competence as 'knowledge of others; knowledge of self; skills to discover and/or to interact; valuing others' values, beliefs, and behaviours; and revitalising oneself. Linguistic competence plays a key role'. Relatedly, Fantini, Arias-Galicia and Guay (2001) observed that ICC involves:

> [*T*]he ability to develop and maintain relationships, the ability to communicate effectively and appropriately with minimal loss or distortion, and the ability to attain compliance and obtain cooperation with others. (p. 27)

Similarly, Deardorff (2006, p. 194) averred that ICC is 'the ability to communicate effectively and appropriately in intercultural situations based on one's knowledge, skills, and attitudes'.

Olson and Kroeger (2001) defined ICC as the ability to engage in a successful conversation with people from other cultures. The authors further delineated requisite ICC skills that are necessary to engage with others. *Empathy* being the first skill required for ICC refers to the ability of putting oneself in other people's shoes in order to understand them better. *Cross-cultural awareness* is another skill required for ICC and refers to knowing what a culture looks like from the viewpoint of an insider in the culture. *Adaptability* is also another skill required for ICC development and is defined by Kim (1991) as:

> The individual's capacity to suspend or modify some of the old cultural ways, to learn and accommodate some of the new cultural ways, and to creatively find ways to manage the dynamics of cultural difference/unfamiliarity, inter-group posture, and the accompanying stress. (p. 268)

Furthermore, *intercultural relations* and *cultural mediation* as the final requirements of ICCs are described by Olson and Kroeger (2001, pp. 118–119) as 'the ability to develop intercultural interpersonal relationships and the ability to serve as a bridge between cultures respectively'.

On the other hand, Hammer, Bennett and Wiseman (2003, p. 422) explained that ICCs comprise 'The ability to think and act in interculturally appropriate ways'. In another study, Bennett (2017, p. 2) defined ICC as 'The forming of intercultural sensitivity into behaviour that coordinates meaning across cultural contexts with more or less the same ease that one coordinates within one's own culture'. As stated in Dávila, Cesani and Medina (2013), Portalla and Chen (2010, p. 7) characterised ICC as 'An individual's ability to achieve their communication goal while effectively

and appropriately utilising communication behaviours to negotiate between the different identities present within a culturally diverse environment'. As such, Portalla and Chen (2010) considered three components for ICCs: *Cognitive* (intercultural awareness [IA]), *affective* (IS) and *behavioural* abilities (intercultural effectiveness). The *cognitive* component of ICC refers to the ability to know the similarities and differences between cultures; the ability to discriminate between cultures and has two dimensions: (1) self-awareness and (2) cultural awareness. The *affective* component is the ability to accept and have positive attitudes about a new culture and has six dimensions: self-esteem, self-monitoring, open-mindedness, empathy, interaction involvement and suspending judgement. The third component, the *behavioural* component, is about the ability to interact successfully with people of other cultures. It is the most observable dimension and includes four dimensions: message skills, appropriate self-disclosure, behavioural flexibility and interaction management (Chen & Starosta 2000).

A number of scholars, while employing a 'cross-cultural' approach (Fritz et al. 2002), characterised ICCs as the ability to form positive perceptions about a different culture and consider its *cognitive*, *affective* and *behavioural* dimensions (Ching et al. 2021; Hammer 1989). Some other scholars have put emphasis on the behaviour of people from diverse cultures as they interact with each other. Drawing on evidence from several case studies, Leiba-O'Sullivan (1999) concluded that an *interculturally competent person* exhibits seven characteristics: Expression of respect, interaction posture, knowledge orientation, empathy and compassion, self-directed role behaviour, interaction management, and tolerance for uncertainty. Therefore, it is essential to incorporate the three dimensions and seven characteristics of ICC when designing innovative curriculum interventions that foster global engagement and support TEPs toward self-directed approaches to teaching and learning (T&L).

Intercultural competency and self-directed learning

Long acknowledged as a crucial field of study in adult education, SDL has its roots in Greek philosophy. Socrates (469–†399 BCE) characterised himself as a self-learner who took advantage of opportunities to pick up knowledge from others around him. Aristotle placed a strong emphasis on the value of self-realisation, a kind of wisdom that can be attained with or without the help of a teacher. Also, Plato (428/427–†348/347 BCE) argued that developing the capacity to function as a self-learner in adulthood should be the ultimate purpose of education for the young. As a mode of learning where a person assumes responsibility for their own learning,

SDL became a common theme (Garrison 1997). Self-directed learning is not an educational fad, according to Knowles (1975, p. 17), but rather a 'fundamental human competence the ability to learn on one's own'.

Principled by the constructivism paradigm, SDL is believed to be embedded and situated within socio-cultural contexts (Van Deur 2017). Recent research in the area demonstrated that SDL scholarship has grown dramatically (De Beer, Petersen & Van Vuuren 2020; Mentz & Lubbe 2021). Front and centre in the extensive literature on SDL is the focus on social context (Brockett & Hiemstra 2018; Garrison 1997; Knowles 1975). Specifically, empirical evidence from relevant studies revealed a strong positive correlation between SDL readiness and cross-cultural adaptability (Beswick et al. 2002). This means that strong preparedness for SDL may predict a high level of cross-cultural flexibility. Such findings suggest that SDL skills are necessary requisites to foster and sustain cross-cultural adaptability. The implications of this literature for intercultural competence are noteworthy to highlight, namely that cross-cultural success can be achieved by enhancing the ability to be self-directed and to comprehend the requirements for successfully adjusting to a different culture (Chuprina 2001, p. 114). Therefore, in addition to the personal traits of the learners involved in cross-cultural adaptation processes, it is crucial to demonstrate the relationship between learning or teaching approaches and intercultural adaptability.

Theoretical paradigms underlying intercultural communication competence

Essential to the study of IC are five paradigms explained by Hua (2016). They are positivist, interpretative, critical, constructivist and realist. Hua (2016, pp. 7–17) depicted the main assumptions underlying each paradigm and the questions they address.

In a nutshell, the positivist paradigm seeks to describe and predict, while the interpretative paradigm seeks to interpret culture as a whole. The critical paradigm seeks to transform, while the realist paradigm emphasises the subjective nature of social behaviour. Therefore, the realist paradigm capitalises on explanation (as in the constructivist paradigm) to understand IC.

Relatedly, Kramsch (1993), a pioneer of the intercultural approach, proposed a cultural 'third place' in which culture is depicted as an interpersonal process geared towards having an awareness of one's own ideals and perspectives while embarking on understanding otherness.

The numerous instruments created to test and evaluate ICC in the past 50 years of Western research primarily relied on self-reports using qualitative, quantitative or mixed-method assessments. In education contexts,

Deardorff (2016) noted the dearth of scholarship in the second half of ICC assessment, which relates to others' thoughts and observations on the appropriateness of communication and behaviour outside of self-reports.

Intercultural communication competence models and assessment

While intercultural competence can be examined within the scope of a multitude of ICC models, frameworks and assessments, Arasaratnam-Smith (2017, p. 9) summarised the state of the field as 'an overarching grand theory of intercultural competence is yet to be developed, though there are several widely used and tested theories'. The author listed several ICC models, including the DMIS (Bennett 1986), the ICM (Byram 1997), the PMIC (Deardorff 2006), the IMICC (Arasaratnam 2006) and the ICDM (Fantini 2009).

As noted by Dervin (2017), the predominant ICC models, such as those mentioned, are all Western-based. However, more in-depth investigations by Byram et al. (2016) Deardorff and Arasaratram-Smith (2017) and others are expanding the intercultural field by publishing globally-based IC perspectives within a non-Western and Global South context. It is noteworthy to remark that the field's future is promising. Having stated that, for the purpose of this review, we will investigate the two models described earlier, namely that of Bennett (1986) and Byram (1997). These are currently the two educational approaches that are most frequently employed in education.

While Bennett's (1986) developmental model represents the theoretical frame of the intercultural development inventory assessment (IDIA), as Garrett-Rucks (2016) noted, the model falls short of providing fine-grained descriptions to emphasise the types of noteworthy contrasts that a qualitative analysis might reveal. In the same respect, Garrett-Rucks (2016) argued that it is only through qualitative methodologies that we can capture the unique, nuanced accounts of how IC evolves and develops over time. The second widely cited five-factor ICCs' model proposed by Byram (1997), and which highlights the 'critical awareness' factor, provides a promising framework to conduct empirical studies that capture, document and examine the changes that occur in the learners' intercultural thinking. As noted by Orsini-Jones and Lee (2018), Byram (2012, 2014) revisited his model, further developing the concept of 'intercultural citizenship' as an integral part of ICC.

In identifying stages of global IC, Olson and Kroeger (2001) drew on Bennett's DMIS, which organises differences in cultural experiences into a

sequence of stages. Bennett's diagnostic model enables educators to create curriculum innovations that support progression through these stages of IS. The significance of this tool lies in its potential to help educators address the 'concept of fundamental difference', which is the 'most problematic and threatening idea that many of us will ever encounter' (Bennett 1993, pp. 22–24).

Intercultural sensitivity

Intercultural sensitivity is the capacity to recognise and value cultural differences without harbouring any animosity toward the 'other'. Bronfenbrener et al. (1958) were among the first scholars who explored the construct of IS and classified it into two main types: Sensitivity to the generalised other and sensitivity to individual differences.

In another study, Chen and Starosta (1997, p. 5) defined IS as 'an individual's ability to develop emotions towards understanding and appreciating cultural differences that promote appropriate and effective behaviour in intercultural communication'. The authors cited six elements necessary for IS to develop, namely, self-worth, self-awareness, neutrality, empathy, engagement in social interactions and refraining from passing judgement. People with higher *self-worth* are more likely to initiate interactions with people. These people also have more positive views toward others and are more optimistic about relationships than people with low self-esteem (Chen & Starosta 2000). *Self-awareness*, as the second component necessary for the IS development, increases attentiveness and attention and sensitivity to the appropriate norms in different situations. *Neutrality* also increases IS, because open-minded and liberal people by now know that individuals are different, and people's conceptions of reality are also unique. Having such a view, one can more easily accept cultural differences. *Empathy* is considered the essence of IS. When a person is willing to change their place with others in different hypothetical situations, they will be more successful in gaining knowledge and skills in another culture, which leads to elevated IS. *Engagement in social interactions*, as Chen and Starosta (1997, p. 10) put it, is related to how much the person can 'handle the procedural aspects of structuring and maintaining a conversation'. The last element, *refraining from passing judgement*, is about postponing judgement until complete data are at hand. The same authors further argued that people who judge a person during the first moments of their visit cannot become interculturally-sensitive people easily, because IS comes with a lack or at least postponing of judgement and accepting people as they are and trying to enjoy the interaction without shaping negative perceptions about people. This element is particularly significant in the context of teacher training and preparation, where the focus is on equipping the prospecting 21st-century teacher with the necessary

skills and attitudes to create a fair and safe environment (e.g. their classrooms) that enables their learners to express themselves freely and openly. Exercising self-control and unconditional acceptance of the learners irrespective of their cultural differences are essential characteristics of an effective teacher.

In a similar vein, Hammer et al. (2003, p. 422) described IS as 'the ability to discriminate and experience relevant cultural differences'. In a later study, Bennett and Hammer (2017, p. 2) mounted another definition for IS as '[*the*] ability to have more complex personal experience of otherness'. IS is believed to be closely related to how a person construes cultural difference. As Hammer et al. (2003, p. 423) explained, 'the crux of the development of IS is attaining the ability to construe (and thus to experience) cultural difference in more complex ways'. Cultural *worldview* is defined as the knowledge about distinctions in different cultures. Since individuals who are monocultural have access to only one culture's distinctions and worldviews, they cannot have a complex experience of another culture's worldviews and hence cannot develop IS. In a similar approach, Bhawuk and Brislin (1992) proposed three elements for IS, namely, awareness of cultural customs, tolerance of cultural diversity and adaptability to accommodate cultures' customs.

Intercultural sensitivity assessment instruments

Various researchers attempted to develop an intercultural sensitivity measurement tool (ISMT), including Bennett (1986), Chen and Starosta (2000) and Hammer et al. (2003). However, because of the complex structures underlying the epistemological underpinnings of the construct and its related concepts, it was necessary to conduct statistical analyses to examine the psychometric properties of the scale used to develop a valid and reliable instrument. Chen and Starosta (2000, p. 4) attributed the shortage of measurement tools to the misconceptions about the distinction between three terms: IS, IA and ICC. The authors further simplified that (Chen and Starosta 2000):

> [...] because intercultural training programs such as affective training, cognitive training, behavioural training, self-awareness training, cultural awareness training, and area simulation training, aim to help participant develop an appreciation and understanding of cultural differences and acquire abilities of awareness and sensitivity towards cultural stimuli and interactional skills, the inability to clarify the ambiguity among the three concepts has led to failure in developing valid and reliable measures for evaluating the effect of intercultural training programs. (p. 4)

Therefore, in order to have a valid measurement for the IS, it is essential to have a detailed definition of the *affective* aspect of ICC and to distinguish it from the other aspects of ICC (*cognitive* and *behavioural*).

Chen and Starosta (2000) developed an intercultural sensitivity scale (ISS) and, using several factor analyses, determined the five latent constructs underlying this scale. These were referred to as *interaction engagement*, *respect for cultural differences*, *interaction confidence*, *interaction enjoyment* and *interaction attentiveness*. In the same study, the researchers compared the results from administering the ISS with the results from administering the interaction attentiveness scale (IAS) (Cegala 1981), based on the logic that if a person is interculturally-sensitive, they also know how to handle the conversation and be attentive in the interaction (Spitzberg & Cupach 1984). The results showed that the two tests are strongly positively correlated. Similar procedures were conducted for the cognitive and behavioural abilities of ICC. The results of the ISS administered to a number of students were compared to the results from administering the impression rewarding scale (IRS) (Wheeless & Duran 1982) to the same sample. Similar procedures were undertaken to measure the self-acceptance aspect of self-esteem positively correlated with Rosenberg (1965)'s self-esteem scale [SES]), 'a person's ability to modify their own self-presentation and a person's sensitivity to expressive behaviours of others in interactions' (Chen & Starosta 2000, p. 9) positively correlated with Lennox and Wolfe (1984)'s self-monitoring scale (SMS). In addition, the empathy aspect, emphasised as a requirement for IS by different scholars (Bennett 1979; Hart, Carlson & Eadie 1980), was also assessed by comparing with the results attained from administering Davis' 's (1996) perspective taking scale (PTS), and the results showed a positive correlation between the two scales.

Bennet's intercultural sensitivity developmental model

In the educational context, the intercultural sensitivity developmental model (ISDM) (Bennett 1986) seems more relevant as it outlines a process model of linear progression delineating a range of experiences people engage in and that capture underlying cultural differences. Using constructivist psychology and communication theory and based on academic and corporate observations, the ISDM organises positions of IS along a six-stage continuum that fall under one of two categories: Ethnocentrism, reality as experienced through people's own cultures, and ethnorelativity, the experience of all cultures as multiple realities and relative to context. *Ethnocentrism* emerges through three phases denial, defence or reversal and minimisation, and *ethnorelativism* is achieved through acceptance, adaptation, and integration.

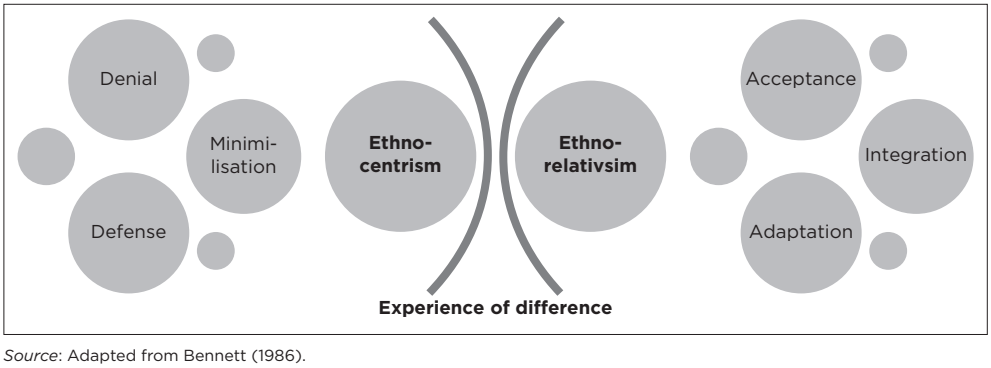
Within ethnocentrism, the progression from one stage to the next shifts from a focus on the self-culture to a binary view of one's own culture as distinct from others' cultures to viewing others' cultures from within the paradigm of one's own culture. In ethnorelativism, the progression from

one stage to the next shifts from accepting the self-culture adapting one's behaviour to accommodate incorporating and internalising others' worldviews into ones' own.

According to Bennett (1986) there is a developmental continuum for IS, with ethnocentrism at the beginning of it and ethnorelativism (a term he coined) at the end of this continuum. Within this continuum, he has defined the ISDM, in which he considers different levels of IS to be present (see Figure 8.1).

The underlying concept in this model is that as a person's cultural experiences become more complex, their IS increases, and as a result, their ICC also increases (Hammer et al. 2003). Such a finding is extremely relevant in the South African context as it resonates with multi-ethnic and multiracial demographics predominant in its schools. In addition, recalling the worldview definition provided previously, the DMIS is a 'model of changes in worldview structure', and this structure usually changes unilaterally and an individual hardly ever develops cultural views that move from ethnorelativism to ethnocentrism (Hammer et al. 2003). However, Hammer (2017) asserted that it is possible for a person to regress from different stages within ethnocentrism (e.g. from defence to denial) or ethnorelativism (e.g. from adaptation to acceptance).

The ISDM is one of the most used and widely studied models, particularly for its contribution as a basis for several quantitative assessments. The DMIS is extensively studied in the context of its theoretical frame for assessment, particularly the popular 50-question Likert scale assessment known as the intercultural development inventory (IDI), which adapts the ISDM to include all stages except for integration. In teacher education, IDI is particularly relevant in assessing prospective teacher candidates' own orientations toward cultural dissonance and commonality. As discussed later in the chapter, when examining the virtual excursions, when afforded opportunities to reflect on their perspectives on cultural competence,



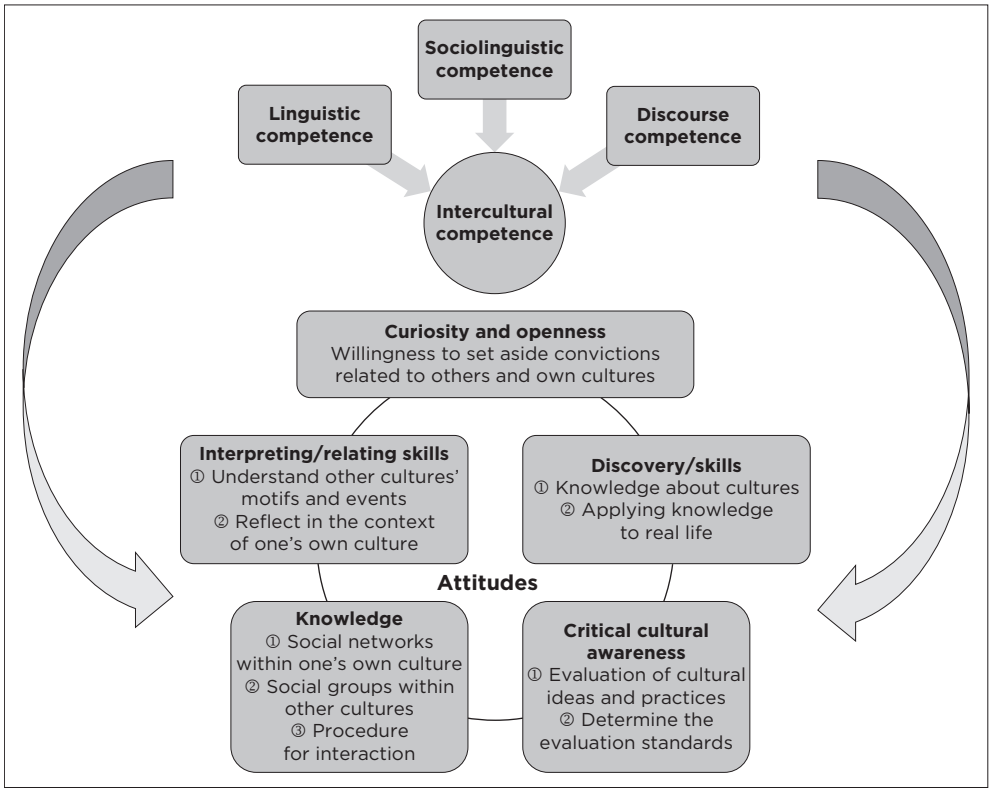
Source: Adapted from Bennett (1986).

FIGURE 8.1: First author's depiction of Bennett's developmental model of intercultural sensitivity.

pre-service teachers will be able to reframe their understandings of cultural differences and similarities and confront their perceived assumptions and beliefs. Furthermore, making sense of cultural diversity will improve future teachers' capabilities to address cross-cultural challenges that can arise in relation to interaction with students, parents or guardians and school community, as well as to scaffold student engagement in learning and developing effective classroom management techniques. As Hammer (2017) explained, developing the IDI profile can enhance teachers' cultural self-awareness as they reflect on their personal outlook on cultural variations and commonalities.

Byram's intercultural competence model

One of the most well-known models in the field of foreign language didactics is Byram's five-factor model ICM (1997), with an emphasis on language acquisition (see Figure 8.2). Garrett-Rucks (2016, p. 48) noted, 'to date there is a lacuna of qualitative studies that provide empirical evidence of learners' development within each of the stages in his model' (p. 48). One of the five



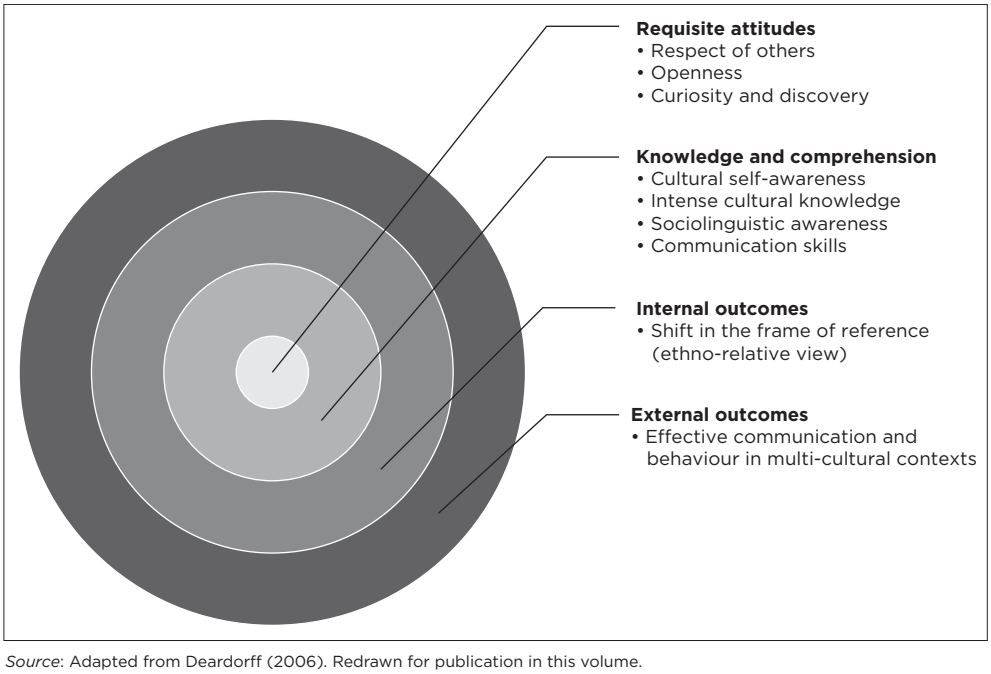
Source: Adapted from Byram (1997).

FIGURE 8.2: First author's depiction of Byram's intercultural competence model (1997).

key factors in Byram's (1997, p. 53) model is 'critical intercultural awareness', which he defined as 'an ability to evaluate critically and on the basis of explicit criteria perspectives, practices and products in one's own and other cultures and countries'. A study conducted by Nugent and Catalano (2015), however, contended that while some intercultural scholars discuss critical IA in the context of IL, considerable literature related to Byram's intercultural framework fails to include the awareness aspect of his intercultural paradigm despite it being a central component of his model. The authors further suggested that to help students think critically at deeper levels about real-world intercultural interactions they experience, critical cultural awareness must become a key component of the curricula. López-Rocha (2016) pointed out that stereotypes can be used as an effective tool in developing critical cultural awareness for students to discover themselves or their capabilities and others by deconstructing the stereotypes and using them to address misconceptions. This recommendation has been one distinguishing feature of virtual excursions that were designed to sensitise pre-service teachers to the extent to which stereotypes could alienate and exclude many.

☐ Deardorff's process model of intercultural competence

To detect and evaluate the effects of internationalisation activities on students, Deardorff (2006) created the PMIC (see Figure 8.3). According



Source: Adapted from Deardorff (2006). Redrawn for publication in this volume.

FIGURE 8.3: First author's depiction of Deardorff (2006) model of intercultural competence.

to Deardorff's research, 80% of those polled, including Byram and Hammer, agreed on the 22 fundamental components of intercultural competence, which Deardorff defined as the link between attitudes, knowledge, and internal and external outcomes. Deardorff (2006) explained:

> [/]t is possible to assess degrees of intercultural competence and in so doing, that it is best to use a mix of quantitative and qualitative methods to assess intercultural competence, including interviews, observation, and judgement by self and others. (p. 241)

Deardorff's compositional model is mostly applied in international contexts.

Intercultural sensitivity in education: The virtual excursion model

In education, cultural sensitivity has been gaining momentum in light of increased support for inclusive and socially-just classrooms (Garcia & Pantao 2021). In the era of globalisation, it is crucial for educators to develop curriculum innovations that can support the development of intercultural adaptability and to create training methods that facilitate more self-directed approaches to meaningful learning.

Using the ISS developed by Chen and Starosta (2000), Dávila et al. (2013) found evidence of significant improvement in the level of IS of 21 undergraduate students in all constructs of the scale, which *include interaction engagement*, *respect for cultural differences*, *interaction confidence*, *interaction enjoyment* and *exclude interaction attentiveness*.

In a South African context, intercultural communication sensitivity (ICS) has been studied particularly within organisations and work-integrated learning (WIL) programmes. For example, Ramlutchman and Veerasamy (2013) examined the IS level of 189 students immersed in WIL at the tertiary level. Results of this study indicated that South African students showed a high-comfort level when engaging with other cultural groups during their WIL experience. Furthermore, students reported positive attitudes towards interacting with people from different cultures, suggesting acceptance of others and respect for cultural diversity. In another study, Du Preez (1987) highlighted the necessary conditions for intercultural communication in South African organisations, such as the ability to communicate with others, willingness to interact and establishing trust. The author encouraged the development of an indigenous South African organisational style that merges perspectives and establishes common grounds for negotiations and interaction.

The benefits of immersing learners in real-life cross-cultural problem-solving tasks within an SDL context have been extensively highlighted in SDL scholarship (Boyer et al. 2014). Specifically, Bosch, Mentz and Goede

(2019, pp. 25–27) suggested a variety of methods to improve SDL, including cooperative learning (CL), problem-based learning (PBL) (Havenga & Du Toit 2022), active learning (AL) and process-orientated learning (POL). According to Fischer (2013, p. 22), AL 'happens when learners are self-directed to learn for themselves by means of their need to solve authentic or personally meaningful problems'. This observation pertains to AL.

According to Sze-Yeng and Hussian (2010, p. 1913), SDL is a leading approach in supporting CL and constructivist collaboration, particularly in online environments, such as virtual excursions. By the same token, De Beer et al. (2011) averred that students can learn best while crossing unexpected socio-cultural uncertainty during excursions. An important benefit of virtual excursions is that learners can transcend temporal, spatial, and locational boundaries within global contexts (Cummings, Espinosa & Pickering 2009). At the same time, Thönnessen and Budke (2021, p. 262) observed that such a flexibility in crossing geographic and spatial boundaries does not necessarily isolate learners from their peers but can capacitate them to be more self-directed and self-regulated, which is a desired outcome for both pre-service teachers and teacher educators. To increase the extent of engagement in SDL experiences, it is necessary that virtual excursions incorporate simulations of real-world problems within a cross-cultural context (Ananchenkova & Bazhenova 2017, p. 133). Relatedly, Kazmina et al. (2020, p. 6) emphasised the importance of selecting an authentic simulation where 'presence of problematicity and variability of potential solutions is essential'. In the context of the excursion, students watched the principal's diary video depicting a number of authentic problems experienced by the school.

Molchanova et al. (2021) highlighted the necessity to transform the excursion experience into a communicative and cooperative activity where students are self-directed as they engage in discourses to:

> [*E*]xpand, deepen and consolidate their knowledge of the material studied during the excursion. They briefly report on the results of their self-performed work. The teacher asks students questions, corrects the answers. The material collected during the excursion is processed by the students and then used for further study. (p. 38)

The first-year student virtual excursions at NWU are premised on the fundamental principles of inclusion, equity and appreciation of socio-cultural diversity. Forming an essential component of the first-year programme requirements in the BEd degree course, these excursion experiences bring together pre-service teachers from three campuses – Potchefstroom, Vanderbijlpark, and Mahikeng – to engage in SDL approaches purposefully designed to support opportunities for experiential inquiry and to promote democratic intercultural dialogues. A corpus of research examining the impact and effectiveness of these excursions on

the diverse group of first-year students who are inducted into the BEd programme has uncovered evidence of inherent racial prejudices and deeply-rooted stereotypes (Petersen & De Beer 2019) that could impact students' sense of belonging and acceptance of 'others', thereby diminishing their cross-cultural readiness and adaptability. These findings prompted an urgent call to launch initiatives to enhance student understanding of the self, the other, and to establish a shared sense of responsibility to recognise cultural differences and thereby reducing long-lasting societal breaches that threaten South Africa's solidarity and diversity.

Perhaps one of the fundamental goals of these simulated virtual work-integrated excursions is to refine pre-service teachers' views on inclusiveness and 'othering' of persons addressing, head on, issues of stigmatisation, stereotyping and discrimination which could potentially lead to exclusion and alienation inside the classrooms. Using gamification as a self-directed and PBL approach (Bunt, De Beer & Petersen 2022), the excursions immerse students in simulated global contexts that expose disproportionate distribution of wealth and resources that have contributed to widening systemic inequalities and the fragility of marginalised and disadvantaged communities.

The 'Famine and Abundance' game

During face-to-face excursions at NWU over the past few years, first-year BEd students have played the 'Famine and Abundance' (F & A) game. Immersed in this activity, students, as *Homo ludens* [the playing human] (Huizinga 1955), interrogate issues related to stereotyping, prejudice, and personal biases engaging in discourses around global equity, social justice and inclusion. Within a problem-based simulated context, pre-service teachers as self-directed learners are poised to develop inclusive, gender-responsive, and relevant competencies to support their future teaching practice.

Through games like the F & A game, which was digitised to serve as an online activity, students are faced with global dilemmas and barriers threatening social justice and inclusion worldwide. To comprehend the intensity and depth of these challenges, students as self-directed learners are prompted to move outside their comfort zone (Bunt et al. 2022) and to interact with other worldviews, critically reflecting on the importance of understanding cross-cultural differences and commonalities as a means to rebuild back more socially just and inclusive education for all.

Ortega Sánchez and Gómez Trigueros (2019) argued that unless teachers' prevailing attitudes and mindsets are challenged through exposure to socio-culturally relevant topics during their initial training, their role as agents of change and involved citizens cannot be achieved.

Intercultural citizenship

An increasing emphasis in intercultural communication focuses on the development of intercultural citizenship. Byram revisited his ICC model alongside Barnett's (1997) domains and levels of criticality to further develop IC. In essence, this model bridges the gap between foreign language education that incorporates the development of ICC and citizenship education that includes service to the community. According to Porto, Houghton and Byram (2018):

> Intercultural citizenship education acknowledges the instrumental value of learning one or more languages but crucially focuses on its education worth and potential. It is a development in which the role of foreign language education in citizenship and political and moral education is seen as an extension of the scope of citizenship education. (p. 485)

The virtual excursions satisfy what Byram et al. (2016) call a suitable IC project as it assisted pre-service teachers:

- Establish a novel global praxis of thinking and doing (a new direction that may either alter the manner in which things are typically done OR be completely novel).
- Apply that novel way to 'knowledge', to 'self', and to 'the world', by creating a sense of cross-cultural identification between students from diverse backgrounds and ethnicities.
- Challenge the preconceived assumptions and stereotypes and developing a new collective way of knowing and doing.

As such, the fundamental contribution of virtual excursions is affording opportunities to build critical cultural awareness instilling in pre-service teachers an appreciation of differences, positive dispositions toward students from diverse backgrounds, and an intentional acceptance of the idea that group boundaries can be deconstructed.

Conclusion

Relevant sciences are today testing and frequently disproving prior ideas about the inherent characteristics of our universe, its vastness and complexity, and the nature of humanity as a part of it. In general, research must respond by eschewing constrictive, superficial, and unhelpful clichés about human diversity, including many that may comply with political correctness and awareness, and replacing them with more informed facilitating insights fitting to the 21st century. Advancements in the study of intercultural relations and the practical skills required to make interrelating happen must be prompted by these new insights. Astrophysics, neuroscience, and the archaeological sciences are just a few of the fields of study that are shattering too simplistic notions of the earthly universe and

human beings. The models and frameworks presented here are just a few examples of the ways that contemporary research and scholarship are encouraging us to change our perspectives and intents towards how we treat one another across geographic and socio-economic boundaries. At a time when we have more knowledge and resources than ever before, perhaps it is necessary to educate ourselves as global citizens of the world on how to co-exist peacefully.

While research on IC in education is growing, it is still limited. Shiri (2015) noted that studies on ICC in relation to motivation in developing overall linguistic and cultural competence are understudied and nearly non-existent. Lampe (2018) addresses the need for all teachers to adopt a basic intercultural competence framework and integrate intercultural communication in the curriculum in alignment with appropriate proficiency levels, with the goal being much more transformative. Such limited scholarship on IC in education has mostly addressed the use of language variety and register in intercultural interactions or the use of politeness and impoliteness mostly concentrating on study abroad. Critical IA in global education is a field of inquiry that would benefit from further scholarship and empirical studies. Further research is invited to contribute to shrinking this gap in IA.

As a key component in the virtual excursion initiatives, the F & A game presents an exemplar of a curriculum innovation approach sensitising pre-service teachers to the potential of intercultural communication as a competence enabling the recognition and appreciation of cultural differences. Previous research in this regard has called for the inclusion of similar simulation games throughout the four-year initial training programme that extend beyond the two-day virtual excursion at the beginning their first year. Furthermore, Bunt et al. (2022) reported several themes that emerged during their study. Firstly, pre-service teachers exhibited a range of emotions as a result of virtual immersion in the gaming environment. Subsequently, they developed more global viewpoints in relation to inclusivity and social justice issues, and they became more aware of the scope of issues and barriers related to promoting inclusion and equity in their future classrooms. It is hoped that at the completion of their four-year TEP, pre-service teachers will build new knowledge and expertise to develop mechanisms and tools that will establish and sustain a more sustainable and flexible transition to culturally responsive and inclusive instructional practices.

To gain a profound understanding of the effectiveness of the virtual excursion simulated F & A game in building IC to cultural differences, it would be necessary to measure impact using ICCs tools presented earlier. A closer examination of the emergence of cross-cultural sensitivity among

pre-service teachers as they engage in gamified virtual inquiries, encourages deeper thinking about evidence for potential lasting impacts on teachers' SDL and development. Such an endeavour will be realised in the upcoming round of virtual excursions.

Ethical clearance

Ethical clearance was obtained as described in Chapter 1.

Chapter 9

Pedagogy of play in a virtual excursion to foster self-directed learning in health care students

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Abstract

The value of learning through play has been widely researched in early childhood education (ECE). Although a small number of studies reporting on the use and value of learning through play in post-secondary education

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(tertiary education levels) have been published over the last five years, no publication reporting on the use of pedagogy of play (PoP) in a virtual excursion in health care training to foster self-directed learning (SDL) could be found. This chapter reports on how learning through play within a virtual excursion learning event can be used to foster SDL in undergraduate Bachelor of Health Sciences (BHSc) students. The research question guiding this study was: How can learning through play in virtual excursions foster SDL in BHSc students? Framed from a social-constructivist approach, a qualitative study design was used. We collected data using an online, open-ended reflective questionnaire (OERQ) and proceeded to thematically analyse the data. Findings strongly suggest that PoP can be a useful educational approach that can be included in innovative curriculum design in higher education institutions (HEIs) to foster SDL skills in health care professionals-in-training. These skills include fostering feelings of empowerment, collaboration with peers, sharing knowledge amongst peers, critical-thinking skills and problem-solving skills. These findings can inform innovative undergraduate BHSc programme curriculum redesign to assist the development of self-directed students who can, as emerging primary health care professionals, act as agents of change within their sphere of influence.

Introduction

Higher education in South Africa is responsible for creating 'fit for purpose' professionals who can function efficiently, successfully and responsibly in society (Council on Higher Education [CHE] 2013). Erikson and Erikson (2019), as well as Scott (2018), state that the goals of higher education should include, among other things, preparing students for future employment by offering opportunities for students to develop self-directedness.

Offering opportunities for developing self-directedness is critical in undergraduate Bachelor of Health Sciences (BHSc) programmes to prepare BHSc students as future primary health care professionals who have the required knowledge, skills and attributes to function as confident primary health care experts (Academy of Science in South Africa [ASSAf] 2018). Cadorin et al. (2012) report on the lack of evidence in developing SDL processes and outcomes for future primary health care professionals. According to Svein (2020) SDL has been a concept present in theory but seldom put into practice. Svein (2020) further states that the challenge exists in how to design appropriate learning opportunities that will increase student engagement and students taking responsibility for their own learning.

The greater emphasis on graduate attributes for student success places university lecturers under constant pressure to explore innovative ways to equip students with the required knowledge, skills and attributes

(Winberg et al. 2013). In addition, the World Health Organization (WHO) (2010) suggests virtual excursion initiatives aimed at fostering skills and competencies such as active and collaborative learning, mutual respect and appreciation, student agency, self-directedness, autonomy and creativity, to produce work-ready graduates.

In a study conducted by Van Rensburg and Botma (2015), the authors argue that the curriculum should include a variety of approaches to develop self-directedness, such as problem-based learning (PBL), field-based learning, or project-based learning. These authors also propose a safe environment where self-directedness could be encouraged through opportunities for practical and applied learning.

Against this background, the North-West University (NWU) is committed to innovative curriculum design to prepare students, including future primary health care professionals (BHSc students) with graduate attributes that will enable them to face current and future 21st-century challenges. Educational strategies implemented would have to pivot around student-centredness, inquiry-based, active, participatory, collaborative, self-directed and CL within a supportive, responsive and enabling teaching and learning environment to achieve the outcomes as mentioned (NWU 2021). In this context, the first-year virtual excursion initiative, as part of innovative curriculum design at NWU, attempted to foster SDL in BHSc students by learning through play in the virtual excursion. This provided students with the opportunity to work collaboratively during a purposefully designed learning event outside the formal curricula. The research question guiding this study was: How can learning through play in a virtual excursion foster SDL in BHSc students?

The findings from this qualitative study could inform future innovative curriculum designs, which include virtual excursions within health care professions education to foster SDL. In the following section, the authors discuss the underpinning framework and concepts for this study.

Underpinning framework and concepts for the research

This study is underpinned by social constructivism. Social constructivism describes learning as a process that occurs through social interaction (Thomas et al. 2014). Within social constructivism, knowledge develops as a result of social interaction and is, therefore, a collaborative rather than an individual experience. In this study, the researchers viewed social constructivism as an appropriate lens because of the collaborative and interactive learning experience through PoPs in the virtual excursion. Additionally, understanding how students learn through play during a

virtual excursion can inform the researchers about the value of PoPs and virtual excursion as part of innovative curriculum design to foster SDL in BHSc students. Embedded within social constructivism the following concepts will be unpacked: SDL, PoPs and virtual excursion.

Self-directed learning

Malcolm Knowles first outlined the concept of SDL in 1975, describing it as:

> [*A*] process in which learners identify their own learning needs, set their own learning goals in accordance to those needs, choose and locate their learning resources and strategies to achieve the learning goals, and assess their own learning outcomes. (p. 18)

The skills of collaboration, seeing peers as resources in the planning of learning, and providing and receiving assistance while learning were added to this description by Henschke (2016). In order to foster higher-order thinking skills (HoTS), including problem-solving, critical-thinking and reasoning skills, SDL also calls for active student participation in the learning process (Okoro & Chukwudi 2011).

According to Guglielmino (1978), a self-directed learner sets new learning objectives, is committed to achieving those objectives, is driven to acquire new knowledge and abilities and sees hurdles in their learning as opportunities to be addressed. Self-directed learners display high degrees of independence, high levels of curiosity and self-discipline in terms of time management (Guglielmino 1978). Synonyms for SDL are lifelong learning, active or independent learning and student-centred education (Cadorin et al. 2012).

The health care environment requires people who will take charge as change agents and are self-directed in a complex, constantly changing health care setting (Van Rensburg & Botma 2015). Therefore, HEIs and lecturers must implement a fostering environment to equip their students with solid SDL skills. It is important to create student-centred environments where students can develop the skills associated with SDL (Setlhodi 2019). Being knowledgeable about their students' levels of self-directedness and the development of SDL learning opportunities will empower health care lecturers and mentors to plan, design and develop innovative learning opportunities to support students in fostering SDL competencies (Cadorin et al. 2012). Furthermore, to foster SDL competencies, students should be supported to increasingly take responsibility and ownership for directing their own learning.

Taking into account the changing higher education environment and the move towards online learning, new alternatives emerged for fostering SDL. Utilising the possibilities of online learning, virtual excursion initiatives may

provide students with generous opportunities to develop SDL skills, including but not limited to seeking new learning opportunities, solving problems and collaborating to learn about, from and with others for personal developmental purposes (Olivier 2020). In the context of this study, the virtual excursion initiative for first-year BHSc and Bachelor of Social Care (BSc) students at NWU provided an opportunity for students as future primary health care professionals to develop their own self-directedness.

Virtual excursion

Grounded in field trip pedagogy, excursions, as part of learning, play an essential role in bridging the gap between theory and practice (Behrendt & Franklin 2014). Excursions provide 'a unique extra opportunity for students to identify, question and work towards modifying their unarticulated habits and prejudices before they enter the profession', according to De Beer, Petersen and Dunbar-Krige (2012, p. 108). Although face-to-face excursions have been implemented widely within the context of educational learning, a systematic literature review by Olivier and Kunene (2022) revealed a significant increase in interest in virtual excursion's in 2021 because of the impact of the coronavirus disease 2019 (COVID-19) and the shift towards online learning. Olivier and Kunene (2022) indicate that most research on virtual excursion's was conducted in Russia, Spain and Ukraine, with no publications on the use of virtual excursion's from the Global South or South Africa, specifically. In accordance with Olivier and Kunene (2022), the authors agree that more research is necessary for these unexplored contexts, hence the purpose of this study.

The increased shift toward online learning has created unique opportunities for conducting a virtual excursion. A virtual excursion can be defined as an excursion that consists of a combination of focused online activities which is delivered through a specific online platform. If designed correctly, virtual learning activities can contribute to the fostering of self-directed learners who take responsibility for their own learning process (Denysenko et al. 2021).

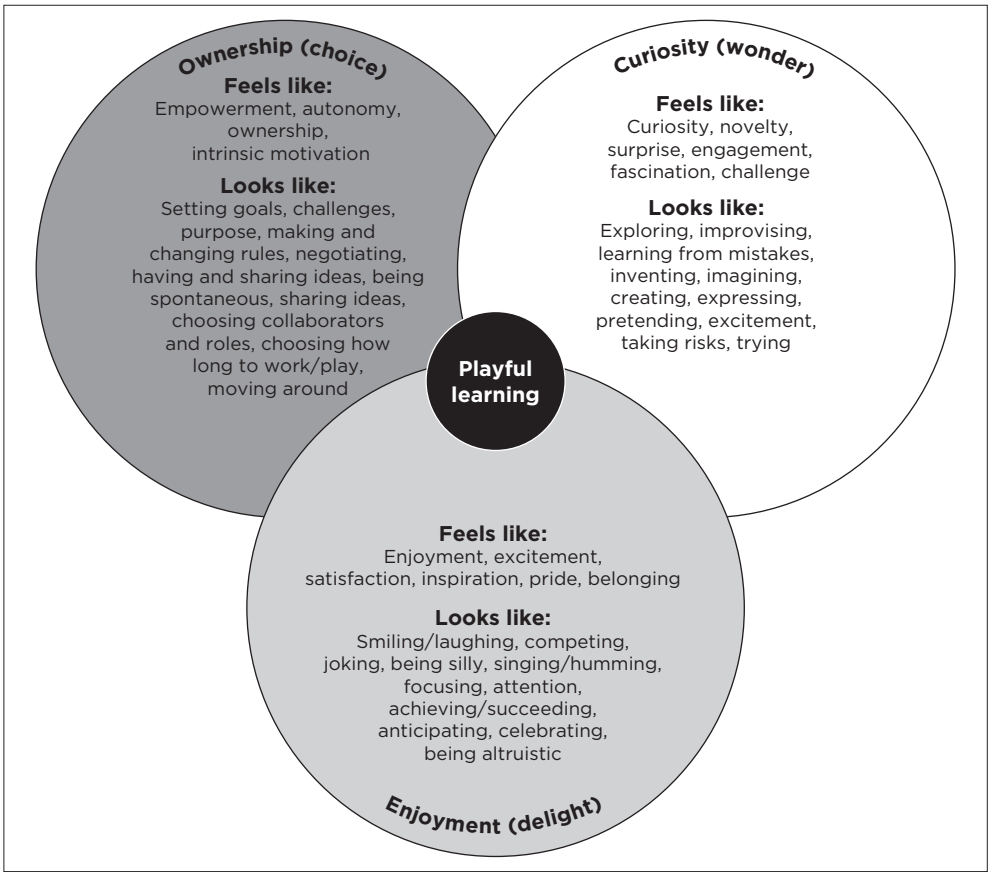
Virtual excursions, as social learning opportunities, were purposely designed to contribute to developing profession-specific competencies that students will need when entering the workplace as primary health care professionals. These competencies include, but are not limited to, collaboration, communication, problem-solving, shared decision-making, teamwork and self-directedness. Additionally, a virtual excursion provides an opportunity to sensitise students towards WIL with BHSc and BSc students to prepare them for their future profession in a less formal,

more playful manner. Along similar lines, Bowen (2018) states that WIL contributes to the development of a student's (1) *knowing*, (2) *being* and (3) *doing*, as well as improved understanding of their future profession. This is confirmed by Ferdig and Pytash (2021), who state that a virtual excursion can be associated with AL and knowledge construction. Within this context, the researchers argue that the virtual excursion learning event provided students with an opportunity to actively engage with and learn from other students in a more relaxed and playful manner rather than simply passively learning or adopting new information within a traditional formal classroom setting where the educator instructs their learners, for example, a blackboard-and-chalk setting. The researchers argue that the student-centred, (inter-)active and SDL requirements discussed emphasise the importance of university teachers being aware of and including PoP to foster SDL.

Learning through play

Exploring the concept of PoP yielded diverse understandings and a continuous curiosity towards rethinking and exploring different views of play (Fleet & Kemenyvary 2019). From the literature, it is evident that play supports learning through meaningful, social, and active engagement (Bateson 2014; Fleet & Kemenyvary 2019; Leichter-Saxby 2015; Zosh et al. 2017). 'Pedagogy of Play' refers to playing with an educational purpose in mind (Ashari & Baharuddin 2017). Like many other pedagogies, learning through play is grounded in curricular goals, content and activities and also draws from students' lived experiences and interests to keep students engaged in the learning process (Zosh et al. 2017). Farne (2005) argues that learning through play pivots around three elements, namely choice, wonder and delight, and that these three core indicators distinguish PoPs from other pedagogies and approaches to learning (Figure 9.1). Zosh et al. (2017) add to the debate by stating that the *emotional*, *social* and *cognitive features of play* also distinguish learning through play from other pedagogies. Learning through play provides students with an opportunity to interact with fellow students, their teacher and the content. During these interactions, students get the opportunity to draw from their own experiences and existing knowledge to construct a better understanding (Leichter-Saxby 2015).

In this study, the researchers drew from the work of Farne (2005) and Mardell et al. (2016) and used the core indicators of play, namely *choice*, *wonder* and *delight*, to not only structure the learning activities in the virtual excursion project but also as a lens to investigate how learning through play in virtual excursion can foster SDL in BHSc students. In the section to follow, we briefly discuss each of the indicators.



Source: Adapted from Mardell et al. (2016, p. 7).

FIGURE 9.1: The three core indicators of playful learning.

In learning through play, having a choice (*ownership*) creates a sense of empowerment, autonomy of learning, spontaneity and intrinsic motivation. Allowing students to make decisions about their learning and personal development cultivates a sense of empowerment, autonomy and belonging (Farne 2005; Mardell et al. 2016). Through choices, students get the opportunity to determine their own learning goals, and should they experience any difficulties, they get the opportunity to solve problems and manage associated challenges accordingly. Allowing students to take ownership of their development and make decisions that can influence their lives enforces the notion that learning is a shared responsibility, a characteristic of self-directedness (Solis et al. 2019).

Within the context of learning through play, *curiosity* (also referred to as *wonder*) encompasses creating a sense of intrigue, novelty, surprise and challenge (Farne 2005; Mardell et al. 2016). Designing learning activities that intrigue the students and spark excitement provides students with the

opportunity to explore, take chances and learn from the experience (Farne 2005; Mardell et al. 2016). The last core indicator of learning through play pivots around the satisfaction and joy students experience during the learning process (Mardell et al. 2016). Learning through play stimulates *feelings of enjoyment* (also referred to as *delight*), taking pride, and a feeling of belonging. When designing learning activities where students can learn through play, university teachers need to create a relaxed and joyful learning environment that allows for social interaction, engagement and laughter. Learning activities should stimulate a playful mindset, including diverse learning opportunities where students can work, play and learn together (Ashari & Baharuddin 2017; Farne 2005; Mardell et al. 2016).

Virtual excursion as a playful learning opportunity to foster self-directedness

The value of learning through play has been widely researched in ECE learning. However, over the last five years, more studies reporting on the use and value of learning through play in post-secondary education – therefore, at tertiary level – have been published (Leather, Harper & Obee 2021). As noted earlier, the purpose of higher education is to prepare work-ready graduates (CHE 2013; Erikson & Erikson 2019). Leather et al. (2021) state that learning through play can be used effectively to prepare graduates by developing specific attributes that employers seek, which will reduce the theory–practice gap. These attributes include self-directedness, being able to collaborate, problem-solving, critical-thinking, creativity and spontaneity (Leather et al. 2021).

The NWU Faculty of Health Sciences acknowledges the importance of including learning and developmental opportunities within and outside of the formal curriculum where students, as emerging primary health care professionals, get the opportunity to develop graduate attributes (Faculty of Health Sciences 2022). One example of such a learning opportunity where students are given the opportunity to develop self-directedness is the virtual excursion learning event for first-year students in the Faculty of Health Sciences. To ensure that learning was meaningful, all the activities within the virtual excursion learning event were designed deliberately to encourage students from different health and social disciplines to socialise, work, play and learn together.

With the support of the Faculty of Health Sciences' management, the virtual excursion facilitation team pursued the idea of fostering the notion of learning through play, finding the extraordinary in the ordinary by developing learning activities for first-year BHSc students, allowing them to explore different health-related topics and develop SDL skills in a playful manner. Within the context of this study, university teachers or lecturers

within the Faculty of Health Sciences that share a passion for active, student-centred and collaborative learning and the use of PoP in their own teaching met regularly to explore and discuss ideas, strategies and new opportunities to imbed playful learning in undergraduate health education. Activities aimed to sensitise students towards the knowledge and admirable characteristics, values and behaviours required from primary health care professionals. Additionally, interprofessional collaboration during the planning, design and development of the virtual excursion activities enhanced the development of both personal and professional relationships among members of the virtual excursion facilitation team. Figure 9.2 outlines the activities purposively designed to develop skills associated with SDL through playful activities.

As part of the virtual excursion initiative at the NWU, the virtual excursion facilitation team also conducted a research study, investigating how learning through play in virtual excursions can foster SDL in BHSc students (Figure 9.2, Activity 4).

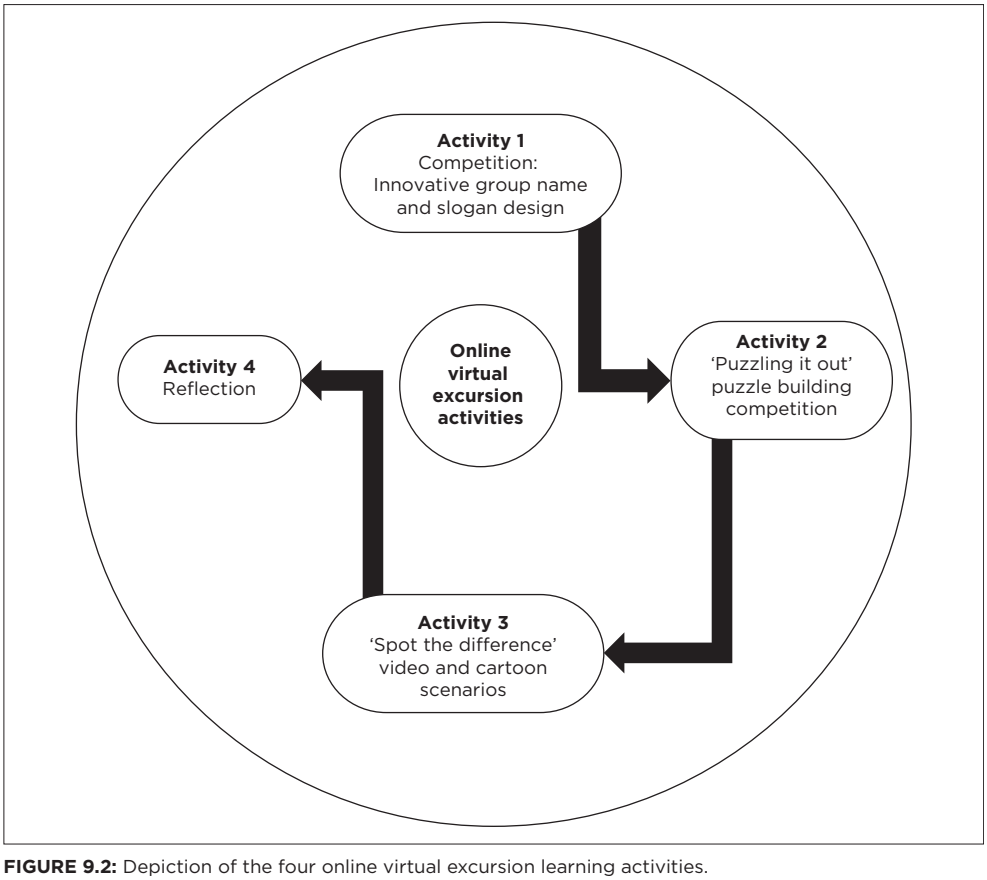


FIGURE 9.2: Depiction of the four online virtual excursion learning activities.

Research design and methodology

Research paradigm

This study is anchored in a constructivist-interpretivist paradigm, as students have varying perspectives regarding the goal of higher education and the virtual excursion as a component of learning in higher education. This study aimed to understand how learning through play in a virtual excursion can foster SDL from first-year Faculty of Health Sciences students' subjective frames of reference.

Research design

The researchers conducted a literature review using specific keywords to establish a sound theoretical foundation. Empirical data were collected using a qualitative approach. The researchers were able to investigate and acquire insight into students' perspectives about a virtual excursion in teaching using an online questionnaire containing eight open-ended questions. According to Teodoro et al. (2018), interpretive description is a good technique for identifying workable answers to health educators and lecturers' challenges in health care professions education. Teodoro et al. (2018) add that interpretive description enables researchers to investigate and learn more about participants' individual views, subjective beliefs, viewpoints and lived experiences related to health care-related concerns.

Population and sampling

The study population comprised all first-year Faculty of Health Sciences students registered at the three NWU campuses during 2022. Non-probability sampling and voluntary sampling were the main techniques employed by the researchers. The participants were not required to be a representative sample of any specific campus, gender, age, ethnic background or discipline as the goal was to look into how students in general perceived learning through play in a virtual excursion as a vehicle to foster SDL. Participation in this study was voluntary and all students had an equal opportunity to participate (n = 294). In total, 215 (n) students indicated their willingness to participate by signing the required informed consent form. The research information sessions, the informed consent procedure and the data-collection process were all carried out by an impartial third party that was independent of the teaching, learning and assessment of the first-year students at the Faculty of Health Sciences to lessen the vulnerability of the students as a captive and vulnerable audience.

Data collection

North-West University granted ethical approval (NWU-01013-21-A2; NWU-GK-21-065) for this study. Data were collected after the virtual excursion event, during the first part of the second semester, using an online questionnaire containing eight open-ended reflective questions. Questions focused on students' perceived experiences on participation in the virtual excursion learning event, perceived gains (knowledge, skills and attributes) and the fostering of their self-directedness. The questionnaire was developed by the virtual excursion facilitation team. To ensure content and face validity, a panel of experts reviewed and critiqued the OERQ (McMillan & Schumacher 2014). In addition, a few students were also asked to evaluate readability, to ensure that each question is understood in a similar way by all the students. The replies from the students were recorded using QuestionPro® Version 2.0 (QuestionPro Survey Software 2022), a web-based application for conducting online surveys.

Data analysis and trustworthiness of the data

The independent research administrator sanitised the data by removing the data of the participants who did not provide consent or withdrew from the study before data anonymisation. To improve anonymity and confidentiality, the independent research administrator thereafter removed any personally identifiable information and generated a unique code for each participant. A qualitative data-analysis program, ATLAS.ti™ Version 9 (ATLAS.ti™ 9) (ATLAS.ti™ Scientific Software Development GmbH 2022), was used to analyse the data. Both deductive and inductive coding strategies were used, and co-coding was applied to improve the validity and trustworthiness of the findings (Stahl & King 2020). The coder and co-coder discussed the coding, adjusted the initial coding list as necessary and recorded the data.

The data-analysis procedure was guided by the six steps outlined by Creswell and Clark (2018). Firstly, the researchers organised, sorted and arranged the data before use. Thereafter, the researchers explored the data to gain a general understanding of it. Additionally, the researchers recorded their first and overarching conclusions regarding the data. The researchers then started with analysing the data by coding the data and applied both an inductive and deductive strategy. The researchers carefully read, considered and scrutinised the participants' reflections before connecting the pertinent material to a code connected to a sub-theme, theme and pattern. Using the networking capabilities in ATLAS.ti™ 9, repetitive codes, sub-themes, themes and patterns were blended and connected to demonstrate interrelationships. The researchers analysed and discussed the findings to give the data context. The findings were organised

into themes. Quotes were used to support the findings and to understand how the data respond and relate to the research topic and literature. The research team also determined the study's shortcomings and the implications for additional research.

The researchers employed several data-validation techniques to guarantee the authenticity and dependability of the findings (Shenton 2004; Stahl & King 2020). An online open-ended questionnaire (OOEQ) was used to collect the data, which were then analysed. Transferability was ensured by providing a thorough explanation of the participants, the data-collection process and instrument, as well as the data-analysis and findings (Poggenpoel & Myburgh 2004; Shenton 2004). The context, target population and participants were discussed without endangering the participants' identities or breaching confidentiality.

As discussed, the researchers employed scientific procedures during the data-collection, analysis and interpretation stages to adhere to confirmability (Creswell & Clark 2018). Using a systematic and adequate research process and having a transparent audit trail ensured dependability (Creswell & Clark 2018; Shenton 2004).

Findings and discussion

In this study, the research question: 'How can learning through play in a virtual excursion foster SDL in BHSc students, guided the data-analysis process to identify themes, codes and quotations?' During the data-analysis, three predetermined main themes based on the core indicators of learning through play were used to structure the coding process. They are ownership, curiosity and enjoyment (Figure 9.1). Additionally, during the data-analysis, a fourth theme emerged, namely, challenges related to participation in the virtual excursion initiative.

In the next section, we discuss each of the three themes and include supporting participant quotations to elucidate the findings. For reporting purposes, the researchers used three identifiers, namely response number, date of completion and response ID (e.g. #62, 03 August 2022, 148942204). However, none of the identifiers can be linked to any specific participating student and is therefore anonymous.

Theme 1: Taking responsibility for own learning (ownership)

Theme 1 explores *ownership* as one of the core indicators through which learning through play can foster self-directedness. This theme is dominated by a sense that students realise the importance of taking responsibility for their

own learning by participating in additional learning events such as the virtual excursion and by collaborating with others during the learning process.

Participating in the virtual excursion learning event was optional. Feedback from the majority of students showed that they recognised the importance of seeking and participating in learning opportunities outside of the formal curriculum, where they could learn and develop themselves as future self-directed primary health care professionals. The responses from the students support the findings by Mardell et al. (2016) and Solis et al. (2019), who argue that when students get the opportunity to take ownership of their own learning and development that can influence their lives, it enforces the notion of empowerment and autonomy – characteristics associated with self-directedness. Supporting reflections from students include:

> 'I need to seek further training and information. Associate myself with informative platforms that will help my career path.' (Student 120, 03 August 2022, 148942673)

> 'I gained knowledge from everyone that I interacted with and I even gained some confidence of knowing how to talk to other people you first meet.' (Student 170, 03 August 2022, 148943142)

Henschke (2016) states that a self-directed learner is able to collaborate, identify peers as resources of learning and give and receive help during learning. Additionally, Mardell et al. (2016) indicate that during play, the collaborative nature of the learning event provides students the opportunity to be creative and to generate and share ideas. During the virtual excursion learning event, students had to work collaboratively to complete learning activities. To complete these activities involved generating a variety of ideas, elaborating upon ideas and drawing from existing knowledge and experiences to make connections between thoughts and ideas in a playful manner (Mardell et al. 2016; Reitsma et al. 2022). Underpinned by the principles of playful learning and SDL, learning activities in the virtual excursion were designed in such a way that it stimulated idea generation, sharing and collaborative problem-solving to align with suggestions by Henschke (2016) and Kemp, Baxa and Cortes (2022).

As indicated in the responses listed further, it is evident that students experience this notion as they highlighted the importance of establishing collaborative and teamwork relationships with their peers.

> 'Working as a team we came up with different ideas.' (Student 68, 03 August 2022, 148942241)

> '[*I enjoyed*] engaging, because you can learn how others tackle the questions.' (Student 106, 03 August 2022, 148942576)

> 'I gained a lot from hearing what other students think [...] I learned that teamwork is the best because you get to know things you didn't know.' (Student 116, 03 August 2022, 148942627)

Additionally, the feedback also indicated that students valued the opportunity to practise self-directed traits, such as *self-discipline*, *time management*, *intrinsic motivation*, and *self-esteem*. This supports the research by Henschke (2016) and Olivier (2020) as discussed in Section 3.1. The virtual excursion event allowed students the opportunity to develop self-esteem and students indicated that they felt capable of managing challenges, felt comfortable working with and learning from others, but still valuing their own uniqueness. Responses include:

> 'I've gained a lot of experience on how to manage my time by being fast but we tried our best as a team.' (Student 81, 03 August 2022, 148942384)

> 'A very comfortable space for learning new things was offered and I was not made to be afraid to ask questions.' (Student 38, 03 August 2022, 148941953)

> 'Please do more of these executions they're inspiring us students to work harder because we get a version of our future work space.' (Student 54, 03 August 2022, 148942141)

Theme 2: Curiosity

As previously discussed, curiosity encapsulates creating a *sense of intrigue*, *novelty*, *surprise* and *challenge* (Farne 2005; Mardell et al. 2016; Figure 9.1). Theme 2 pivots around how curiosity, as one of the core indicators in learning through play, fostered self-directedness in a virtual excursion event.

The findings from this study are in agreement with the work of Farne (2005) and Mardell et al. (2016), who found that learning activities that intrigue, spark excitement and challenge students stimulate exploration, risk-taking and drawing from experience. The data portray fascinating data wherein participating students acknowledge the value of opportunities that learning hurdles offer and the opportunities they should address. Additionally, the students valued that they got an opportunity to develop their HoTS further through PoP in a virtual excursion learning event. This includes *problem-solving*, *critical-thinking* and *reasoning*, previously reported by Guglielmino (1978) and Okoro and Chukwudi (2011) as indicators of self-directedness. This is reflected in the following feedback:

> 'It was good doing a puzzle made me think critically, understanding the videos what they are on about it was really good indeed.' (Student 68, 03 August 2022, 148942241)

> 'I enjoy making up my puzzle because it a little bit challenging and I love challenging things because they make me to think out of the box for a moment because that was a very complicated puzzle.' (Student 37, 03 August 2022, 148941934)

> 'It was interesting, working with people I just met and solving problems together.' (Student 139, 03 August 2022, 148942825)

According to Svein (2020), it is necessary to implement pedagogies that incorporate aspects of risk-taking to foster SDL. Participants indicated that

the way in which the virtual excursion learning activities were designed provided them with the opportunity to step out of their comfort zones and to take risks. This is reflected in the following feedback from students:

> 'It was good because I got to challenge myself and step out of my comfort [*zone*] as I had to go out of my way and be a team player despite being a bit introverted.' (Student 65, 03 August 2022, 148942222)

> 'I experienced something I never experienced before.' (Student 61, 03 August 2022, 148942203)

According to Mardell et al. (2016), it is important to create a safe and controlled learning environment where students can engage in activities that are intriguing, exciting and based on real-life scenarios. Through imagining real-life scenarios and exploring different reactions and behaviours, students got the opportunity to imagine their own positionality as a student as well as a future primary health care professional. In the responses to follow, students indicated that the virtual excursion platform provided a safe and comfortable space to learn and develop their professional identity as future primary health care professionals:

> 'It helped me to understand that social workers are more than just a career, it requires human kindness and reliability.' (Student 104, 03 August 2022, 148942573)

> 'It foreshadowed me of what is ahead and what to expect, when I start practising my profession.' (Student 169, 03 August 2022, 148943129)

Theme 3: Enjoyment

The last core indicator of learning through play pivots around the *enjoyment*, *satisfaction* and *delight* students experience during the learning process (Mardell et al. 2016; Figure 9.1). Learning through play stimulates feelings of enjoyment, taking pride and a feeling that they belong. When designing SDL activities where students can learn through play, university teachers or lecturers should create a relaxed and joyful learning environment that allows for active student-centred learning, social interaction, engagement and laughter (Leather et al. 2021).

Learning activities should stimulate a playful mindset, including diverse learning opportunities where students can work, play and learn together (Ashari & Baharuddin 2017). In line with the findings of Ashari and Baharuddin (2017), the majority of the students highlighted the satisfaction and joy that they experienced while completing the virtual excursion activities. The BHSc students enjoyed meeting new people, the interactivity of the activities, the social interaction and the opportunity to be creative. Some of these reflections include:

> 'It was a great experience for me. It made me feel so free and relaxed even when working with students I've never met or seen before. The activities were a fun way to smile and also learn about psychology.' (Students 48, 03 August 2022, 148942108)

> 'I rated my overall experience as excellent because it was fun and educational and I enjoyed it. My team spirit was very good and we had a very good time and productive experience.' (Student 67, 03 August 2022, 148942231)

> 'Participating in this virtual excursion was fun, I got to learn a lot about how professionals should act, what ethical and unethical conducts. The way or manner in which we need to behave.' (Student 136, 03 August 2022, 148942809)

When asked to identify the element that they most enjoyed about the excursion, the majority of the students highlighted that they enjoyed the active engagement with their peers. According to Cadorin et al. (2012), AL and student-centred learning are synonyms for SDL:

> 'Seeing people from other campuses. It's always nice to engage with others and see their perspectives.' (Student 62, 03 August 2022, 148942204)

> 'I enjoyed engaging with other students because I've always been shy to communicate with others.' (Student 54, 03 August 2022, 148942141)

> 'I enjoyed working with fellow students and those ones from other campuses. I discovered how active I can be in a team.' (Student 05, 03 August 2022, 148942083)

Theme 4: Challenges experienced in relation to participating in the virtual excursion

The fourth theme that emerged from the analysed data indicated challenges associated with using PoP to foster self-directed students during the virtual excursion event. Despite the overwhelmingly positive experience feedback by the participating students in the virtual excursion opportunities, some students experienced challenges participating in the virtual excursion. These challenges include *feelings of anxiety*, *shyness* and *web-connectivity issues*. The following feedback reflects these challenges:

> 'I am very shy so talking is always hard. The thing I enjoyed least was having to speak more than I usually would. (85, 03 August 2022, 148942398)

> 'I think it was a good experience, but I did not rate it as excellent due to my social anxiety.' (Student 92, 03 August 2022, 148942441)

> 'The internet connection was giving some of our teammates from the other campuses problems.' (Student 153, 03 August 2022, 148942915)

In addition, a number of students expressed their desire to meet and collaborate with other BHSc students in a virtual excursion. Students have also opined that face-to-face virtual excursions would contribute even more to their enjoyment of activities. Some responses include:

> 'Maybe doing discussions isn't wise over a screen. It would have been better if we could participate face-to-face.' (Student 131, 03 August 2022, 148942746)

> 'I think this process needs to be a physical process where we all meet face-to-face with students from all campuses.' (Student 62, 03 August 2022, 14894220)

> 'All I can say is we need to meet and do these activities together as it will be much more fun.' (Student 32, 03 August 2022, 148941852)

As indicated in the findings, it is important that the virtual excursion facilitation team needs to acknowledge the influence of *internal characteristics* (e.g. shyness and social anxiety) and *external factors* (e.g. web-based or internet connectivity difficulties) could have on the development of self-directedness.

Conclusion

After graduating, students will enter the ever-changing health care environment (Van Rensburg & Botma 2015), proving that it is essential that students understand the importance of self-directedness and continuously seek opportunities to develop SDL-related skills (Okoro & Chukwudi 2011; Olivier 2020; Setlhodi 2019). Fostering self-directedness in undergraduate health care education can be achieved through creating opportunities and designing learning activities within these opportunities that develop SDL skills.

This chapter allotted a studied snapshot of how learning through play within a virtual excursion can be applied to foster the self-directedness of students as emerging primary health care professionals. Using the principles of learning through play (ownership, curiosity and enjoyment), activities in the virtual excursion learning event were purposely designed, developed and implemented to cultivate a mindset of self-directedness. Findings strongly suggest that PoP can be a useful educational approach that can be included in innovative curriculum design in HEIs to foster self-directed primary health care professionals.

It is impractical to make assumptions over a wider population regarding the findings in this study, as the population participating students were limited to a specific faculty at a specific institution (NWU). However, the findings of this study may inform the wider scholarship on fostering SDL through the PoP by means of virtual excursions. Although many students participated in the virtual excursion initiative and completed the OOEQ reflection activity, only a small number of participants gave voluntary consent for their reflections to be employed for research purposes. Although the design team was interprofessional and interdisciplinary, we recommended that more primary health care profession scholars must be included and represented, especially to endeavour to create sustainable, contextual and profession-specific scenarios and activities. The limitation of recording of volunteering students voices' poses the possibility of a biased view, as the recorded data may only portray the positive and motivated students' voices. Therefore, a more representative sample should be included to hear a more diverse student voice. The contributing authors, as scholars, suggest in addition that it might be necessary to revisit the

procedure of obtaining informed consent from student (volunteer) participants at the onset of the virtual excursion. Furthermore, we suggest creating, implementing and following mixed-method approaches to achieve a greater understanding of the phenomenon.

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Chapter 10

Work-integrated learning and self-directed learning: Design, skills and dispositions for professional development

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Abstract

Reflecting on insights obtained in this scholarly book on higher education in the post-coronavirus disease 2019 (COVID-19) period and how higher education institutions (HEIs) are to remain relevant, this chapter considers scholarship on work-integrated learning (WIL) and self-directed learning (SDL) as described in relation to a series of excursions based on innovative curriculum design principles aimed at bridging the gap between theory and practice. Two questions are addressed in this chapter: 'How does SDL provide insights into how WIL opportunities can be designed?' and 'How does SDL enhance and support student development through the opportunities presented by WIL?'. The chapter provides an analysis of selected scholarship concerning WIL and SDL and demonstrates how the latter can support, enhance and develop student employability and readiness for their chosen professions.

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Introduction

This book reflects on bridging the gap between theory and practice by exploring the possibilities offered in WIL and SDL, in which online learning continues to feature in the COVID-19 period.[3] The challenges associated with the theory–practice divide have been elaborated on throughout the text and are well-defined in the literature associated with higher education and various professions (Brinkmann 2015; Kerthu & Nuuyoma 2019; Wolff et al. 2022). Beyond these concerns is a more generalised concern with higher education itself as focusing too much on the theoretical dimensions of knowledge ('knowing about') in the absence of a systematic elucidation, illustrated by experiential learning, of the application of knowledge ('knowing-how'). Within this focus on the perceived and experienced gaps between theory and practice lie other levels of concern, also evident in the scholarship of higher education, particularly in relation to two transitions experienced by students. First is the transition from secondary schools to post-secondary education institutions (universities or colleges), while the second concerns the post-secondary education institutions' transition to the world of employment.

As referenced earlier in this book, Cameron and Rideout (2022) note that school learners or first-time undergraduates are often not ready for higher education, let alone for self-direction. Learners are considered to emerge from schooling systems in which the approaches to learning depend heavily on teachers providing both content knowledge and learning approaches to the understanding, synthesis and construction of knowledge, in which the learner is situated in a position of deficit and need.

In South Africa, much research exists that points to this school-to-university transition as requiring special attention and focus, and such is the gravity of this concern that a prominent report on the readiness of students for university education proposed that the duration of undergraduate studies be extended by an additional year in order to better

3. It is difficult to determine whether, when writing this condensed concluding chapter in 2022, the world has emerged from, or even properly controlled, coronavirus disease 2019 (COVID-19). The World Health Organization (WHO) provides a definition for post-COVID conditions in clinical terms, to refer to the symptoms as well as treatment of the side effects of COVID-19. For many scholars, 'post-[*COVID*]-19' refers to an era already passed (in which the virus is equivalent to other flu-like viruses) or which is likely never to pass (a future in which co-existence with the virus as a social threat is normal). Hafezi and Asemi refer to the post-COVID-19 era as the immediate past and future time in which to predict major economic trends; and in which the virus has ceased to exist. Post-COVID thus refers to three distinct possibilities in time: the period immediately following recovery from the virus; or the period following the detection of virus and the associated social, economic, or political consequences of lockdown, or the future years in which the consequences of the lockdown period of 2020–2021 have to be determined and measured. And, even in this latter instance, the phenomenon of stringent lockdown regulations and conditions is not a memory but rather an immediate and crisis-prone reality, as described, for example, by Yeung (2022) with reference to the November 2022 prevention lockdowns experienced in 'zero-tolerance' China.

support and enable students to complete their studies in time and with greater success (Council on Higher Education [CHE] 2013). Having accessed higher education, the development of readiness for employment and skills necessary to demonstrate employability, through the opportunity of WIL, are critical for a student's success both during and after graduation. SDL offers opportunities not only to develop innovative approaches to support learning throughout WIL but also to contribute to the employability of students through the development of skills prized by the professions that go on to grow long after formal qualifications have been obtained (e.g. health care and others).

In relation to the post-school to the world of work transition, a wealth of scholarship also exists. Other studies, focusing on specific disciplines in a higher education context, point out that SDL is a critical preparation for lifelong learning. For example, Hammoumi et al. (2021) studied physics, science and chemistry university students at selected Moroccan universities where a student-centred and self-directed curriculum had been implemented since 2019 in the sciences. Understandably (Hammoumi et al. 2021):

> [*G*]roup work and lab experiments are the best active-learning strategies that help the students retain the course [...] allowing them [...] to observe and compare their different points of view on a given problem. (p. 331)

Their study showed that the majority (89%) of participants prize learner self-direction, while very few enjoyed a teacher-centred pedagogy. The link between SDL and lifelong learning is made explicit by Hammoumi et al. (2021, p. 332) as the 'respondents believe that this approach encourages active, cooperative, and lifelong learning'. Further to this, and beyond schooling and higher education, research is also concerned with SDL that occurs after formal training. Work-integrated learning is, of course, the cornerstone of professional practice learning in which the application of classroom-based knowledge is integrated into guided professional practice. For example, Gupta and Singh (2022) apply principles associated with SDL in the context of the medical curriculum at a university in India and find that SDL aligns well with the focus of WIL as a means to prepare students for the professional practice associated with the world of employment.

Another example, also linking to medical practice, is found in a study by Reis et al. (2021), who worked with newly-qualified medical practitioners in urban and rural areas in Brazil. Drawing on the field experiences of the new practitioners, the researchers probed what associations were held by practitioners with SDL and found that (Reis et al. 2021):

> [*T*]he interviewees more quickly and frequently associated the representation of self-learning with the following sixteen evocations: Knowledge, dedication, study, reading, necessity, internet, practice, time, scientific articles, confidence, case discussion, experience, interest, improvement, book and research. (p. 4)

Both transitions described above point to the critical role of WIL firstly in the presentation of the knowledge and values that underpin the curriculum, and secondly in the opportunity for students to demonstrate practices associated with the discipline as well as the profession, which in their integration underpin the need for lifelong learning beyond the curriculum.

Education researchers suggest that WIL affords academics and students unique learning opportunities in the course of the curriculum, opportunities which promote a range of skills, values and dispositions. As noted in Chapter 1, Armstrong, Dopp and Welsh (2020, p. 42) promote the value of design-based research (DBR) in relation to WIL because it enables the development of 'knowing about' and 'knowing-how': '(1) tangible, practical outcomes and (2) intangible, theoretical outcomes'. Work-integrated learning affords academics responsible for the design of such experiences opportunities to explore the links between curricular knowledge and professional knowledge in the form of the tangible outcomes associated with WIL. Du Toit and Petersen (see ch. 1) suggest that, in terms of the excursion-type experience, the intangible outcomes aim to 'develop a better understanding of the theory underpinning educational research, to contribute to constructing increasingly better and more relevant learning experiences for our student teachers'.

This closing chapter of the book thus focuses on the purposes of WIL in relation to SDL in supporting students to make the most of and grow through those opportunities, possibilities and affordances associated with a profession, in preparation for that profession, prior to them graduating from a HEI. By considering the goals or purposes associated with WIL in relation to SDL, it becomes possible to consider how SDL supports the goals of WIL. In the post-COVID-19 period, the relationship between WIL and online teaching and learning, with specific reference to the contributions enabled by SDL, has been explored globally, and no less so than qualifications in which WIL was and still is a requirement (in programmes associated with professions). This chapter thus considers a selection of the scholarship associated with WIL. The chapter then considers the features of SDL, as also drawn from selected scholarship, and details the ways in which SDL supports, enhances and even extends the range of competencies and skills to be developed by students, specifically as a result of their gradual and accumulative experiences of WIL. Elsewhere in the book, specific aspects of professional development in the context of WIL in two particular faculties have been described, and the insights drawn from these are also referenced in this chapter.[4]

4. At the outset, it is important to acknowledge that there is no specificity in the research as regards the terminology of SDL (Van der Walt 2019) and further that there is the acknowledgement of the overlaps between SDL and self-regulated learning (SRL) (Makonye 2016). This chapter does not re-explore these debates, some of which are also referenced in the book (e.g. in ch. 4).

In order to integrate these various dimensions of the research problem to which the book attends, the chapter is structured so as to make evident the relationships between WIL and SDL. The first half considers the design of WIL as drawn from an existing scholarship, while the second half illustrates those areas of SDL that enhance the possibilities of WIL for students as part of their development towards readiness for employment and their intended professions. It needs to be noted at the outset that the relevance of WIL in terms of education curricula is not limited to these professions only. Increasingly, universities the world over have begun to design workplace placement opportunities for students as part of the general employability foci and strategies of higher education. The motivation for this exists, in part, as a means of meeting more closely the expectations of the labour market (by thus addressing the theory–practice divide) and developing in students the capabilities of self-direction, self-motivation and reliance necessary to be part of the world. In this world, self-reliance is especially prized in the context of adversity, as seen in (e.g. during the period of COVID-19) regards to whether a student is self-employed, employed by an organisation or not employed and actively seeking work. The rising development of the discouraged, educated and unemployed youth makes the imperative of creating and offering work experience opportunities to students beyond the professions regulated by statutory bodies in which WIL is a requirement all the more urgent. Even in programmes not always associated with particular professions, WIL is regarded as a key opportunity to enhance, develop, and demonstrate employability. Thus, although this book has considered the affordances (positive benefits) which accrue to students as well as scholars in relation to the design, implementation, experience and assessment of WIL excursions, the implications for the employability of students, more generally, are worth consideration from HEIs. Two questions are addressed in this chapter:

1. How does SDL provide insights into how WIL opportunities can be designed?
2. How does SDL enhance and support student development through the opportunities presented by WIL?

Having described the rationale and structure of this chapter, focusing on the relationship between WIL and the possibilities offered for the professional development of students through SDL, the section to follow provides an overview of WIL as based on selected higher education research.

Work-integrated learning: Skills, dispositions and values

'Work-integrated learning falls under the umbrella of experiential learning (EL), or learning through reflection on experience' (Arney & Krygsman

2022, p. 97). Many scholars of WIL highlight links between EL and the presence of professional supervision with someone in the field. Choy (2009) claims that an authentic learning experience involves the integration of skills, abilities and self. Benefits concerning retention and performance (Ramji et al. 2016), skills development (Ferns et al. 2019; Jackson 2013; McRae et al. 2019), and transferable skills – all of which support the development of a professional disposition or identity (Choy 2009) – supports readiness for work (Lim et al. 2020).

Arney and Krygsman (2022, p. 99) argue that Dewey (1938) considered experience to be educational when it supports 'the ability to learn from an experience and leads to future learning and experiences'. True education, from Dewey's (1938) point of view, is linked to growth. Work-integrated learning is, therefore, education about the profession, in the process of training towards a qualification, in future readiness for a profession.

Dewey has influenced a range of other researchers interested in WIL, some of whom – like McRae and Johnston (2016, p. 339) – have focused more on the role of the workplace and work, while others – like Mezirow – have focused on the role of WIL in testing theoretical knowledge and ideas, reflecting, revising and reinforcing such to gain experience (Mezirow 1991). The pedagogic role of the 'clash' between knowledge (and specifically theory) and the experience of place and professional identities (practice) is evident in Mezirow's (1991) humanistic theory of transformative learning. De Beer and Henning (2011) further extrapolate on the role of dramatical collisions with specific reference to 'dramatical collisions' experienced by students in the context of the education profession excursions which are linked to WIL from the first year of the qualification onwards.

Within the various types of transitions already described, there are others associated with the induction into particular professions in which WIL features. For example, WIL may be considered as 'the transition to professional practice' (McNamara et al. 2012, p. 1). In professions like education and the health sciences, WIL is part of the curriculum design and the professional requirements associated with a range of qualifications within these broad fields. In these professions, precisely because of the curriculum's applied nature and the associated assessments, WIL is a critical element of the education design experience of the student. Thus, for example, typical qualifications in which statutory or legislative requirements are evident also evidence WIL as a developmental aspect of the competencies to be demonstrated by the student as that student grows towards the attainment of recognition as a professional by both the HEI and the relevant statutory body.

Taking both formal training as well as lifelong learning into account, Reis et al. (2021) argue that there is a:

> [*N*]eed to understand how this learning process determined by the individual occurs and how the influence of individual and social factors and context can provide better training and inclusion in formal training curricula [...]. (p. 9)

Lifelong learning within the professions is similarly regulated through the mandatory attainment of continuous professional development (CPD) points which might similarly feature placements or activities in which WIL features and through which the professional must either re-demonstrate or sharpen and upskill certain skills.

These competencies[5] entail not only the demonstration of a skill, or sets of skills, but also the evidence of particular approaches to learning (consider the differences between communicative and systemic functional grammar approaches to language learning). The aforementioned experience also needs to account for and demonstrate a student's perspective on and appreciation for the values associated with the field as an academic area of expertise, and also the associated profession. The developmental aspects of WIL, from the first year of post-school studies through to the final year of a four-year qualification, is thus an important prism through which to view the academic field and the professional practice to which the academic field seeks to contribute, support and enhance.

Higher education institutions are increasingly aware, even beyond the requirements associated with professions, of the value of WIL as part of the employability development of students, long in advance of their actual graduations. Understanding the nature of the experience of work, and being able to integrate academic insight, knowledge and understanding with a view to the demonstration of how knowledge might be applied, is a complex and demanding requirement in and of itself, as associated with WIL; notwithstanding the requirements associated with professional practice upon successful graduation. In many professions, internships await the graduate, even after the completion of WIL requirements, as further induction to and assessment of readiness for a profession. While certain values might be held in common, these are not necessarily the same across professions but are rather held in different measure to each other, in relation to the nature of the profession itself. For example, in terms of respect for others, acceptance of the inter-dependencies of learning, appreciation of knowledge, acknowledgement of experience in the application of knowledge, value for the ethical application of skills, knowledge and insight

5. Consider the competence of a teacher to manage the interactive learning as well as the social dynamic of a group, the directed and facilitated aspects of groupwork and collaboration and attainment of the outcomes set for – or even set by – the group, all as part of what is achieved by a group of learners.

in ways that prevent harm, enhance growth, promote self and others-respect, to value and nurture truth, to protect confidentiality and personal information applicable to privacy.

Work-integrated learning is also, up to and until entry into higher education, an experience which has not been anticipated or contemplated as part of the typical school curriculum. However, there may be many instances in the school curriculum where EL features and in which knowledge about the subject area within a curriculum is displayed in the form of excursions to workplaces. By and large, such instances are rare in the course of South African primary and secondary schooling and seldom see learners interact with or 'try out' workplace skills precisely because of the levels of maturity, responsibility and self-knowledge as necessary accompaniments to knowledge itself. In acknowledgement of the place of workplace learning associated, for example, with vocational educational and artisan development, WIL in preparation for a profession is a profound aspect of a higher education curriculum, seldom found in a learner's primary or secondary school experience. Its role in tertiary education is as much concerned with the development of skills and skilled application of knowledge as it is about the development of the student and the growth in confidence and maturity necessary to become part of a profession or organisation (whether associated with professions or not) (Billet 2011; Martin, Rees & Edwards 2011).

A school curriculum may be characterised by EL, but WIL in tertiary education aspires to develop a range of competencies desired as features of a curriculum as well as attributes of a curriculum for application in the environment in which the value of knowledge must be demonstrated professionally. In essence, the 'integrated' dimension of WIL is thus integrated of the curriculum experience as a prerequisite to attaining a qualification, as well as integration of knowledge in the context of related practice, and integration of the attributes (the skills as well as the values) associated with the qualification. In as much as WIL involves the demonstration of competencies in the course of the qualification, it also entails the demonstration of its potential. Seeing that potential is an important part of lifelong learning, the value of context development (in other words, development in the professional setting, alongside and mentored by other professionals), the value of the placement is not only in relation to skills and the application of knowledge but also in relation to personal development with the purpose of understanding the responsibilities towards self (in terms of lifelong learning), as well as the profession and employment (Wilton 2012).

There are aspects regarding professional identity which also need to be framed sociologically, as professionals form part of defined communities

of practice. Although this chapter is not concerned with an exploration of the scholarship of professionalism and professions, there is a scholarship available concerning professional communities, and so it is perhaps appropriate at this point to reference the broader framing of these. For Bourdieu (1991; Bourdieu et al. 2013), the body is born into a class and thereafter follows a series of class-related actions associated with family, communities and institutions. Similarly, for the professional, upon graduation and having been inducted into the profession through the required periods of exposure to and immersion in the profession, as part of WIL, the professional occupies a social space and forms part of a professional body of other professionals; sharing the same dispositions which then guide the formation of opinions, perceptions, experience, choices and behaviours. The aforementioned notwithstanding, as Bourdieu's work on habitus and field has shown, instrumentalist views of work and identity in the workplace can have a negative impact on the extent of commitment or engagement in work as an activity which is core to human identity. Identity as a professional and a commitment to lifelong learning is thus important. Sonday's (2021) work in South Africa is apposite here in relation to the final-year readiness of contemporary primary health care professionals, as is the work conducted by Mabalane (2021) with teacher education professionals and the role of online media and communication applications (apps). So, too, is the work conducted with Australian student teachers by Aprile and Knight (2019), who show that while valuable for the preparation for professional life, contextual features associated with placement sites, relationships with teacher mentors and performance pressure associated with assessment during placements can all affect the experience of students negatively, making it all the more necessary to develop resilience skills for challenging or demanding contexts. Notwithstanding the differences between professions, contexts, institutions and systems, Jackson and Chapman (2012) surveyed professions and derived a set of commonalities across professions, which is used in this chapter to structure the discussion concerning the relationship between WIL and SDL.

Jackson and Chapman (2012, pp. 541–546) summarised what they considered, in addition to the technical skills associated with respective professions – specifically the health sciences and education professions – those skills generic to WIL, across professions, along the following lines:

1. Working effectively with others (task collaboration, team working, social intelligence, cultural and diversity awareness, influencing others and conflict resolution).
2. Communicating effectively (verbal communication, giving and receiving feedback, public speaking, meeting participation and written communication).

3. Self-awareness (metacognition, lifelong learning and career management).
4. Thinking critically (conceptualisation and evaluation).
5. Analysing data and using information and communication technologies (ICTs) (numeracy, technology and information management).
6. Problem-solving (reasoning, analysing and diagnosing and decision-making).
7. Developing initiative and enterprise (entrepreneurship and intrapreneurship, lateral thinking and creativity and change management).
8. Self-management (self-efficacy, stress tolerance, work–life balance and self-regulation).
9. Social responsibility and accountability (accountability and personal ethics).
10. Developing professionalism (efficiency, multi-tasking, autonomy, time management, drive and goal and task management).

Bearing the aforementioned in mind, it is possible to consider, as Wilton (2012) did, that the value of the placement, beyond enhancing skills or achieving curricular outcomes through application, also relates to personal development. The demands of the working environment and the disposition towards productive, effective and efficient employment feature also, as noted by Jackson (2013). Having described the associated skills, dispositions and values associated with WIL as a feature of professional programmes, the section to follow demonstrates how SDL enhances and supports these when applied in the context of the WIL (in-person or online) excursion.

Self-directed learning and work-integrated learning

An established scholarship concerning both WIL and SDL exist. Work-integrated learning is not an education theory of learning in itself; it is instead a curricular experience of learning in the professional setting or simulated professional setting, in which the guidance of mentors or other professionals with a student, or students, in the application of knowledge, is enacted. This enactment is not simply demonstration: it also entails developing the dispositions toward the chosen profession as embodied and the practices and values associated with the profession as integrated and internalised into both knowledge and practice. Self-directed learning is an established area of education research with a history dating back to the well-known publication by Knowles (1975). It was not long after that that scholars began to research the impact of SDL on learner autonomy and satisfaction. Suanmali (1981), for example, argued on the basis of learner self-appraisal and performance that self-directed learners were more motivated and were able to make decisions

related to their learning needs. Increased levels of confidence matured into learner autonomy, and with the teacher as facilitator, confidence became a demonstrable academic performance. Similar research in South Africa, as documented in this, as well as other books and articles, contributes to that scholarship about student experiences of SDL at the North-West University (NWU).

But what, in essence, is SDL? For Loeng (2020), SDL:

> [...] entails individuals taking initiative and responsibility for their own learning. You are free to set goals and define what is worth learning. Self-directed learning can take place both inside and outside of formal educational institutions. When teachers are involved, they should be facilitators of learning, not transmitters. (p. 2)

For Garrison (1997):

> [...] the individual does not construct meaning in isolation; to take responsibility of your own learning does not necessarily mean to make decisions in isolation [...] [*SDL is*] [...] an approach where learners are motivated to assume personal responsibility and collaborative control of the cognitive (self-monitoring) and contextual (self-management) processes in constructing and confirming meaningful and worthwhile learning outcomes. (p. 18)

For Chené (1983), SDL enables critical judgements to be made on the basis of knowledge. Self-directed learning is not merely a means to apply techniques on one's own but to understand what Loeng (2020, p. 3) terms the 'normative sides and aspects of knowledge' and 'questioning the underlying norms'. Which begs the question: 'How does SDL provide insights into how WIL opportunities can be designed?'

In many chapters of this book, reference has been made to Vygotsky's (1978) zone of proximal development (ZPD). At the outset, this concept was used to design activities associated with the professions described. These activities were characterised by understanding what knowledge of the professions students brought to the WIL experience, and thereafter using scaffolding to extend understanding of the profession, as well as application of the types of skills (as described in the previous section with reference to Jackson's [2013] work). In addition to the scaffolding of activities for increased understanding, complexity and problem-solving, a number of pedagogic strategies were used, for example, the use of gamification as a form of engaging learning, maintaining motivation and developing self-direction (see ch. 4). The ZPD and adaptations thereof, as demonstrated with reference to Senninger (2000; see ch. 1), are used as important design principles meant to assure both academics and students of the developmental and cumulative nature of the learning taking place as part of the WIL excursions.

In other chapters, particular theoretical perspectives – for example, cultural-historical activity theory (CHAT) in Chapter 3 – are explicated in

alignment with the skills sought to be developed through SDL and which arise also from the descriptions of SDL research.

Furthermore, how does SDL enhance and support student development through the opportunities presented by WIL? In order to respond to both questions posed at the start of this chapter, Table 10.1 has been developed for illustrative purposes to show how particular activities and skills associated with WIL (as derived from the work of Jackson & Chapman 2012) are paired comparatively with references to the respective book chapters, in which the SDL-related skills and activities associated with particular WIL excursion initiatives, support, enhance, and develop students. The scholarship is, of course, much wider than all the sources used to develop this comparative table and is thus not provided here with the intention of illustrating an exhaustive list of either the skills specific to WIL (given that these must perforce differ in relation to the profession in question in any event) or in relation to SDL (given that the skills associated with SDL have been drawn from a range of scholars surveyed in the article by Loeng [2020]). Rather, the illustrative contribution to the argument made in this chapter, with reference to Table 10.1, is to demonstrate the overt as well as implicit alignment between the skills associated with the scholarship on SDL and those dispositions and skills associated with the scholarship concerning WIL.

Considering Table 10.1 in terms of conceptualisation, it is evident that the first two columns, concerned as they are with WIL (identity social dispositions as well as learning skills and strategies), are very much aligned with the latter two columns, in which skills supported or enhanced by SDL are described. Jackson and Chapman's (2012) typology of skills consists not simply of actions to be performed, but also dispositions to be embodied. 'Autonomy' is thus, for example, a dispositional behaviour, while 'time management' is a skill. Drawing from Bourdieu's work described earlier in this chapter, it is possible to infer that the skills and dispositions might fit neatly into Long's (1989) sociological dimensions of SDL, as dispositions relate to how the body is both social and individual. The second two columns of Table 10.1 refer to the skills associated with SDL as extrapolated from Loeng's (2020) survey of SDL literature, and these skills, while being related to those to be developed through the experience of WIL, align and relate to Long's two dimensions of SDL: the pedagogical and psychological. 'Choosing and implementing appropriate learning strategies and evaluating learning outcomes', as seen in the third column, is evidently a pedagogical skill associated with SDL, whether for the teacher-facilitator or for the student. Another example drawn from the table, 'taking initiative and responsibility for their own learning', is more a psychological attribute also associated with 'autonomy', as the taking of initiative and responsibility for one's own learning depends on a

TABLE 10.1: Work-integrated learning and self-directed learning skills and activities.

WIL skills (after Jackson & Chapman 2012)	WIL activities (ethical clearance was obtained as described in ch. 1)	SDL skills (after Loeng 2020)	SDL-related skills identified through scholarly-presented research in chapters of this book
1. Working effectively with others	Task collaboration, teamwork, social intelligence, cultural and diversity awareness, influencing others and conflict resolution	Collaborative and cooperative learning	Awad and Chahine on intercultural competence (ch. 8)
2. Communicating effectively	Verbal communication, giving and receiving feedback, public speaking, meeting participation and written communication	Identifying human and material resources for learning	Awad and Chahine on intercultural competence (ch. 8) Pool et al. on team communication, ownership of learning and the virtual excursion initiative (ch. 9)
3. Self-awareness	Metacognition, lifelong learning and career management	Taking initiative and responsibility for their own learning	Bunt et al. on metacognition and the F & A game (ch. 4)
4. Thinking critically	Conceptualisation and evaluation	Formulating learning goals	Bunt et al. on metacognition and the F & A game (ch. 4)
5. Analysing data and using technology	Numeracy, technology and information management	Choosing and implementing appropriate learning strategies and evaluating learning outcomes	Petersen et al. on problem-solving and the ill-structured problem activity (ch. 3)
6. Problem-solving	Reasoning, analysing and diagnosing, and decision-making	Diagnosing learning needs	Kruger and Mdakane on critical reflection (ch. 5) Pool et al. on team communication, ownership of learning and decision-making and the virtual excursion initiative (ch. 9)
7. Developing initiative and enterprise	Entrepreneurship and intrapreneurship, lateral thinking and creativity, and change management	Personal control over either or both the planning (goals) and the management (support) of the learning experience	De Beer on role-play for initiative-taking and the 'Super Teacher' activity (ch. 2) Du Toit on entrepreneurial thinking and the 'Super Teacher' (ch. 6)
8. Self-management	Self-efficacy, stress tolerance, work–life balance and self-regulation	Critical awareness of meaning and self-knowledge	Lubbe on self-assessment, team assessment in the poster and video activities (ch. 7)
9. Social responsibility and accountability	Accountability and personal ethics	Personal responsibility in one's own thoughts and actions	Lubbe on self-assessment, team assessment in the poster and video activities (ch. 7) Kruger and Mdakane on moral or ethical practice (ch. 5)
10. Developing professionalism	Efficiency, multi-tasking, autonomy, time management, drive, and goal and task management	Choosing and implementing appropriate learning strategies and evaluating learning outcomes	De Beer on role-play for initiative-taking and the 'super teacher' (ch. 2) Du Toit on entrepreneurial thinking and the 'Super Teacher' (ch. 6)

Source: Author's own work.
Key: F & A, the 'Famine and Abundance' game; WIL, work-integrated learning; SDL, self-directed learning.

self-perspective on capability as well as capacity to do so, and this is closer to the psychological dimension of SDL as articulated by Long (1989). Critical-thinking is also a skill that is associated with student experience of WIL and which is supported in the work presented in this book by Kruger and Mdakane (see ch. 5). What is insightful in this book is that the development of critical-thinking requires more scaffolding in order to facilitate students' shift from understanding as a skill, to critical-thinking, along the lines also described in other chapters in which research on students' experiences of change as associated with Vygotsky's ZPD, were conducted. How to reflect critically on knowledge, learning, and context also entails understanding of learning styles. There is limited research, according to Loeng (2020), on learning styles, but that which does exist – for example, that conducted by Adenuga (1989) – suggests that learning styles are linked to readiness for self-direction. Gokalp (2013) also referred to in the survey of Loeng (2020), underscored the importance of individual differences in the design of curricula and the provision of facilitation therein.

Although social independence is ascribed to the learner by Long (1989, p. 131), it is in relation to the social nature of the learning situation. In this book, almost all the learning situations are characterised by collaborative and cooperative team-based learning.[6] From a curriculum perspective, WIL is designed to be cumulative and – over time – to lead to higher levels of student autonomy or independence. The scholarship makes reference to the fact that in becoming an autonomous professional, the professional should be capable of independent action and thinking to enable further personal and professional growth.

Long's second SDL dimension is the pedagogical dimension. This relates to the pedagogies employed by the learner, or in the case of this book, the pedagogies facilitated by the facilitators (academics) in the WIL excursions. The pedagogies included teamwork, as well as working together in groups (in other words assisting or cooperating with each other in the completion of the activities) rather than teams. The activities described throughout the chapters were all designed to be engaging rather than didactic: play was often a feature and critical reflection almost always an outcome (see, e.g. chs. 3, 4, 6 and 9). As Loeng (2020) argues:

> [...] seen from the pedagogy side, self-direction can be learned and developed and is considered a goal. This means that SDL can take place without social isolation. Self-directed learning can take place in groups as well or in cooperation with institutions or others. Neither social isolation nor total independence is necessary. (p. 3)

6. For a discussion of collaborative and cooperative learning, please see McInnerney and Roberts (2009).

The third dimension described by Long is the so-termed psychological self-direction dimension. This dimension focuses on abilities and the underpinning skills needed for SDL. What is evident from this book is that the learning activities were controlled by the learners themselves rather than relying on a facilitator to be present or an academic to provide instruction. Loeng (2020) suggests that:

> [*P*]sychologically, SDL is a question of to what extent the learner maintains an active control of the learning process. The mental activities are in focus. The most important are not the external factors but the inner psychological control in the learning situation. (p. 3)

Well-documented throughout the book are many instances in which student voice and student feedback are provided to illustrate the experience of the learning activities as well as reflections on the learning activities (see, e.g. chs. 1, 5 and 7). What is also evident in the book is the demonstrable evidence of students taking responsibility for themselves and the insights generated from their learning (metacognition). This feedback concerns not only skills, actions or activities as reported in the course of this book but also how students experienced learning styles (their own as well as that of others) and were able to reflect on their ethical dispositions towards the professions. What emerges is the fact that students struggled initially with developing the skills associated with SDL, but as experience within the excursion environments (whether online or in-person) grew, so did levels of confidence and insight.

Conclusion

Guglielmino and Guglielmino (2001) have pointed out that all skills and knowledge are defined in time and change with time, and for these reasons, lifelong learning is required. Loeng (2020) suggests that while learning organisations have a responsibility to inculcate an appreciation of continuous or lifelong learning, this can be done through the development of SDL skills that enable students to identify, select, and determine their own learning needs as part of continuous learning. This aspiration is presented to students in the experience associated with WIL because it is there that SDL is encouraged through participation in the professional workplace context by the student in association with other professionals or professional mentors. Loeng (2020) suggests that:

> The workplace is of growing importance for learning, leading to an increasing need of self-directed learners, mainly because of more responsive and cost-effective learning infrastructures [...] To develop the knowledge base of the organization, the individual members of the organization should have the capacity to be self-directed learners. (p. 6)

It is clear that value proposition as regards WIL is high for prospective employers, academics, as well as students and the institutions at which

they are studying. What is equally evident is that the role of WIL is multifaceted and there are increasing expectations that WIL be made available for students also studying for general degrees. In these terms, the employability strategies of universities are also a potential means of addressing issues raised in this chapter as regards the link between knowledge and its many applications as a means of transforming not only the professions, for the forms of work for which students are being readied or are readying themselves. As the skills associated with WIL are valued by industry, employability strategies and initiatives might similarly be influenced by the kinds of considerations academics factor into the design and facilitation of learning activities associated with SDL.

Arney and Krygsman (2022) caution that there is a danger of universities framing too narrowly the value of WIL as:

> [...] a quality WIL programme [...] where students are able to engage in the labour market, [...] as part of their education. This shows a philosophy that the purpose of higher education is to get citizens employed and contributing to the economy. (p. 103)

The goal of WIL, primarily, is to develop the student into a fully autonomous professional rather than only an employed or employable individual. This professional must simultaneously be capable of embodying the technical skills and knowledge associated with the profession, as well as the skills and values associated with what it means to function as a professional, not in isolation of other professionals or lifelong learners, but with the full awareness and autonomy necessary to change with and change the profession itself as part of the learning journey. It is no wonder, as Loeng (2020, p. 4) argues in relation to SDL, that:

> [...] there seems to be an increasing need of self-directed learners in society and work life. That alone should be a reasonable argument for increased focus on this approach to learning. (p. 4)

The approach to learning, as mentioned here, is both the learning which is designed within institutions (schools and higher education) as well as the learning pathways designed by learners themselves within and beyond institutions. Research conducted elsewhere affirms this. Two examples drawn from research conducted in the Far East and elsewhere in Africa come to similar insights: Hammoumi et al. (2021, p. 332) argue that 'creativity, critical-thinking, and problem-solving, which are optimised by this [self-directed] pedagogy, are 21st-century skills that are much more important than ever before'. Bin Abdullah et al. (2008), in their overview of adult learning theory development, argue that:

> [...] much of the research done on SDL activity particularly related to successful E-learners suggests that adult students who are attracted to this type of learning share certain common characteristics, including that they are voluntary seeking further education, are highly motivated, have high expectations,

> are more self-disciplined, are independent, are active learners, possess good organisational and time-management skills, and can adapt to the new learning environments. (pp. 70–71)

While the benefits of SDL are evident as part of the curriculum, the role of WIL as a special area of the curriculum, in which innovation, practice, values, and disposition come tongether, has formed the focus of this scholarly book regarding innovations relating to SDL.

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Foreword

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Chapter 10

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Index

The authors of this scholarly book have excellently considered aspects of self-directed learning for the intent of field-based learning situated in online excursions and face-to-face scenarios. The methods and pedagogies applied allowed the scholars to expose students to particular methods of teacher instruction so that they were better prepared to continue learning in the teaching profession after their first year.

Examining learning based on comfort, learning and panic drawing from Senninger's learning zone model, initially conceptualised by Vygotsky, connects well with social constructivism and is an excellent way to observe how we learn. This book proposes using a community of practice where student teachers and teacher educators can jointly explore the complexities of the teaching profession and focus on the essentials of self-directed learning, supporting early career teachers. The scholars employed virtual excursions to sensitise students to the complexity of the teaching profession and to prepare them in ways that will abridge the theory–practice divide. The virtual excursions were designed to be engaging, student-centred, real-life experiences for students in a virtual space to overcome possible feelings of isolation and disengagement while engaging in work-integrated learning to address the divide between theory and practice. Case-based teaching presents a dilemma and puts student-teachers in the shoes of a practising educator, fostering critical thinking and problem-solving skills as groups collaborate to reflect on scenarios and consider education theory and practice. Applying the role-play method to help students view problems from other perspectives proved that reflection was necessary, leading to increased comfort levels among students within the groups as it supported playful learning and increased student awareness of intercultural constructs.

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I applaud the editors and authors for tackling such an important issue, especially for addressing the pragmatic bridge between theory and practice from multiple perspectives. I truly appreciate the extensive nature of each chapter in providing the need for the study, theoretical underpinnings, research design and results. Each chapter provides a new insight into navigating a comprehensive curriculum to its artistic delivery and educational impact. This well-orchestrated book will greatly serve current and future education scholars.

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