# Students with Disabilities Inclusion in Higher Education: Forgotten Issue in Disability Literatures

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## Abstract

*The purpose of this study was to look into the inclusion of disabled students in higher education institutions. A quantitative technique was utilized in conjunction with a cross-sectional survey design. A total of 246 SWDs were chosen from five Ethiopian public HEIs using a stratified proportionate random sampling technique. Frequency, percentage, mean, standard deviation, correlation, one-sample t-test, multiple regressions, Independent samples t-test, and One Way ANOVA were used to examine data acquired through a college student experience questionnaire. The pupils were found to be enrolled in the institutions, according to the findings. When compared to male students, female students scored higher on inclusion. Pupils who were blind were more included than students who were deaf or had physical limitations. However, the pupils' inclusion does not seem to be affected by their year level. The conclusion is that, despite the fact that inclusion has been discussed in disability literature for a long time, there is no scale to quantify it in higher education. As a result, the advice is that a scale be devised, and that males who are deaf and have physical limitations, for example, be assisted by institutions.*

## 1 Introduction

### 1.1 Background of the Study

In Ethiopia, the number of public higher educational institutions (HEIs) has expanded from 11 to 45 in the recent few years. Undergraduate enrollment went from 447,693 in 2010/11 to 593,571 in 2013/14; masters enrollment increased from 10, 211 in 2007/08 to 58, 286 in 2013/14; and third-degree enrollment increased from a low base of only 258 in 2007/08 to 3,169 in 2013/14. (Ministry of Education, 2015. p.24). However, the number of students with disabilities (SWDs) at higher education institutions (HEIs) remains low (Tirussew, Daniel, Alemayehu, Fantahun, Sewalem, Tilahun & Yirgashewa, 2014; Ahmed, 2016). Those who

have enrolled in HEIs are facing a variety of problems, ranging from academic to social to physical. On instance, according to Yared (2008), Ethiopian HEIs have no defined policy for SWDs, and the available provision, if any, is minimal.

Furthermore, Almaz (2011) found that Ethiopian HEI students exhibit a negative attitude toward students with visible disability in her research. Birhanu (2015) found that SWDs face a lack of understanding regarding disability, instructor and student misconceptions, negative attitudes, and a lack of effective training materials in his study of three experienced HEIs (Addis Ababa, Haramaya, and Adama Science and Technology universities). Abebe (2017) conducted a comparison research

with Kenya and Tanzania, visiting ten technical and vocational education and training (TVET) colleges in five areas of Ethiopia to assess the availability of policy and legal frameworks, as well as the training packages provided to SWDs. He discovered that the institutional training of SWDs was inadequate due to a lack of proper strategy, priority, and implementation, as well as a shortage of facilities and qualified human resources. Yohannes (2015) conducted a qualitative case study in Hawassa and Mekelle universities to investigate the situation of students with visual impairments (SWVIs). He discovered that SWVIs faced non-interest-based department placement, inflexible curriculum, non-accommodating assessment, and unfriendly learning/institutional environments. Ethiopia, on the other hand, aspires to and is determined to have an inclusive society in all of its growth and development domains in the future (Ministry of Labor and Social Affairs, 2012, p.IV). The aforementioned studies, on the other hand, made no attempt to record whether SWDs were included or not in the institutions using a standardized scale; instead, they chose to describe only problems, despite they were informative about the condition of SWDs in the institutions. As a result, a study of this nature in the country is worthwhile.

## 1.2   Statement of the Problem

The majority of studies on SWDs at HEIs, both internationally and locally, focus on the diverse kinds of problems (in academic, social, and physical areas) that students face in the institutions. As we can see in the survey of related literature section on SWDs' "inclusion" in HEIs, research tended to focus on relaying qualitative experiences as inclusion demonstrations. Even yet, they place a greater emphasis on academics and less on social and physical elements. Furthermore, there is no "inclusion scale" that can be used to study the inclusion of SWDs in HEIs, according to the researchers' expertise and reach in the disability literature. The current study did not address the problem; instead, it used a scale to suggest what the scientific community and other stakeholders in the field should do in the future, both worldwide and nationally.

The following research questions were posed in order to achieve the study's goal:

1. to what extent are students with disabilities included in the higher education institutions?
2. is there a substantial difference in the enrollment of disabled students in higher education institutions due to demographic characteristics (gender, disability types, and year levels)?

## 2   Review of Related Literature

### 2.1   Examples of Studies focusing on Challenges of SWDs in HEIs both Internationally and Nationally

On the academic challenges, those studies reviewed internationally (e.g. Abu-Hamour, 2013 cited in Edna, 2016; Alsalem, & Doush, 2018; Blinn, 2017; Erten, 2011 cited in Birhanu, 2015; Joseph, 2010; Mccray, 2013; Matonya, 2016; Moores, 2010 cited in Suubi 2013; Ntombela & Soobrayen, 2013; Oppong, Fobi & Acheampong, 2018; Suubi, 2013; Zambrano, 2016) indicated that the challenges are related to faculties' expressed in not allowing late comers, non-accommodative methodology, assessment, evaluation, poor knowledge of legislation and lack of teaching experience with SWDs, family poverty/financial, HEIs' settings suitable for non-deaf students only, lack of department cooperation, information inaccessibility and non-uniformity function of HEIs, non-availability of sign language interpreters, ill-prepared interpreters, lack of guidance counseling service, and technology and lack of computer skills.

The local studies (e.g., Endalkachew & Dessalegn, 2017; Getachew, 2018; Teferi, 2018; Tirussew *et al.*, 2014; Walga, 2018; Yared, 2008; Yohannes, 2015) unraveling the academic challenges of Ethiopian SWDs in HEIs more or less came up with similar findings with studies discussed in the international ones. Yet, two things need to be stressed in the findings. First, the findings talk about only some HEIs in the country. Namely, Adiss Ababa, Hawassa, Gondar, Semera, Dilla, Haramaya, Axum, Bahir Dar, Mekelle, Jigjiga, Debretabor, Adama Science and Technology, Jimma, Welkite, Mizan-Tepi, and Mekelle Universities in particular and dominated by Addis Ababa University in general. Second, SWDs who participated in the study were none other than students with visual, hearing impairments, with

physical disabilities, and more of on SWVIs. May be because, these three types are mostly recognized as disability types by HEIs in Ethiopia. For example, disability offices in HEIs in the country serve only students with these disability types. Though not solved in this study, the researcher would like to suggest future studies need to incorporate other HEIs and other disability types too.

On social challenges, those studies (e.g., Chanika, 2010; Joseph, 2010; Lourens, 2015; Matonya, 2016; Suubi, 2013; Zambrano, 2016) reviewed internationally indicated SWDs' social challenges are the following: difficulty in finding oneself in HE setting, hostile environment, marginalization and disempowerment, communication problem, difficulty to make social networking, dating problem, lower expectation, and attitudinal barrier related to toilet use and sharing food.

The social problem of SWDs' as indicated by local studies (e.g., Almaz, 2011; Birhanu, 2015; Endalkachew & Dessalegn, 2017; Teferi, 2018; Tirussew *et al*., 2014; Tirussew & Lehtomki, 2010, cited in Walga, 2018; Walga, 2018; Yohannes, 2015) were primarily negative attitude of faculties' and SWODs' and its resultant hostile relationship and the uneasiness of interaction with others due to fear of sexual harassment.

On physical challenge, those studies (e.g., Blinn, 2017; Kabuta, 2014; Matonya, 2016; Mutanga, 2015; Okoye, 2010 cited in Walga, 2018) reviewed internationally indicated that there were bureaucratic problems while requesting access by SWDs, lack of health service, difficulty in daily living activity due to access inadequacy and unattractiveness, and generally the physical environment challenge seem to be more or less similar in the majority of HEIs.

The same thing was also witnessed in the local ones. A study done by (e.g., Abdulfettah, 2018; Endalkachew & Desalegn, 2017; Getachew, 2018; Teferi, 2018; Tirrusew *et al*., 2014; Walga, 2018; Yared, 2008) in different HEIs in the country reported similar findings that the physical environment of the HEIs' is inaccessible. For instance, dormitory, dining room, toilet, shower, road, recreational centers/campus playgrounds, library, and the likes were inaccessible. Therefore, some of these studies reported that SWDs were challenged in their mobility, incur mark reductions and negative relationships with faculty due to lateness from class, unable to enjoy services due to inability to access the whole campus settings, asking help from passersby while moving inroads, and fatigue in a library.

In summary, we understand that though the above studies were insightful in reporting the challenges existing in the inclusion process of SWDs in HEIs, the current researchers believe studies in the area should transcendinvestigating inclusion of the students using a measurement scale.

## 2.2   Examples of Studies focusing on Inclusion of SWDs in HEIs

It must be noted in advance, the studies to be mentioned hereafter were not done using measurement scale, and they were instead qualitative in nature reporting experiences of the students. The studies reported below both at international and national levels indicated mixed results both satisfactory and unsatisfactory and sometimes different scenario among disability types; for the latter it was attributed to different challenges existing in the campus settings.

Internationally, (Matonya, 2016) in her study taking women with disabilities (WWDs) explained education contributed to their development of self-awareness and knowing their identity within the society, transforming from ignorance and illiteracy into literate, well-developed individuals. WWDs also reported meeting with people who face greater challenges than they do and thus learning how to interact and live within the diverse society. Their family and community members started respecting them, involving them in decision-making, listening, allowing them to air their views, and consulting them for advice. Families and community members were able to ask respondents for guidance and counseling regarding siblings and nephews about the importance of education.

Locally, (Yohannes, 2015) asked his respondents about their perceptions of whether they had equal opportunities in learning with their sighted students. They all agreed that they were equal in terms of

having the opportunity to join the HEIs. However, considering the overall learning environment, all three of them strongly argued that they did not have an equal opportunity to learn. They all mentioned different challenges and problems that hampered this equality. The main problem that all of them mentioned was related to materials provision which they described as minimal as compared to what was available for their sighted peers.

Yet, there was another encouraging finding from the country that reported after having SWDs to rate their academic status as below average, average, and above average. They reported that 4.6% of them had below average, 60.8% average, and 34.7% above average status. This is promising that SWDs are performing well in the HEIs. Except for a few HEIs (e.g., Samara and Dilla Universities), the data obtained from students showed that the academic status of students in most HEIs was average (Tirussew *et al.*, 2014).

However, studies indicated there are differences among students with different disability types. For example, it was clear that there were differences between the inclusion of deaf/hard of hearing and SWVIs, the students with visual impairments (SWVIs) felt more included (Suubi, 2013). Deaf/hard of hearing students had mixed feelings about their studies: some found the HEIs hard while others thought they were easy. But both deaf/hard of hearing and SWVIs had confidence in their academic abilities. Despite the confidence, deaf/hard of hearing and SWVIs said they did not perform as well as they would have liked due to several challenges they encountered in their academic work. "HEIs were aware of their needs but had done little to meet them" (Suubi, 2013, p. 234).

Levels of inclusion of the SWVIs and deaf/hard of hearing students in the HEIs were not satisfactory. SWVIs felt that they were not fully included while deaf students on the whole felt excluded and 'left out'. Among deaf/hard of hearing participants, only the hard-of-hearing felt included. There were few instances of friendships between deaf students and hearing students and very little interaction between deaf students and their faculties (Suubi, 2013). He further, stated that "levels of satisfaction with their inclusion were much lower among deaf/hard-of-

hearing students than among SWVIs" (p. 225).

However, both at international and local level it seemed to be very difficult to get ample studies with similar and or different reports. For example, locally only two studies Tirussew *et al.* (2014) and Yohannes (2015) were found. The lack of inclusion scale in all studies as it may.

Nevertheless, across the globe, though efforts seem to be not made to develop inclusion scale to measure inclusion of SWDs at all levels of education including HEIs, there are initiatives made to realize inclusion of the students as discussed below.

For example, the least restrictive environment (LRE): A fundamental component of special needs education that has been in place since IDEA of 1975, is that SWDs are to be educated in the "least restrictive environment" (20 U.S.C. § 1412(a)(5). LRE creates a presumption that SWDs are to be educated in the regular education classroom to the "maximum extent appropriate".

The other is the universal design of instruction: One approach for addressing accommodation issues is to include accessibility from the beginning of the course development. This inclusive teaching strategy is commonly called Universal Design for Instruction. "Universal Design offers principles for creating a curriculum that is accessible for multiple audiences which includes detailed guidelines for creators of academic content to follow" (McGinty, 2016, p.21). The Universal Design framework follows, "the seven principles established within the field of architecture (these are flexible to use, equitable to use, information is perceptible, simple and intuitive, requires little physical effort, tolerates error and appropriate size and space for use)" (McGinty, 2016, p.22). Dallas, Sprong and Upton (2014) cited in McGinty (2016) stated that Universal Design approaches seek to provide inclusive learning that promotes HEIs learning environments to view disability from a social model as opposed to a medical model. Gale and Mills (2013) identify three dimensions of pedagogy-belief, design, and action-and propose three principles that underpin an inclusive pedagogy: the belief that all students offer value to the learning environment, the design of a pedagogy that values difference, and

actions that work with students rather than impose predetermined actions upon them.

Still, we have also another instrument called the inclusive teaching and learning movement: Inclusive teaching and learning are the methods by which "pedagogy, curricula, and assessment are designed and delivered to engage students in learning that are meaningful, relevant and accessible to all" (Hockings, 2010, p.1). The principles of inclusive teaching and learning call for institutions to be, "just, inclusive and engaging of all by understanding the nuanced experiences of all students within highly diverse student groups" (Hockings, 2011, p.192). Providing inclusive education that removes barriers to participation and acknowledges and harnesses learner diversity requires engagement with an anticipatory approach to curriculum design so that curricula, assessment, and classroom activities meet the learning needs of all students (Hockings, 2010).

And also, we have a disability-friendly climate concept: One way to improve outcomes for SWDs is to create a disability-friendly institutional climate (Huger, 2011). A disability-friendly climate offers value for all students and serves to increase the sensitivity and acceptance of those who are different. Exposure and interaction with a diverse group of students is an important aspect of the HE experiences according to student development theory (Huger, 2011).

In the least restrictive environment, inclusive teaching, and learning, universal design of instruction, and disability-friendly climate advocates all believe that HEIs to be inclusive for all children and youth with or without disabilities (CYAWODs) and need to have values and beliefs promoting social cohesion, belonging, active participation in learning, a complete HE experience, and positive interactions with peers and others in HE communities (IDEA, 1975; McGinty, 2016; Hockings, 2011; Huger, 2011). Yet, in this study, when SWDs inclusion is studied the study did not investigate the preceding issues whether they are available or not in the 5 sampled five public HEIs; instead the student respondents were asked whether they believe or not included in the institutions only. In other words, the study considered inclusion in terms of

gains/benefits the students believe in areas of academics, social and physical in their journeys in the institutions.

In a nutshell, from the background of the study, statement of the problem, and review of related literature we understand that studies focused on mere report of the multitude of challenges SWDs face qualitatively and seem to be no reporting the gains/benefits/inclusion status of SWDs in HEIs quantitatively using a scale both at international and national levels. Therefore, the current study is believed to bridge this gap of research.

## 3 Research Design and Methodology

### 3.1 Description of the Study Areas

There are around 45 public HEIs in Ethiopia. Despite this, the research focused on the 10 first-generation public universities. Addis Ababa, Jimma, Haramaya, Mekelle, Hawassa, Bahir Dar, Gondar, Arbaminch, Dilla, and Adama University of Science and Technology were among them. The justification is that among the remaining 35 public HEIs, the 10 HEIs with a solid track record in accepting SWDs are deemed to have a good track record (e.g., Tirussew *et al.*, 2014). However, using simple random picking, five universities were chosen for this study: Addis Ababa, Haramaya, Hawassa, Bahir Dar, and Gondar universities.

### 3.2 Research Design and Approach

The study employed a cross-sectional survey design with quantitative approach. The design enabled the collection of data from respondents with in a very short period of time to investigate the relationships between variables of interest of the study, from 01 May 2019 to 25 June 2019.

### 3.3 Population, Sample, and Sampling technique

The population of SWDs from Addis Ababa, Haramaya, Hawassa, Bahir Dar, and Gondar universities is shown in Table 1. The study employed Taro's (1967) formula to calculate the sample size, n, from the study population, N, and e is the chance of error (within the desired precision of 0.05 for 95 percent confidence level). In our situation, the

sample size was determined to be 264 SWDs from a target population of 773 SWDs. To choose sample SWDs from the five HEIs, stratified proportionate random sampling techniques (deaf, blind, and physical impairments strata) were used. Finally, the indicated SWDs from each HEI were chosen using a systematic random sampling technique based on a name list of students acquired from each of the five HEIs.

$$n = \frac{N}{1+N(e)^2}$$

$$n = \frac{773}{1+733(0,05)^2} = 263.59 \approx 264$$

**Table 1:** Population, sample size, and sampling technique

| University | Target Group (SWDs) | Target Population | Sample Size | Percentage from Target Population |
|---|---|---|---|---|
| Addis Ababa | Blind | 108 | 37 | 12.1% |
| University | Deaf | 146 | 50 | 16.3% |
| | Physical impairments | 53 | 18 | 5.9% |
| | **Total** | **307** | **105** | **34.3%** |
| Haramaya | Blind | 82 | 28 | 26.2% |
| University | Deaf | 2 | 1 | 1% |
| | Physical impairments | 23 | 8 | 7.5% |
| | **Total** | **107** | **37** | **34.7%** |
| Hawassa | Blind | 110 | 37 | 28.5% |
| University | Deaf | 5 | 2 | 1.5% |
| | Physical impairments | 15 | 5 | 3.8% |
| | **Total** | **130** | **44** | **33.8%** |
| Bahir Dar | Blind | 121 | 41 | 32.5% |
| University | Deaf | 0 | 0 | 0% |
| | Physical Impairments | 5 | 2 | 1.6% |
| | **Total** | **126** | **43** | **34.1%** |
| University of | Blind | 51 | 17 | 16.5% |
| Gondar | Deaf | 4 | 2 | 2% |
| | Physical impairments | 48 | 16 | 15.5% |
| | **Total** | **103** | **35** | **34%** |
| | **Total** | **773** | **264** | **34.2%** |

*Source: Computed by the current researcher from data obtained from each sampled HEIs.*

### 3.4   Instrument of data collection

**Questionnaire**

Having the same demographic characteristics of SWDs as sex, year of study, disability types, the College Student Experience Questionnaire (CSEQ, $4^{th}$ eds.) of Pace and Kuh, (1998) which were adapted with permission was used. The pace and Kuh's questionnaire consist of over 150 items with categories of (a) college activities, (b) the college environment, and (c) estimate of gains (Gonye *et al.*, 2003). However, leaving (a) the college activities and (b) the college environment, the CSEQ was used to collect data on (C) inclusion ("estimate of gains" as put in the questionnaire) consists of about 25 items of different areas about academic, social and physical inclusions (yet, an estimate of gains is non-dimensional). Items are evaluated on a 1 -

4 Likert scale: 1 - very little; 2 - some; 3 - quite a bit; 4 - very much. It must be understood that CSEQ "estimates of gains" were used to measure inclusion, the fact that to the reach of the current researchers they were unable to get inclusion scale none other than CSEQ.

## Validity

Validity of the face and content were examined. The study took into account the following recommendation in doing so. The process of judgment entails having a group of specialists confirm the items in order to assure the assessment instrument's content validity. Domain specialists should be chosen based on characteristics such as expert knowledge, specific training, and/or professional experience in the field. When establishing content validity, it is recommended that at least three experts be involved. The use of a large number of experts (more than ten) reduces the likelihood of agreement (Polit & Beck, 2006). The minimal number of experts necessary for content validity is three to ten (Streiner, Norman, & Cairney, 2015; Yaghmale, 2003), whereas others recommend at least two (Gable & Wolf, 2012; Waltz, Strickland & Lenz, 2016). As a result, three Ph.D. dissertation supervising committees, two from Haramaya University and one from the University of Gondar, as well as four special need and inclusive education professionals and experts from the latter HEI, were consulted to assess the face and content validity of the three instruments. Constructive recommendations and comments were gathered from these seven professionals.Punctuation, subject-verb agreement, wordings, phrasing, ordering, additions of demographic information, and clear directions on how students fill out the questionnaire are among the suggestions and critiques.As a result, the expert feedback was taken into consideration, and clear directions on how students fill out the questionnaire. Hence, the feedback given by the experts were considered accordingly.

## Reliability

First and foremost, the valid instrument (CSEQ) in its English language version was translated into Amharic by a professional translator who was unfamiliar with the questionnaires' aims at the Bahir Dar City Administration prior to the pilot test. The translation, on the other hand, contained a few faults as a result of its straight translation, which shifted the focus away from the notion. As a result, the researcher re-corrected these minor inaccuracies in order to bring the instruments up to par with an accurate translation. It was a scientific procedure. Guillemin, Bombardier, and Beaton (1993) and Beaton, Bombardier, Guillemin, and Ferraz (2007), for example, suggested that a naive translator who is unaware of the questionnaire's objective should produce the translation so that the researcher can detect subtle differences in the original questionnaire.

A pilot research was conducted at Mekelle University's AdiHaqi Campus with 30 SWDs consisting of 10 blind, 18 with physical disabilities, and 2 deaf to maintain the instrument's dependability, as shown in Table 2. Following the pilot study, the questionnaire item numbers were kept the same as they were in the original instruments. Table 2 summarizes the instrument's dependability.

**Table 2:** Reliability index of measures

| Variable | Sub-scale | Number of items | Cronbach Alpha |
|----------|-----------|-----------------|----------------|
| Inclusion | Inclusion | 25 | .93 |

As indicated in the above table, the total Cronbach's alpha ($\alpha$) internal consistency reliability coefficient was calculated for the total scale for CSEQ was to be .93. Thus, it was adequately justifiable to proceed with the final data collection for the study that the scale's values satisfactorily met the standard of very good internal consistency reliability of a scale. For example, DeVellis (2003) as cited in (Pallant, 2010 p. 97) stated that, "ideally, the Cronbach alpha coefficient of a scale should be above .7" Pallant (2010, p.100) further strengthened that, "Values above .7 are considered acceptable; however, values

above .8 are preferable".

### 3.5 Methods of data analysis

The collected data from the questionnaire were converted into a machine-readable, numeric format Excel spreadsheet and entered into the SPSS statistical program to be analyzed through SPSS version 21. Once the database was established in SPSS, the researcher checked each data line in the Excel sheet, to ensure the data were matching those in the SPSS database. No errors were found through this check. In SPSS, the researcher also calculated the minimum and maximum values of each variable to check for impossible values. No values were found to be outside of the minimum or maximum range. The data entry error rate was 0%, with an accuracy rate of 100%. Empty responses were entered as 'missing' and excluded using pairwise deletion ($n$ = 10). Participants who completed more than 80% of each measure had missing data points imputed based on the mean of the answered items on that measure. After these data cleaning procedures, a total of 255 cases out of 264 cases were retained for analyses by rejecting 9 cases.

Frequencies and percentages were calculated for respondent socio-demographic characteristics. Before passing to inferential statistics assumption tests were checked and were fulfilled (e.g. homoscedasticity, absence of outliers, linearity, normality). One sample t-test analysis was computed to examine the extent of inclusion of respondents in the HEIs. An independent sample t-test was computed to examine gender differences in inclusion. One Way ANOVA was used to see whether disability types and year levels have differences in respondents' inclusion in the institutions.

## 4 Results

### 4.1 Respondents' demographic characteristics

**Table 3:** Percentage of respondents across gender, disability type, and year level

| Variables | Categories | Number | Percent |
|---|---|---|---|
| **Gender** | Male | 178 | 69.8 |
| | Female | 77 | 30.2 |
| | **Total** | **255** | **100.0** |
| **Disability type** | Deaf | 54 | 21.2 |
| | Blind | 152 | 59.6 |
| | Physical Disability | 49 | 19.2 |
| | **Total** | **255** | **100.0** |
| **Year level** | First Year | 72 | 28.2 |
| | Second Year | 79 | 31.0 |
| | Third Year | 66 | 25.9 |
| | Fourth Year | 23 | 9.0 |
| | Fifth Year | 15 | 5.9 |
| | **Total** | **255** | **100.0** |

A total of 178 (69.8%) males and 77 (30.2%) female SWDs participated in the study. Coming to disability type, more than half of the participants (59.6%) were blind, followed by deaf (21.1%), and with physical disabilities (19.2%). Concerning year level, 31%, 28.2%, and 25.9% were second-year, first-year, and third-year students respectively.

### 4.2 Extent of SWDs inclusion in HEIs

**Table 4:** One sample $t$-test on measuring the extent of inclusion

| Variable | Mean | SD | T | Df | Sig. | Mean difference | Test value |
|---|---|---|---|---|---|---|---|
| Inclusion | 72.10 | 13.28 | 11.539 | 254 | .000 | 9.60196 | 62.5 |

The one-sample t-test in the above indicated a significant difference in the sample mean score of inclusion and the test value, $t$ = 11.53, $df$ = 254, $p$ = .000. The sample means score of inclusion ($M$ = 72.10, $SD$ = 13.28) was greater than the test value (62.5). This shows that the extent of inclusion of the respondent SWDs was higher.

### Gender difference in inclusion

**Table 5:** Independent samples $t$-test comparing engagement between male and female SWDs

| Gender | N | Mean | SD | $t$ | df | sig. |
|---|---|---|---|---|---|---|
| Male | 178 | 70.4719 | 12.95851 | 3.026 | 253 | .003 |
| Female | 77 | 75.8701 | 13.35975 | | | |

As shown in the above table, there was a significant difference in inclusion between male and female SWDs ($t$ = 3.026, $p$ < .05). Interestingly, female students had a higher score of inclusion as compared to males.

### Inclusion difference across the different disability types

**Table 6:** One Way ANOVA comparing inclusion among deaf, blind and physically disabled students

| Disability types | N | Mean | SD | F | df | sig. |
|---|---|---|---|---|---|---|
| Deaf | 54 | 66.8333 | 14.38126 | 88.45 | 2 | .000 |
| Blind | 152 | 74.8092 | 12.88448 | | | |
| Physical Disability | 49 | 69.5102 | 11.07008 | | | |

The one –Way ANOVA result demonstrated a significant difference in inclusion among the blind, deaf, and students with physical disabilities ($F$ = 88.45, $p$ < .05). The Tukey posthoc test confirmed that the inclusion score of blind students was significantly higher than deaf and students with physical disabilities. This implies that blind students are in a better position of inclusion as compared to deaf and physically disabled students.

**Inclusion difference across year levels**

**Table 7:** One Way ANOVA comparing inclusion among first, second, third fourth and fifth year SWDs

| Year levels | N | Mean | SD | F | df | sig. |
|---|---|---|---|---|---|---|
| First Year | 72 | 71.2778 | 12.36103 | .475 | 4 | .754 |
| Second Year | 79 | 73.4430 | 13.03619 | | | |
| Third Year | 66 | 72.4394 | 13.91638 | | | |
| Fourth Year | 23 | 69.7826 | 15.00896 | | | |
| Fifth Year | 15 | 71.0667 | 14.31017 | | | |

As demonstrated in the above Table, there was no significant difference in inclusion among first, second, third, fourth, and fifth-year SWDs ($F = .475$, $p > .05$). This shows that batch level does not have a significant influence on inclusion.

## 5 Discussion

From the findings, only four major issues can be stated boldly. The first is, unlike those previous studies (e.g. Abu-Hamour, 2013 cited in Edna, 2016; Alsalem, & Doush, 2018; Blinn, 2017; Endalkachew & Dessalegn, 2017; Getachew, 2018; Teferi, 2018; Tirussew *et al.*, 2014; Walga, 2018; Yared, 2008; Yohannes, 2015; Chanika, 2010; Joseph, 2010; Lourens, 2015; Matonya, 2016; Suubi, 2013; Zambrano, 2016; Blinn, 2017; Kabuta, 2014; Matonya, 2016; Mutanga, 2015; Okoye, 2010 cited in Walga, 2018) both internationally and nationally which dealt the diverse challenges of SWDs in HEIs; the present study investigated the inclusion status of SWDs in sampled HEIs which can be taken as a new research endeavor to be continued in the future by concerned researchers in the area.

The second is, worldwide, though there are initiatives in place like the least restrictive environment (LRE) (IDEA, 1975), Universal Design of Instruction (McGinty, 2016), Inclusive Teaching and Learning Movement (Hockings, 2010), and Disability-friendly Climate Concept (Huger, 2011) to realize inclusion of SWDs at all levels of education; it remains a vexed question why there is no so far inclusion scale, to measure the inclusion of the students at all different school settings.

The third is like as it was reported in the review of related literature similar to the study's of Suubi (2013) differences of inclusion experiences was observed in this study due to disability types, which can be taken as consistent finding. Whereas, gender and year levels influences the level of inclusion of respondents' in the institutions though very difficult to label them as new and or consistent findings of this study the fact that exhaustive empirical evidence search was not undertaken at the review process, yet they should b taken as considerable findings.

The fourth and the most important finding as it should be, it is possible to infer the finding of the current study that respondents were found to witness inclusion, is attributed to decades of relentless efforts of policymakers, GOs, NGOs, special educational needs professionals, educators, and so on who are relentlessly working in crafting and enacting legal and policy directives, strategies, guidelines and so on disability issues for the inclusion of children, youth, and adults in schooling settings for example.

## 6 Conclusion and Recommendations

Based on the finding and discussion of this study two strong conclusions were drawn; i.e. through the issue of access and inclusion to the education of children, youth, and adults with disabilities in various school settings have been in disability literature for decades, it is a disappointing scenario that so far there is no inclusion scale to measure it, developed by special educational needs/inclusive education educators/researchers. Male students and students who are deaf and with physical disabilities are not that much included when compared to females and those blind students. Therefore, the recommendation of this study would be educators/researchers in the area should make up most effort to develop inclusion scales that can be applied to different

education settings, in our case, HEIs and males and those with deaf and physical impairments need to be supported more by the institutions for example.

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## Conflict of Interests

The authors declare that there is no conflict of interest.

## Ethical approval

Consent was sought form the research participants. Confidentiality was maintained in reporting information.

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