



INVESTIGATING THE CREATIVITY SKILLS OF UNIVERSITY STUDENTS WITH HEARING AND VISUAL IMPAIRMENTS IN KWARA STATE, NIGERIA

Elizabeth O. Uyanne¹ and Isaac O. Ifinju¹


Department of Social Sciences Education, Faculty of Education University of Ilorin, Ilorin Kwara State, Nigeria¹

ABSTRACT

Creativity skills are imperative for university students with hearing impairment and visual impairment for survival in the academic domain. Adopting the Five Creative Disposition Model, the study investigated the creativity skills of university students with hearing and visual impairment in Ilorin, Kwara State, Nigeria. The descriptive survey design was adopted and the study targeted university students with hearing impairment and visual impairment in Ilorin Kwara State, Nigeria. All 31 students with hearing impairment as well as all 13 students with visual impairment were selected for the study using a purposive sampling technique. The findings of the study revealed that students with visual impairment were high in all five creative dispositions, and also, students with hearing impairment were high in four creative dispositions except for inquisitive skills. The study recommends the use of assistive technology such as screen readers, magnification software, Braille displays, hearing aids, and cochlear implants, which could significantly enhance the learning experience of students with hearing and visual impairments. Providing access to these assistive technologies can help students participate fully in the classroom and achieve academic success.

KEYWORDS: *Creativity Skills, Hearing-Impaired Students, Visually-Impaired Students, Disability, Five Creative Disposition Model and Componential Theory*

Corresponding Author: Isaac O. Ifinju, Email: olawaleifinju@gmail.com

 <https://orcid.org/0009-0003-0123-0748>



This is an open-access article licensed under a Creative Commons Attribution 4.0 International License (CC BY) allowing distribution and reproduction in any medium crediting the original author and source.

1. INTRODUCTION

Creativity can be seen as “a process of becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies; identifying the difficulty; searching for solutions, making guesses, or formulating hypotheses about the deficiencies; testing and retesting these hypotheses and possibly modifying and retesting them; and finally communicating the results” (Fields & Bisschoff, 2014). In this study, creativity is defined as a set of tactics used by students with special needs to thrive in the academic domain, particularly in a culture where prejudice and discrimination are prevalent. There have been a few theories on creativity developed throughout the years, but the componential theory of creativity was crucial in the study.

Componential Theory of Creativity

Teresa Amabile's componential theory of creativity was effectively stated in 1983. The hypothesis was carefully crafted to be applicable to both psychological and organizational creativity research (Amabile, 2012). It describes the creative process as well as the different aspects that influence both the process and the results. According to Amabile (1997), everyone has the ability to do at least rudimentary creative work; nevertheless, personality, environment, and time all have an impact on the amount of creativity and its frequency. Amabile enumerated two major suppositions. "There is a continuum from low, everyday levels of originality to the highest degrees of creativity found in historically significant inventions, performances, scientific breakthroughs, and works of art". Second, there are degrees of creativity in the behaviour of any single individual, even within a domain” (Amabile, 2012). Amabile further stated that the level of creativity that an individual produce at a particular point in time is a function of the creativity components operating within and around that individual at that time.

Amabile's idea is based on how individuals are/can be creative in a given setting at a specific moment. Students must optimize their creativity in order to excel academically; in general, students use a variety

of creative tactics to achieve academic success. However, the various challenges university students face, such as academic stress (Reddy, Menon and Thattil, 2018), financial stress (Hicks, 2021), relationship problems (Nwosu, 2014) and career choice complexities (Nauman and Sarwat, 2014), are well documented in literature, especially for students with disabilities (Agyire-Tettey et al., 2017; Kapur, 2018). As a result, students acquire inventive techniques to deal with a variety of challenging situations at school.

The Five Creative Disposition Model

The five creative disposition model investigates the numerous creative dispositions that creative people use to keep afloat in life's complexity. According to Rabi and Masran (2016) a creative person(s) can develop novel ideas (originality), which are unusually relevant when considering several possibilities (fluency), are usually open-ended and can be thought of in a variety of ways (flexibility), and are rich in content, interest, and conclusion (elaboration). People that are creative go deeper into concepts, allowing them to comprehend, analyze, decide, assess, and develop promising options into artistically fruitful outcomes (Min-Ying, 2015). Furthermore, creative people have the ability to listen to their inner voice, they regard themselves as creative, they have a strong desire to express their ideas, and they are aware of their strengths, passions, and convictions (Treffinger *et al.*, 2002). Finally, creative individuals are inherently curious and eager to try new things. They are not afraid of the unknown and can tolerate uncertainty in order to achieve this goal, and they are committed to seeing their ideas through to completion.

In the study, these qualities were compressed and compacted into the "Five Creative Disposition Model," which comprises five creativity skills: inquisitive, persistent, imaginative, collaborative, and discipline (Foghlam, 2014; Collard & Looney, 2014; Spencer et al., 2014; Thompson, 2016). Curiosity or inquisitiveness demonstrates a student's ability to wonder and ask questions, explore and experiment in their environment, and study and

challenge topics. In psychology, inquisitiveness is classified as intrinsic motivation which is thought to be important for encouraging active learning and spontaneous exploration. According to Borowske (2005) there are two types of inquisitiveness that influence creativity. The first is an instinctive or emotional response, in which an individual's attention and concentration are stirred and awakened when confronted with a new problem. This means that curiosity might lead to exploration, which is frequently accompanied by anxiety. Second, "scientific curiosity or metaphysical wonder," in which the brain reacts to gaps or inconsistencies in its knowledge, prompting it to seek explanations.

Persistent ability demonstrates a student's ability to persevere in the face of adversity and uncertainty. When confronted with an unanticipated challenge, highly motivated pupils persist longer and continue to put in greater effort toward educational activities (Lens *et al.*, 2005). Students' perseverance may persist even after they have achieved their educational aim. It's referred to as effort management or effort regulation by Ampofo and Owusu (2015) and it refers to the ongoing expenditure of effort on a task, even when faced with impediments. Persistence may be necessary for students with special needs to achieve their educational goals.

According to Min-Ying (2015) imaginative skill is an ability and a thinking style that is beyond reality and pre-existing knowledge that plays a critical role in being creative. It entails the ability to generate a mental image of an image or thoughts, the mental flexibility to think in a certain way rather than just having a quasi-visual mental picture of concepts, and it is usually specific rather than abstract or generic. To be imaginative, according to Takaya (2004), is to think in alternate or various possible ways in order to break habitual or mechanical ways of thinking and to look beyond what is offered in order to avoid falling victim to only what is presented. Imaginative skill could help students with disability in developing alternative ways of solving emerging and pressing academic problems.

Collaborative skill refers to the capacity to work as

part of a team and to collaborate with others to achieve a common goal. Summers *et. al.* (2005) and Zheng *et. al.* (2018) found a positive link between college students who participate actively in collaborative learning. Students with collaborative skills participate in group discussions, collaborative tasks, actively contribute to the achievement of a common learning goal, and share effort to achieve established objectives. Collaborative skill could be an effective method for encouraging academic creativity by assisting students in gaining needed support from their peers. According to Lew *et. al.* (2000) if there is a distinct academic group contingency and collaborative skill contingency reinforcing them to act, students will improve their performance. This capacity may be necessary for students with disabilities to engage in facilitative and interactive behaviors with their teachers and peers to attain their objectives.

The spectacle of creative effort, innovation, creativity, and a different approach to things are all indicators of creative abilities. Being creative, on the other hand, necessitates a high level of discipline. The ability to design realistic and reflective techniques for reaching defined goals is referred to as discipline (Simba *et al.*, 2016). Discipline, for example, can help students perceive issues in new ways, recognize ideas worth pursuing, and persuade others of their ideas, all of which can encourage and strengthen creativity. Every human, according to Amabile (2012) possesses a certain level of creativity, and students with impairments are no exception.

Hearing Impaired and Visually Impaired Students

According to Deyglio (2009) every student should be able to express and demonstrate their talents and competences in the classroom, and neither disability nor a lack of topic knowledge should be a barrier. Mutumburanzou (2018) reiterated that creative skills can be learned through instruction and practice or are innate. Teachers and instructors, according to Obradović *et. al.* (2015) should focus on improving educational processes for visually and hearing challenged students through inclusivity, flexibility,

and recognizing students' attributes, aptitude, and skills, especially at the tertiary level. In order to maximize their potential in the school system, visually and hearing impaired students must use their creativity talents (Malik *et al.*, 2014). There is ability in every disability, and disability does not always imply incapability (Frieden, 2004). Inquisitive and inventive skills, for example, enable students with disabilities to engage their minds critically and effectively (Echezona, Osadebe and Asogwa, 2011).

Students with hearing impairment are classified as deaf or hard of hearing depending on the severity of their hearing loss, which can be permanent or temporary and range from mild to profound (Agyire-Tettey *et al.*, 2017). Congenital deafness is a born deafness, whereas adventitious deafness is acquired deafness. According to research (Stinson, 1999) students with hearing impairments in traditional schools are frequently shunned by their hearing peers, even in the classroom. It is clear that self-concept and academic achievement of hearing impaired students have a significant relationship (Omotayo, 2011). Furthermore, negative attitudes of societies and students without disabilities toward hearing-impaired students have an impact on their academic and psychological well-being in school (Mwanyuma, 2016). In order for hearing-impaired students to be properly integrated into the schooling system, appropriate teaching aid should be inculcated (Mpofum & Chimhenga, 2013; Kun-man, 2017).

Visually challenged students have trouble seeing things up close or far away, have trouble seeing clearly, have a limited field of vision, are unable to distinguish colors, or have completely lost their sight. Binocular vision anomalies, poor optical correction, and prolonged use of vision in a stressful situation, among other things, might cause this (Kotingo *et al.*, 2014). According to evidence (Stewart, 2014; Nasiforo, 2015) visual impairment has a negative impact on educational attainment; nevertheless, the introduction of inclusive education has aided visually impaired students in achieving their educational goals (Eguavoen, 2016). Similarly, Shahed *et al.* (2016) asserted that providing active support from all stakeholders, particularly in the areas of technology

and creativity, can dramatically improve the academic performance of visually impaired children.

Statement of the Problem

Creativity is essential for survival, particularly in the academic world. To maintain physical and psychological equilibrium, each person engages in some type of creative behavior. In the academic domain, however, creativity abilities are especially critical for students with hearing and visual impairments. Academic complexity and the stress that comes with them may be particularly harmful to these students in traditional universities where there is little or no help. Anecdotal data suggests that students with disabilities face the same difficulties, problems, and academic obstacles as those without disabilities. Students with visual impairment, for example, are required to enroll in an average of 13 courses per semester, move from one class to another in different locations, and follow up on test issues as other students, often without the assistance of a school guide and with the assistance of other students. During class hours, students with hearing impairments have been seen to have no translators and are frequently unable to articulate their thoughts and ideas because they are either dismissed by their peers or isolated during the academic discourse.

Furthermore, evidence has shown the challenges of students with visual impairment (Farrar *et al.*, 2012; Agyire-Tettey *et al.*, 2017; Otyola *et al.*, 2017; Temesgen, 2018; Amin *et al.*, 2021) and hearing impairment (Florence, 2008; Kapur, 2018; Wezzie Khomera *et al.*, 2020) in their educational pursuits. However, to the best of the researcher's knowledge, no study has explored creativity skills, adopting the Five Creative Disposition Model, specifically to these categories of university students. Thus, this study assessed "Creativity Skills of University Students with Hearing and Visual Impairment in Kwara State: Adopting the Five Creative Disposition Model".

Research Question

What is the level of creativity skills (inquisitive,

persistent, imaginative, collaborative and disciplined) of university students with hearing impairment and visual impairment in Ilorin, Kwara State, Nigeria?

Research Hypotheses

H01: there is no significant difference of the inquisitive skill of university students with hearing impairment and visual impairment in Ilorin, Kwara State, Nigeria.

H02: there is no significant difference of the persistent skill of university students with hearing impairment and visual impairment in Ilorin, Kwara State, Nigeria.

H03: there is no significant difference of the imaginative skill of university students with hearing

Table 1: Demographic Data of the Respondents

Variables	Frequency	(%)
a. Gender		
Male	21	47.7
Female	23	52.3
Total	44	100.0
b. Type of Impairment		
Hearing	31	70.5
Visual	13	29.5
Total	44	100.0

impairment and visual impairment in Ilorin, Kwara State, Nigeria.

H04: there is no significant difference of the collaborative skill of university students with hearing impairment and visual impairment in Ilorin, Kwara State, Nigeria.

H05: there is no significant difference of the discipline skill of university students with hearing impairment and visual impairment in Ilorin, Kwara State, Nigeria.

2. METHODOLOGY

The study adopted descriptive survey research. A descriptive research design was considered appropriate for the study because it enabled the researcher to obtain information from a representative sample of the population to describe the research situation as it really exists.

The population of this study comprised all university students with hearing impairment and visual impairment in Kwara State. The target population includes all students with hearing impairment and visual impairment in a selected conventional university in Ilorin Metropolis. There are three universities in Ilorin Metropolis. A purposive sampling technique was used to select one university because it houses the largest number of students with hearing impairment and visual impairment. All 31 students with hearing impairment and all 13 students with visual impairment were purposively selected, which brings the sample size to 44.

An Adapted reconfigured questionnaire tagged “Creativity Skill Scale Questionnaire (CSSQ)”, which captures the five creative disposition models, was used to collect the data for the study. The instrument comprised two sections coded A&B. Section A consists of the demographic information of the respondents including, gender and type of impairment. Section B Creativity Skills Scale (CSS)

developed by Thompson (2016), “Targeting Creativity Skills for High School Students with Special Needs”, was adapted under the supervision of experts to fit the context of the study. Four points Likert scale; “Not yet evident” (1), “Emerging” (2), “Expressing” (3) and “Excelling” (4) suggested by Treffinger et al., (2002) and used by Thompson (2016), was adopted as the scale of measurement. Mean scores below the cut-off Mean of 2.50 (i.e. 4+3+2+1/4 scale of measurement) was interpreted as a Low level while Mean score above the cut-off mean of 2.50 was interpreted as a High level of creative skills.

Face and criterion-related validity tests were conducted with the help of a disability specialist, to ensure the reliability of the instrument, and split-half procedure was conducted and the Correlation Coefficient of 0.73 was obtained for the instrument with the use of Cronbach alpha. The instrument was therefore adjudged to be very reliable.

The researcher personally administered the instrument to the students following all ethical processes. Approval was received from the centre for support service for the deaf from the selected institution and the consent of the students was sought before the instrument administration. For the visually

23(52.3%) were female. Also, 31(70.5%) students were with hearing impairment and 13(29.5%) where with visual impairment.

Research Question:

What is the level of creativity skills (inquisitive, persistent, imaginative, collaborative and discipline) of university students with hearing impairment and visual impairment in Ilorin Kwara State, Nigeria?

To answer the research question, descriptive analysis of mean was used to analyse the responses of the respondents on the five creativity skills based on the four-point Likert scale which was summed up to ascertain the cut-off Mean point of $(4+3+2+1/4)$ 2.50. Also, the responses of each respondent were summed up to ascertain the average and then divided by the number of items in each category (inquisitive, persistent, imaginative, collaborative and disciplined) to determine the Mean of each skill.

A Mean greater than 2.50 was regarded as a high level and below 2.50 was regarded as a low level of creative skill. The result was presented in Table 2;

Table 2: Descriptive Analysis of Mean Showing the Creativity Skills of University Students with Hearing Impairment and Visual Impairment in Ilorin Kwara State, Nigeria

Skills	Hearing Impairment (N=31)			Visual Impairment (N=13)		
	Mean	Std.	Level	Mean	Std.	Level
Inquisitive	2.49	0.94	Low	2.56	0.47	High
Persistent	2.53	0.62	High	2.67	0.45	High
Imaginative	2.90	0.70	High	3.41	0.60	High
Collaborative	2.74	0.70	High	3.15	0.60	High
Discipline	2.83	0.53	High	3.00	0.55	High
Grand Mean	2.70			2.96		

impaired students, the items were read and their responses were collected after which the researcher personally collected copies of the completed questionnaire from the respondents for analysis.

The data were subjected to descriptive and inferential statistics. Percentage and frequency count was used to organize the demographic characteristics of the respondents. Descriptive analysis of Mean was used to answer the research question and Independent t-test was used to test research hypothesis one, two, three, four, and five all at 0.05 level of significance.

3. RESULTS

The “demographic description” of the respondents was described. The data presented in Table 1 shows the demographic characteristics of the respondents using percentages. Results in Table 1 show that out of the 44 university students with disabilities who participated in the study 21(47.7%) were male while

Table 2 shows that university students both with hearing impairment and visual impairment in Ilorin, Kwara State scored above the cut of Mean point of 2.50 in all the components of creativity skills including persistent (2.53; 2.67) Imaginative (2.90; 3.41) collaborative (2.74; 3.15) and discipline skill (2.83; 3.15) respectively except for inquisitive skill (2.49; 2.56) where students with hearing impairment scored below 2.50 and students with visual impairment scored above 2.50. Also, the grand mean of 2.70 for students with hearing impairment and 2.96 for students with visual impairment indicates a high level of creativity skills for both categories.

Hypotheses Testing

Five research hypotheses were raised for this study and all were tested with the use of an Independent t-test all at 0.05 level of significance.

H₀₁: *There is no significant difference in the creativity skills of university students with hearing impairment and visual impairment in Ilorin Kwara State, Nigeria.*

H₀₂: *there is no significant difference in the persistent skill of university students with hearing impairment and visual impairment in Ilorin Kwara State, Nigeria.*

H₀₃: *there is no significant difference in the imaginative skill of university students with hearing impairment and visual impairment in Ilorin Kwara State, Nigeria.*

H₀₄: *there is no significant difference in the collaborative skill of university students with hearing impairment and visual impairment in Ilorin Kwara State, Nigeria.*

H₀₅: *there is no significant difference of the discipline skill of university students with hearing impairment and visual impairment in Ilorin Kwara State, Nigeria.*

To test all the hypotheses, responses on each creativity skill (inquisitive, persistent, imaginative, collaborative and discipline) of university students with hearing impairment and visual impairment in Ilorin, Kwara State were coded and analyzed using independent t-test statistical analysis individually in a single table. The result was compressed and reported in Table 2;

Results in Table 3 show the t-value of each of the five creativity skills i.e. -0.51, -0.78, -2.26, -1.86 & -0.92 and the p-value also, i.e. 0.616, 0.441, 0.029, 0.070 & 0.365 respectively. The table indicates all the p-values were greater than 0.05 ((0.616, 0.441, 0.070 & 0.365) > 0.05) except for imaginative skill with a p-value of 0.029.

Since the p-value of inquisitive (0.616), persistent (0.441), collaborative (0.070) and discipline skills (0.365) are greater than 0.05 and imaginative skill (0.029) is less than 0.05 alpha level, it can thus be

concluded that; The null hypotheses one, two, four and five are not rejected; meanwhile the null hypothesis three was rejected.

Hence, there is no significant difference in inquisitive, persistent, collaborative and discipline skills of university students with hearing impairment and visual impairment in Ilorin Kwara State, Nigeria; but there is a significant difference in imaginative skills of university students with hearing impairment and visual impairment in Ilorin Kwara State, Nigeria.

4. DISCUSSION

The finding of the study shows that the level of creativity skills of university students with hearing impairment and visual impairment in Ilorin Kwara State, Nigeria was relatively high. This finding agrees with the findings Stanzione et. al. (2013), Daramola et. al. (2019) and De Caroli et. al. (2020) submissions that both hearing-impaired and visually impaired students have a relatively high level of creativity and this has made them to adapt relatively well in a school environment at every level. Although, they pass through a lot, on and off campus, especially in a society with high prejudice, harnessing these creative skills and abilities are eminent both for their psychological and physical well-being including academic success. Echezona et. al. (2011) supported this, reiterating that there is ability in every disability; Hence students with hearing impairment and visual impairment scan very well and function in the academic environment if they can maximize these creative abilities.

The findings also revealed that university students with hearing impairment in Ilorin, Kwara State has low level of inquisitive skill; this could be because of the nature of the disability. This is evident because majority of students and staff on campus does not understand sign language (Antia et al., 2012; Antia & Kreimeyer, 2016) and this has impede interaction and discussion among students with hearing impairment, other students on campus and staff. However, since the advent of the internet interaction has drastically improved (Bodemann, 2012; Thorén et al., 2013; Egaga & Aderibigbe, 2015).

Table 3: Independent t-Test for each Creativity Skills of University Students with Hearing Impairment and Visual Impairment in Ilorin Kwara State, Nigeria.

Skills	Impairments	No	Mean	Std.	df	t-value	p-value	Remark
Inquisitive	Hearing	31	9.68	3.74	42	-0.51	0.616	NS
	Visual	13	10.23	1.88				
Persistent	Hearing	31	10.10	2.50	42	-0.78	0.441	NS
	Visual	13	10.69	1.80				
Imaginative	Hearing	31	11.61	2.79	42	-2.26	0.029	S
	Visual	13	13.62	2.40				
Collaborative	Hearing	31	13.71	3.49	42	-1.86	0.070	NS
	Visual	13	15.77	3.00				
Discipline	Hearing	31	11.35	2.19	42	-0.92	0.365	NS
	Visual	13	12.00	2.20				

Another finding of the study indicates that there is no significant difference in inquisitive, persistent, collaborative and discipline skill of university students with hearing impairment and visual impairment in Ilorin, Kwara State, Nigeria. Inquisitive, collaborative, persistent and discipline are crucial skills needed by students living with disability to thrive in the academic environment (Spencer, Lucas and Claxton, 2014). Although, the nature of hearing impairment and visual impairment may differ, however, students with hearing impairment and visual impairment require these skills to thrive in the university atmosphere (Thompson, 2016). The study also revealed a significant difference in Imaginative Skill of university students with hearing impairment and visual impairment in Ilorin, Kwara State, Nigeria. The nature of disability is of immense importance, and it may contribute to the difference in exploring their imagination (Newman, 2020).

Key Highlights

The inquisitive skill, persistent skill, imaginative skill, collaborative skill, and discipline skills are all crucial for the development of hearing-impaired and

visually-impaired students; while these skills are interdependent, it is important to note that the development of each skill may be impacted differently by the disabilities of the student. For example, the inquisitive skill may be more difficult to develop for students who have difficulty processing auditory or visual information.

Similarly, the persistent skill may be more challenging for students who face additional barriers to learning, such as limited access to learning resources or limited support from educators and peers. It is also important to consider that the development of these skills may require accommodations and modifications to traditional teaching methods and materials to ensure that all students, including those with hearing and visual impairments, can fully participate in the learning process.

Collaborative skill is particularly important for hearing-impaired and visually impaired students as it enables them to work with others who may have different communication needs and to build a supportive and inclusive learning environment.

Finally, discipline skill is essential for hearing-impaired and visually impaired students as it enables them to stay organized, manage their time effectively, and remain focused on their learning goals despite potential challenges they may face due to their disabilities.

Alignment with UN's SDGs Goals

Developing the creativity skills of hearing-impaired and visually impaired students aligns with the fourth Sustainable Development Goal (SDG) of Quality Education in several ways:

Inclusive Education: By enhancing the creativity skills of hearing-impaired and visually impaired students, we can create an inclusive learning environment where these students can participate fully in classroom activities, express themselves creatively, and engage with the curriculum in meaningful ways. This aligns with SDG 4, which emphasizes the importance of ensuring that all learners have access to quality education.

Improved Learning Outcomes: Developing creativity skills can help special students to think alternatively, solve problems, and communicate effectively. By enhancing these skills, hearing-impaired and visually impaired students can improve their learning outcomes and achieve academic success. This aligns with SDG 4, which aims to ensure that all learners acquire the knowledge and skills needed to promote sustainable development.

Empowering Students: Developing creativity skills can also empower hearing-impaired and visually-impaired students to express themselves and share their perspectives with others. By giving these students the tools and skills to express themselves creatively, we can help them to build self-confidence, develop a sense of agency, and participate more fully in society. This aligns with SDG 4, which emphasizes the importance of empowering learners to become active agents of change in their communities.

Promoting Inclusive Societies: By promoting the creativity skills of hearing-impaired and visually impaired students, we can help to create a more

inclusive society that values diversity and promotes equal opportunities for all. This aligns with SDG 4, which aims to ensure that education promotes social cohesion, tolerance, and respect for diversity.

In general, by encouraging the creativity skills of hearing-impaired and visually impaired students, we can promote quality education, empower learners, and build more inclusive societies that promote sustainable development.

5. CONCLUSIONS

University students with hearing impairment and visual impairment face a lot of challenges in school; ranging from social discrimination, academic difficulty and lack or little school support in all areas among others. However, despite all the challenges students with disability may face on campus, indications by the study were that students with hearing impairment and visual impairment possess relatively high creativity skills which might have sustained them on campus and in their academic pursuits thus far. Applying the five creative disposition models including inquisitive, persistent, imaginative, collaborative and discipline skills, the study reflects the usability of these skills and their differences between students with hearing impairment and visual impairment; indications were that no significant difference was found between students with hearing impairment and visual impairment on the four creative disposition except for imaginative skill. Thus, it can be inferred that creativity skills are highly adopted among students with disability and developing these creative skills are essential for university students with hearing impairment and visual impairment in Ilorin, Kwara State to thrive academically.

Since both university students with hearing impairment and visual impairment largely depend on the five creative dispositions to thrive in the academic domain as revealed in the findings of the study, the following practical approaches to support these students were recommended.

1. The use of assistive technology such as screen readers, magnification software, Braille displays, hearing aids, and cochlear implants could significantly enhance the learning experience of students with hearing and visual impairments. Providing access to these assistive technologies can help students participate fully in the classroom and achieve academic success.
2. University educators could make several accommodations to their teaching methods to support students with hearing and visual impairments, such as providing written copies of lectures, using visual aids, providing additional time for assignments, using inclusive language, and providing real-time captioning or sign language interpretation.
3. Collaborating with the student, their parents/guardians, and other professionals such as an audiologist or a vision specialist, an Individualized Education Plan could be developed and implemented to provide individualized support for each student with hearing and visual impairments to ensure academic success.

Therefore, future research should be conducted on creativity skills as a correlate of visually impaired and hearing-impaired students' academic identification. In addition, due to the small sample size – 44 respondents, which happens to be the total number of hearing-impaired and visually impaired students in the selected institution, research should be conducted on a broader scale involving high numbers of hearing and visually impaired students to buttress the generalization of the findings.

6. REFERENCES

Agyire-Tettey, E. E., Cobbina, M. and Hamenoo, E. S. (2017) 'Academic Challenges of Students with Hearing Impairment (SHIs) in Ghana', *Disability, CBR & Inclusive Development*, 28(3), pp. 127–150. doi: 10.5463/dcid.v28i3.646.

Amabile, T. (1997) 'Motivating Creativity in Organizations: On Doing What You Love and Loving What You Do', *California Management*

Review, 40(1), pp. 39–58. doi: <https://doi.org/10.2307/41165921>.

Amabile, T. M. (2012) 'Componential Theory of Creativity', *Harvard Business School*, pp. 12–019. doi: 10.4135/9781452276090.n50.

Amin, A. S. *et al.* (2021) 'Main Challenges of Students with Visual Impairment at Higher Education Institutions', *International Journal of Academic Research in Progressive Education and Development*, 10(1), pp. 734–747. doi: 10.6007/ijarped/v10-i1/9682.

Ampofo, E. T. and Owusu, B. O. (2015) 'Academic Ambition and Effort in the Public Senior High Schools', *International Journal of Academic Research and Reflection*, 3(5), pp. 19–35.

Antia, S. D. *et al.* (2012) 'Peer Interactions of Deaf and Hard-of-Hearing Children', *The Oxford Handbook of Deaf Studies, Language, and Education: Second Edition*, 1(October 2017). doi: 10.1093/oxfordhb/9780199750986.013.0013

Antia, S. D. and Kreimeyer, K. H. (2016) 'Social interaction and acceptance of deaf or hard-of-hearing children and their peers: A comparison of social-skills and familiarity-based interventions', *Volta Review*, 98(4), pp. 157–180.

Bodemann, M. A. (2012) 'Building Interaction with an Isolated Population through Social Media: The Deaf Community', *Spring*. Available at: <http://scholarworks.uark.edu/rhrcuht/13/>.

Borowske, K. (2005) 'Curiosity and motivation-to-learn', *ACRL Twelfth National Conference*, pp. 346–350. Available at: http://three.umfglobal.org/resources/1976/curiosity_article.pdf.

De Caroli, M. E. *et al.* (2020) 'Creativity and Logical-Spatial Skills in Blind and Visual Impaired Adolescents. First Results of the FIRD Project', *Psychology*, 11(03), pp. 404–418. doi: 10.4236/psych.2020.113026.

Collard, P. and Looney, J. (2014) 'Nurturing creativity in education', *European Journal of*

- Education*, 49(3), pp. 348–364. doi: 10.1111/ejed.12090.
- Daramola, D. S. *et al.* (2019) ‘Creativity level of hearing impaired and hearing students of federal college of education’, *International Journal of Instruction*, 12(1), pp. 1489–1500. doi: 10.29333/iji.2019.12195a.
- Deyglio, S. (2009) ‘Engaging Critical Thinking Skills with Learners of the Special Populations’, *Educator’s Voice*, 8, pp. 62–71.
- Echezona, R. I., Osadebe, N. and Asogwa, B. . (2011) ‘Library services to the physically challenged: Nature , challenges and strategies’, *Journal of Applied Information Science and Technology*, 5(1), pp. 14–18.
- Egaga, P. I. and Aderibigbe, S. A. (2015) ‘Efficacy of Information and Communication Technology in Enhancing Learning Outcomes of Students with Hearing Impairment in Ibadan’, *Journal of Education and Practice*, 6(30), pp. 202–205. Available at: <http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ1081324&site=ehost-live>.
- Eguavoen, E. O. (2016) ‘ICT Utilization As Correlates Of Academic Performance Among Students With Visual Impairment In Lagos State, Nigeria’, *European Scientific Journal, ESJ*, 12(13), p. 205. doi: 10.19044/esj.2016.v12n13p205.
- Farrah, D. Y. *et al.* (2012) ‘Challenges among individuals with visual impairment in an institution of higher learning in malaysia’, *European Journal of Special Needs Education*, 2, pp. 99–107. Available at: file:///C:/Users/user/Downloads/Challenges_among_individuals_with_visual.pdf.
- Fields, Z. and Bisschoff, C. A. (2014) ‘Developing and Assessing a Tool to Measure the Creativity of University Students’, *Journal of Social Sciences*, 38(1), pp. 23–31. doi: 10.1080/09718923.2014.11893233.
- Florence, Y. O. (2008) Challenges facing the education of learners with hearing impairment in mumias school for the deaf, mumias district kenya. Available at: <https://ir.kiu.ac.ug/bitstream/20.500.12306/2938/1/img01016.pdf>.
- Foghlam, A. (2014) ‘Career Education Standard 3-18 Learning Resource 3: Introduction to Career Management Skills’.
- Frieden, L. (2004) ‘Improving Educational Outcomes for Students with Disabilities.’, in *National Council on Disability*, pp. 1–91. Available at: <http://www.eric.ed.gov/ERICWebPortal/recordDetail?accno=ED485691>.
- Hicks, S. (2021) *Financial Stress in Undergraduate Students*. Available at: <https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=11138&context=dissertations>.
- Kapur, R. (2018) ‘Challenges Experienced by Visually Impaired Students in Education’.
- Kotingo, E. L. *et al.* (2014) ‘Effects of Reduced Visual Acuity on Academic Performance among Secondary School Students in South-South Nigeria’, *International Journal of Science and Research*, 3(4), pp. 328–334.
- Kun-man, C. Y. (2017) ‘Academic Performance of Deaf and Hard-of-Hearing (DHH) Students in the Sign Bilingualism and Co-enrolment in Deaf Education (SLCO) Programme’.
- Lens, W. *et al.* (2005) ‘Study persistence and academic achievement as a function of the type of competing tendencies’, *European Journal of Psychology of Education*, 20(3), pp. 275–287. doi: 10.1007/BF03173557.
- Lew, M. *et al.* (2000) ‘Positive Interdependence , Academic and Collaborative-Skills Group Contingencies , and Isolated Students Published by : American Educational Research Association Stable URL : <http://www.jstor.org/stable/1163061> REFERENCES Linked references are available o’.

23(3), pp. 476–488.

Malik, A. M. *et al.* (2014) ‘Causes of Learning Disabilities in Basic Skills of Students at Primary Level and Remedial Techniques Used by the Teachers Causes of Learning Disabilities in Basic Skills of Students at Primary Level and Remedial Techniques Used by the Teachers’, *PUTAJ-Hmanities and Social Science*, 21(2).

Min-Ying, T. (2015) ‘The Relationships among Imagination, Future Imagination Tendency, and Future Time Perspective of Junior High School Students’, *Universal Journal of Educational Research*, 3(3), pp. 229–236. doi: 10.13189/ujer.2015.030309.

Mpofu, J. and Chimhenga, S. (2013) ‘Challenges faced by Hearing Impaired pupils in learning: A case study of King George VI Memorial School’, *IOSR Journal of Research & Method in Education (IOSRJRME)*, 2(1), pp. 69–74. doi: 10.9790/7388-0216974.

Mutumburanzou, P. (2018) ‘Communication Skills for Children with Severe Learning Communication Skills for Children with Severe Learning Difficulties’, *European Journal of Educational Sciences*, 5(1). doi: 10.19044/ejes.v5no2a6.

Mwanyuma, R. M. (2016) ‘Factors Influencing The Academic Achievement Of Deaf Learners In Kilifi County, Kenya: A Case Of Sahajanand School For The Deaf’, in. Available at: <http://erepository.uonbi.ac.ke/handle/11295/98964#>. XaNkXA1omac.mendeley.

Nasiforo, B. M. (2015) *Academic Impediments Students With Visual Impairments Encounter In The Colleges Of University Of Rwanda.*, *National Journal of Inclusive Education*. Kenyatta UNiversity. doi: 10.1145/3132847.3132886.

Nauman, M. and Sarwat, N. (2014) ‘Factors inducing career choice: Comparative study of five leading professions in Pakistan’, *Pakistan Journal of Commerce and Social Sciences*, 8(3), pp. 830–845.

Available at: <https://www.econstor.eu/bitstream/10419/188172/1/pjcss211.pdf>.

Newman, G. (2020) *Nature-Based-Learning for Students with Disabilities*. Available at: https://repository.stcloudstate.edu/cgi/viewcontent.cgi?article=1115&context=sped_etds.

Nwosu, J. C. (2014) ‘Dating And Academic Performance: An Empirical Analysis Among Babcock University’s Undergraduate Students In Ogun State’, *British Journal of Education*, 5(11), pp. 112–118. Available at: <https://www.eajournals.org/wp-content/uploads/Dating-and-Academic-Performance-An-Empirical-Analysis-among-Babcock-Universitys-Undergraduate-Students-in-Ogun-State.pdf>.

Obradović, S., Bjekić, D. and Zlatić, L. (2015) ‘Creative Teaching with ICT Support for Students with Specific Learning Disabilities’, *Procedia - Social and Behavioral Sciences*, 203, pp. 291–296. doi: 10.1016/j.sbspro.2015.08.297.

Omotayo, T. O. (2011) ‘Self Concept and Academic Performance of Hearing Impaired Students in Ondo State Secondary Schools’, *The Nigerian Journal of Research and Production*, 19(1), pp. 1–11. Available at: <http://globalacademicgroup.com/journals/nigerian-journal-of-research-and-production/self-concept-and-academic-performance.pdf>.

Otyola, W. R., Kibanja, G. M. and Mugagga, A. M. (2017) ‘Challenges faced by visually impaired students at Makerere and Kyambogo Universities’, *Makerere Journal of Higher Education*, 9(1), p. 75. doi: 10.4314/majohe.v9i1.6.

Rabi, N. M. and Masran, M. N. Bin (2016) ‘Creativity characteristics in teaching students with learning disabilities among pre-service teacher in UPSI’, *International Journal of ADVANCED AND APPLIED SCIENCES*, 3(11), pp. 66–72. doi: 10.21833/ijaas.2016.11.012.