Engagement of Students with Disabilites for Inclusion in Ethiopian Public Higher Education Institutions

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ABSTRACT

The aim of the study was to investigate the extent of engagement, inclusion and influence of engagement on inclusion of Students with Disabilities (SWDs) in Higher Education Institutions (HEIs). Convergent Parallel Mixed research design was employed though only quantitative data presentation, interpretation and discussion was considered in this paper. Student Engagement Scale (SES) and College Student Experience Questionnaire (CSEQ) were used to collect data. Reliability and validity of the instruments was scrutinized properly. For example, pilot study of the instruments was undertaken involving 30 SWDs who were attending their education at Mekelle University. Target population were 773 SWDs from 5 HEIs in the country, yet through Taro (1967) stratified proportionate random sampling technique (deaf, blind and physical impairment strata) 264 SWDs were determined to be sample populations. The data collected by the two questionnaire were analyzed by using one-sample t-test and multiple stepwise regression. Results indicated that SWDs were engaged highly in their sense of valuing (psychological engagement I) and cognitive engagements. However, they have lower sense of belonging, lower relationships with faculty members, peers and behavioral engagements. On the contrary, SWDs were found to be included and this inclusion was influenced by SWDs' engagement. Recommendation was therefore, training about engagement need to be delivered to SWDs at various levels of education before entering to HEIs.

Key words: Students with Disabilities, Engagement, Inclusion, Higher Education Institutions, Ethiopia

INTRODUCTION

Engagement is conceptualized as the involvement and the quality of effort students themselves devote to educationally purposeful activities that contribute directly to the desired outcomes (Astin, 1993; Hu & Kuh, 2001; Pascarella & Terenzini, 2005) and the psychological, cognitive, emotional and behavioral engagements of individual learners towards the whole aspect of campus and class engagements (Gunuc, 2014; Gunuc & Kuzu, 2015). Studies indicated that when students are fully responsible for their learning, they would be designing diverse mechanisms to achieve their learning goals (Bray & McCLaskey, 2015). That is why, some studies confirmed engagement predicted better academic achievement, cognitive, behavioral, social, classroom engagements and sense of belonging in HEIs (Gunuc 2014) and brings satisfaction and college success (Korobova & Starobin, 2015).

To the current researchers' knowledge, there are quite few studies conducted in the country (for example, Abebe, 2017; Almaz, 2011; Birhanu, 2015; Tirussew, Alemayehu, Fantahun, Sewalem, & Yirgashewa, 2013; Tirussew, Daniel, Alemayehu, Fantahun, Sewalem, Tilahun, & Yirgashewa, 2014; Yohannes, 2015) that reported the situation of SWDs and their challenges in HEIs in the country. Challenges that SWDs encountering include but not limited to lack of awareness on disability, negative attitude, lack of facilities and materials, unsatisfactory exam accommodations and teaching methodologies, lack of skilled human power and employment problems. Yet, the studies never raised SWDs' engagement as major issues neither for a particular purpose such as classroom accommodation nor for a general purpose of inclusion of SWDs in HEIs.

Furthermore, most studies done on the general population of students in HEIs in the country while they had the chance of investigating student engagement as one component of their study, they rather externalized failures of students' in different aspects in their education to different factors and agencies such as classrooms, facilities, family background, socio-economic, teacher, institutions, policy and stakeholders. For example, in a study to examine factors affecting the academic performance of female students in Addis Ababa University by Aemiro (2018); assessment of students' satisfaction in Dire Dawa University by Dawit, Getachew and

Ashenafi (2017); factors affecting the academic achievements of students in Wollo University by Kassu and Jemal (2016); determinants of academic performance of undergraduate students in Arba Minch University by Moges (2017); students' participation in research course in University of Gondar by Worku, Workie and Gedyon (2016) and factors affecting female student participation in Bahir Dar University by Wudie and Petros (2014) to mention a few.

In fact, two studies were found on student engagement in the country as to the reach of the review literature. The first is a study by Yekoyealem and Belay (n.d.); they took conveniently 67.2% doctoral students attending their education in Addis Ababa University from different departments. Self-administered questionnaire with three dimensional (namely, vigour, dedication and absorption) and interview were used to collect data and found that 62.7 % of the respondents were averagely engaged. The participants expressed that they are engaged in their academics hoping for better personal growth, social recognition, improved employability and income. The second study was undertaken by Mateb and Fantahun (2017) in Bahir Dar University. They took 101 teachers and 169 senior students to investigate the influence of teachers' leadership on the learning engagement of students and their study indicated that teachers' servant leadership positively influenced students' engagement resulting in better academic achievement.

However, though the above two studies used three-dimensional student engagement questionnaire and interview data to be considered as a strong side and were insightful in highlighting about student engagement in the HEIs in the country, but the two studies have their own limitations. The first limitation is, currently student engagement is seen as four dimensional (psychological, cognitive, emotional and behavioral engagements), not three dimensional as used in the two studies. While the second limitation comes as a consequence of the first limitation i.e. psychological engagement dimension (which includes valuing and sense of belonging) was missing in both studies what we call campus engagement. In other words, the two studies focused only in classroom engagements of sample students; the bigger missing element of engagement for inclusion as it may. Therefore, the current research is dedicated to bridge the research gap discussed above.

Research Objective

The main objective of the study was to investigate the extent of SWDs engagement and inclusion and determining the influence of engagement of SWDs on their inclusion in the HEIs.

Research Questions

In achieving aim of the study three research questions were raised. These were;
1. To what extent do SWDs are engaged in HEIs?
2. To what extent SWDs are included in HEIs?
3. Do engagement dimensions significantly influence the inclusion of SWDs in HEIs?

LITERATURE REVIEW

The Concept of Engagement

Engagement is differently conceptualized by scholars due to various reasons for example, context of the scholars (Reschly & Christenson, 2012). The concept of student engagement has been entertained in literature for more than seven decades according to Kuh (2009). For example, Trowler (2010) came up with 1,000 research papers related to engagement. Nevertheless, the concept has been treated in different terminologies, but commonly agreed as "students learn from what they do in college" (Pike & Kuh, 2005, p. 186).

Nevertheless, one commonality across different understandings is that student engagement is multi-dimensional (Fredricks & McColskey, 2012). For example, (Fredricks & McColskey, 2012, p.764) undertook an extensive review of literatures on the dimensionality of student engagement. They depicted that, some scholars have proposed a two-dimensional model of engagement which includes behavior (e.g. participation, effort, and positive conduct) and emotion (e.g. interest, belonging, value, and positive emotions) (Finn, 1989; Skinner, Marchand, Furrer, & Kindermann, 2009). More recently (e.g., Archaumbault, 2009; Fredricks et al., 2004; Jimerson et al., 2003; Wigfield et al., 2008, as cited in Fredricks & McColskey, 2012) have outlined a three-component model of engagement that includes behavior, emotion, and a cognitive dimension (i.e., self-regulation, investment in learning, and strategy use). Later, Christenson and her colleagues (Appleton, Christenson, Kim & Reschly, 2006; Reschly & Christenson, 2006, as cited in Fredricks & McColskey, 2012) conceptualized engagement as having four dimensions: academic, behavioral, cognitive, and psychological.

The four-dimensional engagement indicators to be followed in this study as conceptualized by Gunuc (2014, pp. 217-218) the first dimension is, psychological engagement-referring students' value and sense of belonging to education and university. The second dimension is, cognitive engagement referring students' time investment to learning, setting goals and planning and self-regulation. The third dimension is, emotional engagement referring students' relationship with faculty and peers. While, the fourth dimension is, behavioral engagement having meaning of students' effort of attendance and participation in class (Gunuc, 2014).

International Studies on Student Engagement in African HEIs

Wawrzynski, Heck, and Remley (2016) in their extensive review literature reported that though the relationship/influence of engagement on students' outcome/achievement is well documented in countries like America (Astin, 1993; Kuh, 2003; Kuh, Kinzie, Schuh, & Whitt, 2005; Pascarella & Terenzini, 2005), Australia (Krause, 2007a, 2007b; Krause & Coates, 2008; Krause, Hartley, James & McInnis, 2005), New Zealand (van der Meer, 2009; van der Meer & Scott, 2009), and Malaysia (Azman, Ali, & Jelas, n.d.), and England (Mann, 2001; Yorke & Longden, 2008). However, there are few studies existing in HEIs in Africa, for example

South Africa (Wawrzynski, Heck & Remley, 2012, p. 106). Besides the existing studies as closely scrutinized by the researchers of this study, are largely focusing on the general population of students, not on SWDs.

Asare, Nicholson and Stein (2017) conducted a study in one large public research HEI in Ghana by taking 469 undergraduate students through quota sampling to see the role of parents over the engagement of the students. They found out that continued financial and social support and monitoring of academic performance of parents was found to be predictor factor of student engagement. However, among others the study did not explain what kind of questionnaire it was either two, three or four dimensional.

Wawrzynski, Heck and Remley (2012) in South Africa used a non- dimensional engagement instrument to see a single aspect of engagement which is participation in extra-curricular activities to be categorized under behavioral dimension of engagement. Wawrzynski, Heck and Remley (2012) took 2,235 undergraduate students of in one HEIs of South Africa. They found out that those students who participated in extra-curricular activities reported positive outcomes, those students who live in campus were found with positive outcomes and engaged in extra-curricular activities.

Nwosu, Okwuduba and Okoye (2018) undertook a study to see coping strategies and academic engagement by taking 155 undergraduate students. On part of student engagement, they used Student Engagement in Schools Questionnaire (SESQ) by Stewart and Jimerson (2011) as cited in Nwosu, Okwuduba and Okoye (2018) did not use in fact a scale for HE students. They concluded that the respondent students were academically engaged.

Matonya (2016) taking 22 women with disabilities in one HE in Tanzania found that the students ask supports from their lecturers by following the teachers after class, for example they receive assignment and exam instructions.

Pudaruth, Gunputh and Singh (2017) taking 6 SWDs in one HE of Mauritius found out that all the students revealed that they did not knew their advisors to get counseling over their requirements and challenges their challenges.

Butucha (2016) in his extensive review of literature over the trend of student engagement in African HEIs comparing decades back with the 21st century without discussing on the research trend on student engagement in HEIs in Africa. Nevertheless, Butucha concluded that African students are not engaged in HEIs. Revealing, "students are hooked to Facebooking, sending and receiving messages, tweeting, googling, chatting and doing many other things while lecture is going on" (p. 39).

Some International Studies on Student Engagement Beyond the African Continent

Gilson and Dymond (2012) in Hong Kong depicted that SWDs were reluctant to ask support inside class but were strong to claim support from teachers outside class. Nevertheless, the students were free to ask supports in and outside class form their friends.

Fichen, Asuncion, Barile, Genereux, Fossey, Juddy, et al. (2001) conducted a Meta-analysis on three empirical evidences investigating SWDs' needs and concerns of computer technology in 800 colleges and HEIs and found out that the majority of SWDs used computers, however, almost half demanded a sort of adaptation to utilize computers efficiently.

SWDs in one UK's HEI showed that SWDs lacked the necessary technological skills to enable them to succeed within HE environments. Thus, it was indicated HEIs' arrangement is necessary to conceptualize and organize technological skills for SWDs enabling the students to access to relevant experiences (Georgeson et al., 2015, as cited in Pudaruth, Gunputh & Singh, 2017).

Luan (2015) undertook a case study on SWDs with physical and visual impairments in HE of Elbasan in Albania. Luan found out that all the students were to have less engagement with computer and information communication technology. The students were found to have difficulties in benefiting e-learning, web-site and downloading. One reason for the difficulty imposed up on SWDs is the existing technologies are prepared for students without disabilities.

METHODS

Research Design, Approach, and Paradigm

The study employed concurrent convergent parallel mixed research design. Quantitative and Qualitative data were collected simultaneously as recommended by (Creswell & Plano-Clark, 2011). The mixed method approach belongs to the pragmatist paradigm (Morgan, 2014, p. 1045). Hence, quantitative and qualitative research approaches were used in this study. However, this article only dealt with quantitative data presentation, interpretation, and discussions.

Study Respondents and Their Selection

In Ethiopia there are about 44 public HEIs. Nevertheless, the study had ten first generation public universities as target universities. These were Addis Ababa, Jimma, Haramaya, Mekelle, Hawassa, Bahir Dar, Gondar, Arbaminch, Dilla and Adama Science and Technology universities. The justification is, the ten HEIs listed in the proceeding among the remaining 34 public HEIs are believed to have a good track record of admitting SWDs. However, the sample universities for this study were only five namely Addis Ababa, Haramaya, Hawassa, Bahir Dar and Gondar universities, selected through simple random sampling. From the selected five HEIs there were 773 SWDs as target populations. By using Taro (1967) formula presented below, 264 SWDs were selected as sample populations. Meanwhile, to select the 264 SWDs stratified proportionate random sampling technique (deaf, blind and physical disabilities strata) was used. Then, simple random sampling which was lottery method was employed to collect data from 264 SWDs.

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

$$n = \frac{773}{1 + 773(0.55)^2} = 263.59 \sim 264$$

Instrument

Having the same demographic characteristics of SWDs as sex, year of study, disability type and university for quantitative data collection, two self-administered questionnaire were used. The first one was, Student Engagement Scale (SES) adapted with permission from the work of Gunuc and Kuzu (2014) having 41 Items (Psychological= 12 Items, Cognitive=9 Items, Emotional=13 Items, and behavioral= 7 Items) and rated on Five-point likert scale (1= I totally disagree, 5=I totally agree).

The second one was, College Student Experience Questionnaire (CSEQ) Fourth Edition adapted with permission from (Pace and Kuh, 1998). The Pace and Kuhs' questionnaire consisted of 25 items about Inclusion.

Pilot

To maintain reliability of the two instruments pilot was conducted at Mekelle University by taking 30 SWDs consisting of blind, deaf and students with physical disabilities. From 41 items of SES of Gunuc and Kuzu (2014), 3 items were deleted that they were with poor quality. Hence, the total Cronbach's alpha (α) internal consistency reliability coefficient was calculated for the total scale to be.94 and for CSEQ of Pace and Kuh (1998) was to be.93. To check the face and content validity of the two instruments 3 PhD dissertation supervising committee and 4 special need and inclusive education experts were consulted and their feedbacks were considered. Hence, the two instruments were found to be highly reliable and valid that the final data collection were undertaken.

Procedures and Ethical Issues

Letter of permission was taken from Department of Special Needs and Inclusive Education of Haramaya University and was submitted to each five university's disability center co-ordinators/directors. Consent of agreement was reached with each university and they allowed the data collection process after securing the consent of agreement of SWDs. was done properly by the researchers. Meanwhile, the centers suggested cooperative SWDs to be recruited who can assist the data collection process. It was through these mechanisms that the data collection process underwent. Respondents were made to give data anonymously and the collected data were made only useful for academic purpose without risking of the respondents. Response rate was 100% but 9 questionnaires were incomplete and hence were made to be rejected. Thus,

presentation, interpretation and discussions were made on data that was obtained from 255 SWDs respondents.

Analysis

To answer research questions raised in the beginning of the research descriptive statistics, one-sample t-test, and multiple stepwise regression were used using IBM SPSS version 20. Assumption such as normality of residuals was checked by examining histograms and normal probability plots. Homoscedasticity was also checked by inspection of scatter plots. Linearity of the residuals was also checked by assessing scatter plots. In addition, absence of multi-collinearity among independent variables was checked by examining coefficients of Tolerance and Variance Inflation Factor (VFI). All these assumptions were met.

RESULTS

Demographic Characteristics

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

Extent of Engagement of Respondents

One of the aims of the study was to examine extent of engagement of respondents in the HEIs. To this end, one sample t-test was conducted to determine whether the sample average score of participants significantly differ from the test value. Table 1 displays the mean, standard deviation, t value and test value.

As Table 1 shows, there was no significant difference between the sample mean of psychological valuing and the test value, t =1.82, df = 254, p =.07 (M = 12.32, SD = 2.82) was a little bit higher than the test value (12). Similarly, there was a significant difference in cognitive engagement between the sample mean and the test value, t =5.05, df = 254, p =.000. The sample mean score of cognitive engagement (M = 34.37, SD = 7.50) was greater than the test value (34). From this one may infer that the degree of cognitive engagement of SWDs was high. On the contrary, the results indicated the significant difference in the sample mean of psychological sense of belongingness and the test value, t=4.042, df = 254,

Table 1. One sample t-test on measuring extent of engagement among respondents

Campus engagement	*M*	*SD*	*t*	*df*	*p*	Mean difference	Test value
Psychological engagement I (valuing)	12.32	2.82	1.82	254	0.070	0.32	12
Psychological engagement II (sense of belongingness)	30.23	6.95	4.042	254	000	−1.761	32
Cognitive engagement	34.37	7.50	5.056	254	000	2.38	32
Emotional engagement (relationship with faculty)	15.38	4.33	16.986	254	000	−4.61	20
Emotional engagement (Relationship with peers)	17.98	4.01	8.040	254	000	−2.02	20
Behavioral engagement	25.34	5.57	7.616	254	000	−2.66	28

p =.000. The sample mean of respondents' score on sense of belongingness (*M* = 12.32, *SD* = 2.82) was significantly lower than the test value (32). Similarly, there was significant difference in emotional engagement (relationship with faculty) and the test value, *t*=16.98, *df*=254, *p*=.000. The sample mean score on relationship with faculty (*M* = 15.38, *SD* = 2.82) was significantly lower than the test value (20). This shows that the extent of relationship of SWDs with faculty members was low. The one sample t-test also yielded a significant difference in emotional engagement (relationship with peers) between the sample mean and the test value, *t* =8.04, *df* = 254, *p* =.000. Here, the sample mean score of relationship with peers (*M* = 17.98, *SD* = 4.01) was lower than the test value (20), indicating that the degree of relationship of SWDs with their peers was low.

Extent of Inclusion of Respondents in Higher Education Institutions

The one sample t-test in Table 2 indicated a significant difference in the sample mean score of inclusiveness and the test value, *t*=11.54, *df* = 254, *p* =.000. The sample mean score of inclusiveness (*M* = 72.10, *SD* = 13.28) was greater than the test value (62.5). This shows that the extent of inclusiveness of SWDs was high.

Engagement Predicting Inclusiveness of Respondents in Higher Education Institutions

As shown in Table 3, stepwise multiple regression analysis was used to test if engagement dimensions significantly predicted inclusiveness of respondents in HEIs. The results of the regression indicated that the six engagement predictors (Psychological valuing and sense of belongingness, Behavioral, Cognitive, Emotional relationship with faculty and relationship with peers and Behavioral engagements) explained 48.3 % of the variance of inclusiveness (R^2 =.483, *F*(6,248)=38.59, *p*=000). Sense of belongingness (*β* =.231,

p=.000) was the strongest predictor of inclusiveness followed by cognitive engagement (*β*=.222, *p* =.004) and relationship with peers (*β*=.145, *p* =.014). Here, it can be inferred that as sense of belongingness, cognitive engagement and relationship with peers increase, inclusiveness increases. Put in other words, sense of belongingness, cognitive engagement and relationship with peers increase are positively associated with inclusiveness.

DISCUSSION

The first research question was, "to what extent do SWDs are engaged in HEIs?" It was found that the students are engaged in some and are not in other parts of engagement dimensions. Hence, it is possible to infer that partially SWDs of this study are employing diverse strategies for their classroom and campus engagements. Which is a consistent finding with studies (for example, Astin, 1993; Bray & McCLaskey, 2015; Gunuc, 2014; Gunuc & Kuzu, 2015; Hu & Kuh, 2001; Pascarella & Terenzini, 2005) that indicated when students are fully responsible for their learning they would be designing diverse mechanisms to achieve their learning goals. Again, the study more or less come up with same finding of a local study by Yekoyealem and Belay (n.d.) that indicated average student engagement.

Furthermore, though not explained qualitatively the study came up with a similar report of student non-engagement in some dimensions of engagement construct a finding which was consistent with what was reported by Butucha (2016) revealing, "students are hooked to Facebooking, sending and receiving messages, tweeting, googling, chatting and doing many other things while lecture is going on" (p. 39).

The study can minimize the research gap in student engagement studies in Ethiopia in particular and Africa in general as was argued by Wawrzynski, Heck and Remley (2016). In their extensive review literature they argued that though the relationship/influence of engagement on students' outcome/achievement is well documented in countries for

Table 2. One sample t-test on measuring extent of inclusion

Variable	*M*	*SD*	*t*	*df*	*p*	Mean difference	Test value
Inclusion	72.10	13.28	11.539	254	000	9.60	62.5

The one sample t-test in Table 2 indicated a significant difference in the sample mean score of inclusiveness and the test value, *t*=11.54, *df*=254, *p*= .000. The sample mean score of inclusiveness (*M*=72.10, *SD*=13.28) was greater than the test value (62.5). This shows that the extent of inclusiveness of SWDs was high

Table 3. Multiple regression on prediction of inclusiveness from engagement dimensions

Variables	Unstandardized *β*	SE B	Standardized *β*	*t*	*p*
Psychological engagement I (valuing)	0.764	0.339	0.162	2.254	0.025
Psychological engagement II (sense of belongingness)	0.441	0.124	0.231	3.546	0.000
Cognitive engagement	0.393	0.133	0.222	2.944	0.004
Emotional engagement (relationship with faculty)	0.444	0.179	0.145	2.485	0.014
Emotional engagement (Relationship with peers)	−0.016	0.220	−0.005	−0.074	0.941
Behavioral engagement	0.260	0.175	0.109	1.485	0.139
R^2=0.483					
F(6, 248) =38.59, p=000					

example America (Astin, 1993; Kuh, 2003; Kuh et al., 2005; Pascarella & Terenzini, 2005), Australia (Krause, 2007a, 2007b; Krause & Coates, 2008; Krause, Hartley, James & McInnis, 2005), New Zealand (van der Meer, 2009; van der Meer & Scott, 2009), and Malaysia (Azman, Ali, & Jelas, n.d.), and England (Mann, 2001; Yorke and Longden, 2008). However, there are few studies existing in HEIs in Africa, for example South Africa (Wawrzynski, Heck & Remley, 2012, p. 106). Besides the existing studies as closely scrutinized by the researchers of this study, are focusing on the general population of students, not on SWDs.

Last but not least, the second and the third research questions were, "to what extent SWDs are included in HEIs?" and "do engagement dimensions significantly influence the inclusion of SWDs in HEIs?" The findings indicated that the students were included and the inclusion was highly influenced by SWDs' own engagements. Which is a finding consistent with similar studies though not explicitly but implicitly and partially indicated (for example, Astin, 1993; Bray & McCLaskey, 2015; Gunuc, 2014; Gunuc & Kuzu, 2015; Hu & Kuh, 2001; Korobova and Starobin, 2015; Mateb & Fantahun 2017; Pascarella & Terenzini, 2005). Engagement predicted better academic achievement, cognitive, behavioral, social, classroom engagements and sense of belonging in HEIs (Gunuc 2014) and brings satisfaction and college success (Korobova & Starobin, 2015).

CONCLUSION

The 255 SWDs who were blind, deaf and with physical disabilities, students from five HEIs in the country who were the respondents of this study were found to be engaged in their valuing and cognitive engagements; but not on their sense of belongings, emotional (relationship with faculty and peers) and behavioral engagements. And the SWDs' engagement predicted 48.3% inclusion of the SWDs in the HEIs. Indeed, though not presented and discussed here qualitative data indicated that SWDs were not receiving parental support, training in engagement and transitional plan to HEIs. Therefore, the proceeding mentioned relevant inputs need to be provided for fellow SWDs in the future ahead of their entrance to HEIs.

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