



IJRASET

International Journal For Research in
Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 11 **Issue:** II **Month of publication:** February 2023

DOI: <https://doi.org/10.22214/ijraset.2023.49119>

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Effectiveness of Evaluation Methods and Process of Identifying Students with Learning Disabilities: “A Case Study of USA and Zambia”

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Abstract: *This study is done to draw a comparative analysis between the evaluation process for special education needs among primary education students in the USA and Zambia. The paper studies the effectiveness of the evaluation methods and the processes of identifying students with learning disabilities in both the countries of the USA and Zambia.*

There is no appropriate definition for learning disability but in the most basic way, it can be said that learning disability is a term that is used to describe many different neurological disorders. It is the consequence of impairments in one or more processes that is related to perceiving, thinking, remembering, or even learning. The mechanisms of the children with learning disabilities are just as same as normal kids, it is just that their brains are wired differently. This difference in their brain affects how they receive and process information. These disorders are not curable, it is a lifelong issue. Children with learning disabilities are taught by special education which is a practice of educating students in such a way that their individual differences and their special needs can be addressed. With the help of proper support and intervention, children suffering with learning disabilities can get success in their academic field and get distinguished careers later in life.

The difference in the approaches under each model of special needs evaluation for students in USA and Zambia will be understood. A comparative analysis of the strengths and limitations of the different models used in both the countries will be drawn and a contribution will be made to the existing studies by providing comparative results between a developed and a developing country. The answers to the questions will be sought by implementing qualitative and quantitative research analysis, where the analysis will be done based on the existing data. This paper is especially significant for the educational psychologists and educational diagnosticians as it needs a comparative approach to understand the specific factors and approaches that are further considered for the evaluation of the students with learning disabilities in USA and Zambia. Due to their profession, it shall be easier for them to understand the pros and cons of the evaluating processes used in both countries to treat the students having learning disabilities. Also, they can take lessons from one country, probably the developed country, to eliminate whatever is deficient in the evaluation method that is prevalent in the other country.

I. INTRODUCTION

Education is the basic need of all human beings, and the process of education is evolving every day. Among primary education students, specific education availability is needed. Zambia and USA are the two developing and developed countries that have implemented different evaluation methods and approaches. This research is focused on comparing the evaluation methods of both countries. In this research, with the purpose of understanding, if the disability among students is related to intellectual disability formally known as mental retardation, learning disability, autism, emotional disturbance, etc., a qualitative research methodology shall be implemented. Many studies and reports are previously done on this similar subject matter. A conclusion will be drawn by analysing the results and discussions of those selected data sources and the comparison will be done by secondary methodology. This study is done especially for educational psychologists and educational diagnosticians as it takes a comparative approach to understand the specific factors and approaches that are considered to evaluate students who have special needs of learning in countries such as the USA and Zambia.

A. Background of Study

1) Special Education

- a) Learning disabilities are types of abnormalities in a student where they lose their ability to read, write, learn, spell and think logically (Scanlon, 2013).
- b) WHO report stated that - around 15% of the global population is disabled (Krahn, 2011)

- c) People suffering from a disability in their childhood may require special education (alternative instruction, support, and services for children who have academic, behavioral, health, or physical needs that are not met by traditional educational approaches) (Mallick & Sheesh, 2013)
- d) Right of Person with Disabilities (CRPD) established in 2006 to support disabled to make inclusive education (education of children alongside classmates in local schools, with assistance as needed) accessible
- e) The basic purpose of special education is to provide appropriate and free education to disabled children in same was as to other children
- f) However, children with disabilities continue to suffer unpleasant, negative, and/or discouraging experiences at school. Thus, addressing exclusion is an essential aspect of reorienting education systems
- g) Special education in USA and Zambia
- h) Education in USA is based on Individuals with Disabilities Education Act (IDEA), which was earlier known as the Education for All Handicapped Children Act (EHA) of 1975
- i) Generic methods of Evaluation are Response to intervention model and discrepancy model
- j) In Zambia, the idea of the evaluation process and special education is a new concept
- k) Discrepancy model is majorly adopted in Zambia
- l) In USA earlier the goal is to provide education to all children but after the access to education is derived, the goal shifted to addressing problems in implementation process
- m) In Zambia, National Campaign to Reach Disabled Children (ZNCRDC) was started in 1981 which was not even reaching 10% of special children.
- n) Initially in Zambia the focus was just on disabled students but with improvisation in policies, there was an up gradation in the certification and quality of instructions for specialist teachers
- o) Problem Statement, Aim and Objectives

B. *Problem Statement*

- 1) Education is a tool that empowers people by providing them with knowledge, skills, techniques, and information
- 2) Special needs education is developing toward inclusive education across the world.
- 3) As a result of the shift to inclusive education, teachers' classroom activities must be adjusted to fit the individual educational needs of the children with whom they work.
- 4) Methods and practices for identifying children with learning disabilities, as well as their effectiveness, may differ across developing and industrialized countries.
- 5) Despite the efforts the children with special needs continue to be stigmatized and discriminated against, resulting in a lack of effective educational programs.
- 6) While there is a wealth of literature on research-based procedures and standards for dealing with kids with disabilities, there is relatively little information on special education instructors' current practices and evaluation approaches when working with students with learning disability
- 7) As examination of methods would help in improving the implementation status of existing educational policies and supporting the countries in enhancing access to education for students with learning disabilities
- 8) Thus, the current study focuses on evaluation methods and their usefulness for students with special education needs.

C. *Aim*

The aim of this research is to draw a comparative analysis between the evaluation process for special education needs among primary education students in the USA and Zambia.

D. *Objectives*

The objectives of this study are stated as:

- 1) To understand the different approaches under each model of special needs evaluation for students in the USA and Zambia.
- 2) To draw a comparative analysis of the strengths and limitations of each model.
- 3) To contribute to the existing studies by providing comparative results between developed and developing countries.

II. CASE STUDY

A. Evaluation Models

1) Discrepancy Model

a) The discrepancy model is a conventional method used to determine or identify a child with a disability and the child's requirements for special education services. An IQ test is taken, and the discrepancy between its score and other exam is checked. If there is a discrepancy of at least 30 points, the child is known to have a learning disability.

2) Response to Intervention

a) It is multi-layered approach for the students with special learning, and abnormal behavior needs to provide early identification and support. With this, the learning rate of the different students is identified, and the learners who are struggling are provided with interventions at higher intensities such that their rate of learning can be accelerated.

3) Cognitive Processing Deficit

a) Deficits in perception are issues with the mechanisms of recognizing and understanding the information taken in through the senses. A thorough SLD test will consider psychological variables that interfere with a student's academic ability in the Cognitive Deficiency Approach

4) Linking Assessment Data to Intervention

a) Creating tailored interventions focused on specific patient needs and advise appropriate intervention preparation when a patient does not respond to RTI efforts

5) Cognitive Processes and Intervention

a) USA uses the Cattell-Horn-Carroll (CHC) theory of intelligence due to the wide range of cognitive abilities . The psychological and achievement test are used for assessing Fluid Intelligence, crystallized intelligence, short term memory, vision processing, auditory processing, long term storage, and processing speed.

6) Relationship Between Evaluation Models and Student learning

a) Cognitive ability assessments like discrepancy models help in understanding whether underachievement is a result of a disability like learning disability, lack of instruction, lack of proficiency in English language or even a socio-economic challenge

b) An individual's response is evaluated based on the above aspects through the evaluation theories or models

c) The various evaluation models do not simply collect data but work on the clinical analysis of such data collected for evaluating learning disabilities. These include conducting quantitative and qualitative analysis through a professional trained in the area of learning disabilities and related development behavior/disorders (LDA, 2018).

d) The evaluation methods apart from conducting data analysis and providing recommendations post evaluation also help in evaluating how an individual would work within a school or other learning atmosphere.

e) These methods identify a learning disability by deducing any cognitive processing deficits which hampers an individual's skill acquisition and navigation capability towards learning and performance.

f) By applying one or more of these evaluation methods, educators are in a better position to explore the hypothesis including external factors significantly impact an individual's learning capability or all plausible external factors have been ruled out (LD Online, 2022).

g) This will help the educators in chalking out effective student learning programs to aid SLD's to perform better.

h) Comparison of Models in USA and Zambia

7) USA

a) High-incidence disorders, such as learning difficulties, speech challenges, behavioural challenges, and moderate intellectual disabilities, typically impact 80 percent of United States schools providing special education services(Friend and Bursuck, 1999)

b) Cortiella and Horowitz (2014) consistently reported that the US lacks adequate teachers and staff to perform evaluation efforts due to the growing number of students with disability.

- c) The USA evaluated its process according to the RTI method. If this method is unsuccessful, the student is referred for a formal evaluation. Even the USA uses the Cattell-Horn-Carroll (CHC) theory of intelligence due to the wide range of cognitive abilities described
 - d) In the United States, thorough assessments are still required to better understand the strengths and limitations of a student, even with a diagnosis (Turnbull, Stowe, and Huerta, 2007). Such information will enable teachers to develop a student's Individualized Education Plan (IEP) and decide what support the student requires to excel in school (Parent Center Core).
 - e) The common method used in the USA are the RTI and Processing Deficit Approach method which is progressive and has been effective much more than the discrepancy method.
- 8) *Zambia*
- a) Most African countries do not have specific local definitions of learning disabilities or high-incidence disabilities. Usually, students with learning disabilities find it very difficult to be accepted in classrooms (Abosi, 2007).
 - b) Zambia adapt the international model to develop psychological tests to ensure validity and reliability and mainly Ministry of Health mandates the process based on the traditional discrepancy model.
 - c) The World Bank (2018) discovered that many children with learning disabilities are often "diagnosed" incomprehensively, devoid of appropriate medical evaluations and tests within Zambia. Therefore, to remedy this condition, tests should be mandatory for all children's benefit before enrolling in a special school.
 - d) The absences of standardized evaluation methods and the lack of availability of professionals make it difficult to identify learning disabilities at an early stage in Zambia. Thus, focusing on country-specific standardized tests, trained teachers, and early assessment is required.
 - e) The common method used in Zambia is tradition discrepancy model.

III. RESEARCH METHODOLOGY

A. *Research Strategy*

A mixed research strategy was applied to compare the evaluation process for special education needs in both countries. The use of the qualitative method via secondary review helped in drawing basic information about the already identified facts while quantitative method has been applied which gave insights into the strategies which are currently practiced

1) *Targetted Population*

Professionals working in Elementary Schools with special education in Zambia and the United States of America were considered the target population. The selected schools were Brehm Preparatory School in Carbondale, Illinois region of USA, and primary schools from the central province of Zambia

2) *Sampling Plan*

A total of 200 samples were collected (100 from Preparatory School in Carbondale, Illinois USA, and 100 from primary schools in Central province of Zambia). After deriving permission, the questionnaire was sent in google doc form to the teachers in 2021. Purposive sampling method was used to collect the data

3) *Questionnaire Design*

A close-ended questionnaire dividend into 3 sections i.e. Demographic with 5 questions i.e. gender, age, nationality, teaching experience, and other professional experiences; background with question on knowledge of respondents about special education; and inferential with 5 points Likert scale

4) *Data Analysis Tools and Methods*

The quantitative data analysis was performed through SPSS. Herein, for demographic and background section frequency analysis was performed while for inferential section independent t-test was performed for comparison of responses obtained from professionals in the USA and Zambia

5) *Data validity, Reliability, and Ethical Consideration*

Data validity was established by verifying the results with past investigations, Data reliability was achieved through the Cronbach alpha test as the value for constructs was more than 0.7, and ethics by providing all information to respondents, citing existing research work and maintaining confidentiality of personal information.

6) *Demographic and Background*

The population surveyed in Zambia comprised 30-40 years, male, full-time, and teaching experience of 0-4 years. Whereas the respondent profile in the USA had a maximum of 40-49 years, female, employed full time, and have experience of teaching for 5-9 years. The selected professionals were aware of the special education and existing challenges. Even the models adopted in countries vary i.e. Zambia has discrepancy model while USA – RTI

7) *Hypothesis 1*

Hypothesis - There is no difference in programs in Zambia and USA in improving learning in students with learning disabilities

- a) In the special education programs, developed countries have availability of resources thus, the focus is towards enhancing the efficiency and the existing capacity but for developing countries as initial step is to make the facilities available, thus, maintenance is key priority
- b) Thus, herein different evaluation methods to determine a program's success in addressing learning disabilities in students are analyzed
- c) The analysis reveals that the significance value for all the statements is less than 0.05, thus the assumption of having equal means is rejected. This reveals that there is difference in performance of students based on the programs used by the country.
- d) The results were supported by existing studies wherein a study by Nkhosi & Menon (2015). Revealed that in Zambia, the programs focused on local tools as part of a coordinated national strategy for screening These programs were similar to international approaches for evaluating profiles and checklists relating to learning disabilities (Muwana & Morgan, 2018). However, Response to intervention (RTI) is a popular approach for identifying learning disability in USA which is applied an everyday practice in many schools across USA (Björn et al., 2014). The focus of USA has been on supporting students in everyday practices and thus enhancing the effectiveness of the model and delivering better learning experience. These programs had a more proactive approach especially from the school management. It aimed at early interventions based on experiences, development and student education. Such intervention forms were seen to differentiate students with learning disabilities and identifying processing evaluation based on cognitive developments (Zablotsky et al., 2019).
- e) Thus, as in USA the approach was more focused on individual child and early intervention programs with a more proactive approach, thus, there were scope of improving the learning experience of students and supporting students in tackling the difficulties more efficiently. Hence, though Zambia evaluation models also have majorly contributed in supporting the hearing and vision tests, assessments and standard screenings but the effectiveness of the each of these contributions has been more for USA compared to Zambia

8) *Hypothesis 2*

Hypothesis - There is no difference in the impact of the model on its ability to improve the chances of determination of students with a learning disability

- a) Learning disability reduces a student's ability to learn and develop their motor and cognitive skills. Various models like discrepancy models and response to intervention models have helped evaluate learning disabilities in students worldwide.
- b) The assessment was done to know the efficiency of evaluation models practiced in the regions i.e. discrepancy model in Zambia and the response to intervention method in the USA.
- c) The p-value for most of the variables (B1, B2, B3, B6, B8, B10, B11, B12, B13) is below the needed value of 0.05. Thus, This denotes the statements; the null hypothesis of no difference in the impact of the model on its ability to improve the chances of determination of students with a learning disability is rejected.
- d) The existing reviews by Restori et al. (2009) mentioned the use of IQ-discrepancy model and some of the other models like response to interventions are prevalent which supports intelligence tests for determining learning abilities of students. Even Muwana & Morgan, (2018)

- e) Stated that local tools and discrepancy models were widely used in Zambia to evaluate learning disability among students. A study by O'Donnell & Miller (2011) verified that discrepancy models were applied as it had the ability to differentiate better between normal ability and academic results by focusing specifically on the learning disability attributes.
- f) However, for the USA the existing review by Gee (2019) mentioned that Response to Intervention and Cognitive Processing Deficit Approach were predominantly in practice. These approaches focus on individual learnings via development of individual learning programs for each student with a learning disability. Also Schultz (2020) stated that cognitive approach is applied across USA as it helps in providing step-by-step evaluation, problem solving, sequencing skills and providing structured and explicit teaching methods .
- g) Thus, this study supported the existing reviews and identified that in USA response to intervention model allows early interventions based on experiences, development, and education of the students. though Zambia evaluation models also have majorly contributed in supporting the hearing and vision tests, assessments and standard screenings but the effectiveness of the each of these contributions has been more for USA compared to Zambia

IV. CONCLUSIONS

A. Findings

- a) The prominent models followed in the USA were found to be Discrepancy, Response to Intervention, and Cognitive Processing Deficit Approaches Whereas, in Zambia, there is a presence of locally developed tools and the Discrepancy model was found to be most prevalent.
- b) The discrepancy model enables identification of discrepancy patterns which help assess low achievement and ways to consider potential treatment methods for helping an individual overcome learning disabilities while response to intervention model via intervention provides data for instruction purpose to determine students having learning disabilities, to offer them seamless support thus enabling initial diagnosis formulation for students with learning disabilities. However, the limitation of response to intervention is requirement of monitoring while for discrepancy model focus on students' assessment only when they enter the stage of going into school thus preventing early detection
- c) For Zambia, the factors like language assessment tests, reading assessments among students, improvement in writing and spelling evaluations, or progress in mathematical assessments are more relevant for support special education while in USA, performance of children in vision and hearing tests, intelligence assessment tools for evaluation, progress in motor skills among the students, or increased capacity of the students to show functional behavior assessment are more relevant

B. Recommendations

- a) The governments and ministry of education in Zambia and the USA need to revise the education plans in the country to facilitate training within services
- b) Schools should spend on the continuous professional development of the teachers involved with students with learning disabilities
- c) Discrepancy, Response to Intervention and Cognitive Processing Deficit methods combination provides chances of very early detection and understand the benchmark for disabilities
- d) Teachers should be motivated by acknowledging the teachers for their special contribution to enhancing an inclusive learning atmosphere
- e) The government and schools can together focus on the use of assistive technologies, individualized education plans, and addressing complaints and redress for students with learning disabilities

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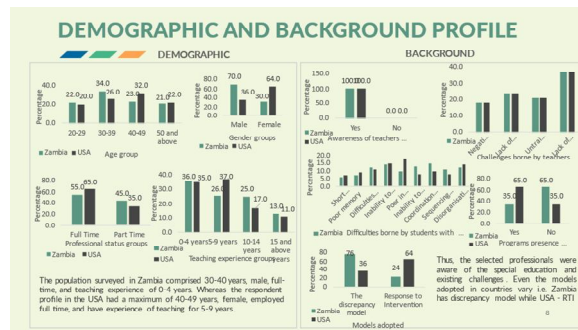
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HYPOTHESIS 1

		Levene's Test for Equality of Variances				
		F	Sig.	df	df	Sig. (Default)
A1	Equal variances assumed	39.38	0.00	-13.92	198.00	0.00
	Equal variances not assumed			39.09	144.66	0.00
A2	Equal variances assumed	55.96	0.00	-11.66	198.00	0.00
	Equal variances not assumed			-11.66	132.24	0.00
A3	Equal variances assumed	43.77	0.00	-13.70	198.00	0.00
	Equal variances not assumed			-13.70	144.54	0.00
A4	Equal variances assumed	48.88	0.00	-11.44	198.00	0.00
	Equal variances not assumed			-11.44	155.60	0.00
A5	Equal variances assumed	52.94	0.00	-12.27	198.00	0.00
	Equal variances not assumed			-12.27	151.26	0.00
A6	Equal variances assumed	43.00	0.00	-12.62	198.00	0.00
	Equal variances not assumed			-12.62	153.96	0.00
A7	Equal variances assumed	38.14	0.00	-14.24	198.00	0.00
	Equal variances not assumed			-14.24	143.76	0.00
A8	Equal variances assumed	34.58	0.00	-14.32	198.00	0.00
	Equal variances not assumed			-14.32	145.54	0.00
A9	Equal variances assumed	24.00	0.00	-14.74	198.00	0.00
	Equal variances not assumed			-14.74	169.78	0.00
A10	Equal variances assumed	49.20	0.00	-11.77	198.00	0.00
	Equal variances not assumed			-11.77	158.48	0.00

HYPOTHESIS 2

		Levene's Test for Equality of Variances				
		F	Sig.	df	df	Sig. (Default)
H1	Equal variances assumed	184.61	0.00	-17.38	198.00	0.00
	Equal variances not assumed			-17.38	124.40	0.00
H2	Equal variances assumed	22.53	0.00	-5.24	198.00	0.00
	Equal variances not assumed			-5.24	149.76	0.00
H3	Equal variances assumed	7.51	0.01	-5.01	198.00	0.00
	Equal variances not assumed			-5.01	151.11	0.00
H4	Equal variances assumed	2.47	0.12	-4.21	198.00	0.00
	Equal variances not assumed			-4.21	149.00	0.00
H5	Equal variances assumed	3.81	0.05	-6.01	198.00	0.00
	Equal variances not assumed			-6.01	144.70	0.00
H6	Equal variances assumed	44.33	0.00	-13.46	198.00	0.00
	Equal variances not assumed			-13.46	144.30	0.00
H7	Equal variances assumed	0.00	0.81	-14.68	198.00	0.00
	Equal variances not assumed			-14.68	147.50	0.00
H8	Equal variances assumed	177.43	0.00	-17.85	198.00	0.00
	Equal variances not assumed			-17.85	124.80	0.00
H9	Equal variances assumed	2.11	0.15	-3.21	198.00	0.00
	Equal variances not assumed			-3.21	155.20	0.00
H10	Equal variances assumed	18.43	0.00	-10.11	198.00	0.00
	Equal variances not assumed			-10.11	173.20	0.00
H11	Equal variances assumed	4.11	0.04	-18.84	198.00	0.00
	Equal variances not assumed			-18.84	147.20	0.00
H12	Equal variances assumed	110.50	0.00	-9.51	198.00	0.00
	Equal variances not assumed			-9.51	117.30	0.00
H13	Equal variances assumed	28.00	0.00	-5.44	198.00	0.00
	Equal variances not assumed			-5.44	145.30	0.00



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