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# Early intervention assessment tools for children with various disabilities

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#### Abstract

The aim of paper is to describe early intervention assessment tools for children with various disabilities. Different types of disability, Visual impairment, Hearing impairments, Learning disability, Autism, Speech and language, Intellectual disability, Emotional and behavioral and physical and health impairment was discussed. For all this different disability we can use different assessments tools, Assessment tools can be used to help support active learning, facilitate team-building activities, and foster peer-to-peer learning. It also provides alternative assessment methods and can be used to check in on student learning in real time. In this paper standardized assessment tools for early intervention for students with different disability was listed and discussed.

Keywords: IQ, Hearing impairments, learning disability, Autism

#### Introduction

The creation of assessment tools is driven by many goals. In order to arrange instruction or intervention, professionals and families might use one type of evaluation to learn about a child's needs and talents. Professionals and families can use many of the same techniques to monitor a child's growth throughout time, typically in relation to a specific curriculum or age-appropriate norm (Ringwalt, 2008) [3]. Testing young children incorrectly when tests intended for one purpose are used for another is a significant abuse. Because IQ testing is used to identify children who need special education, its content is improper for use in lesson planning.

When assessments designed for one reason are utilized improperly for another, testing with young children is seriously abused. For instance, the content of IQ tests meant to identify kids who need special education is inappropriate for use in lesson planning. A high-stakes decision like enrolling children in a special kindergarten for at-risk children may not be supported by evaluations created for instructional planning if they lack sufficient technical precision and validity. (McConnell, 2015) [25]. Different assessments for various purposes, such as assessments to assist learning, assessments for the identification of special needs, assessments for program evaluation and trend monitoring, and assessments for high-stakes accountability, may be included in an effective assessment system (Shepard et al., 2000) [28]. Universal Design aims to improve all students' access to instruction and assessment by removing barriers. The essential point is that all students, not only those who are struggling, benefit from excellent education and examinations. The foundation of universal design, which has architectural roots, is that good design benefits everyone and reduces the need for accommodations. For instance, curb cuts in sidewalks allow wheelchair users access while also making it easier for parents using strollers and people with sore knees to maneuver around the corners (Brookhart, S. & Lazarus, 2017) [6].

It is important to assess pupils who are linguistically and culturally diverse (LCD) in order to differentiate between a language difference and language impairment. This will guarantee that IEP teams identify speech and language impairments as the cause of a student's communication challenges rather than social dialects, English as a second language, or a combination of these. The use of assessment tools and strategies with LCD students has changed from the use of only formal standardized measures, assessing discrete units of language, to the use of informal measures, assessing the student's overall communicative competencies. This change was made in order to more accurately distinguish between a language difference and a language impairment (Freiberg *et al.*, 2013) [10], the author of this post examines the evaluation choices available to children with varied disabilities. An assessment tool is a methodology or method of information analysis to determine how much

Corresponding Author: Hanchalu Geleta Wegari Department of Special need Education, P.O. Box.19 Ambo University, Oromia, Ethiopia someone understands and whether this knowledge fits into the larger picture of a theory or framework.

The assessment strategies utilized depend on the setting and goal. For instance, financial evaluations assess your understanding of topics like investing and saving, whereas personality assessments analyze your responses to pinpoint personality traits. Any assessment approach relies on a series of thoughtful questions to elicit insights and interpret these insights to achieve well-informed findings, regardless of the context. (WHO, 2005) The primary focus of the author of this research is on the crucial early evaluation tool for all types of impairment and This post will discuss the typical evaluations tools for early intervention because they are commonly necessary for traveling to the injury site.

There are many various forms of disabilities, such as speech and language impairment, intellectual disability, physical and health impairment, learning disability, hearing impairment, and autism (NICCHCY, 2012) [28]. We may use a range of assessments methods to identify each of these varied disabilities; this paper covered conventional assessment tools for early intervention for students with various disabilities.

### Early intervention assessment tools for students with learning disability

Harun D, Baharudin NS (2020) [3] A neurobiological disease in which a person's brain functions or is organized differently is referred to as a "learning disability." The capacity to communicate, listen, read, write, spell, reason, recall, organize knowledge, and perform arithmetic are all impacted by these variations in brain anatomy. The National Institutes of Health estimate that one in seven kids suffers from a learning problem.80 percent of kids with learning difficulties struggle with language abilities, including reading, writing, and spelling. These kids are just as intelligent as their peers, but they still require more time and resources to learn to read, write, and spell. Despite the fact that there are many techniques for assessing children with learning disabilities, the researcher's writing was not clear. However, the writer of this paper provides clear information and evidence based on an early assessment tool for early intervention for students with LD (Baharudin NS, Harun D, 2020) [3].

Effects of Reading Comprehension Measured by the Third Edition of the Wechsler Individual Achievement Test for Oral Language and Reading (Parkin, 2016) [29]. Bruininks Oseretsky motor proficiency test, version 2 (BOT-2) BOT-2 examines both fine and gross motor skills, with subtests that concentrate on stability, mobility, strength, coordination, and object manipulation. The test is designed for schoolaged children and young adults between the ages of 4 and 21, who have a range of motor control abilities from normal to mild to moderate. (Lucas *et al.*, 2013) [23].

The Wechsler Adult Intelligence Scale—Fourth Edition (WAIS-IV) is an independently administered test of cognitive aptitude for people between the ages of 16 and 90. The Administration and Scoring Manual emphasizes that interpretation should always be carried out by professionals with proper training in assessment and experience with standardized clinical instruments, even though administration may be carried out by trained technicians. (Climie, 2019) [7].

Both manual scoring and computerized WAIS-IV scoring tools are available. To translate subtest raw scores to scaled

scores, which have a mean of 10 and a standard deviation of 3, age-based conversion charts are offered. All 10 core subtests (FSIQ) and each of the four indices (VCI, PRI, WMI, PSI), which are made up of their respective core subtests, are scaled scores are added to create a composite standard score. The mean of these composite scores is 100, while the standard deviation is 15. For each of the subtests and composites, age-based percentile ranks can also be determined. The scaled scores from the VCI and PRI subtests can be added to create a GAI if desired. (Said *et al.*, 2021) [35].

The well-known Movement Assessment Battery for Children has recently undergone a redesign known as the Movement Assessment Battery for Children-2 (MABC-2) (MABC). The MABC-2 is developed to detect and characterize motor performance issues in children and adolescents aged 3 to 16 years (Nazarioa &, Luciana Ferreirab, Jorge Bothc, 2022) [27]. Children with mild to severe motor impairments who are in school should use the pediatric balance scale (PBS). PBS, a modified version of the Berg Balance Scale, is used to evaluate students of school age's functional balance abilities. The maximum score on the scale, which has 14 components, ranges from 56 points (the highest function) to 0 points (the lowest function) (Darr *et al.*, 2015) [8].

The most widely used tool for assisting with the identification of intellectual and developmental disorders is the Vineland Adaptive Behavior Scales, Second Edition (Vineland-II). Vineland Adaptive Behavior Scales has long been a respected indicator of the interpersonal and social abilities required for daily life (S.M. Manohari, Vijaya Raman, 2013) [34]. The computerized adaptive exam for the pediatric evaluation of disability inventory (PEDI-CAT). Computerized Adaptive Test for the Pediatric Evaluation of Disability Inventory the PEDI-CAT is a computer adaptable caregiver report that assesses Daily Activities, Mobility, Social/Cognitive, and Responsibility. It is made to be used with kids and teenagers who may have a range of physical or behavioral issues. (Haley *et al.*, 2011) [12].

Some students deal with learning difficulties due to these issues in educational settings, including kindergartens, middle schools, and even colleges. Students that have learning disabilities struggle academically in areas like reading, writing, and solving arithmetic issues as well as in other courses like business, management, science, and so forth. With reference to many ideas and topic areas, students could experience learning impairments. When working with students who have learning difficulties, educators are required to increase their own awareness, knowledge, skills, and training in order to be able to deal with these individuals in an effective manner. Therefore, it has been highlighted that educators who work with pupils who have learning difficulties need to develop particular skills, knowledge, aptitude, wisdom, and other areas.

## Early intervention assessment tools students with speech and language impairments

A communication condition, such as stuttering, poor articulation, language impairment, or voice impairment, that has a negative impact on a child's academic achievement is referred to as speech or language impairment (Freiberg *et al.*, 2013) [10] Almost all early intervention for speech and language problems uses seven different types of testing.

Test for Boston Diagnostic Aphasia. The BDAE-3 aids in

recognizing and differentiating between aphasic syndromes and abnormalities of language function. The items in the BDAE-3 Complete Kit are: New Short Form and Standard Form for BDAE-3: The Short Form has 27 items, whereas the Standard Form has 146

The BDAE was created to identify aphasia, Describe aphasia. Damage to a particular region of the brain that regulates language expression and comprehension results in aphasia, a language impairment. A person with aphasia finds it difficult to interact with others. Aphasia is a common side effect of stroke. It usually follows a stroke or brain injury. and modes of responding (writing, articulation, and manipulation). Neurologists, psychologists, speechlanguage pathologists, and occupational therapists can all use the BDAE (Tsapkini *et al.*, 2010) [41].

Battery for Western Aphasia, Receptive and Expressive Emergent Language Scale measures the linguistic abilities most typically impacted by aphasia as well as important nonlinguistic abilities and offers information on differential diagnosis. (2019, Bond & Jackson) Joint attention, taking turns, and listening are considered to be the cornerstones of speech, language, and communication development, according to the Scale of Early Communication Skills. Your interactions and discussions with your child during regular activities can aid them in developing these early communication abilities (Kim & Mcintyre, 2019) [20]. Dimensional Skills for Language Acquisition, Grammar and vocabulary were measured for both the modalities of comprehension and production as the characteristics of language competence. There were 1,929 kindergarten students in the initial sample, and 600 kids were followed over time (Li. 2013).

A behavior rating system called the Childhood Autism Rating Scale was developed to aid in the diagnosis of autism. Eric Schopler, Robert J. Reichier, and Barbara Rochen Renner developed CARS. (Mayes et al., 2012) [24] To gauge understanding of verbal instructions, the Revised Token Test was created. (Quintana et al., 2015) [31] It gauges the capacity to carry out commands of various complexities (such as "touch the blue square and the white square"). (Akinin, 2019) [1]. To evaluates a child's spoken language skills, use the Test of Language Development. Utilize TOLD-P to identify language-limited children, pinpoint linguistic strengths and weaknesses, and track development (Hammill and P. L. Newcomer, 2014) [13]. It is helpful to know that a range of techniques can be used to address speech and hearing issues. Problems with these students can be addressed.

### 3. Early intervention assessment tools for students with Intellectual dis ability

The Adaptive Behavior Assessment System (ABAS-3) and the IQ Test are the two main measures used in early ID intervention, according to researchers. Adaptive Behavior Assessment System (ABAS-3): The ABAS-3 is a rating scale that can be used to evaluate daily-living abilities in people who have developmental delays, autism spectrum disorders, intellectual disabilities, learning disabilities, neuropsychological disorders, or sensory or physical impairments (Prokopiak & Kirenko, 2020) [30]. The range of scores on an Intellect Quotient (IQ) test is frequently used to evaluate intelligence or cognition. The formula for calculating IQ is IQ = (intelligence age/actual age) x 100. In addition to MentalUP's online IQ test, here is a brief

summary of the most popular IQ tests (intelligence quotient tests) that you or your children may choose to take: The Wechsler Adult Intelligence Scale (Stanford-Binet, SB-V) (WAIS-IV). (Sansone *et al.* 2014) [36].

Once more, cognitive skills tests, thinking skills tests on the Woodcock-Johnson III, cognitive ability tests, fluid reasoning tests on the Woodcock-Johnson III, cognitive ability tests Whole-Scale IQ Fifth edition of the Stanford Binet Intelligence Scales, Verbal IQ; Fifth edition of the Stanford Binet Intelligence Scales, Nonverbal IO Assessment techniques include the Fifth Edition of the Stanford Binet Intelligence Scales, the Leiter-Revised Differential Abilities Scale (DAS), and the Universal Nonverbal Intelligence Test (McLoughlin, J. A., & Lewis, R. B. 2008). When evaluating kids with ID, we look at both their intellectual functioning (such as their capacity for learning and problem-solving) and their adaptive functioning (activities of daily life such as communication and independent living). Before the age of 18, a thorough cognitive test and adaptive behavior scores should be used to identify an educational disability condition. Professional judgment is crucial to the evaluation process at all stages, but it is crucial for determining if a person has an intellectual disability.

### 4. Early intervention assessment tools for students with emotional and behavioral dis order

EBD is an emotional condition marked by excesses, deficiencies, or behavioral abnormalities. The child's difficulties are emotionally grounded, and neither intellectual, cultural, sensory, general health, nor any other additional exclusionary characteristics can adequately explain it. Placement and eligibility. Various behavioral diseases exist, such as Attention Deficit Hyperactivity Disorder (ADHD) Conduct Disorder with Oppositional Defiant Disorder (ODD). Inattention, Hyperactivity, and Impulsivity, Defiant Behavior, Drug Use, and Criminal Activity are all examples of behavioral problems.

Voigt-zabinski (2017) [42] states that the methods for treating emotional and behavioral disorders include Self-monitoring is a personality attribute that entails the capacity to keep an eye on and control one's emotions, behaviors, and outward appearances in response to social contexts and circumstances. It entails being conscious of your actions and how they affect your surroundings. Decision Making The process of choice making is when a teacher offers a structured option to a student in order to encourage compliance with a behavioral or instructional request.

Peer-Assisted Instruction Peer-assisted learning is the active aiding and supporting of knowledge and skill acquisition among status equals or matched companions. It involves individuals from comparable social groups who are not trained teachers helping one another learn while also learning themselves in the process. Positive reinforcement, the introduction of a pleasurable or desirable stimulus after a behavior is referred to as positive reinforcement. The behavior is reinforced by the pleasurable sensation, increasing the likelihood that it will occur again.

#### 5. Tools intervention for students with autism

Even though the symptoms of ASD may go better with time, it usually starts before the age of three and might last the rest of a person's life. Within the first year of life, some kids begin to exhibit ASD symptoms. Others may not experience

symptoms until 24 months of age or later. Up until the age of 18 to 24 months, some kids with ASD learn new skills and reach developmental goals, but after that, they stall or lose the talents they previously had.

ASD usually manifests before the age of three and can last the rest of a person's life, though symptoms occasionally become better with age. ASD symptoms can appear in some kids within the first year of life. Others might not experience symptoms until they are 24 months old or older. Some ASD children develop new skills and reach developmental milestones up until the age of 18 to 24 months, at which point they cease doing so or lose the abilities they previously possessed.

Teenagers and young adults with ASD may struggle to make and keep friends, communicate with peers and adults, or comprehend what is appropriate behavior in the workplace or at school. They might be noticed by medical professionals if they also have disorders like anxiety, depression, or attention-deficit/hyperactivity disorder, which are more common in people with ASD than in those without ASD. (Hodges et al., 2020) We can screen students with autism using early intervention techniques, 1st Practice art examines the work and identity of artists from a broad viewpoint, focusing on everything from studio artists' capacity to create meaningful artworks to their function as cultural producers, arts advocates, community builders, and innovators across a variety of creative disciplines. (Yücesoy, 2020) [45] Fourth Parents' Evaluation of Developmental (PEDS), Fourth Parents' Evaluation Developmental Status (PEDS) is an evidence-based tool for identifying and treating behavioral and developmental issues in kids from birth to seven years and eleven months old. The parent fills out a straightforward 10-item form called PEDS. The 5th Modified Checklist for Autistic in Toddlers (MCHAT) is a psychological test that assesses a child's likelihood of having an autism spectrum condition between the ages of 16 and 30 months. The interactive, empirically determined 6th Screening Tool for Autism in Toddlers and Young Children (STAT) has been created to screen for autism in children between 24 and 36 months of age. In 2019 (Thabtah).

Parents' Evaluation of Developmental Status (PEDS), now in its fourth edition, is a research-based tool for identifying and treating behavioral and developmental issues in kids from birth to seven years and 11 months old. The parent must complete a short, 10-item questionnaire called PEDS. A psychological test called the 5th Modified Checklist for Autistic in Toddlers (MCHAT) measures a child's likelihood of developing an autism spectrum condition between the ages of 16 and 30 months. The 6th Screening Tool for Autism in Toddlers and Young Children (STAT) is an interactive, experimentally derived test that has been created to identify autism in infants between the ages of 24 and 36 months. 2019 (Thabtah)

### 6. Early intervention assessment tools for students with Visual Impairments

A visual handicap is a visual impairment that is severe enough to impede progress in a regular educational program. Students need to be able to see clearly, concentrate on near- and far-away objects, coordinate their hands and eyes, recognize minute distinctions, and retain what they see. Low vision and blind students are both considered to

have visual impairments. Blind students are permitted to read in Braille. Students with low vision impairments can employ assessment methods for early intervention,

The 1995-original JAWS Screen Reader for Windows is now available. Minor bi-monthly and significant annual releases are produced by Freedom Scientific, a company that also creates a variety of other assistive technologies. A bundle named Fusion usually pairs Zoom Text, a screen magnifier, with JAWS. 2018 (Kapperman et al.) [19], The computer screen reader program known as JAWS, which stands for Job Access, enables blind and visually impaired users to view the screen using a refreshable Braille display or text-to-speech output. The Blind and Low Vision Group at Freedom Scientific creates JAWS (Lihitkar, 2022) [22]. popular screen reader with Speech A screen reader converts the text that appears on the screen into voice that may be heard through headphones or speakers using a Text-To-Speech (TTS) engine. A TTS could be a piece of hardware that connects to the computer or it could be a software program that is included with the screen reader. Supalo and colleagues 2007 Kurzweil Education is an organization that Corporation with an American base that offers educational technologies for those with learning difficulties and challenges, as well as those who are blind or partially sighted, Kurzweil Education offers literacy solutions, resources, and training. (Glaub, 2008) [11]. Refreshable Braille Displays are user interface tools that display 40-80 braille cells by raising or lowering a row of pins. A braille display's features might vary greatly; some models have a regular OWERTY keyboard while others only have braille inputs. Many gadgets merely have inputs or outputs (Ramos-garc et al., 2022) [32].

## 7. Early intervention assessment tools for students with Hearing Impairments

Grammar, spelling, and vocabulary lessons, taking notes during class discussions, participating in instructional videos, delivering oral reports, and taking notes during lectures are all things that a student with hearing loss may find challenging. For children who are profoundly deaf as young as age 3, the ESP test battery measures speech perception. The ESP can be used to set goals and assess how a hearing aid or cochlear implant affects a child's capacity to perceive speech. Cochlear implants, bone-anchored hearing aids, and hearing aids are evaluation tools for students who need early intervention for HI.

A person who is partially deaf wears hearing aids, a little amplifier that sits on the ear (Holt, 2019). Hearing implants, You wear a sound processor behind your ear for a cochlear implant. Sound signals are transmitted from a transmitter to a receiver and stimulator that are surgically implanted under the skin. The stimulator uses electrodes in the cochlea to activate the auditory nerve. The speech processor, microphone, and transmitter are all included in one external device for some cochlear implant types (lower left), whereas others have these components as distinct external sections (upper left and on right) (Jiménez-romero, 2015) [18], A surgically implanted device called a bone-anchored hearing aid (BAHA) transmits sound to the cochlea by vibrating the bones. Candidates for the BAHA should have conductive or mixed hearing loss, be single-sided deaf, and be unable to tolerate conventional hearing aids in the ear canal (Forton & Heyning, 2007) [9].

### 8. Early intervention assessment tools for students with physical impairments

The phrase "physical disability" refers to a "restriction on a person's physical functioning, mobility, dexterity, or stamina" that has a "significant" and "long-term" detrimental influence on a person's ability to do typical everyday tasks. Impairment of a person's physical, psychological, or cognitive abilities; examples include amputation of a limb, visual loss, or memory loss. Limitations on activity, such as trouble hearing, seeing, walking, or solving problems. When it comes to early intervention for students with physical disabilities, mobility aids are crucial diagnostic tools. Mobility aids help you walk or move from place to place if you have a disability or an accident, according to Iezzoni et al., (2000) [17]. They consist of: Crutches. Canes. Walkers Those who are physically challenged might require assistance moving around. Wheelchairs, walkers, scooters, crutches, canes, and orthotic devices are some examples of equipment designed to aid with mobility. A person may utilize a different gadget depending on their level of mobility impairment and the type of impairment.

#### Conclusion

The purpose of this study is to discuss early intervention evaluation methods for kids with different disabilities. With the help of standardized evaluation methods for early intervention, the writer was given a list of various types of disabilities. The core of special education is assessment. Complex learners, students with impairments have particular needs in addition to their capabilities. Effective special education instructors must have a thorough understanding of these assets and requirements

As a result, these educators are proficient in using and evaluating data as well as assessment. This comprises formal, standardized tests used to classify pupils as needing special education services, create IEPs for those students, and guide ongoing care. Data on whether students with disabilities are meeting state content standards and how their academic achievement contrasts with children without disabilities is also available through formal assessments like statewide exams. Additionally, teachers are informed and skilled in the use of informal tests, such as those used to assess kids' intellectual, behavioral, and functional requirements

. These tests are used to create students' individualized education plans (IEPs), plan and evaluate instruction, and track students' progress. Special educators continually assess the impact and efficacy of their own instruction as reflective practitioners. Last but not least, these teachers are skilled at negotiating dialogues with families and other stakeholders, selecting suitable tests given each kid's profile, and understanding how context, culture, language, and poverty may affect student achievement.

#### Recommendation and future direction

Researchers advise using early intervention screening methods for kids with a variety of disabilities, despite the fact that there are many different types of disabilities. This paper is crucial for those who find it difficult to provide early intervention for students with diverse disabilities since the writer provides clear information on early intervention assessment techniques for kids with varied disabilities. The significant suggestion was sent. Without a grasp of this

instrument, education providers are unable to address the disability's core issues. Scholars and stakeholders should therefore comprehend the assessment method with this form of injury and identify their issues.

For upcoming scientists, Researchers and educators should keep looking at new technologies, especially those with universal design features that can improve the collection and use of precise, significant, and trustworthy data for assessment and evaluation procedures. The amount, variety, and complexity of assessment data generated by new technologies may strengthen our comprehension of the connections between data collecting and the efficacy of instructional decision-making. Without a grasp of this instrument, education providers are unable to address the disability's core issues. Scholars and stakeholders should therefore comprehend the assessment method with this form of injury and identify their issues.

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