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Affirmative Action and Psychometric Tests use in the South African National Defense Force: Are they Complementary or Conflicting Forces?

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Abstract

One of the legacies of apartheid is that South Africa (SA) is a country characterized by imbalances of distribution of opportunities and resources which permeates all spheres of society. The differences are mostly felt in educational and occupational environment and they still shape the wellbeing and future of the previously oppressed Black majority. The demise of apartheid regime meant that legislations and other mechanisms have to be invoked to address those imbalances. This need also permeated the Ministry of Defence, which was wholly controlled by the White minorities. One of the mechanisms put in place is Affirmative Action (AA) aimed at correcting the imbalances of the pasts by giving the Black majority an opportunity to advance and develop. Since not everyone can join the military and be promoted, the psychometric tests are used to select the candidates. However, the inferior quality of education and other factors that resulted from institutionalized discrimination makes it difficult for most Black candidates to meet the requirements. This extends to their ability to perform above the cut-off point on psychometric tests necessary for joining, promotions and attending high profile courses such as pilot course. The situation is aggravated by the bad reputation of psychometric tests in SA, making it difficult for some leaders to accept the result. Some perceive them as tools to frustrate processes such as AA, consequently suggesting the exclusion of psychometric tests in any selection processes. This study will use a descriptive literature discussion to articulate this challenge, its causes and recommendations to ameliorate it.

Keywords: Affirmative action; Psychometric testing; Military

Why Affirmative Action in South Africa?

South African legacy of apartheid has created massive social and economic inequalities along racial and gender lines. This resulted in under-representation of black South Africans and women in higher echelons of industry and the corporate world, especially at decision-making levels [1]. These effects spilled over to all spheres of the society, with the labour market being a distorted one, characterised by inequality in access to education, skills, managerial and professional work based on race and ethnicity. Racial discrimination was institutionalised in labour legislation for example, job reservation clauses in the Mines and Works Act and Industrial Conciliation Act (1956) [2,3]. The first democratic elections in 1994 served as a watershed that spelled the demise of such a regime [4].

Since repealing apartheid legislation would not on its own redress its legacies; AA was introduced and has been embraced by the African National Congress (ruling party) and the section of the business as an appropriate mechanism for restitution. In this study, AA is defined as the process of creating greater equality of opportunity, it is temporary and flexible and not in accordance with rigid quotas, compatible with the concept of qualification and it does not unnecessarily trample on the reasonable expectations of competent White men. It involves a critical analysis of current selection and recruitment procedures, criteria for entry into jobs, selection tools and organisational culture [2].

One of the potential conflict points emanating from this legislation is preferential hiring according to race because of its implications on job security and demands for replacements. This policy threatens the white minority in SA because unlike in most countries where minorities were targeted, in SA it is the majority that was oppressed [5]. AA is lauded by its proponents to be capable to allow the industries and the country to benefit from new ideas, opinions and perspectives generated by greater workforce diversity [4].

The broad scope of the policy was necessitated by the Apartheid Labour market system that left most employees inadequately trained and economically disempowered. This implied that without intervention, the majority will be still be limited in their involvement in the labour market. Section 9(2) of the Constitution states that in part 'to promote the achievement of equality, legislative and other measures designed to protect or advance persons, or categories of persons, disadvantaged by unfair discrimination may be taken [3,6]. Few White male executives openly opposed enlarging their group with Blacks and females, provided they are equally qualified. Accordingly, there was a debate about how the pool of talent can be broadened and what constitutes proper admission criteria to maintain standards [5].

The SA Labour Landscape

The apartheid practices with their discrepant educational facilities for Whites versus Blacks have left a pervasive mark in the SA labour landscape. Despite the dismantling of Apartheid, the differing schooling opportunities for more socially advantaged Blacks and Whites versus those that are less advantaged still persist had an effect often the quality of labour available in the country and its military [7]. This creates the potential for the perpetuation of unequal access to education opportunities for the coming generations, which will spill-over to labour force. Many high school graduates intending to join the labour force and the military are not prepared when leaving high

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school to succeed in selection processes. This influence the availability of further learning opportunities by such individuals and their ability to make meaningful contribution in their societies [8,9].

The foregoing situation necessitates a developmental dimension to form part of human resource employment and utilisation in SA. Accordingly, there is a need for training of applicants from previously disadvantaged groups to be stepped up to meet the increasing demand for highly trained personnel [10]. The economic and social environment in SA demands that practical solutions to issues surrounding work be rooted in research and practices that are culturally and contextually sensitive [11].

To meet the above-requirement, measuring instruments used need to comply with the Employment Equity Act requirements, be attuned to SA realities and be able to be used on all cultural and language groups in the country [12]. Currently, the country's majority tend to display a general dislike of psychometric assessments and treat their results with suspicion. Consequently, psychometric assessment results are often rejected by employees and unions, to the extent that sometimes people refuse to participate in them [13]. The South African National Defence Force (SANDF) is not absconded from those challenges. Its situation is even more aggravated by the fact that as a defendant of the state, it is expected to reflect the demographic profile of the country. However, the organisation cannot accept every applicant without some form of screening.

The Role of Tests in the Sandf

Psychometric tests are generally used in organisations to assist in making decisions about the prediction of future work performance and success of individuals. Their role includes the selection and classification of human resources, from filing clerk to top management [14]. The cognitive tests mainly used in the SANDF include the Senior Aptitude Test (SAT), Differential Aptitude Test (DAT) (form L) and Academic Aptitude Tests (AAT). The former two tests are used to determine work-related learning potential and the latter is used to determine the academic learning potential.

The validity of the subtests of the SAT was established using correlation method between SAT scores and the examination marks. The correlations were all significantly positive. The reliability of the test was established using Kuder-Richardson formula 14 and it ranges from 0.52 to 0.92 [15]. The validity of the DAT was established using an external test-the General Scholastic Aptitude Test with the results ranging between 0.43 to 0.95. The reliability of the test was established using a Kuder-Richardson formula 14(K-R14) and the results were found to be satisfactory, ranging from 0.23 to 0.94 (Owen, 2000). The reliability of the AAT was evaluated using Kuder-Richardson Formula 20 and the results range from 0.71 to 0.94 [16]. Since the test was developed with the intention of predicting overall course performance rather than performance on a particular sample, only the scores relevant to the course were provided. Owen and De Beer [16] found that all the subjects provided significant correlation with at least one test of a battery. These tests are selected as the best available. The organisation strives for excellence hence uses only the best possible.

The scores of the tests are only interpreted by registered industrial psychologists and they also relate the scores to other data available at their disposal. The psychologists also take into account the standard error of measurement when interpreting the test scores [15]. The sensitive and informed approach when interpreting the scores is necessary because the outcomes have significant implications on the testee's quality of life, the quality of life of the testee's family and the future career opportunities [9,13,17,18], educational and occupational attainment and economic outcomes such as wages and earnings [19].

Consequently, higher test scores, which permit entry to more opportunities to study further, alter the opportunity structure of the individuals and influence the occupational placement in the military and other employment opportunities [19]. The elitism that characterised the higher education system in SA plays a major role in the outcomes of test results [20]. The Employment Equity Act provides that if it can be demonstrated that these psychometric tests place a particular individual or subgroup at unfair disadvantage (thus discriminating unfairly), this could constitute an unfair labour practice. The criticism is highly echoed when previously disadvantaged groups get relatively fewer chances of sharing the social benefits of employment opportunities and occupational advancement [21]. As a result, some employees have become defensive and distrustful of the instruments [3].

Different Scores

Much of the criticism of psychological tests in general, and intelligence tests in particular, is derived from the observation that certain groups differ extensively in test performance. The tendency to criticise such tests increases if the groups that show relatively poor performance are also socioeconomically disadvantaged and at the focus of public attention [22]. Black and White differences on cognitive performance tests are more pronounced on high g-loaded tests, g being the general factor of intelligence [23]. Reviews of the literature in the United States(US) and around the world indicates that Europeans and their descendents have an average IQ of about 100 and Africans about 85. The lowest average scores are reported for Sub-Saharan Africa, about 70 [24].

The above-pattern of performance has not only being observed in US, but also in the Netherlands, and in SA. For example in SA, Rushton and Skuy gave un-timed Raven's Standard Progressive Matrices (SPM) to 309, 17-23 year old psychology students at the University of the Witwatersrand in Johannesburg. The 173 African students solved an average of 44 of the 60 problems whereas 136 Whites solved an average of 54 of the 60 problems. There was no evidence of test bias because over 70% of the items were answered correctly by African students and the inter-item correlation matrices showed that the items performed in the same way for both Africans and Whites, putting the Blacks on IQ equivalents of 84 and 104 respectively [25]. In another study Rushton et al. [26] administered un-timed SPM to 342, 17-23 year old in the faculties of engineering and built environment at the University of Witwatersrand. Out of 60 total problems, African students solved an average of 50, Indians 53 and Whites 56 which translated into IQ scores of 97,102 and 110 respectively [27].

The differences were more pronounced in those items with the highest item-total correlations, indicating the difference in g. Similar results were found on students from the University of Venda, with Black students scoring 37 out of 60 with an IQ equivalent of 78. In another SA study, Owen administered SPM without time limits to 1056 White and 1093 Black 24 year olds. The results were IQ of 72 for Whites with the mean of 100 using the percentile equivalents from the SPM [27]. In addition, in another SA study Owen administered SPM to 1093 African high-school students and found they solved an average of 28 out of 60 problems, which is near the 10th percentile [24]. The people tested are the very individuals who apply for positions in the SANDF. These results suggest the potential of the tests to reproduce

racial inequalities and inequalities between historically advantaged and historically disadvantaged Black [20].

Tobias [28] noting this results argued that many Black South Africans are from underprivileged background, making it unfair for them to be expected to compete on instruments shown to function against them. He added that the use of these instruments will deny access to previously disenfranchised who attempt to join or move up positions in the SANDF. This implies the thwarting of AA goals and by implication, the continuation of the deprivation of certain sectors of the society. Since part of the equity process of AA is the removal of artificial barriers, the tests may be perceived as barriers [3]. Phungula in Tobias [28] concluded that the change that is expected to happen in the SA Air Force is inhibited by the utilisation of psychometric instruments [28]. There are different explanations for poor performance.

Socio Cultural Factors that Affect Test Performance

Socio-cultural influences encompasses a number of closely inter-related variables that are difficult to separate, including language usage, reading ability, level and quality of educational attainment, socio-economic status, home and schooling socialization experiences [7]. The longer a particular environmental condition has operated in the person's lifetime, the more difficult it becomes to reverse its effects. Certain conditions that are environmentally determined are not necessarily remediable [29]. Research has found that differences in test performance between ethnic groups reflect socio-cultural factors, rather than ethnic attributes and this has been extensively documented in the literature [24]. More than 13 years in the democracy the rich and White children perform better than poor and Black children which still reflect the history of the country [30].

Culture

Culture is defined as shared meanings or interpretations that are largely tacit and unique to a group [31]. Culture affect the information and knowledge that is available to a group or society [32]. It dictates what is, and what is not relevant and what is worth knowing. It also affects language ability and factual knowledge, as well as procedural functions often called 'test-wiseness' such as pencil use. These can also influence performance on tests [7,29]. Ideally, before an activity can be tested in a fair manner, there must be an opportunity in all involved cultures for the over-learning of such an activity. From this it follows that if a certain activity does not occur in a culture, there is likely to be poor results in that activity [29]. Accordingly, culture bias is purported to exist when an assessment instrument yields significantly different results for different cultural groups [13].

Biesheuwel emphasized the importance of home environment, schooling, nutrition and other factors which are part of culture in cognitive test performance in a multicultural society [12]. Gaylard [33] argued that the use of 'middle class' tests on individuals from different poor cultural backgrounds is not a true reflection of intelligence' but rather reflects the discrepancy between the western middleclass 'norm' and the individual's culture. Mlumenau and Broom [34] lamented that there is a propensity in SA for tests normed in the westernised white populations to be used in different populations such as blacks. Experiences within a particular socio-cultural context can significantly influence a person's understanding of the meaning of a task, and may emphasise relatively different competencies and cognitive processes from those expected in the assessment situation [35]. General Mathibe concluded that it is plausible for candidates from rural areas in SA to display high level of test anxiety which is usual on individuals not familiar with the instruments, thereby contributing to their poor test scores [28].

There is a frequently held view that visiospatial and non-verbal tests are culturally and educationally fairer than verbal tests, citing a number of studies that demonstrate a strong association between educational level and performance on common non-verbal neuropsychological tests [7]. Three SA studies of Blacks versus Whites, the Whites significantly outperformed the Blacks on WAIS-R Vocabulary and Block design. Similarly, in the study of Indians versus Whites, Whites outperformed the Indians on WISC-R Block design and in a study comparing Whites with African Americans a measure of acculturation accounted for poor scores on WAIS-R Block design for the Africans [7].

The content of any measure reflects the culture of the people who designed the measure and the country in which it is to be used. Clearly people who do not share the culture of test developers will be at a disadvantage when taking that particular measure [18]. Despite all attempts, Foxcroft and Roodt, [35] argue that there is no such a thing as a culture free measure. Accordingly, inadequate representation during standardisation can be conceived as a source of cultural bias [36]. In sum, cultural differences are related to test performance and such differences are not minute on non-verbal or other performance tests than on verbally loaded ones [19]. Consequently, Tobias [28] enjoined administering psychologists to be aware of the background and social conditions in township life.

Socio-Economic Factors

Social class has been found to be related to test performance. Some or all of the observed group differences in test performance are due to group differences in social class [19]. Since the earliest measurement of the intellectual ability of human beings, it has been evident that tests can be class or culture linked. As early as 1950, Binet and Simon noticed that on their new of intelligence, Parisan children of high social status scored higher than students of the lower or working class. Similar differences were found in Belgium, Germany and the US [29]. In three studies carried out of Korean and Vietnamese children adopted into White American and White Belgian homes, most children were previously hospitalised for malnutrition prior to adoption. After adoption, they went on to develop IQs 10 or more points higher than their adoptive national norms [37]. The socio-economic states have the propensity to spill over to the quality of education.

Quality of Education

Most intelligence measures are an indirect measure of what the individual has learned during the lifespan and, as such, are largely influenced by the schooling experiences. This is because formal education provides people with the problem-solving strategies, cognitive skills and knowledge needed to acquire information and deal with new problems, which is what is required by traditional intelligence measures [35]. The lack of Westernized test-sophistication is likely to be a contributing factor for consistent lower performance in rural Blacks [7]. The individual that has had extensive prior experience in taking standardised tests enjoys a certain advantage in test performance over the one who is taking the first test. Part of this advantage emanates from being conversant with the typical language used. In addition, such people have overcome the initial feeling of strangeness and have developed more self-confidence and better test taking attitudes [38].

However, in SA the situation is complicated by the fact that attainment of a particular grade is not necessarily the best indicator of what a person is able to achieve. Poorer quality schooling makes

it difficult for students to compete on equal footing with those from more advantaged educational backgrounds. Consequently, a person with a Grade 12 qualification from one of the public schools would not have the same knowledge base or similar skills as a counterpart from privileged area [35]. Denton and Vloeberghs [3] attributed this to poor level of literacy, which is rife among the greater majority of school-leaving individuals.

Nell criticised Human Science Research Council (HSRC) standardisation for not taking into account the effect of quality of education, as he believed that the variations in quality of education in SA affects IQ test performance [33]. Scheepers in Meiring et al. [12] concurs that urban subjects, when compared with their rural counterparts have a greater differentiated-intellect, with education playing the biggest role in the differentiation process. The characteristics of education system is discussed elsewhere [7,13,21,33,35].

Language

Language is one of the parameters along which cultures vary. In SA, there are 11 officially recognised languages, 9 African languages and English and Afrikaans. English-speaking learners are educated through the medium of English, while in most cases African language learners are educated in their home language until they reach grade 4 and thereafter, mainly English [33,39]. It can hardly be denied that primary language influence performance in an intelligence test [29]. The majority of South Africans speak languages and dialects quite different from standardised English as their mother tongues. It is therefore reasonable to assume that some of the generally observed discrepancy in test scores between White and Black SA are attributable to the variety of languages and dialects that are spoken [38]. Blumenau and Broom [34] argued that it is inappropriate to use single language norms to populations using different languages.

Language was found to be the most important mediator of test performance, especially when the language in which the measure is administered is not the home-language of the test-taker. Concepts may be very difficult to test-takers who are native non-English speakers of the language of administration [39]. In the 1980s there was an interest in comparing cultural groups regard to existing cognitive tests. All the respondents wrote the tests in English. The verbal part of the test was problematic for the Black group and this was attributed to English not being their mother tongue. Large mean differences were reported for the cultural groups and the structural equivalence was to be poor [12]. The depressed scores are directly related to the degree of exposure to the language used in tests [40].

People working in a second language tend to employ an internal translation process when responding to assessment questions. This means that they first translate the questions in their minds into their mother-tongue, and then choose their response. This is not necessarily problematic in un-timed tests, such as personality questionnaires, but in instances where a time limit is imposed, such as in cognitive assessments, this has major implications for test performance [13]. Dornic found that processing information in the weaker language produced consistently lower functioning. Furthermore, the entire process of mentation becomes progressively more and more vulnerable to the point of shutting when the material was too complex or when stress levels increased [40]. People can perform better in a test that is written and administered in their home language than in a test in a second language [35].

Reynolds and Gregory cited in Van Zyl and Visser [21] described bias to exist in the content of the test when an item (or items) can be demonstrated to be relatively more difficult for members of one group than for another when the general ability level of the groups being compared is held constant and no reasonable theoretical rationale exist to explain group differences on the item in question. Rushton et al. [24] found that the most reliable example of internal bias found in the extensive literature is the linguistic one of the Vocabulary components of tests like the Wechler from groups that does not have English as their first language. In a research conducted by Lopes and colleagues [38], on APIL-B, it was found that the scores of Blacks were consistently so low and the means of the Whites was consistently above the total sample mean .This was attributed to language.

Aston obtained the views of psychology professionals in the Eastern and Western Cape on each of the WAIS-III subtests regarding whether items were potentially problematic for English, Afrikaans and Xhosa speakers. The results indicated that Xhosa and Afrikaans-speaking test-takers were confused with wording used in the instructions of the picture completion, digit-symbol-coding, and block design subtests [39]. Linares [40] found that the more exposure to language other than English which is used for psychometric assessment, the lower the predictive validity of English test. In an attempt to circumvent barriers caused by educational and socioeconomic disadvantage, interviews were used in the University of Witwatersrand, only to be abandoned later because they could not overcome the effects of previous language deprivations [41].

Challenges with Instruments

Despite all the challenges relating to inequality in SA, it has not been a normal practice to control for quality of education in standardization procedures of IQ tests and in line with this, Human Science Research Council (HSRC) did not devise empirical controls for this variable in the SA standardization. Its omission has been heavily criticized by Nell who proposes that the representiveness of the HSRC data will be flawed due to vastly different types of educational exposure among the Blacks [7]. Furthermore, although the literature includes hundreds of studies with a total of tens of thousands of subjects, the samples in many of these studies are not representative of any well defined national population. Most studies have used convenience samples that are not strictly generalisable to the nation as a whole [19].

Huysamen concurred that the major problem regarding the use of psychometric tests in SA stems from the complexity of creating tests which may be used across a diversity of linguistic and cultural backgrounds [9,11]. Bias in content validity is the most common criticism of those who denounce the use of standardised tests with minorities. Critics purport that the items ask for information that the disadvantaged children have not had equal opportunity to learn [14]. As a result, many people do not trust the utility of psychometric tests, hence poor face validity.

Lack of Face Validity

Face validity relates to the manner in which the test is perceived by the test candidates. If they believe that it is appropriate because they can see a direct correlation between the test content and the job that they are assessed for, then the assessment method can be said to have good face validity. This type of validity is critical in achieving acceptance for selection method or processes by all stakeholders [13]. Apartheid beliefs and practices were inextricably intertwined with psychology and assessments in SA. This took many forms such as the formation of the Psychological Institute that admitted Whites only, the refusal of

White universities to accept Black students to study psychology and the indifference of academics to conduct and mainstream SA psychology journals to publish research among Black South Africans [42].

The misuse of assessment instruments has left many South Africans with a negative perception of psychological assessment and its use. Many people, for example hold the view that the use of psychological assessment measures is probably a 'clever' way of preventing people from deprived and disadvantaged backgrounds from entering the labour market or gaining access to appropriate education and other opportunities [35]. This criticism emanates from the fact that the instruments were used to reinforce the stereotypes [43]. In 2000, there were still publishers publishing assessment for testing people's English language skills, using mainly White Afrikaans-speaking people despite the fact that the tests were going to be used mainly on Blacks [13]. In industry, assessment was and still is viewed by many as obstructing Black South Africans from securing employment [42].

Direct discrimination is another criticism levelled at psychometric tests in SA. Discrimination occurs when race or sex is unashamedly used as a selection criterion, for example an advertisement specifying a requirement for female shop assistant only. Indirect discrimination on the other hand occurs when an employer makes a requirement which applies equally to everybody, but is more difficult for one group to comply with than the majority group, and cannot be shown to be justifiable on grounds other than race or sex [44].

In SA, the psychological measures were standardised for Whites but were employed among other population groups nonetheless, although it was recommended that such norms should be used with caution. This led to resistance of tests, which continued after 1994 [42]. In some cases, some instruments were the adaptations of overseas measures such as the Standford-Binet, the SA revision of what became known as the Fick Scale. Not only were the early measures standardised for Whites, but also driven by political ideologies, measures of intellectual ability were used in research studies to draw distinctions between races in an attempt to show the superiority of one group over another. Consequent inferior performance of Black children in comparison to that of White children was attributed to innate differences. Their use leads to exclusion and discrimination, leading critics to state that IQ tests are irrelevant to non-White subcultures [33]. Consequently, a negative perception regarding the usefulness of psychological measures developed and large sections of the SA population began to reject the use of psychological measures altogether.

The above situation escalated and culminated in the banning of assessment in certain provinces and industries after 1994 [35,38]. With new labour legislation becoming more rigid and prescriptive, the use of new types of tests and assessments became under severe scrutiny. The most obvious criticism regarding the use of psychological tests is the cultural bias that may result in unfair discrimination against racial and ethnic groups or people of low socio-economic status [38]. To ensure that discrimination is addressed within testing arena, the Employment Equity Act No. 55 of 1998(Section 8) refers to psychological tests and assessment specifically and states that:

Psychological testing and other similar forms or assessment of an employee are prohibited unless the test or assessment being used [35]:

- has been scientifically shown to be valid and reliable;
- can be applied fairly to all employees;
- is not biased against any employee or group.

The Act put more demands which are reasonable under the circumstances on the test use to ensure the use of tests is good faith and intentions to achieve better selection results without indirectly perpetuating the imbalances of the past. The SANDF is trying its best to ensure compliance with the prescribed requirements. However, despite all good intentions, Blacks still under-perform on most psychometric tests.

Conclusions

The separatist legislation and practices of the previous government had serious effects that are pervasive and unlikely to disappear in the near foreseeable future. The policies and practices permeated every facet of the society, making them formidable factors that still haunt the SA labour even after 18 years in democracy. The effects also affected the military, which is a pillar of every country. The pervasive nature of the legislated separate developments also affects measures invoked to correct the practices that led to unrepresentative labour force and military personnel. Despite the enactment of legislations to correct the injustices, the processes are threatened by the inability of the members of the previously disadvantaged from entering the SANDF, benefiting from educational opportunities offered and occupying high and lucrative positions. The effects are pronounced by the necessary use of psychometric tests.

The importance of psychometric tests in any country, especially the developing ones cannot be overstated. They serve as filters to select suitable employees and soldiers for the organisations, identify those deserving further development opportunities and identifying those who will perform optimally when promoted. However, the instruments used, especially those loaded with a g-factor tend to portray members of the designated groups as underperforming. This is an area of concern since not all people can be accepted in the SANDF, nor every subordinate can be promoted. These perpetual low scores have an impact on the implementation of the legislations intended to correct the imbalances of the past.

People who are supposed to be developed to correct the demographic posture of the SANDF to reflect that of the entire country appears to be thwarted by the psychometric tests. This situation has often resulted in dissatisfaction, culminating in arguments purporting that the use of instruments in the South African military as a hindrance to necessary processes and contributes to the under-privileging of the members of the designated groups. This argument is understandable, given the high unemployment rate in the country and the opportunities that accrue to military personnel. Some proponents also added that the situation can also threaten the stability of the country. The situation requires an honest judicious process to find the way of using the tests that allow the achievement of national imperatives. The situation further requires a constructive approach for dealing with these seemingly incompatible but necessary facets of the society, especially the military.

Recommendations

In line with Saunders [13] consistent different performance, the results should be used to assist to identify the skills gaps and implement learning programmes aimed at bridging those gaps. This can help ensure that the disadvantaged people in organisations get the basic educational foundation they need to reach their potential.

There might need to be a move from ability testing to potential testing. General reasoning tests measure an individual's intellectual abilities at the current level and the outcomes of such tests are heavily influenced by past education. In contrast, potential is something that

does not exist yet, but which has the capacity to exist, given the correct circumstances. The assessment of potential answers the question of how will a person respond if given a learning opportunity. This will help to bridge the gap that was left by the previous regime (Saunders) [13].

Despite claims to the contrary by coaching schools, the available evidence suggests that admission test scores of undergraduate, graduate, or professional school applicants are influenced relatively little by short-term coaching that is limited to test-taking strategies [22]. This short-term approach used by other institutions is not helpful.

Another type of an approach is to try to compensate for the effects of educational disadvantage through access type practice, where those who are judged to be disadvantaged are given intensive coaching in test-taking techniques. Such coaching is known to be most beneficial for those people who have had least exposure to standardised tests. In similar vein, one can extend test instructions and test practice, to try to even out effects of prior experience [35]. Unfortunately, research indicated that anything short of real test practice under standardised timed conditions tends to have minimal effect on test performance [43]. Anastasi [37] asserts that the extent of improvement depends on the ability and earlier educational experiences of the test takers, the nature of tests and the amount and type of coaching provided. Individuals with deficient educational background are more likely to benefit from special coaching than are those who have had superior educational opportunities and are already prepared to do well on the test.

There is a need for empirical studies to evaluate the impact of level education, quality of education, language and socioeconomic status on test performance in the SANDF. Furthermore, the continued research on instruments is necessary to manage factors such as the Flynn effect.

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