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A Comparative Review of the Enrolment of Persons with Disabilities versus the Abled Student Population at Tshwane University of Technology, Pretoria West Campus (2012-2020): A Case Study

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Abstract

Background: The admission of differently-abled students to tertiary educational institutions has been sparsely reported in South Africa, making the verification of higher education institution national policy compliance challenging.

Objective: To comparatively review the enrolment statistics of able bodied versus differently-abled students at the Tshwane University of Technology (Pretoria West campus), determining the whether the institution is compliant with South African National guidelines.

Methods: A descriptive quantitative review of the enrolment statistics of students at the Tshwane University of Technology (Pretoria-West campus) from 2012-2020 was undertaken.

Results: The mean percentage of differently-abled students on the Pretoria West campus (2012-2020) is 0.21%, which significantly differs from the percentage of able bodied students (99.78%) ($p<0.0001$). The average percentage of differently-abled students enrolled at the Faculty of Science was 0.14%, comparable to the percentage of differently-abled students enrolled at the Faculty of Engineering and Built Environments (0.14%), but significantly less than those enrolled at the Faculties of Management Science (0.29%), and the Faculty of Arts (0.38%) (2012-2020) ($p<0.05$).

Conclusion: The differently-abled student body forms less than 1% of the overall Tshwane University of Technology (Pretoria-West campus) student body, falling short of the South African national guidelines.

Keywords: Differently-Abled Student; Higher Education Institution

Introduction

The World Bank [1] confirmed an estimated 15% of the global population live with disabilities (one billion citizens). These disabilities include physical, visual, cognitive, and auditory impairments, all of which influence overall quality of life [2]. In 2011, Statistics South Africa released a consensus statement in which they estimated the national disabled populace to be 7.4% of the total population (2 800 000 citizens), where 8.3% of the female population (1 682 071) and 6.5% of the male population (1 188 059) qualify as disabled [3]. The residence of disabled citizens within South Africa was further stratified

into provinces (with percentages expressing disabled citizens as a percentage of the total provincial population): Free State (11.1%), Northern Cape (11.0%), North-West (10.4%), Eastern Cape (9.6%), Kwa-Zulu Natal (8.4%), Mpumalanga (7.0%), Limpopo (6.9%), West Cape (5.4%) and Gauteng (5.3%) [3]. The ethnic categorization of disabled persons in South Africans was estimated to be: African South African (7.8%: 2 381 668), Caucasian South African (6.5%; 207 244), Coloured South Africans (6.2%: 207 244), Indian South African (6.2%: 60 614) and others (5.6%: 9 102) [3]. Presently, the term disabled is interchangeable with the term differently-abled.

The differently-abled age profile of South African minors and young adults within educable age strata was furthermore estimated: five-nine years old (10.8%: 447 843), 10-14 years old (4.1%: 161 828), 15-19 years old (2.6%: 108 738), 20-24 years old (2.4%: 99 665) and 25-29 years old (2.5%: 100 371) [3]. Young adults generally enrol at higher education institutions from the age of 19 years old and the majority of the students complete their undergraduate and postgraduate studies (approximately masters' level) by the age of 29 years old. This age strata can thus be estimated at 200 036 differently-abled individuals (2.4%) out of the approximate age population of 8 235 593 (20-24 year olds: 4 228 422 and 25-29 year olds: 4 007 171) [3].

The South African Employment Equity Act, No.55, recommends that differently-abled employees comprise at least 3% of the national workforce (GCIS) [4]. South African higher education institutions have a similar policy referring to the enrolment of differently-abled students, paralleling the aforementioned national policy relating to disability (3%) [5]. Despite this South African national policy, many differently-abled students experience challenges in enrolling for higher education qualifications and securing employment opportunities [3].

McCallum A, et al. [5] have proposed that many of the present challenges experienced by differently-abled students arise from the indifferent attitudes of higher educational institutions towards them. Magwaza MO, et al. [6] reported that differently-abled students are excluded from tertiary academic programmes based on perceptions of students capabilities in regards to fieldwork, practical experiential learning in off-campus facilities, and the excuse that equipment has been inappropriate manufactured (having been produced following specifications geared at the accommodation of mainstream individuals), thereby prohibiting differently-abled students from participating in academic programmes. Riddell S [7] reported that, previously, many higher education institutions cited the ineligibility of differently-abled students for enrolment in academic programmes based on the application of a medical model of disability classification.

The South African legislature has incorporated the element of equality in order to ensure impartial educational enrolment and employment access for differently-abled persons [4]. This paper reviewed the enrolment of students at the tertiary higher education institution of the Tshwane University of Technology (South Africa: Pretoria West campus) so as to determine whether the institution is compliant with South African National policy. The intention of this paper is to enlighten higher education institution policy makers and the South African Department of Education regarding the enrolment status of differently-abled students in one of the tertiary institutions. It is intended that this study encourage further research within other South African tertiary education institutions in order to more definitively determine the overall enrolment statistics of differently-abled students, in an effect to increase their enrolment.

Methodology

The study adopted a descriptive case study research design with regards to the enrolment of differently-abled students at the Pretoria West campus (Tshwane University of Technology). Ethical approval was secured from the Tshwane University of Technology (REC/2022/03/025). The authors requested Pretoria West campus student registration statistics from the Tshwane University of Technology for the 2012 to 2020 period. Student registration statistics were stratified into differently-abled and able bodied students. Furthermore, the types of differently-abled students were identified within each of the faculties on the Pretoria West campus. Descriptive and inferential statistical analyses were applied to the data that was gathered. Descriptive statistical analyses involved mean, standard deviations, and percentages, while the inferential statistical analyses involved a t-test with the probability set at 0.05.

Results

The results reviewed the number of differently-abled versus able bodied students on the Pretoria West campus of the Tshwane University of Technology (Table 1). Thereafter a comparative review of the number of differently-abled versus able bodied students registered at the Faculty of Sciences, Management Studies, Arts, and Engineering and Built Environments was undertaken (Table 2). Finally, a descriptive summary of the types of disabled/differently-abled students registered at each of the aforementioned faculty will be presented (Table 3).

Year	No. of Differently-Abled Students	No. of Able Bodied Students	Student Population	% of Differently-Abled Student Relative Student Population	% of Able Bodied Students Relative Student Population
2012	96	27 443	27 539	0.34	99.65
2013	89	34 074	34 163	0.26	99.73
2014	66	35 329	35 395	0.18	99.81
2015	82	35 627	35 709	0.22	99.77
2016	85	35 896	35 981	0.23	99.76
2017	72	34 782	34 854	0.2	99.79
2018	69	35 679	35 748	0.19	99.8
2019	50	36 739	36 789	0.13	99.86
2020	42	34 288	34 330	0.12	99.87
Sum of students	651	309 857			
Mean (±SD)	72.3±17.8	3442.8±2747.0		0.21±0.06	99.78±0.06
p-value	2.79E-05			1.07E-42	

Table 1: Enrolment profile of differently-abled students versus able bodied students at Tshwane University of Technology at the Pretoria West Campuses (2012-2020).

Faculty	Science		Management Science		Arts		Engineering and Built Environment	
Categorization	Differently-abled	Able bodied	Differently-abled	Able bodied	Differently-abled	Able bodied	Differently-abled	Able bodied
2012	16	7131	59	10139	2	1653	19	8520
2013	17	9468	49	10556	11	1726	12	12324
2014	11	9955	37	11312	4	1759	14	12303
2015	12	9930	38	11273	14	1672	18	12752
2016	16	10365	37	11501	10	1598	22	12432
2017	13	8529	36	14159	7	1885	16	10209
2018	10	8983	32	14627	7	1795	20	10274
2019	7	9771	24	14786	3	1848	16	10334
2020	6	8972	27	14433	3	1805	6	9078
Sum of students	108	74144	339	112786	61	15741	143	98226
Mean (±SD)	12±3.9 8238.2±2874.7		37.6±10.7	12531,7±1920,2 6.7±4.1		1749±94.94	15.8±4.8	10914±1578,9
p-value	2.62E+00		4.93E-03		1.23E-06		3.10E-03	

Table 2: Enrolment profile of differently-abled students versus able bodied students in the various faculties at the Tshwane University of Technology, Pretoria West campus (2012 to 2020).

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
Visual Impairment	41	40	26	30	30	32	29	22	20	270
Hearing Impairment	2	3	1	2	1	1	0	1	0	11
Cognitive Impairment	26	20	17	25	26	20	21	16	9	170
Physical Impairment	27	26	22	25	28	19	19	11	13	190
Total	96	89	66	82	85	72	69	50	42	651

Table 3: Composition of differently-abled students enrolled on Pretoria-West campus (2011-2020) ($p<0.001$).

There has been a decline in the number of differently-abled students enrolled at the Pretoria West campus of the Tshwane University of Technology from 2012 to 2020 (Table 1). The mean percentage of differently-abled students on the Pretoria West campus (2012-2020) is 0.21%, which significantly differs from the percentage of able bodied students (99.78%) ($p<0.0001$) (Table 1). There has been a general trend whereby the able bodied student population increased from 2012 until 2016; thereafter student enrolment decreased. However, in contrast, there has been a steady and general decline in the number of differently-abled students enrolled at the Pretoria West campus.

An overview of enrolment statistics for individual faculties concerning differently-abled students illustrates a decline over the period of 2012 to 2020 (Table 2). Able bodied student enrolment in the Faculties of Science and Engineering and Built Environments increased progressively from 2012 until 2016, progressively dwindling thereafter, while the Faculties of Management Sciences and Arts illustrate a progressive growth in student enrolment of able bodied students (Table 2). The average percentage of differently-abled student enrolment in the Faculty of Science was 0.14% of the total student enrolment over the 2012-2020 period. Similarly, enrolment statistics were calculated for the Faculties of Management Science (0.29%), Arts (0.38%), and Engineering and Built Environments (0.14%). The comparative review of differently-abled students versus able bodied students significantly differed ($p<0.00001$) (Table 2). Measured in terms of the total number of differently-abled students enrolled (n=651), the Faculty of Management Sciences (52.0%) enrolled the greatest number of differently-abled students from 2012 to 2020, followed by the Faculty of Engineering and Built Environment (21.9%), Science (16.5%), and, finally, Arts (9.3%) ($p<0.001$) (Table 2).

The Tshwane University of Technology Pretoria West campus collects statistics regarding the different categories of disabled/differently-abled students, whose disabilities vary from visual impairment (41.47%), to physical impairment (29.18%), cognitive impairment (26.11%), and hearing impairment (1.68%) (Table 3). More female (334 students: 51.3%) than male (317 students: 48.6%) differently-abled students were enrolled in the period from 2012 to 2020 ($p>0.05$).

Discussion

Differently-abled students represent less than 1% of all students enrolled at the Pretoria West campus of the Tshwane University of Technology for the period of 2012 to 2020, which concurs with previous studies [5-7]. Crous SFM [8] and Mutanga O [9] reported that there are a limited number of differently-abled students enrolled at South African higher education institutions, and that they experience numerous challenges. While Statistics South Africa [3] reported that approximately 25.0% of South Africans with disabilities between the ages of 20-24 years were enrolled at tertiary institutions, the present findings refute the estimates forwarded by Statistics South Africa in their report.

Notwithstanding the national and international endorsement of "education for all," over 90% of differently-abled scholars and students in many countries remain excluded from regular education. There are several prevalent theories for the limited enrolment numbers of differently-abled students at higher education institutions, primarily related to an attitude of indifference [5]. Magwaza MO, et al. [6] reported that indifferent attitudes to differently-abled students include the perception that they are unable to proficiently conduct fieldwork, and that equipment is not ergonomically designed for the use of disabled students. Another significant challenge experienced by differently-abled students in higher education institutions is that of physical access. Engelbrecht L, et al. [10-13] identified limited physical access and differently-abled support services in South African higher education institutions, which may contribute to the low overall enrolment numbers of differently-abled students. Ndlovu S, et al. [14] furthermore concluded that the challenges experienced by differently-abled students have caused a sparsity of professional skills within the fraternity of differently-abled South Africans, adversely influencing their quality of life.

Riddell S [7] reported that the relatively low number of differently-abled students enrolled at higher education

institutions is largely based on an application of the medical model of dealing with disability. The medical model concentrates on the identification of a medical condition, disability, and/or impairment and the subsequent treatment or 'normalisation' of the identified disability. A further application of the medical model lies in identifying the limitations of the differently-abled individual in relation to an able bodied person and the applicability of potential career paths. In contrast to this, the social model appreciates disability as a social construct in which challenges relating to physical admission and attitudes are acknowledged, but are not used as a basis for the limitation of an individual's opportunities for empowerment [5]. A conventional societal approach endorses the social model whereby challenges are identified and addressed in a positive manner in order to uplift the individual's psychological, social, intellectual, and financial statuses.

The limited enrolment of differently-abled students at South African higher education institutions has been proposed as being rooted in primary and secondary schooling. Traditionally, in South Africa, schooling was divided into a leading mainstream system for "normal" scholars and an ancillary system of specialised education for scholars with special needs (disabilities) [5]. McCallum A, et al. [5] reported that the ancillary educational curricula was incongruous and did not adequately prepare scholars for mainstream vocational career opportunities, with a limited number of secondary education institutions providing education up to matriculation level, thereby effectively excluding many disabled scholars from pursuing higher education. The Integrated National Disability Strategy [15] reported that many secondary education aged scholars were also completely excluded from the mainstream educational system and curricula. Howell C [16] reported that reforms to the secondary schooling educational curricula at the turn of the millennium provided the opportunity to support and sustain a greater number of scholars with disabilities allowing them to progress to tertiary higher education. This case study review provides novel insight into the progress and the effect of the changes that were implemented at the dawn of new millennium.

This study found that visually impaired students had the highest enrolment statistics, while students with hearing disabilities had the lowest. These findings concur with the Statistics South Africa (2011) report. Among differently-abled students, visually impaired students had the highest level of attendance in primary and secondary schooling across South Africa, while scholars with hearing and physical impairments had the lowest levels of attendance [3]. Our findings contradicted this in showing that physically differently-abled students were the second largest group of differently-abled students enrolled on Pretoria West campus.

Conclusion

This study illustrated that fewer differently-abled students are enrolled at Tshwane University of Technology (Pretoria West campus) in comparison to able bodied students. It is recommended that supplementary investigations be undertaken at other South African higher education institutions to determine the percentage of differently-abled students who are, and who have been, enrolled. Furthermore, social science based investigations should be undertaken so as to determine the attitudes and perceptions of differently-abled students regarding the attendance of higher education institutions. The present body of evidence suggests that higher education institutions are reluctant to enrolled differently-abled students. However, a social science based study would be required in order to determine whether this is in fact the case or if differently-abled students themselves do not wish to attend institutions of higher education. Higher education institutions should moreover actively campaign for the recruitment of differently-abled students so as to empower their lives and improve their quality of life.

Significance of the Study

The registration of South African differently-abled students in South African tertiary higher education institutions is of considerable significance, reflecting their empowerment in the academic sphere and subsequently in the workplace. South Africa, as a democratic nation, has passed national policies that ensure that differently-abled students enjoy equal tertiary education opportunity. The admission of students at higher education institutions thus reflects the degree to which these policies have been duly implemented. This paper comparatively reviews the number of differently-abled and able bodied students at the Tshwane University of Technology, Pretoria West campus, who are enrolled at the various faculties. Furthermore, the percentage of differently-abled students was compared to the South African national policy and to the Tshwane University of Technology policy in order to determine the degree to which these policies are being met. This paper does fall into the inherent scope of the journal and adds value to the present paucity of literature in this area of study.

Contribution

This study provides statistical information of the enrolment of differently abled students in comparison to abled body students at a South African higher education institution. It highlights the need for more active campaigning of registration of differently-abled students at South African higher education institutions.

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