Sensitizing Prospective Workplaces on the Needs of Students with Hearing Impairments

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ABSTRACT

Social preconceptions and physical barriers can prevent people with disabilities from accessing education or training that prepares them for meaningful employment. As a result, they face challenges of poverty and exclusion from mainstream society. It is particularly difficult for Deaf and Hard-of-Hearing (DHH) people because the implications of their education and employment is often misunderstood. The research reported here interrogated training models used by the National Institute for Development and Training (NIDT) in Worcester, South Africa to find a model that would best suit students, the training institute, and prospective employers. A case study using mixed methods was employed to investigate how students could be trained and helped to find employment in DHH-sensitized work environments. The research paradigm was interpretive and purposive sampling provided information-rich participants. As the existing College Training Model did not serve the needs of students, two new training models were piloted. The results were compared with the existing model to ascertain which of the models was most successful. The model in which employers, staff and students were involved in recruitment, training and employment was the most successful, but there were still gaps that needed further research. A holistic, student-centred training ecosystem in which training providers and employers take equal responsibility in the training and employment processes is necessary.

Keywords: Deaf and Hard-of-Hearing, Disability, Employability, Employment, Training ecosystem, Training models.

Highlights of this paper

- National legislation and guidelines ensure the right to education and inclusion for people with disabilities, but many laws are not implemented in South Africa.
- Training models must be educationally sound and legitimate while they prepare students for the world of work.
- Three training models were analysed, and seven groups of participants were interviewed to obtain a 360° picture of what constituted the best training model for people with different degrees of hearing loss.
- In the most successful model prospective employers and future colleagues were sensitised to working with people with different degrees of hearing loss, and students were properly prepared for the workplace. When prospective employers are involved in the planning and training of students, the training is successful, and students can be absorbed into the workplace where training has occurred.

1. INTRODUCTION

People with disabilities often have limited access to suitable education or training that makes it possible for them to gain meaningful employment, and as a result, they face challenges of poverty and exclusion from the mainstream of society (Louw, Swanepoel, Eikelboom, & Hugo, 2018; Maart, Amosun, & Jelsma, 2019). In 2019 approximately 10% of the world's population was disabled, while in South Africa it is thought to have been 7. 5 % (Disabled World, 2020; Van der Merwe, Sutton, & Taunyane, 2017). People with disabilities often experience their disability being emphasized above their humanity, abilities and skills, and they are often subjected to emotional abuse through discourteous and damaging labelling (Back, Keys, McMahon, & O'Neill, 2016). In a society that values equality and individual freedoms, disabled people must be taken into account, regardless of their differences. Deaf and Hard of Hearing (DHH) people are included in this vulnerable group (UNICEF, 2020).

South Africa has many strategies and laws that govern education, training and employment of disabled people.

According to Article 18 of the Disability Rights Charter of South Africa (Disabled People of South Africa, 2008) these policies are to be enforced to allow all persons with disabilities opportunities to enjoy their rights.

The Charter also states that disabled people should have access to mainstream education and should be encouraged, through State intervention, workshops and employer incentives to enter the world of work. While the list of laws and Acts and the demands in the Disability Charter are impressive, the Acts, regulations and codes of best practice have not yet been sufficiently implemented (Human Sciences Research Council, 2019; Van Staden, 2011).

There are specific changes required in the Post School Education and Training system that will develop programs aimed at including people with disabilities and create accessible, supportive environments to promote learning and recreational opportunities. However, the education models used to provide such environments for DHH students can be problematic if they do not meet their complex and dynamic needs. They should take the provision of equal opportunities, economic growth, and innovation into account. The world of work changes constantly, and thus requires employees to have diverse skills (Keengwe & Byamukama, 2019) as well as the ability to be innovative in their problem-solving. Such requirements in the workplace mean that training providers must reconsider their modes of education and training. While they should include the basics like reading, writing and other academic subjects, they must also include communication and life skills to increase the employability of and acceptability in mainstream society DHH students (Dye & Hauser, 2014). The National Institute for Development and Training (NIDT) delivers a diverse range of services for disabled people. The focus on the Worcester campus is on providing students with hearing impairments free vocational, post-school training. Traditionally students received theoretical and practical tuition and lived on-campus. Once they had completed their training, they were helped by staff to find employment in deaf-friendly organizations. This model was very costly. From 2011 to 2017 funding was awarded by the National Skills Fund, but this was discontinued in March 2017. Between 2015 and 2018 enrolment declined.

At first it seemed appropriate to investigate how the training model used by the NIDT could be revised to offer what was needed in industries, traditionally thought to suit people with hearing loss (agriculture, information technology, hospitality, furniture making, beauty therapy, jewellery making and construction) to improve the employability of the students. However, the researchers found that more rigorous research was urgently needed for the sake of the students.

The purpose of the research was not only to analyse the training model in use, but also to find ways to develop a sustainable training ecosystem that would enable DHH students to have access to meaningful employment.

This article reports on research that was conducted at the NIDT campus in Worcester. The purpose of the research was to analyse the existing offerings to provide the best possible education and employment prospects for students. This paper presents the theoretical framework that underpinned the research as well as the research methods used in the investigation. This is followed by a literature review, the results of the research and a discussion of the results.

2. REVIEW OF LITERATURE

Unemployment is a major challenge among the disabled population as many are excluded from the mainstream of South African society and opportunities for employment are low (Phiri, 2015). In fact, were it not for social assistance grants, many persons with disabilities would be destitute (Commission for Employment Equity, 2018). Those DHH people who are able to access post school education, face a multitude of barriers including a lack of awareness of their needs and support for the unique, complex nature of hearing impairment (Bell, Carl, & Swart, 2016; Lempka, 2019). Contemporary scholarly and social attitudes consider disability as a social issue, and that disability is a result of societal organisation, and not of the individual's impairment (Humphries et al., 2017). Consequently, it is society's negative attitudes and exclusion that, in effect, disable people who are different (Commission for Employment Equity, 2018; Humphries et al., 2017). This social model aims to remove barriers faced by persons with impairments. It also aims to lobby for persons with disabilities to be regarded as equal to the rest of society and to assist them to become as independent as possible (Moores, 2018). Changes in attitudes, support, access to services, information, resources, aids and 'affirmative action', physical infrastructure and flexibility need to come from society as a whole. The 'Human Rights Approach' to disability recognizes that the State must take the lead in protecting the rights of persons with disabilities. The State must create enabling environments that will ensure the rights and freedoms of persons with disabilities (Commission for Employment Equity, 2018). While some progress has been made in the Post School Education and Training system in South Africa, there is scope for improvement.

3. COMMUNICATION AND MENTAL HEALTH

Communication is a fundamental factor in the mental health and social development of all people, whether they be hearing or DHH (Hallahan & Kauffman, 2006; Marschark, Lang, & Albertini, 2002; Scott & Dostal, 2019). However, DHH persons might find it more difficult to find others with whom to communicate (Swanwick, Kitchen, & Clarke, 2012). It seems as if it is not a hearing impairment itself that might affect the social skills of DHH students, but rather the inability to communicate successfully with hearing peers and others (Camarata, Werfel, Davis, Hornsby, & Bess, 2018). Thus, personal and social aspects of students' lives need to be considered by education institutions and employers in order to provide appropriate preparation for the world of work.

An important part of this preparation is to ascertain the levels or degrees of hearing loss and the quality and quantity of sound that can be heard by individual students because each individual is unique. In addition, for those who are not born deaf, the developmental period of the onset of hearing loss (pre-lingual or post-lingual) can affect

their ability to reach their full potential. The earlier hearing loss is identified, and communication techniques are taught (Ptok, 2011) the better a DHH individual will develop socially, cognitively and linguistically (Camarata et al., 2018; Human Sciences Research Council, 2019; Skrebneva, 2015).

4. COMMUNICATION AND JOB SATISFACTION

While the degree of hearing loss is unlikely to be the only factor to have an impact on training results (Scott & Dostal, 2019) it can lead to ineffective communication with hearing people in the workplace and can result in social immaturity and failure to learn appropriate social skills (Dammeyer, Marschark, & Zettler, 2018). This failure can have detrimental effects on work-place relationships, especially in situations that need a high level of communication (Lempka, 2019). At the same time, work-placement of students, as well as hiring practices and attitudes of hearing employers and future colleagues need to be reviewed.

On the other hand, people progressively develop their knowledge of all language forms over the course of many exposures (Camarata et al., 2018). They learn by using social skills to determine intentions, and cognitive skills to find patterns (Scott & Dostal, 2019). Thus, social engagement and interaction are vital for language learning. However, DHH students and employees seem to feel excluded and to be wary of participating in educational and social activities (Bell et al., 2016; McCreery, Walker, Spratford, Lewis, & Brennan, 2019). It must be accepted that DHH persons will spend much of their school and working lives interacting, cooperating with and competing against hearing peers. However, DHH persons often have lower status jobs than hearing people, unless they have university qualifications. They also tend to work in different sectors of the economy (Rathmann, 2019).

4.1. Communication and Employer Perception of DHH Workers

Unfortunately, there are barriers in many learning and working environments due to language, communication and cultural systems, as well as prejudices that make it difficult for DHH persons to feel included (Leeson, 2020). Such barriers can include background noise and the general use of auditory rather than visual signals. Lempka (2019) and Leeson (2020) suggest that some of these barriers might occur as a result of ignorance of the hearing public of necessary accommodations and societal stereotyping. Van Staden (2011) found that the perceptions of employers were that it was expensive to employ disabled persons because of accommodations that needed to be installed, and supervision that would be necessary. In addition, it was thought that disabled people could not do strenuous work, or that they did not want to work at all. Most organizations did not have written guidelines on the employment and management of disabled persons, neither did they have departments or offices to resolve any issues.

Many DHH persons require accommodations or adjustments to be made in the workplace. Some that need to be provided include the employment of South African Sign Language interpreters, text telephones, phone amplifiers, loop systems to amplify speech, flashing alarms, computers, suitable lighting, furniture and workstations arranged to ensure visual access (Bell et al., 2016). While accommodations that suit individual workplaces seem to be an obvious solution to problems, they are not always successful. Accommodations are usually negotiated with managers who might not understand what is needed and decisions are often made for students and employees and not with them (Lempka, 2019). As a result, some accommodations that are introduced into learning and workplaces are deemed by DHH persons to be unnecessary. In addition, organizations that employ DHH persons tend to provide physical and structural accommodations, rather than emotional and psychological support (Smit, 2012). Thus, when training models include work placement of DHH students, accommodations need to be negotiated between the training organisation, the employers as well as the students.

4.2. Teaching and Training Models

Models of teaching are theoretical frameworks or instructional plans used by educators to create learning experiences to help students learn how to learn. They are usually strategies that prescribe the teaching behaviour of educators and learning behaviours of students (Joyce, Weil, & Calhoun, 2017). Training and development models are similar to teaching models but tend to be orientated to skills and occupation development. Billett (2012) propose that good teaching and training models are based on single learning theories, include strategies that create friendly learning environments, encourage student motivation and active participation. In addition, Joyce et al. (2017) identify five elements that models of training should include, namely syntax (the logical, sequential order of instruction), the social system (the nature of learning environment), the principle of reaction (student reactions to training interventions) support systems (any additional requirements students might need), and application and effect of models of teaching (how students can learn from the model).

Training models are usually derived from a country's national development strategy, prevailing legislation and National Qualification Frameworks (UNESCO, 2017). The challenge in the present research was to find an instrument that could serve as a benchmark by which to analyse and assess the success of the model in use and any model that might be developed in future. The instrument had to include all the components needed in the training and work placement competencies while providing adequate accommodations for DHH students (Lempka, 2019). The benchmark instrument also had to comply with the laws of the land, offer meaningful education, prepare students for the world of work, and prepare workplaces to welcome DHH students and employees (Lubbe, Wolvaardt, & Turner, 2020). It became clear from the literature that South Africa has many strategies and laws that govern Education, Training and employment. Unfortunately, not enough seems to have been done to achieve the vision of these policies. It is essential that education and training models should respond to global and local realities of social contexts, acknowledge marginalized groups and be open to new pedagogies and critical reflection. In addition, facilitation staff should be exposed to new pedagogical approaches, and be made aware of hidden curricula that might influence education outcomes (Lubbe et al., 2020).

The literature review confirmed that new information was needed in the field of training and work placement practices of the country and the institution. This confirmation stressed that authentic information could be gathered by means of rigorous research and some solutions for unemployment could be found or created.

5. RESEARCH SETTING

The NIDT provides private post-school training to unemployed DHH youths from across South Africa and neighbouring countries. At the time of the research, the student cohort comprised of males and females, some of whom had completed ten years of basic education, others had not, and some had not attended school at all (National Institute for the Deaf, 2016). It became apparent that the programs offered had not kept up with modern technology and education trends. As a result, the programs did not seem to adequately prepare the DHH students for meaningful employment in the 21st century.

6. RESEARCH METHOD

The study addressed the complex questions of special needs education in a real-life situation. Thus, data needed to be collected from multiple sources in a variety of ways. A case study that included mixed methods research was used to investigate how students could be trained and helped to gain employment in DHH sensitised work environments. The research was regarded as a case study because it focused on one training institution, using small, if diverse participating groups. A variety of data collection methods was used, namely, literature review, document

review, semi-structured interviews during which different questions were asked of each group of participants, and a quantitative student satisfaction survey (Creswell, 2014; Onwuegbuzie & Corrigan, 2018).

7. PARTICIPANTS

As the research was placed within an interpretive (constructivist) paradigm, purposive sampling was used to identify information-rich participants who could provide authentic information.

A purposive, nonprobability sampling method was used to select participants: purposive because they had knowledge and experience of the training being investigated, and nonprobable because they were available (McMillan & Schumacher, 2014). Seven information-rich groups participated in the research, namely, students studying on-campus at the NIDT (College Model), two groups of students studying off-campus (Industry Training Model A and Industry Training Model B), facilitators of the Training Department, staff members of the Integrated Support Services of the National Institute for the Deaf, alumni of the NIDT, and employers of NIDT alumni. Table 1 clarifies the populations of each group of participants. It provides information on the enrolled participants, the alumni interviewed, the total population, sample and percentage of the population that constituted the sample.

Table 1. Participants per group.

Group	Target Population	Total Population	Sample	Percentage of Total Population
Group 1: Students with hearing loss (College model)	Students with hearing loss enrolled for National Certificate programmes	124	124	100%
	Students with hearing loss enrolled for National Certificate programmes	115	115	100%
Group 2: Students with hearing loss (Industry Training models A and B)	Students with hearing loss enrolled for National Certificate programmes (Industry Training model A)	24	24	100%
	Students with hearing loss enrolled for National Certificate programmes (Industry Training model B)	50	50	100%
Group 3: Alumni who were part of the work-placement initiative	Enrolled in 2015 & 2016	114	18	15.78%
	Enrolled in 2017	18	18	100%
	Enrolled in 2018	6	6	100%
Group 4: Facilitators of the NIDT	All facilitators (College model and Industry Training models A and B)	23	23	100%
Group 5: Staff of Support Services of the National Institute for the Deaf	Staff members who provided services to students	5	5	100%
Group 6: Employers of alumni	All employers of alumni 2015 - 2018	58	20	34.50%

The research was conducted in five phases each one evolving from the other, as depicted in Figure 1.
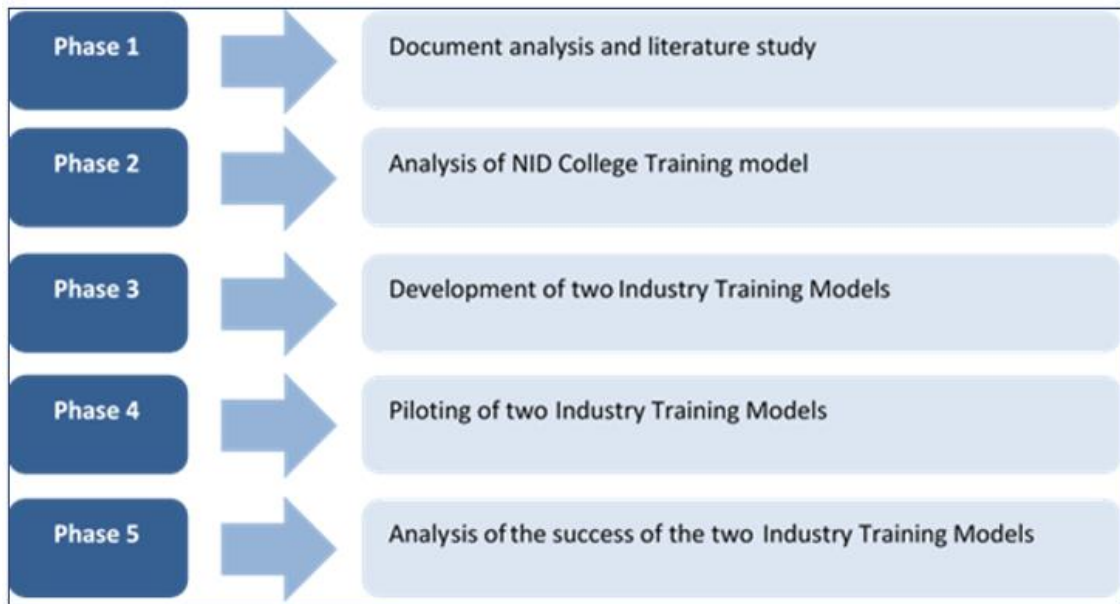
Figure 1. Phases of the research.

The questions asked in the semi-structured interviews stemmed from the literature study, while the document review led to the analysis of all the training models. The quantitative component of the study, namely the student satisfaction questionnaire and student attendance registers, evolved from the qualitative findings of the literature study and informed the analysis of the College Training Model. This gave rise to the development of the two Industry Training Models (A and B) that were piloted and assessed, focusing on work placement and career progression. This, in turn, led to comparisons of the training modes and finally to the development of a new, sustainable training ecosystem.

Data were gathered from the review of national laws, and institutional documents, semi-structured interviews with participants, the analysis of attendance documents, and the student-answered New World Kirkpatrick Training Evaluation Model (Kirkpatrick Partners, 2019). The sample size differed for each group of participants.

8. TRUSTWORTHINESS

Measures for complexity, rigor and trustworthiness were assured in this research through the mix of methods applied (Kalpokaite & Radivojevic, 2019), as the possible weaknesses of one method were reduced by the others.

9. RESULTS AND DISCUSSION

As mentioned above, there was no benchmark available by which to measure the training models in use at the college. The Model Descriptor Framework was developed as part of the first phase of the research. It encompasses the elements advocated by Joyce et al. (2017) mentioned above and made the analysis of the training programs used at the college possible.

Table 2. Training model descriptor framework.

Model Descriptors for Analysis of Training Models	Core Components of Training Models	Core Components of the Mode of Delivery of Programs Offered	Success Indicators of Training Models
Programs offered Relevance to job creation	Mode of training delivery	Meta competencies	Class attendance Workplace compliance
Number of learners and students enrolled	Mode of operation	Cognitive competence	Student level of satisfaction
Academic (facilitator) and support staff to student ratio	Mode of funding	Functional competence	Throughput
Theoretical and practical components of programs	Risks and mitigating actions	Personal competence	Post training after-care services Employability of alumni
Special needs of students		Value competence Awareness training at workplaces	Student level of satisfaction Employer level of satisfaction
Recruitment of students		Holistic development	
Funding requirements		Inclusion of context at workplace	Trainer/employer satisfaction
Core components of the training model		Reflective learning	

The three training models were analysed in terms of the model descriptors represented in Table 2, above, namely programs offered and their relevance to job creation, number of learners and students enrolled, academic and support staff to student ratio, theoretical and practical components of programs, special needs of students, recruitment of students, funding requirements and core components of the training models. These descriptors assessed whether the programs were preparing students adequately to enter the world of work.

This framework was used to assess the existence and success of each component, and can provide consistent analysis of any training model in any context. Components included in the instrument are, programs offered and their relevance to job creation; number of students enrolled; academic (facilitator) and support staff to student ratio; theoretical and practical components of a program; special needs (if any) of students, recruitment of students, funding requirements and core components. Each of these model descriptors was assessed according to the core components of the training models themselves and the mode of delivery of programs offered. Selected success indicators were then listed to clarify the success achieved of each descriptor.

While the core components will ensure consistency, not all are necessary in every context. For example, the core components selected to analyse the College Training Model were, mode of training delivery, mode of operation, mode of funding, identified risks and mitigating actions. These core components reflect the philosophical intent used by Lubbe et al. (2020) to interrogate education practices and acknowledge the warnings against stereotyping made by Lempka (2019); Van Staden (2011) and Leeson (2020).

The original College Training Model offered programs on the campus in simulated work environments and the number of enrolments was limited by the capacity of classrooms and residential units. On the other hand, the two Industry Training Models offered programs in direct consultation with industry entities and were conducted in authentic workplaces of the companies involved. The Industry Training Models shared the same program implementation phases, timelines and verifiable indicators, while the sponsoring companies benefitted by complying with various skills development, employment equity acts and empowerment initiatives of the South African government.

Only the Industry Training Models offered programs that were focused employability of students in specific industries. In addition, both these models were superior in terms of the ratio of academic and support staff to students for both theoretical and practical components of programs because industry experts had been actively involved. Table 3 demonstrates the comparison between the training models. The employment focus is evident in that the sponsoring companies determined which programs could lead to employment of successful students in their business instead of programs being offered according to availability of staff and resources. The staff to student ratio improved from 1:9.26 to 1:6; and 50% was allocated to workplace/industry experience, an improvement of 40% when compared with the College model.

Table 3. Comparison of some elements of three training models.

Training Model Elements	College Training Model	Industry Training Model A	Industry Training Model B
Programs offered and their relevance to job creation	Available resources, infrastructure, facilitator capacity and budget requirements. Influenced the selection of programs	The sponsoring company specified programs according to its employment needs, the Organizing Framework for Occupations, Sector critical scarce skills, and company employment equity strategy.	The sponsoring company specified programs according to its employment needs, the Organizing Framework for Occupations, Sector critical scarce skills, and company employment equity strategy.
Ratio of academic (facilitator) and support staff to student	Student ratio per facilitator theoretical and practical components: 2016: 1: 9.26	Student ratio per facilitator in theoretical and practical components: 2017: 1:6	Student ratio per facilitator in theoretical and practical components: 2018: 1:6
Theoretical and practical components of programmes	30% Theory (classroom) 30% Practical (classroom) 30% Simulated workplace experience (on campus) 10% Workplace (industry) experience	30% Theory (classroom) 20% Practical (classroom) 50% Workplace (industry) experience	30% Theory (classroom) 20% Practical (classroom) 50% Workplace (industry) experience

While the special needs of students were considered in all three models by means of curriculum adaptation and the availability of SASL interpreters, Industry Model A included an awareness program at the workplace before students were recruited.

The program focused on systemic, institutional and personal aspects of working with DHH students. It aimed to prepare employers and mentors for their work with DHH students and to create an awareness of their needs. The concepts of hearing and deafness were explained, and necessary accommodations were agreed on so an employment environment that was productive and secure would be provided.

The classrooms for the theoretical component were prepared by making them accessible and compliant with health and safety standards. Wi-Fi connectivity was made available in all classrooms, and students had access to a learning management system, SASL interpreters or virtual interpreting services.

As the students spent fifty per cent of their time in the workplace itself, the ongoing sensitization process proved to be quite easy. Hearing mentors and colleagues had more time to adapt to the communication needs of the DHH students.

The recruitment processes of the Industry Models were more business-oriented than the College Training Model as the sponsoring companies involved insisted on the application of formal industry-based recruitment criteria. All three training models needed external funding as none of the students was able to pay tuition or accommodation fees.

A comparison of the two Industry Training Models also revealed similarities and differences. What stood out was the expectations of sponsoring companies in terms of recruitment procedures, legal compliance and return on training investment.

The core components of the mode of operation used in Industry Training Model A differed from that of both the other models. The sites of the delivery of the theoretical-, practical- and industry experiential learning components were off campus and offered by industry experts from the sponsoring company. All the staff who would have contact with students were involved in an awareness program and were supported by student mentors from the NID. The sponsoring company's human resources team took care of post-training after-care services. As a leader in the telecom industry, the company funded a second, follow-up program (Computer coding) for 19 students who successfully completed the National Certificate: End User Computing and who wanted to improve their qualifications. The success of this procedure was evident because, after the first program, 90% (21) of the original cohort were employed by the company, and 86% after the second.

The two Industry Training Models (A and B) improved on the College Training Model and introduced a new approach to recruitment of students and Return on Training Investment. They were more aligned with government strategies, white papers, legislation and codes of good practice, were more current, relevant, and focused on the future workforce and career level progression than the College Model. However, the two Industry Training Models were dissimilar: in Model A, NIDT staff drove the program, but the training was focused on a particular company and its requirements, while in Model B, NIDT staff continued to be the drivers of the program with help from industry mentors.

In order to measure the success of the College Training Model the following indicators were used: class attendance, student's level of satisfaction, throughput, and post-training after-care. These indicators revealed that the programs offered had been chosen according to available resources at the National Institute for the Deaf, and not the country's scarce, critical skills. Experiential learning provided on-campus did not give students meaningful work experience and, therefore, did not prepare them for the realities of the entering a real working environment where most colleagues were hearing. The simulated but protective (Deaf culture) environment of the campus proved unsustainable and did not prepare DHH students to compete with hearing peers in the labour market. On the other hand, the two industry models, focused on skills needed by two companies and students were placed off-campus in workplaces. In Industry Model B, NIDT facilitators taught the content and conducted the training component at a site provided by the company. The learning program focused on the needs of each company and adhered to the prerequisites of that company. In Industry Model A, NIDT staff continued to be the drivers behind the program, but the company and its staff were directly involved in the training.

The frameworks and models devised to assess existing training models, and to plan programs and curricula proved to be of great value in the development of a new ecosystem.

10. CONCLUSION

While the findings from the implementation of the two Industry Models showed that each had merit, and while employment of alumni seemed more assured through Model A, neither was perfect. The study found that DHH students are capable of studying and working in modern, technological industries, but that they need support to access suitable training. Training providers like the NIDT are appropriately positions to take on the role of educators, trainers and mentors. Most of the students who attend training institutions in South Africa cannot afford tuition fees of conventional institutions and need to receive funding. For instance, none of the students participating in this study

paid any fees. When prospective employers understand the benefits of sponsoring, training and employing DHH students, they are willing to become involved.

This study concluded that students who were introduced to authentic workplaces earlier, and the more involved the employers are in their training, the more successful they will be. Providing employers with information about hearing loss and mentoring them as they face the challenges of employing DHH people makes them willing to participate in training programs. They are also prepared to consider providing reasonable accommodation prior to and throughout the program.

11. IMPACT OF THE INVESTIGATION

Because of this investigation, the culture of the NIDT changed from following a social model that depended on donor funding and goodwill of benefactors, to following a commercialized business support mode (National Institute for the Deaf, 2018, 2019) that supports South Africa's greatest challenges in terms of meeting Employment Equity targets. In doing so, a win-win situation has been achieved. The NIDT addresses the real need of corporate bodies and provides a service that they are prepared to pay for. In return the businesses address the needs of DHH students by providing funds for their training and offering gainful employment once they have completed their training programs. However, more needs to be done so that programs offered by education institutions must be based on identified scarce and critical skills and be relevant to future employment opportunities, especially regarding education and training needs of the Fourth Industrial Revolution.

The change of culture has necessitated the redesign of the NIDT to move away from servicing the Deaf community exclusively and to recruit a more inclusive cohort of students with disabilities other than hearing loss. The results of the research revealed what the actual and not assumed requirements for training disabled students should be the outcome of strategic planning.

Employer and student satisfaction is increased when DHH students and employers are able to express themselves and participate in decision making regarding training and workplace accommodations. The experiences of students and the analysis of the training models allowed for comparison and provided information that led to the development of a new NIDT ecosystem. The new ecosystem includes inputs from various sectors of the community, takes communication and social challenges faced by DHH persons into account, and focuses on the employment of alumni in meaningful positions. The model includes the involvement of employers in every step of the recruitment, training and employment process. As such it sets out a way to provide a holistic, student-centred training ecosystem to enable DHH persons to take their rightful place in the economy.

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