

Can adolescents undergo a transformative learning and teaching process? Extending Mezirow's Transformative Learning Theory (A South African Perspective)

ASHNE BILLINGS-PADIACHEY
University of Witwatersrand, Johannesburg

CASEY MOTSISI

Abstract

Transformative learning engages learners in drawing on relevant experiences, peer dialogue, and self-reflection in order to respond to challenges encountered in their lives. While much literature suggests that transformative learning is for adults only, our findings, together with those from several recent international studies, as well as authors who have contributed to seminal work, indicate that transformative learning and teaching is also applicable to and valuable for adolescents. This paper also suggests that although South African adolescents in a pre-university program—The Targeting Talent Programme—do not meet the pre-conditions for transformation learning set out by Mezirow, they do however meet the preconditions indicated by other seminal theorists; this is as a result of the peculiar context that these adolescents come from. Additionally, although literature reviewed for this paper focuses on the lecturer-student dynamic in transformative teaching and learning, we use findings from an analysis of questionnaire data obtained from young adult mentors and adolescent mentee in the preuniversity program to argue that mentors, and not just lecturers, can usefully facilitate such learning and that such learning is bi-directional. Mentorship is also regarded as a form of intervention support that student programs use to buffer poor student feedback and address retention and attrition rates. The findings show that mentoring indeed does facilitate intervention support and fosters transformative teaching and learning for higher educational success. Literature also reveals the need for various higher education institutions to put in place a mechanism which optimizes on the support of mentors to uphold students. Given the evidence from the Targeting Talent Programme and the value of transformative teaching and learning for both the psycho-social and academic development of adolescents and young adults, we recommend that higher education institutions consider including this approach in support programs offered at pre-university and undergraduate levels.

Keywords: Transformative Teaching; Transformative Learning; Adolescents; Mentoring, The Targeting Talent Programme; Higher Education.

Introduction

The excitement of acceptance to study at a South African university is short-lived for many students, as they face overwhelming challenges at the beginning of their studies that result in many dropping out in their first year. A report compiled by Letseka and Maile (2008) for the Human Sciences Research Council revealed that in 2005, 36,000 of the 120,000 students who enrolled in higher education in 2000 dropped out in their first year of study. At some institutions, the dropout rates are as high as 80% within a specific cohort of students. The Council on Higher Education revealed that by 2019, 40% of a cohort of first-year students who enrolled for a bachelor's degree in 2014 across various South African

institutions had not completed their degrees. Those who had enrolled for a diploma program had a dropout rate of 45% (CHE, 2021). Many factors may affect dropout rates or the extended time that it takes students to graduate. Some of the factors such as a student's age, gender, demographic classification (race), and financial status may be easier to measure than other more complex factors such as a student's motivation for studying, the extent of academic integration, or the type of living conditions at the university where they are studying (Murray, 2014).

According to Collier (2017), mentorship programs promote student success. Kathy Kram, one of the primary theorists on mentoring and mentorship describes mentoring as:

a helping relationship in which two individuals of similar age and/or experience come together, either informally or through formal mentoring schemes, in the pursuit of fulfilling some combination of functions that are career-related (e.g., information sharing, career strategizing) and psychosocial (e.g., confirmation, emotional support, personal feedback, friendship). (Kram (1983) as cited in Terrion & Leonard, 2007, p.150)

The benefits associated with mentoring may differ according to the program and its objectives with mentoring benefiting mentees, mentors, and organizations in various ways. Within the educational context, one of the benefits often indicated is the improvement of academic performance (Ehrich et al., 2011). Leidenfrost et al. (2014) provides evidence of the positive effect of mentoring on academic performance in a study which investigated the impact of mentoring on mentee academic performance at the University of Vienna. Their findings showed that students who were in a mentorship program performed better academically than students who were not. In South Africa, Masehela and Mabika (2017) conducted a study on the impact of a newly introduced mentoring program on the academic performance of high achievers at the University of Venda. Their findings indicated improvement in academic performance from 80% to 92% as a result of these students' participation in the mentoring program.

According to Ehrich et al. (2011), mentees benefit from the support and encouragement that they receive which in turn enables them to develop competencies, skills, and knowledge necessary to improve their academic performance. Some of these mentee benefits are also evident within a pre-university access program called the Targeting Talent Programme (TTP) hosted at a South African university and facilitated by the Student Equity and Talent Management Unit (SETMU). The program aims to facilitate access to, and success in, higher education and utilizes mentors to implement some components of the program. Data collected by TTP researchers indicate that the 2021 cohort improved by 20% in their Mathematics, Science and Life Science examination results from grade 10 to 11 in years 2019-2020. In grade 12 (2021), they maintained the 20% increase achieved in grade 11 (Student Equity and Talent Management Unit, 2021). Such improvements in knowledge and skills place TTP learners in a better academic position for acceptance into Higher Education Institutions. This improved academic performance can be attributed to the combination of curriculum supplementation and enrichment with psychosocial support and in some cases academic support that mentors provide to high school learners—particularly when mentors have specialised knowledge in a subject that learners find challenging. TTP mentors also offer generic career advice, studying and learning tips, and motivate learners to reach their optimal potential.

Mentoring can help in reducing absenteeism and school dropout rates (Bridges, 2013). Dropping out is not a sudden decision that students/learners make but rather the result of a prolonged period of disengagement and lack of motivation. Participation in a mentoring program can help to minimise precipitating factors and to prevent dropping out (Bridges, 2013). The above-mentioned benefits can only occur through transformative learning and teaching drawing on relevant experiences, peer dialogue, and self-reflection to respond to challenges encountered in their lives. This paper argues that although much literature suggests that transformative learning is only applicable to adults, our findings, together with those from several recent international studies, as well as authors who have contributed to seminal work, indicate that transformative learning and teaching is also applicable to, and valuable for, adolescents. Thus, while adolescents are able to undergo the transformative process in their reflection and dialogue,

their experiences and the experiences of others facilitates and catalyses the transformative process. Mentorship is thus one of the ways in which transformative learning occurs as mentors share their life experiences with their mentees, reflect on their learning, and engage in dialogue which ultimately results in a transformed perspective and change in behaviour.

Very few higher education institutions, particularly in South Africa, house mentoring programs and those mentoring programs pertain mainly to academic support, and first-year adaptations to a new community, home, university space, and careers. Mentors in these university programs also help first year students with social cohesion and integration. There is very little mentoring that addresses psycho-social challenges that students may face. These psycho-social challenges are perceived to be the factors that negatively affect academic performance to the point where students drop out of their studies (Strumpher, 2018). The TTP, which has been offered at a South African university for 16 years includes a mentoring component which is located within a transformative teaching and learning framework. This mentoring component attempts to address the psychosocial challenges of concern to Strumpher. The field of mentorship within educational contexts has rapidly expanded and is similar to that of transformative theory. However, literature on mentorship with a transformative agenda is very sparse and the reason for that is because the transformative learning theory is in most cases applied to an adult sample. There are a few articles found that relate to its application on an adolescent sample.

In this article we review literature in the fields of mentorship and of transformative teaching and learning and then use selections from this literature to describe and evaluate the several components of the TTP and its contributions towards the transformative learning theory within a South African context.

Literature Review Methodology

While there are separate bodies of work on both mentorship and transformative learning, there appears to be very little scholarship in which the two fields are integrated. The authors conducted a literature search on various search engines such as Google scholar, Google Books, SAGE, Science Direct, Research Gate, PubMed Central, EBSCOhost, JSTOR, ERIC, ProQuest Central, and PsycINFO. Thereafter a tool called “Connected Papers” was utilized. This tool allows for searches to be made and the results yielded to build a graph of all papers that are connected to the topic searched.

Figure 1 below illustrates the method and graph used in the process of research for this paper:

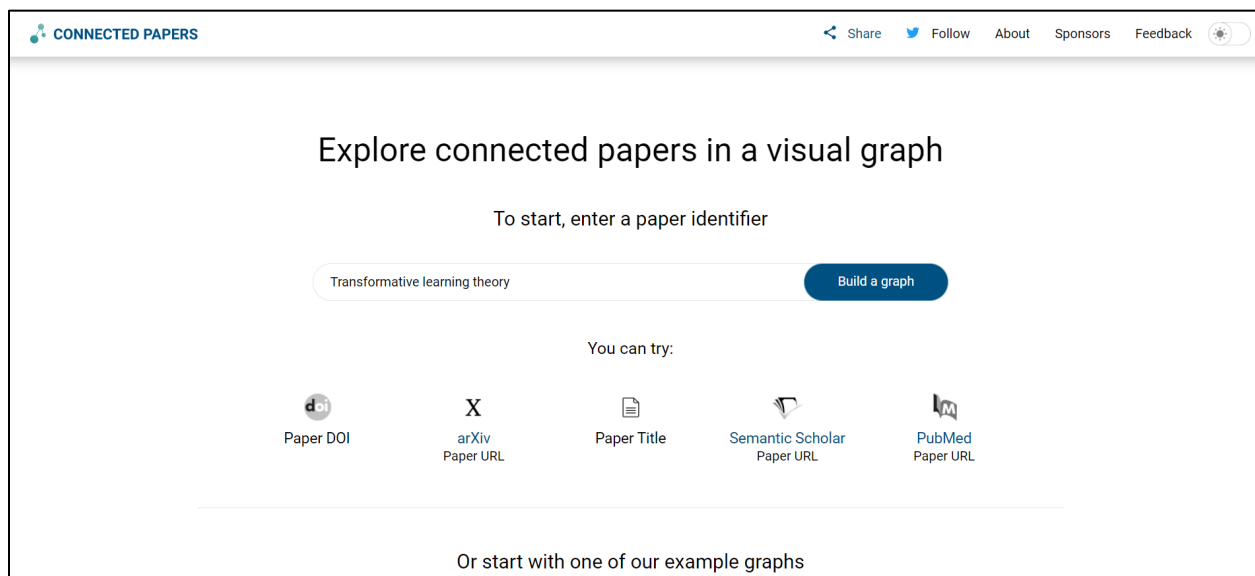


Figure 1: “Connected papers” home screen to start building a graph

These are the steps that were used to search for journal articles.

Step 1: Search for a journal article by different dimensions e.g., paper DOI, paper URL, paper title, semantic scholar, PubMed, or start with the engine's example graphs (See Figure 1, above).

Step 2: Review of graphed results (See Figure 2)

1. Papers are arranged according to their similarity (this is not a citation tree).
2. Node size is the number of citations.
3. Node colour is the publishing year.
4. Similar papers have strong connecting lines and cluster together.

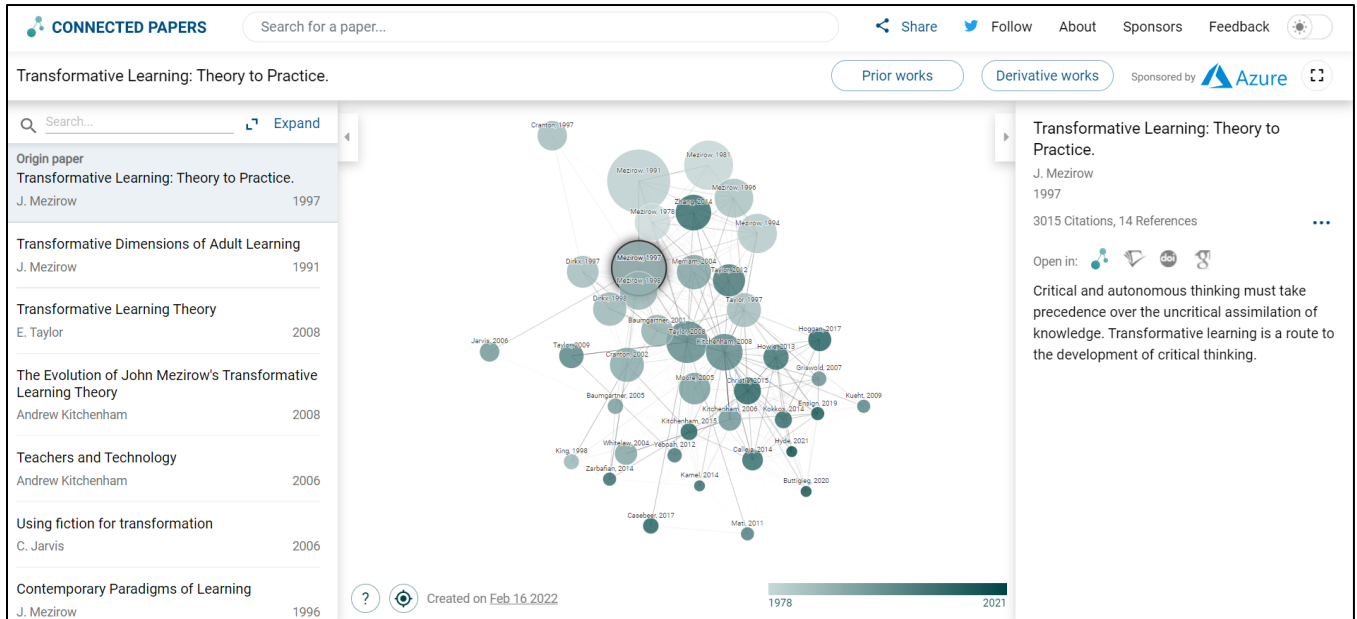


Figure 2: Connected papers graph constructed based on papers connected to the article of interest

Step 3: Review of article for literature review

An article of interest can be clicked on (see figure 3) and opened in various web options and can thereafter be downloaded for storage.

Figure 3: Article by Mezirow (1991) selected to explore for the literature review

Transformative Dimensions of Adult Learning
 J. Mezirow
 1991
 6017 Citations, 0 References

Open in:

1. Making Meaning: The Dynamics of Learning.
2. Meaning Perspectives: How We Understand Experience.
3. Intentional Learning: A Process of Problem Solving.
4. Making Meaning Through Reflection.
5. Distorted Assumptions: Uncovering Errors in Learning.
6. Perspective Transformation: How Learning Leads to Change.
7. Fostering Transformative Adult Learning.

Each article of interest was read carefully and then articles were grouped into folders according to topic. When writing the literature review on specific topics, the articles in the folder were integrated as they were compared with one another. Themes identified in the review were then used to reflect on the TTP in general and to analyse questionnaire data from both mentors and mentees.

Research Methodology

The Student Equity and Talent Management Unit is responsible for planning, facilitating, implementing, monitoring, and evaluating the Targeting Talent Programme. The learners and mentors are required to complete various evaluation forms post each TTP session as one of the methods to measure the effectiveness of TTP sessions. This research made use of data collected retrospectively in several June-July Residential Academic Enrichment Curriculum sessions within the 2018-2022 duration of program implementation.

The methodology utilized is a mixed methods approach which includes the integration of both quantitative and qualitative data to help understand the intervention, whether it was successfully implemented, and what its impact was.

Sample

The sample used in this research was learners and mentors who were selected according to specific criteria to participate in the Targeting Talent Programme.

Learners

The learners came from disadvantaged backgrounds and under-resourced communities, within grades 10-12 aged 15-18 years. The majority of these learners were female (70%), with only 30% of learners having been male. These learners were selected from across South African schools, with diverse backgrounds, cultures, races, languages, ethnicities, and religions. Nine hundred and twenty-nine (929) learners participated in the program for the period 2018-2022.

Mentors

The mentors were students at the University of the Witwatersrand, who were within their second year of study or beyond. Most of these mentors were Targeting Talent Programme alumni, which means that they had participated in the program and have returned to give back in service to the program. This also means that most came from disadvantaged backgrounds and under-resourced communities, similar to the learners, which made them desirable candidates to provide mentorship to learners.

Data Analysis Methodology

The data were collected using a mixed methods approach, however, for this research only qualitative data was extracted for analysis. The method of data analysis was Braun and Clarke's method of thematic analysis. The six phases of thematic analysis were utilized to uncover themes in the qualitative data analysis (Braun & Clark, 2006):

1. Familiarisation with the data: immersing in the data sources and looking through all the data.
2. Coding: colour coding all data content that were similar.
3. Searching for themes: developing categories that seem appropriate and broad enough to encapsulate all similar data content.
4. Reviewing themes: looking at all themes and understanding where it is best suited for the category.
5. Defining and naming themes: Distinguishing themes and giving meaning to each theme.
6. Writing up: weaving together a narrative that integrates themes and data content to evidence to the reader the correlation between themes and with literature.

Ethical considerations

This article makes use of data collected under the ethics application conducted by the Student Equity and Talent Management Unit. The ethics approval was granted by the Human Research Ethics Committee (Non-medical) at the University of the Witwatersrand. The protocol number for authorizing the use of the data collected is H16/11/35.

Literature review

Mentorship

The concept of mentoring has its origins in Greek mythology, in Homer's poem "*The Odyssey*." Odysseus was a Greek man who had a helper named Mentor whom Odysseus entrusted with his son, Telemachus. Mentor assumed the role of a tutor, protector, guide, and advisor to Telemachus when Odysseus left to fight in the Trojan War (Gordon, 2000). Many theories have since been developed and linked to the concept of mentorship.

According to Burlew (1991), if a mentor program is to be successful, one of the first questions that needs to be answered is "*what exactly is a mentor?*" (p. 213). Wai-Packard (2009) suggests that a mentor is an individual who is more experienced than the person whom they mentor (i.e., the mentee). The mentor's experience forms the basis of the relationship that develops between mentor and mentee. The relationship between them is usually but is not limited to face-to-face interactions and is cultivated for a specific period. The mentor is often older than their mentee and thus is likely to have the greater maturity that comes with life experience (Merriam, 1983), which can be used to facilitate and support the mentee's academic, professional, and personal development (Donaldson et al., 2000) in a cross-age-mentoring relationship (Geddes, 2016). Kasprisin et al. (2003) speak to the idea of the dynamic nature of mentorships in that the interactions can be short term, electronic, and either formal or informal as long as a relationship is fostered and academic, professional, and personal development occurs. Since the start of the COVID-19 pandemic, mentoring has mostly been via virtual platforms rather than face-to-face, an approach which has also been adopted by the TTP.

As stated above, the primary definition of a mentor comes from Greek mythology, in which mentorship is aligned with being a male guide, with this definition reinforced through hegemonic history and tradition (Wai-Packard, 2009). However, Davis (2001) argues that mentors can be female and may be of similar age to a mentee, using as an example a peer group of women who meet to talk about science, communities etc. indicating that mentoring can also occur within a group setting. Mentorship should not be considered as confined by gender (for example, male mentor-male mentee or female mentor-female mentee). Mentorship can be implemented across genders. These differences in definition of the concept of 'mentor' suggest that it is an evolving and unstable construct (Haggard et al., 2011).

Table 1 below provides an overview of mentoring definitions offered by a range of authors and shows how mentor/mentoring definitions have varied across time. Most definitions of mentoring do not encapsulate the concept of mentorship holistically. In our view a more persuasive definition is the one provided by Bronfenbrenner, as it 'captures' the mentorship component of the TTP by outlining what a mentor is and what their role should be. Hamilton and Hamilton (2004) quote Bronfenbrenner on his definition of a mentor as:

an older, more experienced person who seeks to further the development of character and competence in a younger person by guiding the latter in acquiring mastery of progressively more complex skills and tasks in which the mentor is already proficient. The guidance is accomplished through demonstration, instruction, challenge, and encouragement on a more or less regular basis over an extended period of time. In the course of this process, the mentor and the young person develop a special bond of mutual commitment. In addition, the young person's relationship to the mentor takes on an emotional character of respect, loyalty, and identification (p. 396).

It is important to define the roles of a mentor within a specific context as these roles may vary according to context. For example, mentors may be expected to play a role in facilitating transformative learning which is the focus of the next section of this literature review.

Table 1: Defining mentoring (Pillay & Psych, 2011, p. 27)

| Definition(s) | Reference(s) |
|--|--|
| A form of professional socialisation whereby a more experienced (usually older) individual acts as a guide, role model, teacher and patron of a less experienced (often younger) mentee. | Moore & Amey (1988), as cited by Jacobi (1991) in Luna & Prieto, 2009: 214 |
| A deliberate pairing of a less experienced person with a more skilled or experienced person who provides advice, support, and encouragement. | Murray, 1991, in Dewart, Drees, Hixenbaugh, & Thorn, 2006: 1 |
| Sage, educator, person of ideas, protector, director, advisor, person of authority, educational leader, wise, experienced, trusted advisor and counsellor. | Erasmus <i>et al.</i> , 2008: 208 |
| A nurturing process, in which a more skilled or more experienced person, serving as a role model, teaches, sponsors, encourages, counsels, and befriends a less skilled or less experienced person for the purpose of promoting the latter's professional and/or personal development. | Brooks & Sikes, 1997: 28, in Gwam & Vawda, 2005: 3 |
| A mentor is a person whose hindsight can become your foresight. | Grey Owl in McCluskey <i>et al.</i> , 2004: 85 |
| Mentoring was not only 'sponsorship', but was an important developmental process in adulthood, also described as an 'intense' and 'complex relationship' where the mentor plays the role of 'peer and parent', and takes on roles such as teacher, advisor, sponsor and friend. | Levinson <i>et al.</i> in <i>Seasons of Man's Life</i> (1978), in Ehrich & Hansford, 1999: 92-93 |
| It implies a more experienced other, i.e. a father/mother figure, who provides counsel, support and guidance to a mentee's professional/personal life. | Ehrich & Hansford, 1999: 92-93 |

Transformative Learning

The concept of transformative learning was introduced by Jack Mezirow in the field of adult education in 1978 in an article entitled 'Perspective Transformation' which was published in an American journal *Adult Education Quarterly* (Mezirow, 2009). The development of Mezirow's theory of transformative learning "was influenced by Freire's 'conscientization', Kuhn's 'paradigms', the concept of 'consciousness raising' in the women's movement, the writings and practice of psychiatrist Roger Gould, philosophers Jurgen Habermas, Harvey Siegal and Herbert Fingerette" (p. 90) and his own observations of the transformative experience of his wife as a student (Mezirow, 2009). One of the most comprehensive definitions of transformative learning comes from O'Sullivan (2003):

Transformative learning involves experiencing a deep, structural shift in the basic premises of thought, feelings, and actions. It is a shift of consciousness that dramatically and irreversibly alters our way of being in the world. Such a shift involves our understanding of ourselves and our self-locations; our relationships with other humans and with the natural world; our understanding of relations of power in interlocking structures of class and gender; our body awarenesses, our visions of alternative approaches to living; and our sense of possibilities for social justice and peace and personal joy (p. 203).

Transformative learning is defined by Mezirow (2003) as “the process by which we transform problematic frames of reference (mindsets, habits of mind, meaning perspectives)—sets of assumption and expectation—to make them more inclusive, discriminating, open, reflective and emotionally able to change” (p. 58). The frames of references described in the definition by Mezirow above derive from our cultural and language orientations which help give meaning to our experiences. They selectively shape and delimit our perception, cognition, and feelings by predisposing our intentions, beliefs, expectations, and purposes (Mezirow, 2009).

The aim of transformative learning is to help individuals to change currently held assumptions on which they act when necessary (Christie et al., 2015). Transformative learning involves disruption of our current “ingrained and well-rehearsed” (Christie et al., 2015. p. 11) belief systems about ourselves, societal views, and epistemological beliefs. It is achieved when an individual is now able to perceive things from a new point of view (Christie et al., 2015). According to Campbell and Brysiewicz (2017), transformative learning results when existing frames of reference are altered in response to unexpected, emotional-inducing events, which are defined as disorienting dilemmas (disorienting dilemmas may be positive or negative events, sudden or episodic). Reflection on disorienting dilemmas can result in dramatic transformations in frames of reference or transformation may be latent and occur over time (Campbell & Brysiewicz, 2017). There are 10 phases of transformative learning that students may experience as indicated in Table 2.

Table 2: The ten phases of transformational learning (Kitchenham, 2008, p.105; Mezirow, 2009, p.94)

| Phase # | Phases |
|----------|---|
| Phase 1 | A disorienting dilemma |
| Phase 2 | A self-examination with feelings of guilt or shame |
| Phase 3 | A critical assessment of epistemic, sociocultural, or psychic assumptions |
| Phase 4 | Recognition that one’s discontent and the process of transformation are shared and that others have negotiated a similar change |
| Phase 5 | Exploration of options for new roles, relationships, and actions |
| Phase 6 | Planning of a course of action |
| Phase 7 | Acquisition of knowledge and skills for implementing one’s plans |
| Phase 8 | Provisional trying of new roles |
| Phase 9 | Building of competence and self-confidence in new roles and relationships |
| Phase 10 | A reintegration into one’s life based on conditions dictated by one’s perspective |

Schnepfleitner and Ferreira (2021) propose adding “context” as a fourth core element of transformative learning in addition to the three originally proposed by Mezirow: i) critical reflection, ii) dialogue, iii) individual experience, and iv) the context. Assuming critical reflection has occurred, the

next step in transformative learning is for a person to participate in reflective discourse by evaluating alternative perspectives, withholding premature judgement, thinking dialectically (Merriam, 2004), and knowing where they stand on an issue to find their voice (Mezirow, 2000). The course of action taken by an individual on a transformative learning path will be based on the results of critical reflection and rational discourse. According to Kitchenham (2008), transformative learning involves two important processes: first being “critically reflective” – where a critical assessment of our sources, nature, and consequences of our habit of mind is made and secondly, participating fully and freely in a dialectical discourse to assess a best reflective judgement. Transformative teaching and learning enable us to challenge, question, and reassess long-standing viewpoints and understandings and replace them with new ones (Cranton & Taylor, 2013).

The key message to be taken from this account of Mezirow’s theory of transformative learning is the need to help students actively participate and engage with concepts presented within the context of their own lives so that both independently and with others they can respond critically to new knowledge (Schneppfleitner & Ferreira, 2021).

Mezirow’s initial work was based on pursued higher education of adult women who had been away from an academic environment for a considerable time. They observed that these women could not apply their old understandings to new scenarios. New perceptions were required as scenarios and situations had changed. Although the authors of this paper agree with the fundamentals of Mezirow’s initial work and theory, we disagree with the application of transformative learning solely within adult education. We agree with Meerts-Brandsma and Sibthorp (2021), Larson (2017), and Williams (2013) that adolescents are able to engage in transformative learning also. In Mezirow’s (2000) view, while adolescents can experience transformative learning, it is limited by their cognitive ability and experiences to engage in the required mental transformation. According to Mezirow (2000), their developmental stage limits their ability to question their own assumptions and that held by others. Although this might be true for some adolescents, many are ready to engage in transformative learning. Kegan (2000) also alluded to how this might be possible for adolescents on condition that they have proceeded from some form of transformation such as evolving their perceptions from their socialized learning towards a more abstract way of thinking. He indicates that this is possible as developmentally, adolescents increase their cognitive level of abstraction. For example, Meerts-Brandsma and Sibthorp (2021) found that a cohort of learners aged 12-15 years demonstrated transformative learning after engaging in educational activities designed within a curriculum tailored to provide transformative learning opportunities. Larson (2017) documented the learning transformations of two 19-year-old adolescent girls who engaged in activities that encouraged self-reflection, critical thinking, identity formation, rational discussions, and action upon reflection. These learners went through many of the stages described by seminal theorists and reflected adult-like cognitive capacities to engage in transformative learning. Williams (2013) took a transformative learning approach within a high school classroom setting by introducing an environmental education curriculum which encouraged high school learners to consider introspectively, ways in which they could protect and sustain their environments. These adolescents drew on their experiences in the world and used that as a basis from which they engage and steer discussions in their groups. These different experiences allowed for adolescents to reflect, and this resulted in a changed perspective. These studies indicate that transformative teaching and learning is appropriate for working with adolescents and young adults and moreover highlights the salience of the phenomenological position in the facilitation of transformative learning and teaching. This is echoed in the work done by Husserl (Taylor, 1994) where phenomenological reduction is used to bracket the essence of an individual’s experience. Zafran (2020) highlights that the objectives of the Transformative Learning Theory are facilitated through significant experiences as this provides the learner with a wider world view and thus encourages them to interrogate their own position in the world, perspectives of the world, beliefs, value systems and behaviours and thus allows for them to alter or adjust their frames of lens and ultimately their actions.

Results and Discussion

Transformative teaching and learning in a pre-university access program in South Africa

Transformative teaching and learning entails creating a dynamic relationship between students and teachers where knowledge is shared to promote student learning and development (Slavich & Zimbardo, 2012). According to Landolt (2012) and Masehela et al. (2014), mentoring is a less formal communication process happening over a sustained period, between a person who is considered more experienced and knowledgeable (mentor) and someone who is less experienced and less knowledgeable (mentee). Mentors may be senior students who are academically successful and who provide guidance and support to students who are at risk of academic exclusion or to those who are new to university. A mentor and a mentee are expected to work collaboratively and learn from one another as both mentees and mentors gain knowledge and develop some skills during their interactions (Ntombela & Mngomezulu, 2018). In South Africa, where many students from diverse backgrounds leave their homes to adapt to a new student life where they learn new routines, form new relationships, and experience anxieties that come with this change in their lives, mentorships provide much needed psychosocial support for students to cope with anxieties experienced in their new unfamiliar environment (Swart, Coughlan, & Joannou, 2019).

The advent of a democratic South Africa has prompted the government to devise strategies for addressing the racial, social, and economic injustices that resulted from the apartheid and colonial past. The disparities in wealth, educational access and attainment, health status and access to opportunities are still predominantly based on race and gender and education is seen as one of the ways to create more equal opportunities. However, students coming to university from previously disadvantaged backgrounds and having experienced schooling that was under-resourced in many respects, may not be adequately prepared for higher learning (Ntombela & Mngomezulu, 2018; Underhill & McDonald, 2010). Mentoring programs offer an important opportunity for engaged teaching and learning as well as for access to the epistemological discourse of the academy (Frade, 2017). In the next section, one such program is discussed.

The Targeting Talent Programme at the University of the Witwatersrand

The Targeting Talent Programme, introduced briefly in the first section of this article, seeks to identify learners with academic potential from a broad range of under-resourced schools. The Program aims to increase the academic, social, and psychological preparation of learners with academic potential, from socio-economically disadvantaged backgrounds, for admission to South African higher education institutions (SETMU Annual Report, 2020). High school learners from Grades 10 and 11 are selected from various schools across South Africa and participate in TTP until the end of Grade 12. Across the two to three years of their participation they engage in Mathematics and Science Supplementation sessions in March and October, and an Academic Enrichment Program in June-July. The Mathematics and Science sessions are currently hosted on a University Learning Management System called CANVAS ULWAZI. In these sessions, Maths and Science lecturers facilitate sessions which provide learners with opportunities to learn new content, clarify misconceptions, develop improved conceptual understanding, and practice their application of content. Discussion sessions are facilitated synchronously online, in which learners discuss any challenges experienced with asynchronous content.

For the Enrichment program, learners reside at the university for two weeks in order to be immersed in campus processes and culture. Learners receive exposure to university lecture venues, lecturers, residency, university facilities such as the library, science and computer labs, and are taught first year university subjects beyond the school curriculum.

These sessions are interspersed with psycho-social activities which teach learners skills that enable good citizenship, career decision making, studying, and learning. They also receive guidance in completing university applications and discuss a range of issues important to adolescents. All the above require the contributions of mentors for TTP to be implemented successfully.

The mentoring component of the TTP

Mentors support the program in conducting its aim and objectives, particularly those pertaining to mentees' personal, social, and to some extent their academic development. The TTP objectives of the mentor component within the TTP sessions include:

- Providing a big brother/sister role to learners.
- Providing the role of a guide by accompanying learners to the various venues, updating them on vital program information and acting as the mediators between the program implementation team and learners.
- Providing a role of mentorship, motivation, and support to the learners.
- Providing important information from the grassroots level to program coordinators with the aim of improving each contact session.

Secondary objectives of the mentor component include:

- Developing leadership, communication, professionalism, problem solving, conflict management, time management, ability to manage diversity, teamwork, and interpersonal skills in mentors.

Who are the mentors?

Mentors are students who are enrolled at the university for any year ranging from second year undergraduate to postgraduate studies. The majority are TTP alumni who aim to give back to the program through mentoring. They are able to relate to the high school learners because they come from similar backgrounds, speak similar languages, and understand the psycho-social challenges faced by the mentees. All mentors go through a rigorous selection process.

How are they trained?

Selected mentors are hosted at mentor training sessions before they start working with high school learners. Mentors are inducted by staff who understand the program and its requirements. During training, mentors learn about mentee demographics, managing interactions with them and the challenges that mentees encounter. Mentors are also trained on how to embrace diversity within the cohort of TTP learners and how to facilitate the transformation of learners' perceptions with reference to a range of socio-cultural topics including diversity.

Mentors work through a training manual which contains activities to support their development of knowledge and skills. They also have opportunities to put into practice what they have learned so that they are prepared to facilitate transformative learning.

Transformative teaching and learning in action at TTP

Transformative teaching and learning aim to be learner focused, with the teaching catering to learners' needs. The teaching is aimed at helping learners understand, engage, and problem solve through critical interaction with the content and their teacher. Lecturers develop a rapport with learners which encourages this type of learning. This approach is not only less hierarchical but also bi-directionally mutual as teachers become learners too (Kumi-Yeboah, 2012).

Transformative learning theories and empirical studies informed by these theories focus on adult/young adult learners. For example, Kumi-Yeboah and James (2014) quotes Cranton (1994) who states that "the underlying theme of transformative learning is that the adult learner will have the ability to reflect, refine, and build new connections through rational discourse as they engage in critical reflection, and discussion related to the course content" (p. 30). As indicated previously, scholars such as Meerts-Brandsma and Sibthorp (2021), Larson (2017), and Williams (2013) have shown that adolescents are also able to engage in transformative learning. According to Kumi-Yeboah (2012), there are four factors that enhance transformative learning: Critical Thinking, Personal Self-Reflection, Classroom Discussions, and Dialogues and Mentoring. The Targeting Talent Programme gives attention to each of these four factors mentioned above in its process of facilitating access to higher education. Now while this research agrees

with Meerts-Brandsma and Sibthorp (2021), Larson (2017), and William's (2013) work, it also acknowledges the contextual differences that are apparent within this research. In this manner, this research aims to provide a South African perspective in extending the theory originally proposed by Mezirow. Cranton (1994) argues that transformative learning occurs when adult learners change their frame of reference. However, as mentioned above, we argue that adolescents are likely to also undergo a range of experiences that require changes to their frame of reference. Unlike these authors, this research takes place in the Southern hemisphere, a part of the world known for its extreme socio-economic conditions and under-resourced surroundings. Learners who come from here are targeted to help develop their talent and further cultivate a skillset that will better prepare them for accessing higher education.

These learners have typically experienced more stressful and disadvantageous circumstances. For example, many learners who have participated in the TTP have experienced the death of a close relative (e.g., mother, father, or both) and have either been raised by a guardian or have had to take on some sort of guardianship role within their homes. Such misfortunes experienced by TTP learners are exemplary of what has been referred to by Mezirow (2000) as "disorienting dilemma" which forms an important part of the transformative learning. These learners who are selected to participate in the program undergo some transformative teaching through the program and interactions with their mentors. This is achieved mainly through constant dialogue with their lecturers, mentors, programmatic staff, and their peers in the program, which encourage reflection through well planned curriculum and activities. These learners commence the program with their own realities and experiences of the world that were mainly influenced by poor access to facilities and resources, service delivery and infrastructure, rife with psycho-social issues which plague their communities such as gangsterism, substance abuse, teenage pregnancy, child-headed households, increase high school dropout rates, and crime. Some of these learners must cope with this adverse environment while also caring for younger relatives in their homes. These learners are at the centre of various inequalities, and this unfortunately influences the way that they perceive the world.

Their transformed perspectives and behaviours are what allows for them to rise above their challenges and successfully transform the perspectives of those they encounter. From this it can be noted that these adolescents do not have a limited experience to draw from and limited cognitive ability to engage in transformative learning and teaching, as initially indicated by Mezirow. On the contrary, these learners have shown that in spite their negative experiences, their willingness to rise above their challenges has encouraged a development in their cognitive capacities. These cognitive abilities lay the foundation for transformative learning and teaching.

These adolescents attend underserviced schools, with limited resources and through the assistance of the program, most of them manage to change their frames of reference so that they become optimistic about their futures while developing problem solving, help seeking behaviours, new methods of engagement, critical thinking skills and extending their academic knowledge. According to Mezirow (2000) there are preconditions to transformative learning: "*maturity, education, safety, health, economic security, and emotional intelligence*" (p. 15). As indicated above, these learners do not meet most of the six preconditions, as opposed to the sample seen in the Meerts-Brandsma and Siphthorp article where US learners are able to afford to attend an enrichment school. This shows that although the end result is transformative learning, the contextual factors are different. It shows that these South African learners, despite their inability to meet the pre-conditions for transformative learning, are still able to undergo the transformative process. Within the program, through opportunities to become critically self-reflective, learners reframe their previous experiences of teaching and learning at school and in their homes and communities. To give one example, some of the enrichment sessions within the TTP focus on critical diversity. Learners are taught to reflect and become aware of their own assumptions and prejudicial biases to understand how these may influence their behaviour in particular social contexts. They learn to question and become self-reflective of their value systems and beliefs, particularly in cases where they have exhibited prejudicial, discriminatory, or racist behaviour and ultimately reflect on the effects they may have had on the 'victim' and learn to regulate the behaviour. Learners develop new ways of relating to others which they can use in their communities, homes, and other contexts. Other preconditions mentioned by Larson (2017) are critical discourse (Mezirow, 2000), developmental consciousness

(Kegan, 2000), cognitive development (Merriam, 2004), and life experiences (Brookfield, 2000) are however, met by learners in the TTP and might be the precursors that allow for the transformative learning to take place. It is important to note that in this paper, transformative learning was measured through self-reflection. Learners and mentors were required to complete evaluation forms which consisted of both open and closed ended questions. The open-ended questions were analysed for this research.

Although this gives the researchers a rich, in-depth understanding of participants' reflections, this self-report method is not without flaws. One of the limitations associated with self-reflective reports is the social desirability bias which is described by Larson (2019) as participants responding in a deceptive manner based on that which is socially desirable to the reader. Another limitation is that of subjectivity as participants respond based on how they interpret the question. In addition, there are several factors that influence their understanding and response to such questions (Paulhus & Vazire, 2007). Although there are limitations to the method of assessment, research indicates that is one of the most utilized methods in effectively accessing participants personality, consciousness, and psyche on a large scale.

Evidence of transformative learning is apparent in the statements below made by TTP learners.

Awareness of held assumptions and prejudicial biases: "As individuals we tend to assume things without knowing the full story to things and diversity has taught me not to assume but do understand and perceive the world around me at much broader by finding out more of people and their lifestyles."

Self-reflective and regulative: "In life nothing is good or bad when you have made a mistake correct it before it becomes late because time waits for no man."

Critical thinking: "We need to think critically about diversity in order for us to fully understand how to go about dealing with its issues."

"Do not only look at the surface world but sink deep into it, diversity is not only about race, gender, sex, etc. but any difference we have."

Learners also applied their transformative learnings to different contexts and subjects and to thinking about the citizens they are within society and how they interact with others in the world, with changed perspectives evident in each of the quotations below:

"To be considerate of other people without the same privileges as myself and to find a way to use the privileges to help others."

"I realised that the person I thought I was, was not really me. I found the real "Peter" in me and now I can describe myself without any doubt."

"Agency helped me realize that I didn't let go of some of the things that happened in the past so now I've literally let them go and I feel like a new person."

"The gratitude I have for TTP cannot be put into words. I believe I have found myself and I have gone (sic) from a shy little girl to a confident and strong person. I acquired (sic) so many (sic) skills from this program and using these has helped me grow inside out."

"I always reflect on days and see how I can apply that to my life and how my day benefited me."

"It has made me think of a lot of things I would like to change about myself."

"My overall perspective on life has changed and I believe I am ready to tackle my future."

"It has developed my confidence and made me believe that everyone deserves respect and dignity, it has groomed me to be a leader, someone that prioritises helping the community first and helping other people."

Transformative learning is a primary focus of the TTP with many of its sessions devoted to discussions and dialogues which aim to give learners a voice with which to express their views and challenge the opinions and ideas of others. Mentors assist learners to extend their knowledge by sharing their phenomenology insight through their experiences and stories so that learners can reflect on previous perceptions, misconceptions, or limitations to their knowledge. Below are some of the quotes from mentors who not only facilitate transformative learning through their own phenomenological experiences

but also through encouraging the sharing of the experiences amongst peers. Here TTP learners reflect on the role of mentors in fostering their transformative learning:

“It was so easy to speak to people and other mentors from other groups because we were the spotlights of this session and they made sure that we understood the courses we want to do next year.”

“Before I came to TTP I was an introvert, but as soon as I dropped my one week everything started to change especially because we had good mentors who actually made TTP our second-best place to be at.”

“I have learnt how to use different techniques to study and how to deal with academic stress by learning from people in my group and hearing a few stories from the mentors.”

“The mentors were a great help in helping me pinpoint what I want to do when I get to university. Literally all of my mentors since grade 10 have given me guidance and advice on how to identify my passion and also to never do a course I'm not passionate about, because at times everything will seem like it's falling apart, and your passion is all you have left to preserve through with determination to attain what you love. So, the mentors that (sic) SETMU had (sic) picked are a great, untainted reflection of varsity life and motivate me.”

“The mentors are the best part of TTP (in my opinion) because they have gone through what you have and are able to give you advice on what to do and what not to do.”

“The extra care given to us by our mentors have made me realise that I am worth it and I should start practising that on myself.”

The program equips mentors to carry out TTP's transformative agenda and in the process, mentors undergo a transformative learning experience as well. Mentoring relationships are beneficial to both mentor and mentee. Connolly's (2017) study found that not only did mentees improve their academic performance through a mentorship program but so did the senior students who were mentors. In another study, mentoring was found to increase leadership efficacy (Lester et al., 2011). The mentors in Connolly's study perceived an improvement in their leadership skills, which included role modelling, time management, confidence, and problem solving. They attributed this improvement to the challenges they experienced in the mentoring process. Within the TTP, mentors state that they have been able to implement the transformative strategies taught to them even after graduating from their tertiary studies. TTP mentor evaluations reveal that mentors' personal development has been enhanced through the acquisition of knowledge and skills such as awareness, communication, interpersonal skills, self-reflection and regulations, communication, and teamwork, altruism (making a difference and giving back), and leadership which can be seen in the following statements made by TTP mentors.

Acquisition of knowledge and skills: “I decided to be a TTP mentor again because learning never stops. From each contact session that I have attended I always go back home with new skills acquired and enhancing on the skills that I already have.”

“From the previous contact session, I gained knowledge on... emotional awareness and intelligence as well as learning to sell myself and the brand I represent which was through the personal branding exercise.”

“The last contact session taught me the importance of mental health. Although I had been exposed to mental disability and how to handle it in theory after the previous session and having been exposed to it directly made me reflect on whether I fully understand and are able with mental health issues.”

“I learned various interpersonal skills such as assertion problem-solving and interpretation of certain kinds of body language.”

“I learned good communication skills and by that, I mean ‘how to really listen before you ask’ kind of communication.”

Altruism: “I also wanted to channel the learners in the right direction and offer guidance where (sic) I can.”

“TTP has grown onto me in such a way that I can’t imagine myself missing a contact session for various reason such as giving back, making a difference and personal growth.”

Self-Reflection and regulation: “It helped me in getting to reflect on my own skills and experiences while also getting to question and refine my ways of thinking and approach to matters.”

Teamwork: “I have learned teamwork and how to compromise, for the sake of the group’s success (sic).”
“I have learnt to trust the people I work with to do their task to a satisfactory level without my interference. This is in a professional workplace setting as well as an academic task setting.”

Leadership: “I learnt how to be a situational leader when I am working with a group of individuals.”

In addition to the self-reported evidence of mentors’ personal development there is also evidence in their reflections on the benefits of participating in the mentoring programs that they believe they have acquired knowledge and skills that will be valuable in the workplace (e.g., communication skills and teamwork skills).

Conclusion

A review of theoretical and empirical literature with a focus on transformative teaching and learning through mentorship was conducted. The research identified that a vast body of work exists on both transformative learning and mentorship, respectively. However, there is sparse literature where these two constructs are integrated. In that regard, this research aimed to integrate the bodies of work through evidencing the transformative learning undergone by adolescents in the Targeting Talent Programme and particularly facilitated through the role of mentorship. This research argued that in South Africa, where many adolescents have had a range of challenging adult experiences while still teenagers, they have the life experience to engage in transformative learning and thus transformative teaching/mentoring should not be considered as appropriate only for adults. This can also be seen in the work of Meerts-Brandsma and Sibthorp (2021), Larson (2017), and Williams (2013) however, it is important to acknowledge the contextual differences that the research offers a perspective on. The research done by the above-mentioned researchers is conducted on adolescents (aged 12-19) of mixed American descent, particularly white, within resourced schools within middle to high class socio-economic level. This research was conducted on disadvantaged adolescents from under-resourced communities and schools from a low socio-economic condition. This research thus aimed to provide a South African perspective as an extension of Mezirow’s Transformative Learning Theory. Despite the contextual differences, it can be noted that the output in the above studies as well as that highlighted in this research is that adolescents can indeed undergo a transformative learning and teaching even though these adolescents do not meet the preconditions set out by Mezirow. Moreover, the research argued that the elements of the Transformative Learning Theory were used to reflect on the design and implementation of the pre-university Targeting Talent Programme and to examine the responses of mentors (senior university students) experiences with their mentees (high school learners) to what TTP offered them. The research acknowledges the salience of the phenomenological insight in that the transformative learning and teaching is purely facilitated through mentors sharing their life experiences which encourages dialogue and reflections to ultimately transform perceptions and behaviours as well. We argue that TTP does provide transformative learning opportunities, some of which are due to the key role of mentors in the program. Mentors themselves also experience transformative learning opportunities as a result of them facilitating this process and develop in their personal capacities as mentors but ultimately as human beings. As an addition to the elements identified in the literature reviewed, we argue that senior students, after being trained as mentors, can play an important role as facilitators of transformative learning for adolescents. Given the value of transformative teaching and learning for both the psycho-social and academic development of adolescents and young adults, we recommend that higher education institutions consider including this approach in support programs offered at pre-university and undergraduate levels. We also recommend the training and use of senior students as mentors in such programs.

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