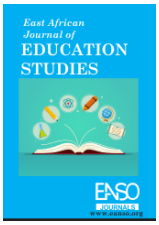

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Original Article

Learning Environment and Inclusion of learners in Secondary Education in Uganda: Analysis of the Moderating role of Self-Efficacy and Disability Status

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ABSTRACT

The inclusion of learners in secondary education has been fundamentally associated with the learning environment. However, little is known about the relationships between types of learning environments and inclusion when moderated by self-efficacy and mediated by disability status. This study measured whether different types of learning environments were associated with inclusion differently and if self-efficacy and disability status mediated the relationships between learning environment and inclusion. In a cross-sectional study, 309 learners with and without disabilities were assessed for inclusion in secondary education, Self-efficacy, Disability status and Learning environment. Regression Analyses were used to measure the association between different types of Learning environment and inclusion and the moderating role of learner's self-efficacy and disability status in the relationship between learning environment and inclusion in secondary education. The findings yielded that physical and social learning environments are the types of learning environments that significantly and independently predicted inclusion in secondary education. The physical learning environment was significantly correlated with social efficacy (*B*=. 18, *P*<. 001) and all four facets of inclusion: access (*B*=. 19, P<. 001), Presence (*B*=. 12, *P*<. 001), Participation (*B*=. 14, *P*<. 001) and Achievement (*B*=. 10, *P*<. 001). While Social environment also had appositive and stronger effect on social efficacy (*B*=. 27, P = .001) and facets of inclusion; access (*B*=. 33, *P*<. 001), presence (*B*=. 22, P<. 001), Participation (B=. 26, P<. 001), and achievement (*B*=. 20, P<. 001). Disability status was found not to relate significantly to self-efficacy and inclusion, but self-efficacy was positively associated with inclusion. The direct relation between learning environment and inclusion remained significant (*B*=. 33, *P*<. 001). However, self-efficacy and disability status did not mediate the relationship between learning environment and inclusion. Types of learning environments should be considered when implementing inclusion in secondary education. Psycho-educational intervention should consider the development of social efficacy as a key determinant of the inclusion of all learners in secondary education.

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INTRODUCTION

The 21st century classroom is composed of learners with diverse needs ranging from physical, social, educational and psychological (Ainscow 2020). This necessitates adopting appropriate educational systems that guarantee education for all in an inclusive learning environment (Slee, 2018). Following recommendations of the Salamanca framework on special and inclusive education (UNESCO, 1994), education systems worldwide have recognized inclusion as the only principal vehicle for educating all learners regardless of disability (Ackar-Jnr &Danso, 2019; Slee, 2018). The basis of inclusion was to address the challenges of access, participation and achievement in education policy, practice and provision (Slee, 2018). Studies have shown that inclusion practices are linked to the development of some of the learner's self-efficacy because of its emphasis on a tailored learning environment that allows all learners to develop, thrive and achieve their full academic potential (Ackar Jr & Danso, 2019). Accordingly, the learning environment in schools has been cogitated as a perfect recipe for inclusion. Studies have noted that the success of inclusion is incumbent on the quality of the learning environment because all learners require a conducive learning environment to achieve in education (UNESCO, 1994; Ezike, 2018; Kamaruddin et al., 2009)

Even though, generally, the learning environment is associated with inclusion (Hewett et al., 2017; Ackah-Jnr & Danso, 2019), little is known about how different types of learning environment is associated with the inclusion of learners in secondary education. Consequently, in order to advance psycho-educational interventions to mitigate the effect of the learning environment on inclusion, there is a need to appreciate how different types of learning environments, together with self-efficacy, explain the inclusion of learners in secondary education in Uganda.

THEORETICAL AND CONCEPTUAL FRAMEWORK

The ecology of inclusive education theory, which Urie Brofenbrenner proposed in his 1976 book, is the foundation for this study. The theory assumes that there are two factors that fundamentally determine learning in inclusion, namely, the characteristics of the learner, the learning environment, and the interrelationships between them (Anderson et al., 2014). Implying therefore, that for educational inclusion to succeed, there must be a deliberate effort by the school system to appreciate that the learner actively influences the learning environment and that the learning environment must be programmed to meet the needs of the individual learner. Bronfenbrenner's framework suggests that the individual learner is at the epicentre of the environment, surrounded by many other environmental factors that might inhibit or enhance inclusion (Anderson et al., 2014). The learner is, therefore trapped in a nested arrangement of structures manifesting in five systems, namely, Micro, meso, exo, macro and chrono (Anderson *et al.*, 2014). This study

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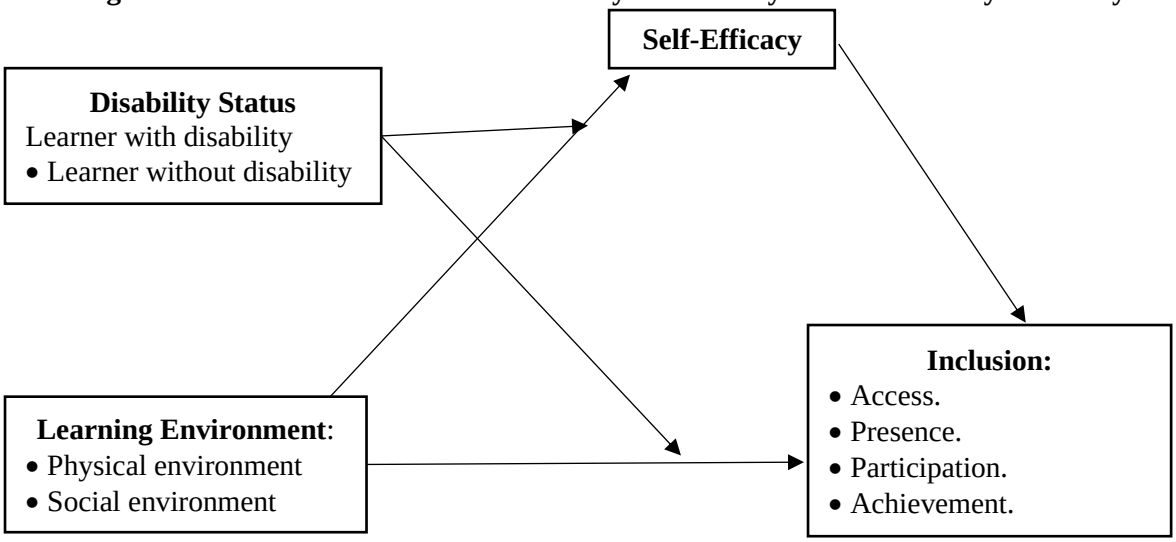
focused on only two systems (Micro and exo) and how they contribute to inclusion. To Bronfenbrenner, the innermost system is the microsystem, which holds the learner at its centre with the immediate inclusive setting (Interaction with teachers, peers, non-teaching staff and physical learning environment). While the exosystem shows how the learner interacts with the school leadership structure, student cohort and school ritual. The emphasis therefore, is that the learners must be helped to participate in the learning process both socially and academically and have to be valued by everyone in the school environment in order to achieve self-efficacy, which is fundamental to inclusion (Slee, 2018). Therefore, the ecology of inclusive education theory was used in this study to explain the relationships between learning environment and inclusion in secondary education.

Using data from a cross-sectional study conducted among learners (with and without) disabilities in three districts in Uganda. The study reported an analysis of data using strong measures of learning environment, disability status, self-efficacy, and inclusion. The study hypothesized that the learning environment would be associated with inclusion and that self-efficacy and disability status mediated the relationship between learning environment and inclusion in secondary education.

Figure 1: Conceptual Model depicting the hypothesized direct, indirect, and conditional effects of Learning environment on inclusion moderated by self-efficacy and mediated by Disability status



The figure below shows that there is an assumed linkage between the elements of learning environments (Physical and social) and inclusion (access, presence, participation, and academic achievement) of learners in secondary education. It also shows that self-efficacy moderated the relationship between learning environment and that disability status mediated the relationship between learning environments and inclusion and learning environment and self-efficacy.

EMPIRICAL REVIEW

Learning Environment and Inclusion

Different researchers have described the learning environment in different ways. According to Madudili (2021), a learning environment is a particular collection of physical characteristics, such as amenities, technologies, accepted behaviours, and shared expectations, as well as tasks and activities for teaching and learning that are centred on and connected to educational objectives and contents. It also refers to how easily the physical environment can be accessed, used, and made available. Similar thinking is expressed by Ezike (2018), who defines the

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learning environment to include all the physical, psychological, and social aspects of school activities. This definition encompasses the notion of a learning environment as well as elements of the educational experience, such as student cooperation, language use by the teacher, the teacher-learner relationship, and teaching and evaluation methods. The broader interpretation of the learning environment seems to be dependable on the fact that environment is an all-encompassing word, and all that we experience has the potential to impact learning (Eimuhi and Ogedegbe, 2016). Within the context of the learning environment, this definition encompasses elements of the educational experience, such as student cooperation, the language used by the teacher, the relationship between the teacher and the students, and teaching and evaluation methods.

Physical Learning Environment and Inclusion

According to Akkah-Jnr and Danson (2019), a child's physical, educational, and functional inclusion or exclusion from school is largely determined by the physical environment of the school. Schools must be made accessible, barrier-free, inviting, and generally more supportive of students with physical disabilities in order to promote inclusive education (Ackah-Jnr & Danson, 2019). The physical environment of the classroom includes things like the lighting, temperature, and ventilation system, size of the desk, chair, whiteboards, and computers, among other things. Unfortunately, most classrooms lack the physical conditions necessary for a successful teaching and learning process, which causes students fatigue and frustration. Ucci et al. (2018) observe that the school's physical setting can influence student's well-being and their capacity to learn.

Furthermore, (Ackah Jnr & Danso, 2019) assert that the physical learning environment means the extent to which school surroundings stimulate students' welfare and health, which may include things like trees and mental and health support services. Several studies have shown significant correlations between the school's physical environment and the success or failure of inclusion (Ackah-Jnr & Danso, 2019; Hewett et al., 2017; Blecker & Boakes, 2010) While some studies romanticize the strong positive relationship between physical learning environment and participation of all learners in inclusion (DaLomba et al., 2021), others articulate the strong association between physical learning environment and academic achievement of all learners in inclusion (Kamarudin et al., 2009; Wolf &Fraser, 2008; Gietz & McIntosh, 2014)

> *H_{01}: Physical learning environment will predict the inclusion of learners in secondary education*

Social learning Environment

For students, the social learning environment at school serves as both a classroom and a second home, creating a favourable learning environment that is crucial for inclusion (Korir & Kip-Kemboi, 2014). Moreover, Weissbers (2000) reveals that students with learning disabilities reported lower levels of sense of coherence than their peers. According to Anderson (1982), Moos and Moos (1978), Ramelow et al. (2015), and Thapa et al. (2013), the social learning environment of a school is a multidimensional notion that encompasses members' interactions and connections, shared values and standards, and personal development and progress. According to (Eccles et al.2018), effective school social settings are essential for student learning, motivation, school adjustment, and achievement. The classroom social environment is comprised of (1) teacher support, (2) promoting mutual respect, (3) promoting student task-related interaction, and (4) promoting performance goals. According to recent studies, these various aspects of the social environment in the classroom can be measured easily and accurately and have a significant impact on student's motivation, self-regulated learning, classroom behaviour (both good and bad), social relationships, and academic achievement (Wigfield & Schiefele, 2018). Many inclusive education experts have made an effort to justify the importance of the social environment

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in the classroom and at school (Hong et al., 2021; Juvonen & Weiner, 2015)

> *H_{O2}: Social Learning environment will positively predict the inclusion of learners in secondary education.*

The Leaners Self-Efficacy

Self-efficacy can be defined as an individual learner's belief that s/he is proficient in learning and performing actions on designated levels (Bandura, 2006). Accordingly, having high self-efficacy encourages the acquisition of new skills since it motivates students to participate in activities, work more, and persevere longer, especially when facing challenges, and vice versa (Zimmerman 2016). Studies have shown that inclusion is associated with certain challenges, especially in adaptation for some learners, such as those with severe cases of disability when newly enrolled in inclusion (Sirmaci & Tas, 2016). Academic self-efficacy, according to some academics, is the most crucial type of self-efficacy for all learners because it helps them identify their own educational needs and grow as individuals in inclusion (Vogel & Human-Vogel, 2016), whereas social self-efficacy, in the opinion of other academics, is the most desirable for students with special educational needs because it will facilitate peer-peer interaction, which is essential to the success of inclusion. In contrast, research generally demonstrates that student self-efficacy is highly related to inclusion (Ozokcu, 2017; Ozokcu, 2018; Woodcock et al., 2012; Hosford & O'Sulliven, 2016). This is similar to earlier studies showing that self-efficacy influences the inclusion of learners in secondary education; the primary focus of the current study is on how self-efficacy moderated the correlation between the learning environment and the inclusion of learners in secondary education (Ozokcu, 2018). We specifically believe that learners with high levels of self-efficacy are more likely to easily access inclusion settings, participate actively, and do well in inclusion.

> *H_{O3}: Self-efficacy will be positively related to the inclusion of learners in secondary education.*

The Role of Disability Status

According to a number of studies (Cambra & Silvestre, 2003; Thomas, 2013; Artiles et al., 2011), students with severe disabilities have a harder time adjusting to inclusion than their peers with mild to moderate disabilities. Those with mild disabilities, they argue, are easier to integrate into inclusion because they can easily see their condition is less normal (Thomas, 2013). Therefore, learners with mild conditions should be enrolled for inclusion, while those with severe to profound conditions should be enrolled on special schools where their management is easier (Moos and Moos, 2018). Regardless of a learner's disability status, according to UNESCO (2020), inclusion is the best educational practice for disabled learners because it gives them the chance to interact with peers who do not have disabilities and share experiences, ideas, and opinions that are crucial for growth, development, and overall success. While some scholars have consistently maintained that disability status has no relationship to inclusion, insisting that once in inclusion, all learners benefit more or less in the same way regardless of disability, others have noted that the academic achievement of all students is better in inclusive schools as compared to special schools (UNESCO, 2019; UNICEF, 2018). In fact, they advise that disability status should not be used as a major factor of mobilization for inclusion.

> *H_{O4}: Disability status will be positively related to the inclusion of learners in secondary education.*

> *H05: There will be a double mediation such that the learning environment positively affects inclusion via self-efficacy and disability status.*

Whereas literature shows that learning environment and inclusion have been well researched, little is known about how the different elements of the learning environment influence

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inclusion. This study adds to the conversation by articulating succinctly how different elements of the learning environment (Physical and social) relate to inclusion in secondary education in Uganda. Our study also shows how self-efficacy and disability status moderated and mediated the relationship between the elements of learning environment and inclusion, which is a unique contribution to the scholarship on interventions to improve inclusion.

METHODOLOGY

Participants and Procedure

The study makes use of cross-sectional data gathered from students enrolled in All-inclusive secondary schools in three regions in Northern Uganda (Arua, Gulu, and Lira). The sample size was determined using Morgan & Krecjie's (1970) sample size determination table and the sample comprised 309 students (61.8% males; 63.8 students with disabilities). Regarding the nature of disabilities, 18.8% of participants had visual impairments, 17.2% had physical impairments, 13.6% had hearing impairments, 4.5% were deaf students, 5.7% were blind, and 4.0% were mentally retarded, while 36.2% were regular learners (without) disability. From the list of members in this study, the following inclusion criteria were used: (1) Learners with disabilities were all included; (2) learners without disabilities who are assigned by the school administration as "attendants" to those with disabilities; (3) Learners without disabilities but in leadership positions (4) Learners from All-inclusive schools. All-inclusive schools are schools that are regionally established as pilot schools for the implementation of inclusion. In the Acholi sub-region, we had Gulu High Secondary School; in West Nile, we had Nvara Secondary School; and in the Lango-sub-region we had Nancy Secondary School. Based on the above inclusion criteria, data was collected with permission from the school administration and active involvement of the Department of Special Needs and Inclusive Education of a particular school.

Instruments and Measurement

The Ministry of Education and Sports (MOE&S, 2001) Basic Requirement and Minimum Standard Monitoring Tool (BRMS) was used to assess the physical environment. The tool consisted of (13) items measuring the Physical learning environment. The items were scored on a five-point Likert scale ranging from 1=strongly disagree to 5=strongly agree. We asked questions such as whether an area or space that is safe for all learners exists in the school buildings (Dormitories, classrooms, toilets, offices, staffroom) are ramped. The questionnaire was reliable for the current study, with acceptable internal consistency (α =0.89).

The Quality of Learning Environment Questionnaire (QLE tool) was used to assess the social environment (Save the Children, 2013). The tool consisted of (12) items measuring the social learning environment. The items were scored on a five-point Likert scale ranging from 1= strongly Disagree to 5= Strongly agree. We asked questions such as whether teachers encourage all learners to participate in a classroom, whether there is a system in place to handle bullying, and whether teachers encourage peer-to-peer interaction. In this current study, the questionnaire had high internal consistency (α = 0.97).

Self-efficacy was measured using the self-efficacy assessment tool by Schwarzer &Jerusalem 1995; Ajzen (2002). The tool consisted of (10) items measuring self-efficacy scored on a five-point Likert scale ranging from 1=strongly disagree to 5=strongly agree. We asked teachers questions such as if someone opposes me; I can find the means to get what I want. When I am in trouble, I usually seek support from others, and I rely on others for most of my daily activities. In the current study, the questionnaire had a high internal consistency (a=0.95).

Inclusion was measured using the Themis inclusion tool (Azorin &Ainscow 2020). The items consisted of (61) items, out of which we

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used (31) items, which measured the inclusion matrix of access (7) items, Presence (9) items, Participation (12) items and achievement (9) items. The items were scored on a five-point Likert scale ranging from 1=strongly disagree to 5=strongly Agree. The instrument revealed acceptable internal consistency for the inclusion tool with the present study (α = 0.81) for access to schools and curriculum, (α = 0.86) for the presence of learners, (α = 0.93) for the participation of all learners, and (α = 0.97) for achievement for all learners.

Procedures

The study employed research assistants who were university graduates fluent in English, the native language of participants and in special and inclusive education. We chose the trained teachers in the special needs education department of these schools and trained them further on data-gathering techniques such as interviewing skills and administration of questionnaires. The research assistants administered the questionnaires to the participants from the schools. The questionnaire took 45-55 min to complete.

Ethical Consideration

This study was approved by the institutional academic review Board (Approval no. GUREC-523-2023). Subsequently, written informed consent was obtained from all participants in accordance with ethical guidelines and approvals. Refreshments were served to all participants in addition to 10,000/= (ten thousand shillings only) provided as time compensation. We also employed a counsellor to provide psychosocial support to learners who broke down during the exercise.

Analytic Approach

The study tests a moderated mediation of the effects of the physical and social environment on the inclusion of all learners (those with and those without disabilities), with social efficacy as the mediator and disability status as the moderator. To achieve this aim, the study applied a moderated mediation analysis in PROCESS Macro for SPSS v4.2 model 8 (Hayes, 2018), which tests for the mediation and moderation effects simultaneously. Bootstrapping at 5000 and confidence intervals at 95% were applied. Background variables such as gender have been found to account for differences in the inclusion of learners with disabilities (Orakci et al., 2016). Therefore, participants' background characteristics, including gender and class, were included in the regression analyses as control variables. A regression model was run for each facet of inclusion.

RESULTS

Descriptive statistics and correlations among study variables are presented in *Table 1*. Results in *Table 2* show that the physical environment was positively associated with self-efficacy ($B = .18$, $p < .001$) and all four facets of inclusion: access to school and curriculum ($B = .19$, $p < .001$), presence of learners ($B = .12$, $p < .001$), participation of all learners ($B = .14$, $p < .001$), and achievement of learners ($B = .10$, $p < .001$). Therefore, a hypothesis 1 was supported. Similarly, the social environment also had positive, however stronger effects, on self-efficacy ($B = .27$, $p < .001$) and all four facets of inclusion: access to school and curriculum ($B = .33$, $p < .001$), presence of learners ($B = .22$, $p < .001$), participation of all learners ($B = .26$, $p < .001$), and achievement of learners ($B = .20$, $p < .001$).

These results support hypothesis 2. Self-efficacy was positively associated with all facets of inclusion of learners: access to school and curriculum ($B = .38$, $p < .001$), presence of learners ($B = .35$, $p < .001$), participation of all learners ($B = .28$, $p < .001$), and achievement of learners ($B = .36$, $p < .001$). These findings support hypothesis 3. Disability status, that is, whether a student had a disability or not, was not significantly related to self-efficacy and the facets of inclusion; hence, hypothesis 4 is not supported. On the other hand, Hypothesis 5 concerns the mediating effects of self-efficacy in the relationship between the physical environment and the inclusion of all students.

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The indices of moderated moderation in Table 2 were not significant for all facets of inclusion, suggesting that self-efficacy did not mediate the association between the physical environment and the facets of inclusion. Similarly, the indices of moderated mediation in Table 3 also suggest that self-efficacy did not mediate the association between social environment and inclusion of all learners. Furthermore, additional analyses in the Sobel test confirm that self-efficacy did not mediate the effects of physical and social environments on inclusion facets. Therefore, hypothesis 5 was not supported.

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Table 1: Descriptive statistics and correlations among study variables

	1	2	3	4	5	6	7	8	9	10
1. Class	-									
2. Gender	.06	-								
3. Disability status	.14*	.09	-							
4. Physical environment	-.15**	.002	.01	-						
5. Social environment	-.17**	.02	.01	.71***	-					
6. Self-efficacy	-.19**	-.08	.03	.42***	.57***	-				
7. Access to school & curriculum	-.15**	.04	.06	.56***	.72***	.53***	-			
8. Presence of learners	-.19**	-.02	.02	.49***	.65***	.53***	.69***	-		
9. Participation of all learners	-.16**	-.03	.06	.47***	.64***	.45***	.63***	.59***	-	
10. Achievement for all learners	-.16**	-.01	.05	.45***	.64***	.55***	.64***	.68***	.69***	-
M				91.60	94.51	39.52	49.51	36.50	40.94	37.73
SD				14.95	13.27	6.56	7.01	5. 80	6.25	5.44

Table 2: Moderated mediation regression results for effects of physical environment on facets of inclusion

Predictors	**Social efficacy**				**Access**				**Presence**				**Participation**				**Achievement**			
	B	**Se**	**CI**		**B**	**Se**	**CI**		**B**	**se**	**CI**		**B**	**se**	**CI**		**B**	**se**	**CI**	
			LLCI	**ULCI**			**LLCI**	**ULCI**			**LLCI**	**ULCI**			**LLCI**	**ULCI**			**LLCI**	**ULCI**
Constant	43.01***	1.29	40.48	45.53	33.70***	2.52	28.74	38.66	23.49***	2.17	19.21	27.77	30.84***	2.46	26.00	35.67	23.91***	2.04	19.89	27.93
Class	.53*	.22	-.97	-.09	-.14*	.20	-.55	.26	-.26	.18	-.61	.09	-.22	.20	-.61	.17	-.15	.17	-.48	.17
Gender	-1.09	.70	-2.46	.28	.94	.63	-.30	2.19	.21	.55	-.86	1.29	-.09	.62	-1.31	1.12	.27	.51	-.74	1.27
Physical environment	.18***	.02	.13	.22	.19***	.02	.15	.24	.12***	.02	.09	.16	.14***	.02	.10	.18	.10***	.02	.06	.13
Disability	.72	.71	-.68	2.11	.70	.64	-.57	1.96	.16	.56	-.93	1.25	.68	.63	-.55	1.92	.49	.52	-.54	1.51
Self-efficacy					.38***	.05	.28	.48	.35***	.04	.26	.44	.28***	.05	.18	.38	.36***	.04	.27	.44
Interaction effects	-.05	.05	-.14	.05	-.003	.04	-.09	.08	.03	.04	-.04	.10	-.10*	.04	-.18	-.02	-.06*	.03	-.13	.003
Model summary	R^2 = .20, F(5, 303) = 15.24***				R^2 = .43, F(6, 302) = 37.93***				R^2 = .38, F(6, 302) = 30.75***				R^2 = .32, F(6, 302) = 23.36***				R^2 = .38, F(6, 302) = 30.29***			
R increase	R^2 = .003, F(1, 303) = 1.01				R^2 = <.001, F(1, 302) = .94				R^2 = .002, F(1, 302) = .72				R^2 = .01, F(1, 302) = 5.53*				R^2 = .01, F(1, 302) = 3.48*			
Conditional direct effects																				
With disability	.19***	.03	.14	.25	.19***	.03	.14	.25	.11***	.02	.07	.16	.18***	.03	.12	.23	.12***	.02	.08	.17
Without disability	.15***	.04	.07	.22	.19***	.03	.12	.26	.14***	.03	.09	.20	.08*	.03	.01	.15	.06*	.03	.001	.11
Conditional indirect effects																				
With disability					.07	.02	.04	.11	.07	.02	.04	.10	.05	.01	.03	.08	.07	.02	.04	.10
Without disability					.06	.02	.03	.09	.05	.01	.02	.08	.04	.01	.02	.07	.05	.02	.02	.08
Index of moderated mediation					-.02	.02	-.06	.02	-.02	.02	-.05	.02	-.01	.01	-.04	.02	-.02	.02	-.05	.02

. p < .05, **. p < .01, *. p < .001, N = 309, Gender (male = 1, female = 2), Disability (with disability = 1, without disability = 2)*

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Table 3: Moderated mediation regression results for effects of social environment on facets of inclusion

Predictors	Social efficacy				Access				Presence				Participation				Achievement			
	B	se	CI		B	Se	CI		B	se	CI		B	se	CI		B	se	CI	
			LLCI	ULCI			LLCI	ULCI			LLCI	ULCI			LLCI	ULCI			LLCI	ULCI
Constant	42.69**	1.16	40.39	44.98	41.32***	2.42	36.57	46.08	28.97***	2.16	24.72	33.22	38.16***	2.38	33.47	42.84	29.52***	2.02	25.55	33.49
Class	-.39	.21	-.79	-.01	-.09*	.18	-.45	.27	-.21	.16	-.53	.11	-.20	.18	-.55	.15	-.13	.15	-.43	.17
Gender	-1.23	.63	-2.47	.01	.52	.57	-.59	1.63	.11	.51	-1.11	.88	-.37	.56	-1.47	.73	.04	.47	-.89	.97
Social environment	.27***	.02	.22	.32	.33***	.03	.28	.37	.22***	.02	.18	.27	.26***	.05	.21	.31	.20***	.02	.15	.24
Disability	.63	.64	-.63	1.90	.74	.57	-.39	1.87	.18	.51	-.83	1.19	.73	.57	-.38	1.85	.52	.48	-.41	1.47
Self-efficacy					.20***	.05	.10	.30	.21***	.05	.12	.30	.10*	.05	.003	.20	.22***	.04	.13	.30
Interaction effects	-.08	.05	-.17	.02	.05	.04	-.04	.14	.05	.04	-.02	.13	-.14**	.04	-.23	-.06	-.08*	.04	-.15	-.01
Model summary	R^2 = .34, F(5, 303) = 1.66***				R^2 = .55, F(6, 302) = 0.63***				R^2 = .47, F(6, 302) = 4.63***				R^2 = .45, F(6, 302) = 0.33***				R^2 = .47, F(6, 302) = 5.25***			
R increase	R^2 = .01, F(1, 303) = 2.32				R^2 = <. 002, F(1, 302) = 1.30				R^2 = .003, F(1, 302) = 1.85				R^2 = .02, F(1, 302) = 10.86**				R^2 = .01, F(1, 302) = 4.81*			
Conditional direct effects																				
With disability	.30***	.03	.24	.35	.31***	.03	.25	.37	.20***	.03	.15	.26	.31***	.03	.26	.37	.22***	.03	.18	.27
Without disability	.22***	.04	.14	.30	.36***	.04	.28	.43	.26***	.03	.19	.32	.17***	.04	.10	.25	.14***	.03	.08	.21
Conditional indirect effects																				
With disability					.06	.02	.02	.10	.06	.02	.03	.10	.03	.02	-.004	.07	.07	.02	.03	.10
Without disability					.04	.02	.02	.09	.05	.02	.02	.09	.02	.01	-.003	.05	.05	.02	.02	.08
Index of moderated mediation					-.02	.01	-.04	.01	-.02	.01	-.04	.01	-.01	.01	-.03	.01	-.02	.01	-.04	.01

. p < .05, **. p < .01,* **. p < .001,* *N = 309, Gender (male = 1, female = 2),* *Disability (with disability = 1, without disability = 2)*

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DISCUSSION

The study assessed the moderating role of self-efficacy and disability status on the relationship between the learning environment and the inclusion of learners in secondary education in Uganda. It has been suggested that a learning environment is a perfect recipe for inclusion, and to maintain a high level of inclusion for all children, the learning environment must be made conducive enough (Ackah-Jnr &Danso, 2019; Ezike, 2018; Madudili, 2021). In this study, we argue that the learning environment (Physical and Social) is an important determinant of inclusion for all learners and that the success of inclusion is solely dependent on the learning environment.

We were hypnotized that the learning environment (Physical and social) predicted inclusion. The findings of the study revealed that learning environments (physical and social) had a strong statistically significant relationship with inclusion, with all facets of inclusion (Access, Presence, participation, and achievement) statistically significant. This implies that a conducive learning environment (Physical and social) will enhance the inclusion of all learners. This is in agreement with the research findings of Ucci et al. 2015; Ackah-Jnr & Danso, 2019; Hewett et al. 2017; Evanita, 2021 who argue for a conducive physical environment as an antecedent to inclusion, while other scholars also found a strong relationship between social learning environment and inclusion (Anderson, 1982; Thapa et al., 2013).

We also hypothesized that self-efficacy will be positively related to the inclusion of all learners in secondary education. The findings of the study revealed that self-efficacy has a strong positive statistically significant relationship with the inclusion of all learners in secondary education. This study is in agreement with the research findings of Ozokou (2017), who found out that a learner's self-efficacy determined how he approached academic tasks, related with friends and teachers, and participated in school activities, this was also supported by a study by Hosford &Sullivan (2016) who found a strong link between learners social and academic efficacy with inclusion of learners especially those with special educational need. To them, a learner's self-efficacy increases the chances of the student's resilience, participation, and achievement in inclusion (Hosford & Sullivan, 2016). Other studies that support the findings are Ozokou (2018); and Chao et al. (2017), who all found a strong link between self-efficacy and inclusion of all learners.

In this present study, we also hypothesized that disability status is positively related to the inclusion of learners in secondary education in Northern Uganda. The findings revealed that disability status was not significantly related to inclusion, so we rejected the hypothesis (Ho_4) and stated that disability status is not related to inclusion, implying that no matter what form of disability a learner manifested, it did not have any influence on the learner's inclusion in secondary education. This study is in agreement with (Hall &McGregor, 2000), who found that disability status was not related to inclusion at all. To them, inclusion is the best educational system to have happened to all learners, and all learners benefit a lot from interaction with one another in inclusion irrespective of the disability they manifest, so implementation of inclusion should not be delayed by consideration of disability status rather all learners even those without disability should be considered for inclusion (Hall &McGregor, 2000).

Finally, we hypothesized that self-efficacy and disability status moderated the relationship between learning environment and inclusion. Findings revealed that self-efficacy and disability status did not moderate the relationship between learning environment and inclusion, and therefore, the study rejected the hypothesis (H_{05}) and stated that self-efficacy and disability type did not moderate the relationship between learning environment and inclusion. This finding is the biggest contribution of my study to scholarships on inclusion since most

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studies have shown that self-efficacy and disability status mediated the relation inclusion (Ozokcu, 2017; Ozokcu, 2018; Thomas, 2013; Cambra &Silvestre, 2003) while our study holds a contrary view.

The current study had a larger sample size than previous studies (Ezike, 2018; Ackar-Jnr & Danso, 2019; Duruji et al., 2014). Second, the standardized tools used were normed to fit the context where this study was conducted.

Limitations

The study was cross-sectional design, and data was collected using self-administered questionnaires; therefore, we cannot rule out social desirability biases (Miller, 2012). Secondly, the study involved merely secondary school students; it is possible that different results might be obtained with different samples, such as students in primary schools or universities. However, the sample was drawn from three secondary schools in three Districts in Uganda (Gulu, Lira, Arua). This implies that our results can be applied to most secondary school students in Uganda.

CONCLUSION

The findings support the ecology of education theory (Bronfenbrenner, 1976) about the interconnectedness between the individual learner and the learning environment in an inclusive educational setting. Secondly, determinations are needed during the course of study for all learners to develop self-efficacy. It has been posited that self-efficacy is also related to inclusion; therefore, developing student's self-efficacy is essential for inclusion. The study also indicated that the learning environment is an antecedent to inclusion; therefore, creating a conducive learning environment is a perfect recipe for inclusion. We also indicated that self-efficacy and disability status did not mediate the relation between learning environment and inclusion; therefore, interventions should focus more on learning environment and inclusion. Disability status should not be a factor when mobilizing learners for inclusion (Hall & McGregor, 2000).

Recommendation

Schools should create a conducive physical and social environment to enhance inclusion since learning environments are fundamental to inclusion.

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Conflict of Interest

The authors declare no conflict of interest

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