

**THE RELATIONSHIP BETWEEN TIME PERSPECTIVE
AND CAREER MATURITY
FOR GRADE 11 AND 12 LEARNERS**

by

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Declaration

I declare that this article hereby submitted by me for the M.Soc.Sc. (Counselling Psychology) degree at the University of the Free State is my own work and has not been submitted by me at another university/faculty. I furthermore cede copyright of this article in favour of the University of the Free State.

A.M. Pieterse

Date

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The relationship between time perspective and career maturity for Grade 11 and 12 learners

Abstract

The main aim of this study was to investigate the occurrence of possible differences in the time perspective and career maturity for learners of different grades (Gr. 11 and Gr. 12), genders (male and female) and school environments (advantaged, transit and disadvantaged). The second aim was to establish whether the time perspective of learners could be used to indicate a significant percentage of variance in their career maturity.

The findings indicated that differences do exist in time perspective and career maturity for learners of different grades, genders and school environments. It was found that learners from disadvantaged schools are most focused on the future, while learners in advantaged schools are least focused on the future. Also, male learners in advantaged schools are less focused on the future than any other group. Learners from advantaged schools achieved the highest average in career maturity, while learners from disadvantaged schools achieved the lowest. It was also found that time perspective can be used to predict a significant percentage of variance in the career maturity of Gr. 11 and 12 learners.

Key words and phrases:

Time perspective, future time perspective, present time perspective, career maturity, career guidance, career decisions, adolescents, gender differences, previously disadvantaged school environment, previously advantaged school environment, attitude, transition from secondary to tertiary education.

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Tertiary education is becoming increasingly costly. Young people can hardly afford to make mistakes in their career decisions, as this could cost them too much in time and money. It seems that young people too often choose the wrong career and either continue with it only to become unfulfilled and frustrated adults, or they decide to pursue a new career and start over, with considerable financial and family life implications.

Recent research (Blustein, Phillips, Jobin-Davis, Finkelberg & Roarke, 1997; Worthington & Juntunen, 1997) describes the transition from secondary to tertiary education as a critical decision point for adolescents. According to Lens, Herrera and Lacante (2004), this transition is a very important step in both developed and developing countries, with far reaching and long lasting consequences on individual and societal levels. They believe that the most efficient way to develop young persons' abilities, and assist them in realising their true potential, is through the educational and vocational training offered in schools. However, it seems as if this is currently a profound need that should be addressed in the South African context.

The Deputy Minister of Education, Mr. Enver Surty, said in a recent speech (Surty, 2005) that socio-economic conditions, poverty, and unemployment rates encourage drop-out and low achievement in secondary schools, especially for the poor. He views this as one of the most important current challenges that South Africa, as a developing country, is facing. According to him, another challenge is the problem of ensuring coherent quality programs in vocational education. It is, therefore, of the utmost importance that research be done to help address the issue of vocational planning and education.

In previously disadvantaged communities in South Africa, educational and career planning was characterised by under-development, marginalisation, and under-

resourcing. This could have impacted negatively on these individuals' motivation towards and perspectives of their future careers. Akhurst and Mkhize (1999) noted that various studies in South Africa have emphasized the need for young people to enjoy career education.

The process of growing up involves a series of choices – about friends, values, spouses, ways of living and, especially, schooling, work and career choices. Some of these decisions are embedded in family life, customs and informal influences. Others are institutionalized and formalized thereby, such as decisions about professional careers. Grubb (2002) views these career-related decisions as a developmental process, unfolding over time.

According to Grubb (2002), career guidance is fast becoming increasingly important. The selection of an appropriate occupation is valuable not only for individual purposes, as a means of increasing satisfaction at work, earnings and stability of employment, but also for the social goals of efficiency, productivity and competitiveness. Improved career guidance is also necessary for individuals to make rational choices within expanded alternatives in the field of work. This seems to be especially relevant to the post-apartheid situation in South Africa, since previously disadvantaged individuals and groups now have expanded career choices, for which they are not adequately prepared.

The majority of researchers (Blustein & Phillips, 1994; Powell & Luzzo, 1998; Reid-Van Niekerk & Van Niekerk, 1990; Savickas, 1984, 1993) define “career maturity” as the readiness and competency of an individual to make critical career decisions. These choices are based on attitudes (Blustein & Phillips, 1994; Powell & Luzzo, 1998), on self-knowledge, knowledge of the world of educational opportunities and of the job market, and sufficient knowledge of career decision making processes (Powell & Luzzo, 1998; Savickas, 1984, 1993).

Super (1955, p.153) simply defines career maturity as “whether or not the vocational development of an individual is appropriate for his age”. In accordance with this, Heidema, Nel and Fourie (1993) view career maturity as the degree to which an

adolescent or young adult has succeeded in mastering the developmental tasks applicable to the developmental phase in which he/she has advanced. Research conducted by Seligman (1980) indicated that there was a relationship between adolescents' career maturity and their later career satisfaction, career success, reaching of potential and realism of career choices. The implication of this is that young people can be timeously prepared by parents, teachers, psychologists and the like, to master every developmental task. Furthermore, this also implies that by increasing the career maturity of young people in South Africa, individual actualization as well as societal growth can be enhanced.

Research conducted in South Africa by Reid-Van Niekerk and Van Niekerk (1990) indicated that there were differences between race or ethnic groups with regard to career maturity. They found that both coloured and black first-year university students possessed significantly lower career maturity attitudes than their white counterparts, and for them this pointed to the need for career development interventions. It is clear from the Deputy Minister of Education's speech (Surty, 2005) that this has still not been sufficiently addressed. It is important to bear in mind that the concept of ethnicity is coloured in the South African context by the socio-political dispensations of the past.

In research conducted by Patton and Creed (2001), it was found that gender differences were evident in the career maturity of Australian adolescents, as measured by Osipow's Career Decision Scale. In the attitude score, female participants had lower scores than male participants at age 13 years and higher scores at ages 15 and 17 years. In the knowledge score, female participants had higher scores than male participants at all age levels. These data generally reflected the findings in other surveys (Alvi & Khan, 1983; Herr & Enderlein, 1976; King, 1989; Lokan, 1984; Luzzo, 1995; Westbrook, 1984) in which female participants reported higher scores on career maturity measures.

Career decisions inevitably require examining present education and future occupations, or present investments and future benefits. Grubb (2002) views valuing future consequences, the willingness to trade current costs for future benefits and to postpone gratification as a sign of maturity and self-control. According to him, part of

the process of maturing involves understanding future consequences more clearly and becoming increasingly aware of careful planning. Super's (1990) conceptualization describes time perspective as one of five important dimensions of career maturity.

According to Lewin (quoted in Daltrey, 1982), "time perspective" is the totality of an individual's views of his/her psychological past, present and future. He believes it is a dynamic, learned and developmental concept which constantly changes due to personal expectations, wishes and fears about the future, as well as feelings about and views of the past. Future time perspective is, in short, defined as the present anticipation of future goals (Lens, Simons & Dewitte, 2002; Simons, Vansteenkiste, Lens & Lacante, 2004). Future time perspective suggests that the views of, and feelings about the future will affect the way in which the individual responds to his/her present situation, by influencing his/her decisions, actions and judgements (Daltrey, 1982; De Volder, 1979). The question now arises as to whether and to what extent time perspective is related to or has a direct or indirect correlation with career maturity.

According to Peetsma (2000), future time perspective is viewed as a variant of the concept *attitude*. She regards it as an attitude towards a certain object or life domain (such as professional career), over a period of time in the future. She found that different future time perspectives related to school career and professional career were good predictors of learners' investment in schoolwork and subject interest. She also found that there was a positive connection between school investment and future time perspectives regarding both school and professional careers. This is relevant to the South African situation and the concern expressed by the Deputy Minister of Education.

According to Nuttin and Lens (1985), several studies revealed restricted future time perspectives among people living in less favourable socio-economic conditions. Lens and Gailly (1980), as well as D'Alessio, Guarino, De Pascalis and Zimbardo (2003), found that the length of future time perspective correlated with socio-economic status and educational standards, and that people with lower socio-

economic status generally had a shorter future time perspective than those in the middle class. Nicholas, Pretorius and Naidoo (1999) believe that if we were to trace the career paths of the majority of South Africans, a picture of foreclosed choice and little intrinsic motivation would be revealed.

Previous research has been done on the correlation of various constructs with career maturity, as well as various constructs with time perspective. However, present literature does not shed any light on the correlation between time perspective and career maturity as such. New information in this field is thus perceived necessary. Nicholas et al. (1999) are of the opinion that research on career education has largely been conducted at tertiary institutions despite indications that it may be even more important at school level – thus the decision to conduct this research with Grade 11 and 12 learners.

Time perspective has a special importance for all individuals going through transitional periods in which they are expected to prepare themselves for the developmental tasks that lie ahead (Seginer, 2003). Therefore, this study of time perspective is especially relevant to the development of young people, as they have important life tasks ahead of them, requiring responsible decision-making abilities.

It has been recognised that future time perspective may have a profound effect on human motivation, goal setting and performance behaviour (De Volder & Lens, 1982; Nuttin, in Lens et al. 2002; Seijts, 1998). Carstensen, Isaacowitz and Charles (1999) believe that a person's perception of time plays an integral role in the selection and pursuit of social goals, with important implications for emotion, cognition and motivation. One such implication was found by Van Calster, Lens and Nuttin (1987), who found that Grade 11 and 12 learners, who rated their education as important for their future, were significantly more motivated than students who perceived their secondary school education as less important.

A present time perspective can be described as one that allows spontaneity and that has the ability to enjoy the present moment without being concerned about past or future events. Present time perspective is also linked to the possibility of being blind

to warnings, and to how current behaviour can have a negative outcome on the future. On the other hand, a future orientation helps us to seek out new challenges and opportunities by envisioning scenarios of possible future selves. It also includes an increased ability to see negative consequences, the ability to set goals as well as to develop strategies to reach long term goals (Keogh, Zimbardo & Boyd, 1999; Zimbardo, 2002). These aspects of future time perspective are vitally important in the making of career-related decisions.

Stouthard and Peetsma (1999) are of the opinion that young people direct their future time perspective towards several objects, and that it may extend into the far or near future. They believe that differences in this perspective can affect motivational qualities influencing young people's investment in their future. In relation to this, Zimbardo and Boyd (1999) believe that these learned time perspectives exert a dynamic influence on many important decisions and actions. Time perspective is, therefore, perceived as situationally determined and as a relatively stable individual-differences process.

Gender has been recognised as a variable that influences time perspective. In research conducted by Keogh et al. (1999), it was found that men reported consistently higher present scores than women. Female participants in the research also reported on having higher future scores in all of the samples when compared to their male counterparts. These results correlate with Heckel and Rajagopal's findings (1975). However, according to Keogh et al. (1999), research in this field has not yielded unanimous results. Therefore, this study attempts to further enhance the South African knowledge base that is held in this regard.

The amount of research done on this topic in South Africa is very limited (Athawale, 2004; Erasmus, 2003; Otto, 2002). Most research on time perspective has been conducted internationally and this study, therefore, aims to contribute to the pool of knowledge on future time perspective in general and its relationship with career maturity in specific, in the South African context.

The purpose of this study was to investigate and explain the relationship between time perspective and career maturity with respect to gender and school environment, in order to contribute to the field of career counselling by providing new insights into these constructs, and the relationship that might exist between them. It was hoped that this study would contribute to alleviating the concerns expressed by the Deputy Minister of Education.

For the purpose of this study, time perspective consisted of present and future time perspectives. School environment was considered within three contexts – previously advantaged schools (old model C schools) serving previously advantaged communities, previously advantaged schools (old model C schools) serving previously disadvantaged communities and previously disadvantaged schools (township schools) in previously disadvantaged communities. This study further aimed at investigating how gender and school environment related to time perspective and career maturity.

METHOD

Sample

The sample consisted of 2000 Grade 11 and 12 learners, and was representative of both males and females and of three different school environments. The school environments were divided as follows: two previously disadvantaged schools in Bloemfontein, serving previously disadvantaged communities (for the purpose of this study they will be referred to as *disadvantaged black* schools: 358 Grade 11's and 289 Grade 12's were included); two previously advantaged schools serving previously disadvantaged communities (hereafter referred to as *transit* schools: 481 Grade 11's and 373 Grade 12's); and three previously advantaged schools, serving previously advantaged communities in Bloemfontein (*advantaged* schools: 229 Grade 11's and 270 Grade 12's). The distribution of the participants in terms of grade, gender and school environment is set out in Table 1.

Table 1: Sample frequency and descriptive data according to grade, gender and school environment.

Schools	Grade 11			Grade 12		
	Male	Female	Total	Male	Female	Total
Disadvantaged	189	167	356	155	136	291
Transit	211	270	481	132	240	372
Advantaged	88	141	229	85	185	270
Total	488	578	1066	372	561	933

For one participant (transit school, Gr. 12) the gender is unknown.

Table 1 indicates that the sample was reasonably divided equally in terms of grades and gender. In terms of grade, a decline in numbers from Gr. 11 to Gr. 12 was evident, even though this was still during the first half of the year. Most learners who participated in the study came from transit schools (N=853 or 43%), 647 (32%) came from disadvantaged schools and only 499 (25%) from advantaged schools.

Procedure

Permission to conduct this study was obtained from the Free State Department of Education and the relevant principals of the identified schools. The questionnaires were administered by postgraduate psychology students and psychometrists, and participation was voluntary. As this research formed part of a longitudinal study, learners had to identify themselves on the questionnaire. However, all information was handled confidentially.

Measuring instruments

Biographical questionnaires were completed to obtain information on the different biographical variables (grade, gender and school environment). Data collection regarding the constructs *time perspective* and *career maturity* was operationalised by means of 2 instruments, namely Zimbardo's Stanford Time Perspective Inventory (ZTPI) and Langley's Career Development Questionnaire (CDQ).

(a) Time perspective

The Stanford Time Perspective Inventory (ZTPI) was standardised on a large American population, and has since been redefined numerous times through factor analyses. The process of developing the short form version of the ZTPI used in this study involved a number of attempts over the years (Gonzales & Zimbardo, 1985; Zimbardo, 1990; Zimbardo, Keough & Boyd, 1997; Keough, Zimbardo & Boyd, 1999).

This scale is based on theoretical reflection and analysis, interviews, repeated factor analyses and the unspecific attempts to increase internal consistency and factor loadings. The ZTPI was developed to provide a standard measure of time perspective with clearly demonstrable psychometric properties. (D'Alessio et al., 2003)

The shorter version assesses time perspective by means of a five-point scale that varies from 1 (very untrue of me) to 5 (very true of me). The ZTPI was originally developed to contain 3 subscales (past, present and future). For this study and the research that was published by Keough et al. (1999) as well as D'Alessio et al. (2003), only the present time perspective and future time perspective scales were used. These scales were refined by means of factor analysis and a varimax rotation to analyse the main components, and were further refined by means of Cronbach's alpha coefficient.

The items that did not correlate highly enough with the total scale, were removed. The 11 item future time perspective scale showed satisfactory internal reliability on the different items, namely 0.67. The present time perspective scale, containing 10 items, had an alpha of 0.52. The limitation in terms of the low alpha values was mainly due to the small number of items in the short form of the ZTPI (D'Alessio et al., 2003). The item in the present time perspective scale "I get drunk at parties" was left out due to overlapping with the outcome-variables.

(b) Career Maturity

The construct career maturity was operationalised by means of the 5 subscales of the Career Development Questionnaire (CDQ), namely self-knowledge, career information, decision-making, integration of self-knowledge and career information and career planning. Each subscale consists of 20 questions, and the questionnaire consists of 100 items in total. Satisfactory reliability coefficients and validity indices were found for all the groups when developing the CDQ. These groups consisted of South African high school learners and first year university students (Langley, Du Toit & Herbst, 1992). The exact coefficients are not available. Both questionnaires were

answered in English, Afrikaans or English/Sotho. In both questionnaires, raw scores were used instead of standardised scores.

The questionnaires were translated by means of the back translation method, and alpha coefficients were calculated (see Table 2). The language in which the questionnaires were completed, was taken into account for these investigations. Subsequently, this was done separately for each language: Afrikaans only, English only and both English/Sotho. This was done by means of Cronbach's alpha coefficient, and by using the SPSS-computer program (SPSS Incorporated, 2001). The results are set out in Table 2.

Table 2: Alpha coefficients regarding the subscales of time perspective and career maturity

Scale	a-coefficient		
	Afrikaans	English	Eng/Sotho
Time perspective:			
➤ Future	0,654	0,778	0,681
➤ Present	0,559	0,668	0,523
Career maturity:			
➤ Self-information	0,682	0,653	0,542
➤ Decision making	0,790	0,811	0,717
➤ Career information	0,789	0,794	0,743
➤ Integration (selfinformation and career information)	0,731	0,664	0,676
➤ Career planning	0,752	0,787	0,660

The scales showed reasonably acceptable internal consistency, compared to those reported by D'Alessio et al. (2003), with the exception of: the Afrikaans and English/Sotho groups, regarding the present scale of time perspective, and the self-information scale of career maturity in the English/Sotho group. The fact that the reliability of the English group is higher than the Afrikaans group, and especially than the English/Sotho group, holds the possibility that the scales provided non-equivalent scores for the three groups. Also, it could be expected that the observed correlations between the variables could be significantly smaller than the real correlations, in those cases where the reliabilities are not acceptable.

Research aim

The initial aim of this study was to investigate the occurrence of possible differences in the time perspective scores and career maturity scores for learners of different grades (Gr.11 and Gr.12), gender (male and female) and school environment (advantaged, transit and disadvantaged). The second aim was to establish whether the time perspective of learners could be used to indicate a significant percentage of variance in their career maturity.

Statistical procedures

Regarding the first aim of this study, it is clear that three independent variables (grade, gender and school environment) and several dependent variables (2 scales for time perspective and 5 scales for career maturity) are at stake. According to Howell (2002), a multivariate analysis of variance (MANOVA) would be the best statistical technique to use in this case. The three independent variables were first analysed for 3 main effects in the analyses, but the interaction between the three main effects was also investigated. If a significant result (*F*-value) was obtained by means of the MANOVA analysis, then the analysis was followed up by a single variance analysis for each of the 7 dependent variables. Due to the fact that some of the independent variables (school environment as well as the interactions) consisted of more than two sub-groups, the Scheffé-procedure was used to establish which of the differences between the sub-groups' average scores were statistically significant.

Effect sizes were calculated as an indicator of practical significance, by using Cohen's indices (Steyn 1999). All the results that followed were obtained by means of the SAS-computer program (SAS Institute, 2003).

RESULTS AND DISCUSSION

Prior to investigating the first research question, the descriptive statistics (averages and standard deviations) were calculated for each dependent variable for the total sample. These are provided in Table 3.

Table 3: Averages and standard deviations for the total sample

Variable	N	\bar{X}	s
Time perspective:			
➤ Future	1892	41,23	6,55
➤ Present	1912	28,63	5,75
Career maturity:			
➤ Self-information	1833	14,05	2,80
➤ Decision -making	1797	13,65	3,62
➤ Career information	1852	12,77	3,96
➤ Integration (selfinformation and career information)	1864	14,05	3,29
➤ Career planning	1861	12,77	3,47

Time perspective:

Table 3 indicates that the total sample scored higher in future time perspective than in present time perspective. The ZTPI was not standardized for the South African population and no South African norms were available for this instrument.

Career maturity:

In comparison with the norm group of the original 1988 test group for the development of the CDQ, it is evident from Table 3 that this group attained lower averages on all the career maturity scales except for career information, in which they attained the same average than the norm group. This implies that this sample group attained a lower score on career maturity, compared to the norm group. All local population groups were included in the norm group. The norm group consisted of male and female learners from Gr. 10 and Gr. 12, representing English, Afrikaans as well as African Languages as the learners' home language.

First research question

In order to establish whether there were differences for learners in terms of the three independent variables (grade, gender and school environment) with regard to the mentioned dependent variables, a multivariate analysis of variance (MANOVA) was performed. Except for the main effects, the interactions were also investigated and the results are provided in Table 4.

Table 4: MANOVA F-values for the test of main effects and interactions

Independent variable	F-value+	n	p
Grade (GD)	2,83**	7; 1381	0,0062
Gender (GR)	6,08**	7; 1380	0,0001
School environment (SE)	36,22**	14; 2204.6	0,0001
GD * GR	17,72**	35; 3903.7	0,0001
GD * SE	15,71**	35; 3906.5	0,0001
GR * SE	3,27**	21; 2874.6	0,0001

* $p \leq 0,05$

** $p \leq 0,01$

+ Hotelling-Lawley test size was used

Differences in the averages of the dependent variables for all three of the main effects as well as for the three interactions are evident from Table 4. In every case the differences in the averages were significant at the 1% level. With reference to grade and gender, only two groups were prevalent but, in the case of school environment and its interactions, there were three or more groups. In this case, the Scheffé test was used to establish the differences between the groups. In order to establish for which dependent variables there were significant differences in the averages, one way analyses of variance were performed. Due to the fact that seven subscales were at stake, it was preferable that the p -value of each comparison had to be at least 0,0014 ($0,01 \div 7$) in order to be significant at the multiple 1% level, and 0,0071 ($0,05 \div 7$) to be significant at the multiple 5% level.

The results of the analyses of variance are discussed for the three main effects and thereafter for the interactions. The results for the different grades are indicated in Table 5. Effect sizes (f) are also indicated for the statistically significant results, and only the results with an effect size of 0,25 (medium) and larger will be interpreted.

Table 5: Results of the analysis of variance with grade as independent variable

Dependent variable	Grade 11		Grade 12		F	P	f
	\bar{X}	S	\bar{X}	s			
Time perspective:							
➤ Future	40,99	6,64	41,49	6,44	1,54	0,2155	
➤ Present	28,74	5,83	28,52	5,66	0,03	0,8701	
Career maturity:							
➤ Self-information	13,89	2,77	14,23	2,81	3,24	0,0721	
➤ Decision-making	13,47	3,54	13,86	3,69	4,14	0,0422	
➤ Career information	12,39	3,84	13,20	4,05	15,60**	0,0001	0,11
➤ Integration (selfinfo and career info)	13,75	3,25	14,38	3,32	11,33**	0,0008	0,09
➤ Career planning	12,45	3,38	13,14	3,55	14,15**	0,0002	0,10

* $p \leq 0,05$ (0,0071)

** $p \leq 0,01$ (0,0014)

Table 5 indicates significant differences (at the 1% level) between the two grades in the averages for three of the five career maturity scales, namely career information, integration and career planning. The relevant effect sizes are small and, subsequently, the differences will not be discussed further. No statistically significant differences in averages were found for the two groups regarding time perspective (future or present). The results of the analysis of variance with gender as independent variable are indicated in Table 6.

Table 6: Results of the analysis of variance with gender as independent variable

Dependent variable	Male		Female		F	p	f
	\bar{X}	S	\bar{X}	s			
Time perspective:							
➤ Future	40,74	6,77	41,59	6,36	6,93	0,0086	
➤ Present	29,20	6,03	28,20	5,50	7,14	0,0076	
Career maturity:							
➤ Self-information	13,64	2,73	14,35	2,81	17,68**	0,0001	0,11
➤ Decision-making	13,37	3,61	13,87	3,61	4,65	0,0311	
➤ Career information	12,62	3,74	12,88	4,12	1,13	0,2879	
➤ Integration (selfinfo and career info)	13,64	3,20	14,36	3,33	14,92**	0,0001	0,10
➤ Career planning	12,70	3,38	12,83	3,55	0,26	0,6077	

* p <= 0,05 (0,0071)

** p <= 0,01 (0,0014)

According to the results in Table 6, differences for two of the career maturity scales (self-information and integration) are indicated. These differences for males and females are significant at the 1% level. The corresponding effect sizes are small and the results are of little practical value. The results regarding the three school environments are indicated in Table 7.

Table 7: Results of the analysis of variance with school environment as independent variable

Dependent variable	School environment						F	p	F
	Advantaged (group 1)		Transit (group 2)		Disadvantaged black (group 3)				
	\bar{X}	s	\bar{X}	s	\bar{X}	s			
Time perspective:									
➤ Future	38,94	6,36	41,29	6,34	43,00	6,43	45,07**	0,0001	0,26
➤ Present	29,36	5,41	28,36	5,75	28,43	5,96	5,50*	0,0042	0,09
Career maturity:									
➤ Self-Information	14,90	3,00	14,22	2,72	13,11	2,44	43,01**	0,0001	0,25
➤ Decision-Making	14,39	3,86	13,83	3,48	12,77	3,42	21,81**	0,0001	0,18
➤ Career Information	13,78	4,03	12,73	4,19	12,01	3,35	20,56**	0,0001	0,17
➤ Integration	15,73	3,03	14,39	3,19	12,19	2,69	127,32**	0,0001	0,43
➤ Career Planning	14,18	3,62	12,80	3,40	11,62	3,01	54,29**	0,0001	0,28

* p <= 0,05 (0,0071)

** p <= 0,01 (0,0014)

According to the results in Table 7, there are differences for the time perspective scales (future and present), as well as for all five career maturity scales for the three school environments. These are significant at the multiple 5% or 1% level. The corresponding *f*-values indicate that the results regarding future time, self-information and career planning are of medium effect size, while the results for integration indicate a large effect size. The other statistically significant results indicate only a small effect size, and will not be discussed further.

Post hoc t-tests were used by means of the Scheffé procedure to establish which of the three groups' averages differed significantly from each other. According to these results, significant differences were evident in the averages of all three groups regarding *future time perspective*, *self-information*, *integration* and *career planning*. In Table 7 it could be seen that group 1 (advantaged) had a higher average in comparison to the other two groups for the career maturity scales *self-information*, *career planning* and *integration*. Even though group 2 showed a lower average than group 1 on the three scales, group 2 showed higher average scores in comparison with group 3. It is striking that in comparison to the other 2 groups, group 3 showed a higher average score on the variable *future time perspective*. Subsequently, an analysis of variance was used to investigate the significant interactions. The results

are discussed below. Table 8 indicates the results of the interaction between gender and school environment.

Table 8: Analysis of variance of the interaction between gender and school environment as independent variable

Dependent variable	F-value	p	f
Time perspective:			
➤ Future	26,71 **	0,0001	0,31
➤ Present	4,82**	0,0002	0,13
Career maturity:			
➤ Self-information	20,22 **	0,0001	0,27
➤ Decision-making	9,71**	0,0001	0,19
➤ Career information	8,36**	0,0001	0,17
➤ Integration	52,76 **	0,0001	0,44
➤ Career planning	24,35 **	0,0001	0,30

* p <= 0,05 (0,0071)

** p <= 0,01 (0,0014)

The results in Table 8 indicated interaction effects of gender and school environment for both the time perspective scales and the five career maturity scales. All of these effects were significant on the multiple 1% level. In relation to future time, self-information, integration and career planning medium to large effect sizes were present, and the analysis was followed up only for these variables. Due to the fact that, in this case, six groups were at stake, the analysis was followed by post hoc *t*-tests (namely the Scheffé procedure). The post hoc *t*-tests regarding the six groups were done for the four dependent variables, and the results are shown in Table 9.

Table 9: Scheffé-results regarding the dependent variables, with the interaction between gender and school environment as independent variable

Groups that differ	Group	\bar{X}	S
		Future time perspective	
Group 1 from 2,3,4,5,6 Group 2 from 4,5,6 Group 3 from 4,5,6	1	37,44	6,91
	2	39,74	5,89
	3	39,91	6,53
	4	42,20	6,04
	5	43,41	5,89
	6	42,56	6,94
		Self-information	
Group 2 from 3 Group 5 from 1,2,3,4 Group 6 from 1,2,3,4	1	14,26	2,95
	2	15,24	2,98
	3	13,95	2,64
	4	14,40	2,75
	5	12,97	2,56
	6	13,26	2,29
		Integration	
Group 3 from 1,2 Group 4 from 2 Group 5 from 1,2,3,4 Group 6 from 1,2,3,4	1	15,33	3,05
	2	15,95	2,99
	3	14,08	3,19
	4	14,61	3,18
	5	12,25	2,68
	6	12,12	2,71
		Career planning	
Group 3 from 1,2 Group 4 from 1,2 Group 5 from 1,2 Group 6 from 1,2,3,4	1	14,12	3,76
	2	14,21	3,55
	3	12,67	3,36
	4	12,89	3,43
	5	12,02	2,95
	6	11,17	3,01

Group 1: Advantaged- male

Group 2: Advantaged- female

Group 3: Transit - male

Group 4: Transit - female

Group 5: Disadvantaged - male

Group 6: Disadvantaged - female

Future time perspective:

According to the averages, male learners in advantaged schools have a significantly lower average than the other five groups. This is indicative that they, compared to the other five groups, were less focused on the future. Furthermore, it was evident from Table 9 that advantaged females and transit males (group 2 and 3) had a significantly lower average future time perspective compared to transit females and disadvantaged males and females (group 4, 5 and 6).

Self-information:

The averages indicate that both males and females in disadvantaged schools have significantly lower averages than the other groups (advantaged males and females and transit males and females). This indicates that they, in comparison with the other groups, are less self-informed. Furthermore, Table 9 indicates that females in

advantaged schools (group 2) have significantly higher average self-information scores compared to males in transit schools (group 3). This indicates that females in advantaged schools are more self-informed, in comparison to males in transit schools.

Integration:

Males and females in disadvantaged schools (group 5 and 6) have significantly lower averages with regard to integration of self-information and career information, compared to the other groups. Table 9 also indicates that female learners in transit schools (group 4) have a significantly lower average on integration in comparison with female learners from advantaged schools (group 2). Also, it appears that males from transit schools (group 3) have a significantly lower average on integration, in comparison with males and females in advantaged schools (group 1 and 2).

Career planning:

The averages indicate that female learners in disadvantaged schools (group 6) have a significantly lower average with regard to career planning, compared to males and females in both advantaged and transit schools (group 1 – 4). Table 9 also indicates that males and females in transit schools and males in disadvantaged schools (group 3, 4 and 5) have significantly lower average scores on career planning, in comparison to males and females in advantaged schools (group 1 and 2).

The results of the interaction between grade and school environment are indicated in Table 10.

Table 10: Analysis of variance of the interaction between grade and school environment as independent variables

Dependent variable	F-value	p	f
Time perspective:			
➤ Future	19,13**	0,0001	0,26
➤ Present	2,55	0,0263	
Career maturity:			
➤ Self-information	18,47**	0,0001	0,26
➤ Decision-making	10,00**	0,0001	0,19
➤ Career information	10,83**	0,0001	0,20
➤ Integration	53,43**	0,0001	0,44
➤ Career planning	23,83**	0,0001	0,29

* p <= 0,05 (0,0071)

** p <= 0,01 (0,0014)

The results in Table 10 indicate that the interaction effect of grade and school environment is significant for the future time perspective scale, as well as for the five career maturity scales. These effects are all significant at the 1% level. Regarding future time, self-information, integration and career planning, medium to large effect sizes are prevalent and the analysis was followed up only for these variables. Due to the fact that six groups were involved, the analysis was followed up by means of post hoc *t*-tests (the Scheffé-test). The post hoc *t*-results regarding the six groups are indicated in Table 11.

Table 11: Scheffé-results regarding the dependent variables with the interaction between grade and school environment as independent variables

Groups that differ	Group	\bar{X}	S
		Future time perspective	
Group 1 from 3,4,5,6 Group 2 from 4,5,6 Group 3 from 5,6	1	38,67	6,37
	2	39,17	6,35
	3	40,93	6,39
	4	41,75	6,25
	5	42,65	6,70
	6	43,43	6,07
		Self-information	
Group 3 from 1 Group 5 from 1,2,3,4 Group 6 from 1,2,3,4	1	14,97	2,98
	2	14,85	3,03
	3	14,03	2,65
	4	14,47	2,79
	5	12,93	2,48
	6	13,31	2,37
		Integration	
Group 3 from 1,2 Group 4 from 1,2 Group 5 from 1,2,3,4 Group 6 from 1,2,3,4	1	15,48	3,00
	2	15,95	3,04
	3	14,29	3,08
	4	14,52	3,33
	5	11,79	2,61
	6	12,66	2,71
		Career planning	
Group 3 from 1,2 Group 4 from 2 Group 5 from 1,2,3,4 Group 6 from 1,2,4	1	13,88	3,50
	2	14,42	3,70
	3	12,48	3,42
	4	13,21	3,34
	5	11,48	2,86
	6	11,81	3,18

Group 1: Advantaged– Gr. 11

Group 4: Transit – Gr. 12

Group 2: Advantaged– Gr. 12

Group 5: Disadvantaged – Gr. 11

Group 3: Transit – Gr. 11

Group 6: Disadvantaged – Gr. 12

Future time perspective:

Significant differences are evident for the future time perspective of the Gr. 11 learners in advantaged schools, compared to group 3, 4, 5 and 6. According to the averages, Gr. 11 learners in advantaged schools have a significantly lower average

than Gr. 11 and 12 learners in transit and disadvantaged schools. This indicates that they, compared to the afore-mentioned groups, are less focused on the future. Gr. 12 learners from advantaged schools have a significantly lower average score compared to Gr. 12 learners in transit schools, and Gr. 11 and 12 learners in disadvantaged schools (group 4, 5 and 6). This indicates that Gr. 12 learners in advantaged schools are less focused on the future, compared to the other groups. Furthermore, Table 11 indicates that Gr. 11 learners in transit schools (group 3) have a significantly lower average in comparison to Gr. 11 and 12 learners in disadvantaged schools (group 5 and 6).

Self-information:

It is evident from Table 11 that Gr. 11 and 12 learners from disadvantaged schools (group 5 and 6) have a significantly lower average than the other four groups. This indicates that they, compared to the other four groups, are less self-informed. Table 11 also indicates that Gr. 11 learners in transit schools (group 3) have a significantly lower average than Gr. 11 learners in advantaged schools (group 1).

Integration:

According to the averages, Gr. 11 and 12 learners in disadvantaged schools (group 5 and 6) have a significantly lower average than the other four groups. This indicates that they, compared to the other four groups, are less focused on integration. Table 11 also indicates that Gr. 11 and 12 learners in transit schools (group 3) have significantly lower averages compared to Gr. 11 and 12 learners in advantaged schools (group 1 and 2).

Career Planning:

It is evident from Table 11 that Gr. 12 learners in disadvantaged schools (group 6) have a significantly lower average compared to Gr. 11 and 12 learners in advantaged schools, and Gr. 12 learners in transit schools (group 1, 2 and 4). This indicates that Gr. 12 learners in disadvantaged schools are less focused on career planning than the other groups mentioned. Table 11 also indicates that Gr. 11 learners from disadvantaged schools (group 5) have a significantly lower average score on career planning in comparison with Gr. 11 and 12 learners in advantaged and transit schools (group 1 – 4). Gr. 12 learners in transit schools (group 4) have a significantly lower average compared to Gr. 12 learners in advantaged schools (group 2).

Furthermore, Table 11 indicates that Gr. 11 learners in transit schools (group 3) have a significantly lower average compared to Gr. 11 and 12 learners in advantaged schools (group 1 and 2). This indicates that Gr. 11 learners in transit schools are more focused on career planning compared to Gr. 11 and 12 learners in advantaged schools.

The results for the interaction between grade and gender as independent variable are indicated in Table 12.

Table 12: Analysis of variance of the interaction between grade and gender as independent variables

Dependent variable	F-value	p	F
Time perspective:			
➤ Future	2,70	0,0443	
➤ Present	2,83	0,0375	
Career maturity:			
➤ Self-information	7,34**	0,0001	0,12
➤ Decision-making	3,42	0,0167	
➤ Career information	6,21**	0,0003	0,11
➤ Integration	9,48**	0,0001	0,14
➤ Career planning	5,02*	0,0018	0,10

* p <= 0,05 (0,0071)

** p <= 0,01 (0,0014)

According to the results in Table 12, the interaction between grade and gender indicates significant effects for four of the career maturity scales. All of these differences are significant at the multiple 1% level, with the exception of career planning. However, the corresponding effect sizes are small and it can therefore be accepted that the results are not of practical value. No follow-up was done with the post hoc comparisons.

Summary of main findings for first research question

With reference to the question as to whether possible differences exist in time perspective and career maturity scores for learners in different grades, gender and school environments, the following main findings (significant differences) were evident:

- (a) Learners from disadvantaged schools are the most focused on the future, while learners from transit schools are the second most focused, and learners from advantaged schools are least focused on the future.

- (b) Learners from advantaged schools obtained the highest average in three of the career maturity scales, namely self-information, integration and career planning. Learners from transit schools obtained the second highest average in these three scales and learners from disadvantaged schools, the lowest.
- (c) Male learners in advantaged schools are less focused on the future, compared to all the other groups.
- (d) Males and females in disadvantaged schools are less self-informed, compared to the other groups.
- (e) Males and females in disadvantaged schools are less integrated in terms of self-information and career information, compared to all the other groups.
- (f) Females in disadvantaged schools are less focused on career planning than the other groups, with the exception of disadvantaged males.
- (g) Gr. 11 learners in advantaged schools are less focused on the future, compared to all the other groups.
- (h) Disadvantaged Gr. 11 and 12 learners are less self-informed than all the other groups.
- (i) Both grades (Gr. 11 and 12) in disadvantaged schools are less integrated than the other 4 groups, and both grades in transit schools are less integrated than both grades in advantaged schools.
- (j) Both grades in disadvantaged schools are less focused on career planning than both grades in advantaged schools and Gr. 12 learners in transit schools. Gr. 11 learners in disadvantaged schools are less focused on career planning than all the other groups, with the exception of Gr. 12 learners in disadvantaged schools.

Second research question

Next, the results pertaining to the second research aim will be discussed: can time perspective be used to predict a significant percentage of variance in the career maturity of Gr. 11 and 12 learners? This was investigated for grade, gender and the three school environments separately. Time perspectives (future and present) are the predictor variables, while the five career maturity variables (self-information, decision making, career information, integration and career planning) are the criteria. The correlation was calculated by means of Pearson's product moment correlation coefficients and the results for the two grades appear in Table 13.

Table 13: Inter-correlations between predictor variables and criteria variables for Gr. 11 and Gr. 12

Variables	Grade 11		Grade 12	
	FTP	PTP	FTP	PTP
Self-information	0,22**	-0,26**	0,21**	-0,20**
Decision making	0,28**	-0,26**	0,28**	-0,16**
Career information	0,27**	-0,17**	0,21**	-0,08*
Integration	0,07*	-0,16**	0,10**	-0,11**
Career planning	0,15**	-0,20**	0,14**	-0,10**
Future time (FTP)	-	-0,10**	-	-0,02

Note: FTP = future time perspective; PTP = present time perspective

** p <= 0,01

* p <= 0,05

The correlation coefficients indicate that significant correlation exists between time perspective (future as well as present) and the five career maturity scales. This relates to both Gr. 11 and Gr. 12 learners. With regard to future time perspective, all the coefficients are positive, while all are negative for present time perspective. It is clear that the two predictor variables correlate significantly for Gr. 11 (negatively and low), and not for Gr. 12 learners.

Next, the degree to which time perspective explains the variance in learners' level of career maturity was investigated. The contribution of the two predictors together, as well as of the specific predictor to the R² value was investigated. For this the hierarchical regression analysis and F-test was used. In order to obtain an indication of the practical significance of the results, effect sizes (f^2) were calculated. The guideline values that should be used in this case, according to Cohen (In Steyn, 1999), is 0,02 as small, 0,15 as medium and 0,35 as large effect sizes. Only those results with a medium or large effect size will be discussed. The results of the hierarchical regression analysis for the two grades are indicated in Table 14.

Table 14: Contributions of the two time perspective factors to the explanation of the variance in career maturity of Gr. 11 and Gr. 12 learners

Variable in analysis	Variable left out	Grade 11				Grade 12			
		R ²	Contribution to R ²	F	f ²	R ²	Contribution to R ²	F	f ²
Self-information									
1. ftp+ptp	-	0,1031				0,0794			
2. ftp	ptp	0,0500	0,0531	5,31*	0,06	0,0422	0,0372	3,72	
3. ptp	ftp	0,0652	0,0379	3,79		0,0406	0,0388	3,88*	0,04
Decision making									
1. ftp+ptp	-	0,1265				0,0979			
2. ftp	ptp	0,0759	0,0506	5,06*	0,06	0,0772	0,0207	2,07	
3. ptp	ftp	0,0688	0,0577	5,77*	0,07	0,0271	0,0708	7,08**	0,08
Career information									
1. ftp+ptp	-	0,0923				0,0469			
2. ftp	ptp	0,0730	0,0193	1,93		0,0429	0,0040	0,40	
3. ptp	ftp	0,0291	0,0632	6,32*	0,07	0,0070	0,0399	3,99*	0,04
Integration									
1. ftp+ptp	-	0,0235				0,0204			
2. ftp	ptp	0,0047	0,0188	1,88		0,0096	0,0108	1,08	
3. ptp	ftp	0,0233	0,0002	0,02		0,0118	0,0086	0,86	
Career planning									
1. ftp+ptp	-	0,0510				0,0290			
2. ftp	ptp	0,0227	0,0283	2,83		0,0193	0,0097	0,97	
3. ptp	ftp	0,0385	0,0125	1,25		0,0098	0,0192	1,92	

Note: ftp=future time perspective; ptp=present time perspective

* p <= 0,05

** p <= 0,01

Grade 11:

The two predictors (future and present) *together* explain a significant percentage of variance in self-information (10,31%; $F_{2,901} = 51,79$; $p = 0,0001$); decision making (12,65%; $F_{2,881} = 63,78$; $p = 0,0001$); career information (9,23%; $F_{2,902} = 45,86$; $p = 0,0001$); integration (2,35%; $F_{2,912} = 10,98$; $p = 0,0001$) and career planning (10,31%; $F_{2,905} = 5,10$; $p = 0,0001$) for Gr. 11 learners. As shown in the results, all the calculated R² values are significant at the 1% level.

When the contributions of the *individual* predictors for R² for the different criteria were investigated, it became clear that significant contributions do exist at the 5% level. These individual contributions all show a small effect size and will not be further discussed.

Grade 12:

The two predictors (future and present) together explain a significant percentage of variance in self-information (7,94%; $F_{2,794} = 34,23$; $p = 0,0001$); decision making (9,79%; $F_{2,783} = 42,50$; $p = 0,0001$); career information (4,69%; $F_{2,805} = 19,82$; $p = 0,0001$); integration (2,04%; $F_{2,814} = 8,47$; $p = 0,0002$) and career planning (2,90%;

$F_{2;804} = 12,01$; $p = 0,0001$) for Gr. 12 learners. As shown in the results, all the calculated R^2 values are significant at the 1% level.

When the contributions of the *individual* predictors for R^2 for the different criteria were investigated, it became clear that significant contributions do exist at the 5% level. These individual contributions all show a small effect size and will not be further discussed. The inter-correlations between the predictor and criteria variables for males and females are indicated in Table 15.

Table 15: Inter-correlations between predictor and criteria variables for males and females

Variable	Male		Female	
	FTP	PTP	FTP	PTP
Self-information	0,25**	-0,28**	0,18**	-0,18**
Decision -making	0,21**	-0,25**	0,32**	-0,18**
Career information	0,24**	-0,17**	0,24**	-0,11**
Integration	0,03	-0,13**	0,11**	-0,13**
Career planning	0,13**	-0,19**	0,16**	-0,12**
Future time (FTP)	-	-0,13**	-	-0,01

** $p \leq 0,01$

* $p \leq 0,05$

The correlation coefficients in Table 15 indicate that significant correlations exist between time perspectives (future as well as present) and the five career maturity scales, for both males and females at the 1% level. With regard to future time all coefficients are positive, while for present time all coefficients are negative. Furthermore, it is clear that the two predictor variables significantly correlate (negatively) for males, but not for females. The results of the hierarchical regression analysis for the two genders are indicated in Table 16.

Table 16: Contributions of the two time perspective factors to the explanation of variance in career maturity of male and female learners

Variable in analysis	Variable left out	Male				Female			
		R ²	Contribution to R ²	F	p ²	R ²	Contribution to R ²	F	p ²
		Self-information							
1. ftp+ptp	-	0,1219				0,0649			
2. ftp	ptp	0,0598	0,0621	6,21*	0,07	0,0337	0,0312	3,12	
3. ptp	ftp	0,0782	0,0437	4,37*	0,05	0,0325	0,0324	3,24	
		Decision-making							
1. ftp+ptp		0,0880				0,1360			
2. ftp	ptp	0,0458	0,0422	4,22*	0,05	0,1046	0,0314	3,14	
3. ptp	ftp	0,0617	0,0263	2,63		0,0338	0,1022	10,22**	0,12
		Career information							
1. ftp+ptp		0,0757				0,0661			
2. ftp	ptp	0,0575	0,0182	1,82		0,0585	0,0075	0,75	
3. ptp	ftp	0,0280	0,0477	4,77*	0,05	0,0104	0,0557	5,57*	0,06
		Integration							
1. ftp+ptp		0,0145				0,0279			
2. ftp	ptp	0,0012	0,0133	1,33		0,0128	0,0151	1,51	
3. ptp	ftp	0,0144	0,0001	0,01		0,0159	0,0120	1,20	
		Career planning							
1. ftp+ptp		0,0431				0,0415			
2. ftp	ptp	0,0162	0,0269	2,69		0,0270	0,0145	1,45	
3. ptp	ftp	0,0378	0,0053	0,53		0,0134	0,0281	2,81	

Note : [ftp=future time perspective; ptp=present time perspective]

* p <= 0,05

** p <= 0,01

Male:

The two predictors *together* (future and present) show a significant percentage of variance in self-information (12,19%; $F_{2;715} = 49,64$; $p = 0,0001$); decision-making (8,80%; $F_{2;713} = 34,40$; $p = 0,0001$); career information (7,57%; $F_{2;715} = 29,30$; $p = 0,0001$); integration (1,45%; $F_{2;735} = 5,43$; $p = 0,0046$) and career planning (4,31%; $F_{2;725} = 16,34$; $p = 0,0001$) for male learners. As shown in the results, all the calculated R² values are significant at the 1% level.

When the contributions of the *individual* predictors for R² for the different criteria were investigated, it became clear that significant contributions do exist at the 5% level. These individual contributions all show a small effect size, and will not be further discussed.

Female:

The two predictors *together* (future and present) show a significant percentage of variance in self-information (6,49%; $F_{2;979} = 33,95$; $p = 0,0001$); decision making (13,60%; $F_{2;950} = 74,77$; $p = 0,0001$); career information (6,61%; $F_{2;991} = 35,09$; $p =$

0,0001); integration (2,79%; $F_{2,990} = 14,22$; $p = 0,0001$) and career planning (4,15%; $F_{2,983} = 21,29$; $p = 0,0001$) for female learners. As shown in the results, all the calculated R^2 values are significant at the 1% level.

When the contributions of the *individual* predictors for R^2 for the different criteria were investigated, it became clear that with regard to *decision-making*, the predictor future time perspective on its own contributed 10,22% to the variance. This contribution is significant at the 1% level and the corresponding effect size indicates that this result is of average practical value. The other individual contributions show a small effect size and will not be further discussed. The inter-correlations between the predictor and criteria variables for the three school environments are indicated in Table 17.

Table 17: Inter-correlations between predictor and criteria variables for the three school environments

Variable	Advantaged		Transit		Disadvantaged black	
	FTP	PTP	FTP	PTP	FTP	PTP
Self-information	0,36**	-0,19**	0,32**	-0,33**	0,16**	-0,19**
Decision-making	0,38**	-0,15**	0,37**	-0,29**	0,22**	-0,23**
Career information	0,34**	-0,15**	0,27**	-0,18**	0,30**	-0,07
Integration	0,26**	-0,12**	0,21**	-0,24**	0,17**	-0,10*
Career planning	0,30**	-0,12**	0,23**	-0,22**	0,17**	-0,16**
Future time (FTP)	-	-0,21**	-	-0,18**	-	0,23**

** $p \leq 0,01$

* $p \leq 0,05$

The correlation coefficients in Table 17 indicate significant correlations between time perspective (positive for the future and negative for the present) and the five career maturity scales, for learners in advantaged and transit schools, at the 1% level. For disadvantaged black learners significant positive correlations are indicated between future time and the five career maturity scales, at the 1% level. However, for these learners significant negative correlations are indicated between present time and three of the career maturity scales, namely self-information, decision-making and career planning, at the 1% level. With regard to present time and integration the correlation is significant at the 5% level, while no statistically significant correlation exists between present time and career information.

What is especially significant is the correlation between future and present time perspectives. For those learners in advantaged and transit schools, a significant negative correlation is indicated at the 1% level, while for the learners in

disadvantaged black schools, a significant positive correlation is indicated. The results of the hierarchical regression analysis for the three school environments are indicated in Table 18.

Table 18: Contributions of the different time perspective factors to the explanation of the variance in career maturity for learners in different school environments

Variables in analysis	Variable left out	Advantaged				Transit				Disadvantaged black			
		R ²	Contrt o R ²	F	p	R ²	Contrt o R ²	F	p	R ²	Contrt o R ²	F	p
Self-information													
1. ftp+ptp	Ptp ftp	0,1456				0,1838				0,0772			
2. ftp		0,1326	0,0130	6,5*	0,02	0,1007	0,0831	8,3**	0,10	0,0259	0,0513	25,7**	0,06
3. ptp		0,0344	0,1112	55,6**	0,13	0,1117	0,0721	7,2**	0,09	0,0361	0,0411	20,6**	0,04
Decision-making													
1. ftp+ptp	ptp ftp	0,1497				0,1861				0,1214			
2. ftp		0,1443	0,0054	2,7		0,1381	0,0480	4,8*	0,06	0,0496	0,0718	35,9**	0,08
3. ptp		0,0221	0,1276	63,8**	0,15	0,0815	0,1046	10,5**	0,13	0,0538	0,0676	33,8**	0,08
Career information													
1. ftp+ptp	ptp ftp	0,1252				0,0868				0,1061			
2. ftp		0,1131	0,0121	6,5*	0,01	0,0719	0,0149	1,5		0,0907	0,0154	7,7**	0,02
3. ptp		0,0229	0,1023	51,2**	0,12	0,0334	0,0534	5,3*	0,06	0,0052	0,1009	50,5**	0,11
Integration													
1. ftp+ptp	ptp ftp	0,0782				0,0810				0,0446			
2. ftp		0,0700	0,0082	4,1*	0,01	0,0424	0,0386	3,9*	0,05	0,0287	0,0159	7,9**	0,02
3. ptp		0,0155	0,0627	31,4**	0,07	0,0575	0,0235	2,4		0,0104	0,0342	17,1**	0,04
Career planning													
1. ftp+ptp	ptp ftp	0,0961				0,0799				0,0670			
2. ftp		0,0898	0,0063	3,2		0,0513	0,0286	2,9		0,0290	0,0380	19,0**	0,04
3. ptp		0,0151	0,0810	40,5**	0,09	0,0489	0,0310	3,1		0,0245	0,0425	21,3**	0,05

Note: ftp=future time perspective; ptp=present time perspective

* p <= 0,05

** p <= 0,01

Advantaged schools:

Table 18 indicates that the two predictors (future and present) *together* explain a significant percentage of variance in self-information (14,56%; $F_{2;444} = 37,82$; $p = 0,0001$); decision-making (14,97%; $F_{2;440} = 38,72$; $p = 0,0001$); career information (12,52%; $F_{2;447} = 31,98$; $p = 0,0001$); integration (7,82%; $F_{2;454} = 19,26$; $p = 0,0001$) and career planning (9,61%; $F_{2;446} = 23,70$; $p = 0,0001$) for learners in advantaged schools. As shown in the results, all the calculated R² values are significant at the 1% level.

When the contributions of the *individual* predictors for R² for the different criteria were investigated, it became clear that with regard to self-information, decision-making and career information, the predictor future time perspective on its own contributed 11,12%; 12,76% and 10,23% respectively to the variance. These contributions were significant at the 1% level and the corresponding effect sizes indicated that these

results were of average practical value. The other individual contributions showed a small effect size and will not be further discussed.

Transit schools:

Table 18 indicates that the two predictors (future and present) *together* explain a significant percentage of variance in self-information (18,38%; $F_{2,749} = 84,33$; $p = 0,0001$); decision-making (18,61%; $F_{2,726} = 83,01$; $p = 0,0001$); career information (8,68%; $F_{2,748} = 35,57$; $p = 0,0001$); integration (8,10%; $F_{2,749} = 33,01$; $p = 0,0001$) and career planning (7,99%; $F_{2,739} = 32,08$; $p = 0,0001$) for learners in transit schools. As shown in the results, all the calculated R^2 values are significant at the 1% level.

When the contributions of the *individual* predictors for R^2 for the different criteria were investigated, it became clear that with regard to decision-making, the predictor future time perspective on its own contributed 10,46% to the variance. These contributions were significant at the 1% level and the corresponding effect sizes indicate that these results are of average practical value. The other individual contribution showed a small effect size and will not be further discussed.

Disadvantaged black schools:

Table 18 indicates that the two predictors (future and present) *together* explain a significant percentage of variance in self-information (7,72%; $F_{2,499} = 20,87$; $p = 0,0001$); decision-making (12,14%; $F_{2,495} = 34,20$; $p = 0,0001$); career information (10,61%; $F_{2,509} = 30,21$; $p = 0,0001$); integration (4,46%; $F_{2,520} = 12,14$; $p = 0,0001$) and career planning (6,70%; $F_{2,521} = 18,72$; $p = 0,0001$) for learners in disadvantaged black schools. As shown in the results, all the calculated R^2 values were significant at the 1% level.

When the contributions of the *individual* predictors to R^2 for the different criteria were investigated, it became clear that with regard to career information, the predictor future time perspective on its own contributed 10,09% to the variance. These contributions were significant at the 1% level, and the corresponding effect sizes indicated that these results were of average practical value. The other individual contribution showed a small effect size and will not be further discussed.

Summary of main findings for second research question

Pertaining to the question whether time perspective can be used to predict a significant percentage of variance in the career maturity of Gr. 11 and 12 learners, the following main findings were evident:

- (a) A significant correlation exists between time perspective (future as well as present) and the five career maturity scales, for both Gr. 11 and Gr. 12 learners. An increase in future time perspective will predict an increase in career maturity for Gr. 11 and 12 learners. However, an increase in present time perspective will predict a decrease in career maturity for these learners.
- (b) Future and present time together explain a significant percentage of variance in the five scales of career maturity, for both Gr. 11 and Gr. 12 learners, and for males as well as females.
- (c) The more future orientated a Gr. 11 learner is, the less present orientated he/she will be. The negative correlation between the two predictor variables for Gr. 12 learners is not significant.
- (d) A significant correlation exists between time perspective (future as well as present) and the five career maturity scales, for both males and females. With regard to future time perspective, an increase will predict an increase in career maturity. With regard to present time perspective, an increase in present time perspective will predict a decrease in career maturity for these learners.
- (e) With regard to decision-making, the predictor *future time perspective* contributed 10,22% to the variance in females, which was of average practical value.
- (f) An increase in future time perspective will predict a decrease in present time perspective in males, while the negative correlation between the two predictor variables for females was not significant.
- (g) For learners in advantaged and transit schools, a significant correlation exists between time perspective (future as well as present) and the five career maturity scales.
- (h) The two predictors (future and present time) together explain a significant percentage of variance in the five scales of career maturity for learners in advantaged, transit and disadvantaged schools.
- (i) It is especially significant that for learners in advantaged and transit schools, a significant negative correlation is indicated between future time and present time

perspective, while for the learners in disadvantaged schools, a significant positive correlation is indicated. Thus, for learners in advantaged and transit schools, an increase in future time perspective will predict a decrease in present time perspective, while for learners in disadvantaged schools, an increase in future time perspective will predict an increase in present time perspective.

CONCLUSION

This research has demonstrated that differences exist in time perspective and career maturity scores for learners of different grades, genders and school environments. The finding that learners from disadvantaged schools are more focused on the future, while learners in advantaged schools are least focused on the future, could possibly be explained by the inverted socio-political situation in South-Africa after democratisation, with previously advantaged learners now tending to feel demoralised by the changes that have taken place. This lack of future prospects could also hold true for male learners in advantaged schools, who are less focused on the future than any other group.

These findings are in contrast with several earlier findings (D'Alessio et al., 2003; Lens & Gailly, 1980; Nuttin & Lens, 1985) revealing restricted future time perspectives among people living in less-favourable socio-economic conditions. Although the socio-economic status of the learners in disadvantaged and transit schools may be low, it must be kept in mind that in the South African context, these learners' future expectations may be enhanced by the altered socio-political structures since democratisation in 1994.

Generally, learners from advantaged schools achieved the highest average in career maturity, while learners from disadvantaged schools achieved the lowest. This supports findings of Reid-Van Niekerk and Van Niekerk (1990), who found that coloured and black first-year students possessed significantly lower career maturity attitudes than their white counterparts. These findings show that improving career maturity amongst previously disadvantaged learners is a need still to be addressed in South Africa, supporting the Deputy Minister of Education's opinion on this matter (Surty, 2005).

Another very important conclusion is that time perspective can be used to predict a significant percentage of variance in the career maturity of Gr. 11 and 12 learners. However, in the absence of longitudinal data and further experimental studies, it seems that it would be premature to conclude that by increasing learners' future time perspective, their career maturity can also be enhanced. It is possible that the direction of causality is contrary to that which is postulated in this study, or that the correlation between time perspective and career maturity could be attributed to a third variable (e.g. socio-economic status, personality traits, quality of education).

The implication of these research findings for the problem posed originally is that time perspective is a learned attribute (Daltrey, 1982; Zimbardo & Boyd, 1999) that can consequently be relearned or changed at secondary school level. The transition from secondary to tertiary education is an extremely critical decision point for young people, and can be a very costly one indeed. By ensuring greater career maturity amongst the South African youth, career education can be improved and learners can be helped to reach their developmental goals, with subsequent career success, satisfaction, and improved productivity.

These findings make an important contribution to the literature on career maturity in South Africa. However, the present study gives no indication of how learners' future time perspective can be improved in an effort to enhance their career maturity. It is recommended that future studies should focus on the development of possible programmes to improve adolescents' future time perspective, incorporating career maturity aspects.

This study has a certain number of limitations, which researchers may wish to address in future studies of this nature. Low alpha coefficients were reported for some groups, (especially the Sotho speaking group) which could be attributed to the small number of items on the ZTPI. This could have attenuated the observance of strong correlations between variables. It seems as if, in the South African context, the ZTPI does not function as well as desired. Although past time perspective was not included in this study, the inclusion thereof might enrich the results of such a study, especially in the South African context where the previous apartheid situation played

an enormous role in the development of educational and vocational systems. Data were gathered by means of self-report measures which, according to Huysamen (1996), have some limitations, namely the ambiguity of items that are open to more than one interpretation, respondents' tendency to give consistently affirmative responses to items irrespective of what the items are asking, and susceptibility to faking, where there is a deliberate attempt on the part of the respondents to answer items in such a way that their real position on the attribute the instrument is designed to measure is not reflected. Therefore, the use of self-report measures could have had an impact on the results.

The post-apartheid situation seems to bring new challenges to the fore, as expanded career choices for previously disadvantaged learners hold little value if they are not adequately prepared to make informed career choices, as implicated by Grubb (2002). On the other hand, previously advantaged learners seem to lose heart in their pursuit of future dreams and goals, and many choose to leave the country to work abroad. According to the Minister of Education, Professor Kader Asmal (2005), South Africa faces an enormous drain of human resources, lured from the country by favourable exchange rates and different social environments. The implication of this phenomenon is that investment in education in a developing country such as South Africa may not lead to more rapid economic growth if a large number of its (usually highly educated) people leave the country, as statistics are showing (Carrington & Detragiache, 1999).

Since career planning will always be an important and relevant subject with considerable influence on the lives of individuals, groups and also the economy of South Africa, this study revealed important information on the relationship between time perspective and career maturity, and underlined the fact that the quality of career decisions among young people should be improved, as this could enhance individual actualization, community well being and ultimately socio-economic-political development.

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