

Core Self-Evaluations and Learning at the University of Zululand

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Abstract. Core Self-Evaluations [CSE] is a person's estimation of his/her own worth and ability (Judge & Scott 2009). This study explored the relationship between Core Self-Evaluations and Learning using an experimental design. The Core Self-Evaluations scores in this study (n=230) were consistent with levels found internationally (Broucek, 2005). This study sought to investigate the relationship between Learning and Core Self-Evaluations for learners at the University of Zululand. An experimental research design made use of the Core Self-Evaluations Scale and Learning gains scores to measure the relationship between Learning and Core Self-Evaluations. There was a statistically significant, but small correlation between Learning and Core Self-Evaluations. When Core Self-Evaluation is higher, Learning tends to be more likely.

Keywords: Core Self-Evaluations, Learning

1. Introduction

This study explores the relationship between Core Self-Evaluations [CSE] and Learning. CSE is an individual's estimation of their own worth and comprises four elements. These elements are neuroticism/emotional stability, locus of control, self-esteem and self-efficacy (Judge, Van Vianen & de Pater, 2004).

Learning is defined as a change in behaviour, produced by experience (Hilgard & Marquis, 1940). This change can result in learned dysfunctional or functional psychological attributes in response to environmental stimuli. These changes then form a platform for future interaction with the environment, shaping future learning and future behaviour. During life, experiences could lead individuals to develop high or low CSE (Judge, Van Vianen & de Pater, 2004). Those who are predisposed to higher CSE or who developed higher CSE may fare better in Outcomes-Based Education and Training [OBET] through their ability to better mobilise their psychological resources and to persist in an intense manner in the quest to attain their goals, thereby achieving Learning (Robbins & Judge, 2007). CSE is the amount of worth a person believes they hold (Judge et al., 2003). There is research support for the validity of CSE as a construct, as well as research support for the relationship between CSE and a number of work and education, training and development [ETD] related performance determinants (Judge et al., 2003).

In this study, the notion of being able to learn in a reasonable amount of time is investigated. A reasonable amount of time is understood to be a period of time that is economically feasible to the organisation and will not seriously jeopardise the operational capacity of the organisation (Du Plessis, Fouche & van Wyk, 2001). The acquisition of skills requires Learning, which can be described as "any process that...leads to permanent capacity change and which is not solely due to biological maturation or ageing" (Illeris, 2007, p3).

The capacity to learn in a reasonable amount of time may be linked to CSE. In international studies, CSE has been linked to both academic and work performance (Judge et al., 2003). The link could be because of the role that CSE may play in the way individuals mobilise their abilities in a challenging environment such as when engaged in learning opportunities. This paper will outline the findings from a small exploratory,

experimental study which explored the interaction between Learning and CSE amongst learners at the University of Zululand.

2. Background to the study

This study was exploratory, ethnographic and quantitative. The hypotheses were tentative and the aim was more to set further agendas for research than provide generalisable results. The goal of the study was to explore the potential relationships between the variables and to identify future directions for research. The results of the study were not meant to be generalisable to the broader population, but instead, the aim was to identify relationships tentatively that could be further investigated. This study examines the interplay between CSE and Learning. The investigation was conducted at the University of Zululand in KwaZulu-Natal, amongst adult Zulu learners, in the context of Post-Apartheid South Africa, where apartheid may have had a residual impact on CSE. This residual impact may impede the ETD needed for true transformation in South Africa.

3. Research objectives and or hypotheses

This study seeks to explore whether CSE has a relationship with Learning, in light of the provisions of the Employment Equity Act (55 of 1998). This question asks whether having high CSE makes students more efficacious in Learning than those with low CSE.

Research hypothesis: There is a relationship between CSE and Learning,

H1: CSE and Learning are related

4. Literature Review

CSE is the self-belief a person holds. This self-belief combines four sub factors. Self-efficacy, locus of control, self-esteem and neuroticism are the four sub factors that make up CSE (Judge & Scott, 2009). CSE may form the basis for much of the interaction between personality and the environment that dictates human behaviour, with immense literature support (Judge & Scott, 2009). This CSE may be closely tied to RE and may be positively related to Learning. Self-efficacy pertains to believing in one's capability- the belief that one can succeed (Bandura, 1986). Locus of control refers to the belief that one is in control of the outcomes in one's life (Rotter, 1954, in Cadinu, Maass, Lombardo & Frigerio, 2006). The third component of CSE is self-esteem, which is the worth a person attributes to themselves (Mruk, 2006). Self-esteem refers to how affectionate individuals feel towards themselves and how they appraise or evaluate themselves. Finally, neuroticism is the level of emotional instability a person has (Cervera et al., 2002). These four aspects interact to form a person's CSE and determine how individuals react to challenges in life (Judge & Scott, 2009). This study sought to explore the potential relationship between CSE and Learning.

Previously, CSE was measured indirectly, until a composite measure integrating self-esteem, locus of control, self-efficacy and neuroticism was developed (Judge, Erez, Bono & Thoreson, 2003). CSE can be defined as the "fundamental premises that individuals hold about themselves and their functioning in the world" (Judge, Erez & Bono, 1998, p161). The fundamental nature of this trait is what makes CSE the underlying trait to the four other traits already mentioned.

Learning is defined as a change in behaviour, produced by experience (Hilgard & Marquis, 1940). This change can result in learned dysfunctional or functional psychological attributes in response to environmental stimuli. These changes then form a platform for future interaction with the environment, shaping future learning and future behaviour. Cognitive ability without CSE does not necessarily translate to academic achievement (Rosopa & Schroeder, 2009).

5. Research Method

An experimental research design was adopted, coupled with questionnaire administration. Learner CSE was assessed; they underwent a pre-test, training intervention and post-test, with validation of the intervention through use of the Solomon four-group design. The study involved testing of the relationship between CSE and Learning. Learning refers to the proportion of change in knowledge, skills and attitudes

achieved after a learning intervention in relation to pre-existing levels of knowledge. For CSE, the researcher used the score from an adapted version of the CSE scale, discussed in the next section.

For Learning, a learning gains score is calculated as a proportion of the total learning possible. The learning gains score takes into account the influence of pre-test sensitisation and is a proportion of all possible Learning.

5.1. Measuring Instruments:

Initially CSE was measured by measuring self-efficacy, locus of control, self-esteem and neuroticism separately. Then Judge, Erez, Bono and Thoreson (2003) developed a scale for CSE, with 12 items loading strongly onto the CSE factor. In this study, the Core Self-Evaluation Sale was used to measure CSE. Assessments are used to measure the extent to which learners have acquired the capacity to demonstrate the specified outcomes, in a formative, developmental and transparent manner, with explicit assessment criteria (Jansen & Christie, 1999; SAQA 2010). The assessment tools in this study were created by the researcher using Outcomes-Based Education as the guiding philosophy.

5.2. Experimental design

This experiment made use of learning gains score testing to ascertain whether Learning related to levels of CSE. Gain scores are used to analyse learning data and are “changes of level between two points in time” (Cronbach & Snow, 1977, p 73). Learning gains scores are traditionally calculated as post-test scoreless pre-test score, however, validity can be improved through the use of Solomon’s four group design. Solomon’s four group design is used when a pre-test might result in practice effect. The effect of the learning intervention can be isolated (VanderStoep & Johnston, 2008) from other scores. Solomon’s four group design makes use of four groups- two experimental groups, who participate in the learning intervention, and two control groups who do not participate in the learning intervention (McDaniel & Gates, 1998).

5.3. Sampling

A simple random sample was drawn. The population was students studying Human Resources Management at the University of Zululand (N=336). The sample was n=230 (which provides a confidence level of 99 percent and a margin of error of 5 percent). This sample was divided up in order to provide two experimental groups and two control groups. A subset of this sample was randomly selected and used to validate the Learning intervention using Solomon four-group design (n=52). The sample size of 230 is comparable with similar research undertaken by Bretz and Thompsett (1991), n=181, with two groups of n=40; Dijkman (2009), n=108; Berthold, Nuckles and Renkle (2007), n = 84; Scharfenberg, Bogner and Klautke (2006), n=117; Wambugu and Changeiywo (2007), n=161, with an experimental group size of n=35; Linde and Stuart (2002), n=88; Lievens and Sanchez (2007), n=51 (25 in Control Group, 26 in Experimental Group) and Dickey (2003), n= 107.

The calculation of validity was performed according to Braver and Braver's (1998) method, with adjustments recommended by Campbell & Stanley (1963, in Braver & Braver, 1998) and Huck and Sandler (1973, in Braver & Braver, 1988).

A Two Way ANOVA was conducted with the dependent variable being the post-test score and the independent variables being Factor A Learning intervention (yes/no) and Factor B Pre-test (yes/no). There was a significant ($p = .046$) difference between the average scores of those who underwent the pre-test and those who did not, but there is also a significant ($p < .0005$) difference between those who underwent the learning intervention and those who did not. It can thus be concluded that the learning intervention did produce a statistically significant ($\alpha = .05$) change in behaviour even though the pre-test did affect the amount of learning that occurred, through pre-test sensitisation of learners, which made them aware of the type of content to be covered in the post-test.

Looking at the non-significant ($p = .843$) result for the interaction between the two factors, it can be concluded that the magnitude of the treatment effect was independent from the sensitisation that occurred due to the pre-test. The learning intervention is thus valid. Behaviour change can be attributed to the learning intervention, with moderation for the effect of pre-test sensitisation.

Table 1: Anova results for Solomon's four-group design

SOURCE	D.F.	SS	MS	F	p-value
Sensitisation	1	1040.17	1040.17	4.19	.046
Treatment	1	9907.02	9907.02	39.95	<.0005
Interaction	1	9.80	9.80	0.04	.843
Within Groups	48	11903.32	247.99		
Total	51	22860.31	448.24		

(Degree of Freedom [DF], Sum of Squares [SS], Mean Square [MS], F Value [F], Probability [p-value])

5.4. Ethical Considerations

The utmost care was taken to ensure that the research was conducted in an ethical manner.

6. Findings

6.1. Demographic profile

Table 2 indicates the gender distribution of the sample. The sample was predominantly female (71.00%), which could be an indication that Human Resources Management is a preferred occupation for females, or an indication of the gender distribution for enrolment in higher education Institutions.

Table 2: Gender distribution of the sample (n=230)

	Male	Female	Grand Total
Frequency	67	163	230
Percentage	29.00%	71.00%	100.00%

The majority of the sample were young (>20= 45.45%, 21-30=51.08%). Very few respondents were older than 31 (only 3.03%), with even less representing the group between 41 and 50 (less than one percent). The total sample comprised 230 respondents. The age distribution of the sample is understandable, considering it is a sample of students. These respondents represent those Zulu young adults who will be looking for work in Human Resources Management in the next few years (see table 3).

Table 3: Age distribution of the sample (n=230)

	Age				Grand Total
	>20	21-30	31-40	41-50	
Frequency	104	118	7	1	230
Percentage	45.45%	51.08%	3.03%	0.43%	100.00%

6.2. Findings

Experimental group one was composed of Human Resources Management students, looking for work in the next three years, from a designated group. The designated group was Black as defined in the Employment Equity Act 55 of 1998. The mean level of CSE for the learning experiment was 3.33 overall (table eight), exactly the same as the CSE level found by Broucek in the United States of America in 2005 amongst undergraduate students there.

Table 4: Descriptive statistics for Core-Self Evaluations (n=230)

<i>Core Self-Evaluation</i>	
Mean	3.33
Standard Error	0.03
Median	3.33
Mode	3.44
Standard Deviation	0.51
Sample Variance	0.26
Kurtosis	-0.51
Skewness	-0.09
Range	2.44
Minimum	2.00
Maximum	4.44

The difference between the pre-test score and moderated post-test score was, on average, 32 percent. If the learners had begun with lower levels of existing knowledge then their post-test scores would have been significantly lowered. The mean learning of the group was 52.95 percent (table 5). The implication is that the learners learned only 53 percent of what they could have learned during the Learning intervention. The average level of Learning was 41.60 percent for males. For females, the average Learning score was 54.65 percent. The female group showed higher levels of Learning in this sample. Comparative studies could be undertaken to determine ways to boost learning gains for young adults in South Africa.

Table 5: Learning gains (n=46)

	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>SD</i>
Learning gains	1.40%	77.21%	52.95%	20.17%

There was a small but definite correlation between CSE and Learning amongst those in the experimental group ($r=.32$, $p < 0.05$, $n=46$, table 6). This relationship should be treated with caution and not used for predictive purposes in South Africa without further research into the nature of the interaction between CSE and Learning.

Table 6: Correlation between Core Self-Evaluations and Learning (n=46)

Core Self-Evaluations	
Learning	.32*

*. Correlation is significant at the 0.05 level (2-tailed).

The relationship suggests that there could be a link between CSE and Learning, but the nature of this link is still unclear. It could be that individuals have higher CSE if they know that they are capable of Learning.

7. Conclusions

CSE is a person's estimation of their own worth and ability. This self-perception comprises a configuration of levels of locus of control, self-esteem, neuroticism and self-efficacy (Robbins & Judge, 2007). International studies found mean scores of 3.33 (Rosopa & Schroeder, 2009) and 3.78 to 4.03 (Judge et al., 2003) in the United States of America, so the score of 3.33 is comparable. The levels of CSE in the study were within the same range as those seen in international studies, with the exception of the scores found by Judge et al. (2003), where the scores were higher. Although levels of CSE were somewhat lower than those measured amongst managers and MBA students in international studies, they were much in keeping with the levels seen in a similar study amongst undergraduate students in the United States of America (Broucek, 2005). The scores found may be in keeping with CSE levels of students, and there is scope for comparative studies investigating this further.

8. Recommendations

Further research needs to be done into this area, in order to investigate whether this relationship extends into the workplace or not. The current findings cannot be generalised to training and development in the workplace. It is important to acknowledge the psychological aspects that affect how successful individuals are in their learning endeavours.

9. References

[1] Available from the corresponding author on request