

Self-directed learning and career decision-making

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This article explores the relationships between self-directed learning and aspects of career decision-making. First-year students in access programmes at a South African university participated in the study. Having entered higher education via an alternative route, it was expected that these students would find it difficult to make career decisions. Students who measure high on self-directed learning find it easier to make career decisions. The results indicate that self-directed learning has significant correlations with career decision self-efficacy, career decision certainty and indecision. Multiple regression analyses showed that self-directed learning explained approximately 4% of the variance in career decision certainty besides what is explained by career decision self-efficacy.

Selfgerigte leer en loopbaanbesluitneming

Die artikel ondersoek die verbande tussen selfgerigte leer en aspekte van loopbaanbesluitneming. Eerstejaarstudente in toelatingsprogramme aan 'n Suid-Afrikaanse universiteit het aan die studie deelgeneem. Aangesien hierdie studente alternatiewe toegang tot hoërsonderwys verkry het, sou 'n mens kon verwag dat hulle probleme met loopbaanbesluitneming sou ervaar. Selfgerigte leerders vind dit makliker om loopbaanbesluite te maak. Die resultate dui aan dat selfgerigte leer beduidende korrelasies met self-effektiwiteit, sekerheid en besluiteloosheid rakende loopbaanbesluite het. Meervoudige regressie-ontledings het aangetoon dat selfgerigte leer ongeveer 4% van die variansie in sekerheid rakende loopbaanbesluite verklaar, bo en behalwe dit wat deur self-effektiwiteit verklaar is.

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Researchers have paid considerable attention to career concepts and their relation to various aspects regarding higher education (*cf* Bubany *et al* 2008, Lopez & Ann-Yi 2006). The concepts of career decision self-efficacy¹ and career decision difficulties or indecision,² in particular, have been researched extensively due to their relevance to career development and career interventions (Chaney *et al* 2007: 195). Career decision self-efficacy refers to individuals' beliefs that they can successfully complete the tasks required to make good career decisions (Taylor & Betz 1983: 63-81), and career indecision is defined as "problems individuals may have in making their career decisions" (Gati *et al* 1996: 510).

The career development of university students in access programmes, such as foundation programmes or extended degree or diploma programmes, has to date received little attention. The National Plan for Higher Education (NPHE) (DoE 2001: par 3.2) encourages higher education institutions to offer or to continue to offer extended curricula in an effort to improve the access and success rates of students from disadvantaged backgrounds. In response to this, an increasing number of students from disadvantaged educational backgrounds are entering these institutions (Cross & Carpentier 2009: 6). These students often experience additional problems and are not always adequately prepared when faced with academic and career-decision demands (Lease 2004: 240). The career development of students in these programmes is often neglected or completely disregarded in the face of the numerous other demands which these programmes are expected to meet.³

Self-directed learning – the process whereby individuals take responsibility for their own learning and development – appears to be a useful vehicle to help individuals cope with the challenges related to individual and career development. The current world of

1 *Cf* Betz 2007, Borgen & Betz 2008, Chaney *et al* 2007, Reese & Miller 2006.

2 *Cf* Germeijs & De Boeck 2003, Lopez & Ann-Yi 2006, Mau 2001, Osipow 1999.

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work has significant implications for continuously making career decisions. Self-directed learners appear to perform better academically (Thompson & Wulff 2004) and are more successful in their jobs (Gerber *et al* 2005) compared to individuals who are not self-directed. Considering the influence of self-directed learning on an individual's development, we hypothesised that students who are more self-directed with regard to their learning will also be more self-directed with regard to their career development, and will be better equipped to make career decisions. Patton (2005: 22) is of the opinion that individuals need to take on a greater role in constructing their own career development. They need to develop skills that will support them "... in taking responsibility for the direction and evolution of their own careers" (Patton 2005: 22).

Various studies have investigated student self-directed learning in higher education institutions (*cf* Maung *et al* 2007, Raidal & Volet 2009). However, limited research has been reported on the role of self-directedness in career development (Ellinger 2004: 158). In addition, the role of self-directedness regarding careers of academically underprepared students appears to be an under-researched area.

Against this background, this article aims to explore the relationship between self-directed learning and career decision-making among first-year students in extended degree programmes. It briefly discusses access programmes in South Africa; the extent to which these programmes provide for the career development of students, and self-directed learning and its relation to career development. The article concludes with the results of an empirical study investigating our hypotheses pertaining to the relationship between self-directed learning and career decision-making.

1. Access programmes in South Africa

The Education White Paper (DoE 1997: 23) emphasises the need to widen access to higher education. This is amplified in the NPHE (DoE 2001: 12) and stated as both a goal and a strategic objective: "To ensure that the student [...] profiles progressively reflect the demographic realities of South African

society". The White Paper and the NPHE, however, warn against high failure and drop-out rates due to increased access, and stress that institutions should carefully consider school leavers' preparedness for higher education. Higher education institutions need to ensure that effective academic development programmes address the teaching and learning needs of students (DoE 2001: par 2.3.2). In response, a system was introduced in 2004 in terms of which earmarked funds are made available to higher education institutions as an incentive to offer extended qualifications. These extended curricula are intended to cater for students from educationally disadvantaged backgrounds and to bolster access and success rates.

The extended programmes incorporate substantial foundational provision in addition to the content prescribed for the corresponding mainstream programme. The longer duration of these programmes enables the inclusion of areas such as study skills, academic literacies and basic numerical skills, all of which are often neglected in so-called mainstream or regular programmes. An investigation into various extended degree programmes in South Africa revealed that aspects of career development are often incorporated in the curriculum. The underlying rationale for the inclusion of these aspects is that career decision-making is a complex process. It appears that many students are not sufficiently equipped to make career decisions when they enter higher education institutions. Many students are unsure of their own career choices and often base these choices on the suggestions of an important figure, for example a father or other role model. Although role models play a significant role in the career decision process, many students from previously disadvantaged groups have limited access to role models, and the role models themselves often had limited exposure to a variety of careers and career information (De Bruin 1999: 97). In addition, many of these students come from previously disadvantaged backgrounds and may not have had adequate and proper access to appropriate career counselling services (Lease 2004: 241). Schools often lack the resources and infrastructure to prepare students for university (Essack & Quayle 2005: 73).

2. Self-directed learning and career decision-making

Self-directed learning refers to any form of learning in which the individual is primarily responsible for the planning, implementation and evaluation of his/her learning (Knowles 1975: 18). One would expect that self-directed learners would utilise independent learning opportunities, show intrinsic motivation and have positive self-esteem and self-confidence regarding their learning.

Although the majority of the research on self-directed learning focuses on higher education environments (*cf* Pata 2009, Thompson & Wulff 2004), it appears to be relevant to the career field. Arulmani & Nag-Arulmani (2004: 22) argue that the future world of work may require individuals to make several job shifts – and therefore career decisions – during their lives. In addition, the rapidly changing world of work generates a continuous flow of new information, and it is expected that many jobs may change dramatically over relatively short periods of time. Hence, in order to meet the needs of the changing world of work, employees will need to constantly update their existing skills and knowledge, and acquire new skills and knowledge (Guglielmino & Murdick 1997: 10).

Although the notion of self-directed learning has received sustained attention over the past decades, no research could be found on self-directedness as a barrier to or facilitator of career decision behaviour. In an attempt to link self-directed learning and career decision-making, the conceptualisation of self-directedness as a personality disposition (Brockett & Hiemstra 1991: 26) needs to be considered. Research indicates that various internal factors, such as personality, impact on career-decision experiences (Albion & Fogarty 2002, Borgen & Betz 2008). In particular, there are reports of relationships between decreased career decision behaviour and external locus of control (Lease 2004, Saka *et al* 2008), task-specific self-efficacy (Betz & Voyten 1997) and anxiety as a personality trait (Lounsbury *et al* 1999; Reed *et al* 2004). Personality has also been linked to more

chronic and pervasive career decision difficulties, often referred to as indecisiveness (Gati *et al* 1996).

Dispositions such as locus of control, self-efficacy beliefs and anxiety relate to self-directedness (*cf* De Bruin 2007, Taylor & Betz 1983). One would expect that self-directed learners who take responsibility for their own learning and development have high levels of internal locus of control. In addition, the gathering of information, goal-setting, planning and implementing decisions, defined as career decision tasks and facilitated by self-efficacy beliefs (Taylor & Betz 1983), are integral to the self-directed learning process. With reference to anxiety, De Bruin (2007: 235) reports a negative relationship between self-directed learning and anxiety in students. Based on the results of these studies, we hypothesised that there is a relationship between self-directedness and career decision behaviour.

3. Method

3.1 Research approach

A quantitative approach with a cross-sectional survey design was used in this study. This design is appropriate when investigating the relationships between variables (Bless & Higson-Smith 1995: 66).

3.2 Participants

The sample consisted of 267 first-year students registered in one of the following extended degree programmes at a South African university: BA (Humanities), BA (Journalism), BA (Development Studies) and BA (Tourism Development). Students from two consecutive years participated in the research. Participants ranged in age from 16 to 31 with a mean age of 18.93 ($SD = 1.44$). The majority of the participants were female (159 = 69.6%), and the remaining participants were male (101 = 37.8%). Seven participants did not indicate their gender. The racial representation of the sample was as follows: 208 (77.9%) black, 19 (7.1%) white, 21 (7.9%) coloured and 12 (4.5%) Indian.

Seven participants did not indicate their race. The distribution of students per extended degree programme was 216 (80.9%) in BA (Humanities), 29 (10.86%) in BA (Journalism), 17 (6.4%) in BA (Development Studies) and five (1.9%) in BA (Tourism Development).

3.3 Instruments

The participants completed the following three instruments.

3.3.1 Career Decision Self-Efficacy Scale-Short Form (CDSE-SF) (Betz *et al* 1996)

The CDSE-SF consists of 25 items measured on a five-point Likert-type scale. The instrument measures an individual's degree of belief that s/he can successfully complete tasks necessary to make career decisions. The CDSE-SF comprises five scales: self-appraisal, occupational information, goal selection, planning, and problem-solving. Betz & Taylor (2006: 9) reported Cronbach's *alpha* internal consistency reliabilities ranging from 0.73 (self-appraisal) to 0.83 (goal selection) for the subscales and 0.94 for the total score of the CDSE-SF. Chaney *et al* (2007: 198) found reliabilities ranging from 0.78 (problem-solving) to 0.85 (goal selection) for a sample of American black students. In the present research the subscales did not provide acceptable Cronbach's *alpha* coefficients in line with Nunnally's (1978: 265) suggestion that acceptable coefficients need to be above 0.70. The Cronbach's *alpha* coefficients ranged from 0.54 (problem-solving) to 0.63 (goal selection). It was therefore decided to use only the total score of the instrument which yielded a coefficient of 0.87.

3.3.2 Career Decision Scale (CDS) (Osipow 1987)

The CDS developed in the USA consists of 19 items with a four-point Likert-type scale. The first two items of the instrument form the certainty scale. This scale measures certainty of educational and vocational choice. The remaining 16 items form the indecision scale. This scale gives an indication of the antecedents of educational and vocational indecision. The last item of the instrument affords participants the opportunity to provide a

description of their career decision behaviour. Patton & Creed (2001: 340) report Cronbach's internal consistency reliabilities of 0.73 for certainty and 0.89 for indecision. In this research the *alpha* coefficients were 0.72 for certainty and 0.88 for indecision.

3.3.3 Student Self-Directed Learning Questionnaire (SSDLQ) (De Bruin 2008)

The SSDLQ is a 22-item uni-dimensional scale. Participants are required to indicate self-directed learning behaviour on a five-point Likert-type scale. De Bruin (2008) reports acceptable Cronbach's *alpha* coefficients for groups of black ($\alpha = 0.91$, $n = 445$) and white ($\alpha = 0.90$, $n = 287$) South African students. In the present study the *alpha* coefficient was 0.84.

3.3.4 Biographical information

A demographic questionnaire requested information pertaining to age, gender, home language and the specific programme for which the student was registered. This questionnaire also requested participants to rate their experience with regard to career education at school, career guidance and assessment, job shadowing and job interviews. This information was deemed important to gain a better understanding of the career development exposure of the participants prior to enrolment at a higher education institution. It was expected that career development exposure would contribute to better career decision skills.

3.4 Procedure

One of the researchers lectures a compulsory module which forms part of the curriculum of all four of the above-mentioned extended degree programmes. The participants completed the questionnaires at the end of one of these lectures. They were informed about the purpose and the anonymous and confidential nature of the study. Participation was voluntary.

3.5 Statistical analysis

The data was analysed using SPSS version 18. Descriptive statistics (means and standard deviations) were used to explore participants' levels of self-directed learning, career decision self-efficacy, career decision certainty and indecision. Pearson product-moment correlation coefficients were obtained to investigate the relationships between the various constructs. Multiple regression analyses were conducted to investigate the predictive relationship of career decision self-efficacy and self-directed learning with career decision difficulties.

4. Results

4.1 Descriptive statistics: exposure to career development activities and levels of self-directed learning and career decision constructs

To gain a better understanding of the extent to which they were prepared for making career decisions, the participants were asked to indicate their exposure to certain career development activities. Approximately 45% ($n = 121$) of the students indicated that they had previously been exposed to career guidance or assessments. Nearly 50% (51.2%, $n = 160$) reported to have had experienced career education at school and 25.5% ($n = 68$) had been exposed to job shadowing. The majority of the students (88%, $n = 235$) had never been interviewed for a job. These results indicate that the students in the extended degree programmes experienced some exposure to career development activities.

The mean scores and standard deviations obtained on the measures were as follows: SSDLQ ($M = 84.63, SD = 10.38$); CDSE-SF ($M = 95.34, SD = 11.59$); certainty ($M = 5.86, SD = 1.61$); indecision ($M = 32.02, SD = 9.83$). The minimum and maximum scores on the SSDLQ are 22 and 110, respectively. Higher scores reflect higher levels of self-directed learning. The maximum score on the CDSE-SF is 125, with 25 as the minimum score. Low scores indicate a low level of career decision self-efficacy and high scores indicate high levels

of career decision self-efficacy. The minimum and maximum scores on the certainty scale are 2 and 8, respectively. A low score on this measure shows that a respondent is unsure about his/her educational or career choice. A high score reflects certainty about this choice. The indecision scale has a minimum score of 16 and a maximum score of 64 on the indecision scale. Low scores on this scale indicate that the respondents do not experience problems in making career decisions, whereas high scores show that they find it difficult to make career decisions.

4.2 Relationships between self-directed learning and career constructs

Pearson's product-moment correlation coefficients were used to determine the relationships between the variables. These coefficients are presented in Table 1:

Table 1: Correlation matrix of self-directed learning and career decision constructs

Variable	SSDLQ	CDSE-SF	Certainty	Indecision
SSDLQ	1.00			
CDSE-SF	<u>0.48</u>	1.00		
Certainty	<u>0.38</u>	<u>0.44</u>	1.00	
Indecision	<u>-0.20</u>	<u>-0.35</u>	<u>-0.40</u>	1.00

Note: Correlations significant at the 0.01 level (2-tailed) are underlined.

Table 1 shows statistically significant positive relationships between self-directed learning and career decision self-efficacy ($r = 0.48, p < 0.01$), self-directed learning and certainty ($r = 0.38, p < 0.01$), and career decision self-efficacy and certainty ($r = 0.44, p < 0.01$). As expected, self-directed learning reflected a negative correlation with indecision ($r = -0.20, p < 0.01$). Statistically significant negative relationships between career decision self-efficacy and indecision ($r = -0.35, p < 0.01$) and between certainty and indecision

($r = -0.40$, $p < 0.01$) were observed. All these relationships, except the relationship between self-directed learning and indecision, can be regarded as practically meaningful.

4.3 Predictive effect of career decision self-efficacy and self-directed learning on career decision-making difficulties

A hierarchical multiple regression analysis was performed with career decision certainty as dependent variable and career decision self-efficacy and self-directed learning as independent variables. Career decision self-efficacy was entered into the regression equation first, followed by self-directed learning. With career decision self-efficacy as the only predictor, $R^2 = 0.191$, $F(1, 263) = 61.964$, $p < 0.001$. Self-directed learning explained a further 3.9% of the variance in career decision certainty, $\Delta R^2 = 0.039$, $F(1, 262) = 13.095$, $p < 0.001$. Jointly, career decision self-efficacy and self-directed learning accounted for 22.9% of the variance in career decision certainty. Inspection of the standardised regression weights, t -values, p -levels and semi-partial correlations showed that in step two of the hierarchical analysis, career decision self-efficacy ($\beta = 0.330$, $r = 0.290$, $t = 5.348$, $p < 0.001$) and self-directed learning ($\beta = 0.223$, $r = 0.196$, $t = 3.619$, $p < 0.001$) were significantly related to career decision certainty.

Another hierarchical multiple regression analysis was performed with career indecision as dependent variable, and career decision self-efficacy and self-directed learning as independent variables. Career decision self-efficacy was entered into the regression equation first and self-directed learning second. With career decision self-efficacy as the only predictor, $R^2 = 0.120$, $F(1, 264) = 36.128$, $p < 0.001$. Self-directed learning did not explain any of the variance in career indecision besides career decision self-efficacy, $\Delta R^2 = 0.002$, $F(1, 263) = 0.472$, $p = 0.493$. Jointly, career decision self-efficacy and self-directed learning accounted for 12.2% of the variance in career indecision. Inspection of the standardised regression weights, t -values, p -levels and semi-partial correlations showed that in step two of the hierarchical analysis, only career decision self-efficacy (β

= -0.325, $r = -0.286$, $t = -4.953$, $p < 0.001$) was significantly related to career indecision.

5. Discussion

This article aimed to investigate the relationship between self-directed learning and career decision-making among first-year university students in extended degree programmes. More than half of the students indicated that they had never been exposed to career guidance or assessment. This was not unexpected. The majority of the students in these programmes, as in our sample, come from previously disadvantaged communities. In South Africa, career guidance and assessment are often very expensive and therefore only available to a privileged few. Although 50% of the students indicated that they were exposed to career education at school, this result needs to be interpreted with caution. This issue referred to career education in the broadest sense and did not capture specific aspects thereof. The majority of the participants had never been in a situation where they could purposefully observe someone in a work environment. Job shadowing is often dependent on the availability of role models. Lease (2004: 240) reports that black adolescents often experience a lack of exposure to role models and this may impact negatively on their processes of career decision-making. Regarding exposure to a job interview, approximately 88% of the students responded negatively. This finding was also not unexpected as the majority of the students had only recently completed their schooling and were thus still exploring career options (Super 1990: 197-261).

In general, it appears that the participants in this study were not previously well-equipped to make career decisions. The fact that they could only choose from four programmes limited their need to make specific choices pertaining to university programmes. It is interesting to note that the majority of the students opted for a more general formative degree programme. Although the BA (Humanities) degree programme does not lead to specific career outcomes, the selection of this programme may be indicative of the students'

uncertainty that the other degrees with clearer career outcomes (for example, Journalism and Tourism Development) could meet their career needs. On the other hand, choosing a general formative degree programme with broader career outcomes provides them with more career options and may be regarded as a positive step in their career decision process.

The mean score on the Student Self-Directed Learning Questionnaire (SSDLQ) compares well with that of 815 South African university students (De Bruin 2008). The students in the present study and those in the De Bruin (2008) study showed relatively high levels of self-directed learning. In comparison with the general population, university students are expected to show higher levels of self-directed learning (Shokar *et al* 2002: 199). The mean score on the Career Decision Self-Efficacy Scale (CDSE) was relatively high and compares well with the mean score for a group of African American students (Chaney *et al* 2007: 199). This score indicates that the participants were generally of the opinion that they could successfully complete the tasks required to make good career decisions. One can almost assume that the participants in this study – of whom nearly 80% were black – have much in common with the African American students, who are regarded as belonging to an ethnic and racial minority group. Although the CDSE scores of both white and black participants were not compared in this study – due to the few white participants – it is interesting to note the results of studies in which such comparisons have been made. Chung (2002: 281) and Chaney *et al* (2007: 199) report that black American students show significantly higher levels of career decision self-efficacy than their white counterparts. Other international studies, comparing the mean CDSE scores of black and white students, yielded conflicting results. For example, in the USA, Gloria & Hird (1999: 164) found higher levels of career decision self-efficacy in white students in comparison with students from racial and ethnic minorities.

Contrary to our expectations, the participants' mean score on the certainty scale revealed above average levels of career decision certainty. This indicates that the participants seemed to have made, and felt comfortable with, their decision regarding their careers and

university majors. This certainty regarding careers and majors may be a result of the limited and forced choices related to programmes and majors. The participants may have perceived that, even if the available access programmes may not have been their first choice, at least they had the opportunity to obtain a university degree.

The mean score on the indecision scale reflected relatively average levels of career indecision, and is to some extent contrary to the above average levels of career decision certainty. As mentioned earlier, the participants indicated that they were confident in making the right career-related choices (within the limited possibilities provided by the access programmes). However, it appears that if they had to make a choice pertaining to a career or university programme on their own, they would have been more indecisive. The items on the indecision scale relate to information regarding interests, abilities and careers in general. Although the mean score on the indecision scale was relatively average and not very high, it appears that knowledge of the self and careers may lower this score. Albion & Fogarty (2002: 100) reported similar levels of indecisiveness for a group of final-year school students.

To conclude, it appears that the students in our sample believed that they had the ability to make career decisions and that they took responsibility for their own learning. Although they appeared to be quite certain that they had made the right choices pertaining to careers and majors, one should bear in mind that, owing to their not meeting the entrance requirements of the majority of the university programmes, they had no alternatives regarding a university programme.

Our findings support the hypothesis that there is a relationship between career decision self-efficacy and the two career decision difficulties constructs. The significant negative relationship with career indecision and the significant positive relationship with certainty were not surprising, as previous research in this field has reported similar results (Bergeron & Romano 1994, Betz *et al* 1996). As expected, the results also showed positive relationships between self-directed learning and career decision self-efficacy as well as self-directed learning and career certainty. It appears that individuals

who take the responsibility to learn more about a subject or area of concern (for example, university programmes or careers) believe that they can complete the required tasks in order to make a career decision (for example, obtaining relevant career information). In addition, those students who take more responsibility for their learning and development are also more certain that they have made the right educational and vocational choices.

The results of the multiple regression analyses supported previous research (*cf* Betz & Vuyten 1997: 187), indicating that career decision self-efficacy predicts career decision difficulties. In this study, career decision self-efficacy explained approximately 19% of the variance in career certainty and 12% of the variance in indecision. Self-directed learning explained nearly 4% of the variance in certainty in addition to the 19% explained by career decision self-efficacy. Self-directed learning, however, did not explain any unique variance in indecision. Although it is clear that career decision self-efficacy makes the most significant contribution to efficient career decision behaviour, the role of self-directed learning cannot be ignored.

6. Recommendations, limitations and conclusion

This research has theoretical and practical implications. First, it contributes to a better theoretical understanding of the career development of students in an era where the changing world of work requires a focus on life-long and self-directed learning. It also provides information pertaining to the usefulness of the assessment instruments across cultures in South Africa. However, although the reliability coefficients of the instruments for the sample (mostly black students) were promising, the cultural relevancy of the instruments requires further investigation. This supports Chaney *et al's* (2007: 203) recommendation for more research on measuring career decision constructs and providing career decision interventions within black samples. Although this recommendation was made in the American context, it is also relevant to the South African context. This may also address Nicolas *et al's* (2006: 2) concerns regarding the applicability of

current theories of career psychology to South Africa's cultural, socio-economic and social conditions. According to Lent *et al* (2000: 36) and Mau (2001: 353), cultural factors play an important role in career decision-making. If we fail to understand the impact of culture on the career decision process, we may arrive at inappropriate and incomplete conclusions.

On a practical level, the research may guide psychologists to design and evaluate programmes to address the career development needs of adolescents and young adults, including underprepared students in access programmes. Although this research focused on specific career decision constructs, career decision should not be regarded as a single event aimed at choosing a career but rather as an ongoing process in which the individual actively participates in constructing his/her career (Patton 2005: 22). A focus on the advancement of self-directedness in students may facilitate their responsibility in this process.

The greatest limitation of this research is the fact that it did not provide for a constructivist perspective on career decision difficulties. According to this perspective, career decision difficulties are understood in terms of the individual's context and personal stories, and not only in terms of psychological assessment instruments (Stead & Watson 2006: 104). It is recommended that future research on the career decision-making of university students in South Africa include a qualitative component where students' career decision experiences can be captured by means of in-depth interviews.

Another limitation of this study relates to the fact that the sample was drawn from only one faculty and thus not representative of the population of students in all access programmes. The results of this study can therefore not be generalised to students in access programmes other than those in the faculties of the Humanities and/or Social Sciences. In addition, the results of this study were not compared with similar results pertaining to first-year students in other university programmes. Until further research is conducted, the results of this study can therefore not be considered unique to access programme students.

To conclude, the results of this study showed that students in university access programmes may be underprepared not only in terms of the academic requirements, but also in terms of career decision-making skills. Although self-directedness in learning may influence their career decision self-efficacy and other career decision behaviours, further research needs to be conducted to gain more insight into these relationships.

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