Journal of Education and New Approaches 2023, 6(2), 350-366

Journal of Education and New Approaches

The Role of New Media Technologies in Improving Communication Skills of Intellectual Disability Individuals

Eren DURAK[*1], Özge DURAK[2], Songül ÖZKAYAGİL[3], Serpil KUŞÇU[4], Ziya GÜL[5]

Recieved: ***14.06.2023*** *Accepted:* ***04.10.2023*** *Published:* ***30.12.2023***
DOI: 10.52974/jena.1314719

Absract:
The communication and social skills of individuals with intellectual disability are considerably behind their peers with normal development. These individuals' educational needs vary depending on their distinct traits. There is an increasing need to improve communication skills in order to minimize the problems experienced by these mentally handicapped individuals in the family, at school, at all levels of social life, and in interpersonal relationships. Considering their characteristics, educational environments designed for these individuals should be set up in such a way that they can make full use of educational opportunities. Emerging from the application of computer and information-processing developments to the field of communication and starting to direct the relations between individuals with the use of the Internet and technological devices together, new media has also been introduced into educational environments, and changes have started to be seen in the educational processes of individuals with intellectual disabilities. New media technologies aim to optimize learning settings for students who show different developmental characteristics than their peers and learn differently from them. Educational environments where new media technologies are used as auxiliary materials provide these individuals the opportunity to learn individually in line with their own abilities and therefore improve the quality of education. New media technologies support the development of communication skills in individuals with intellectual disability, as well as their reading, writing, and math skills, according to their disability area. This study, in this regard, provides information on the development of communication skills in individuals with intellectual disability to socially integrate and conduct interpersonal interactions in a healthy way and offers suggestions for the use of new media tools to improve the communication skills of individuals with intellectual disability.

Keywords: *New media, intellectual disability, communication skills.*

Atıf:
Durak, E., Durak, Ö., Özkayagil, S., Kuşçu, S., & Gül, Z. (2023). The role of new media technologies in improving communication skills of intellectual disability individuals. *International Journal of Education and New Approaches*, *6*(2), 350-366. https://doi.org/10.52974/jena.1314719

[1]Ministry of National Education (MoNE), Türkiye. Orcid ID: 0000-0002-8177-589X
[2]Ministry of National Education (MoNE), Türkiye. Orcid ID: 0009-0004-8333-1688
[3]Ministry of National Education (MoNE), Türkiye. Orcid ID: 0009-0009-7358-4928
[4]Ministry of National Education (MoNE), Türkiye. Orcid ID: 0009-0002-7929-8884
[5]Ministry of National Education (MoNE), Türkiye. Orcid ID: 0000-0001-8917-1444
[*]Corresponding Author: erendrk83@hotmail.com

INTRODUCTION

Because communication is a process that involves neurophysiological structure and takes place on the axis of sensory development, the communication skills of individuals with intellectual disability may vary depending on the type of disability and the degree to which they are affected by the disability (Wilken, 2006). The need for socialization and interpersonal communication skills covers an important part of mental development, and it is known that the majority of individuals diagnosed with intellectual disability have limitations in communication skills (Henry & MacLean, 2002). Learning to speak and communicate is a complex process. It is not easy to achieve an appropriate mix of what to communicate (content), how to communicate (form), when and where to communicate (use) (Petry, et al., 2005). Children with Intellectual Disabilities show a wide range of speech, language and communication problems, with some even struggling to perform basic communication acts such as asking for food and water (Smith, et al., 2020). Speech and language are considered normal if they resemble the speech and language of the majority of people from the same environment, culture, age, gender, socio-economic conditions and educational background. The majority of children develop speech and communication normally, but some children fall outside the majority. Children with intellectual disabilities are among the individuals who cannot join the majority (Chew, et al., 2009). Speech and communication are considered abnormal when it is so different from the way other people speak and communicate that it is noticeable or interferes with communication. If individuals have difficulty in understanding and expressing language symbols, or in other words when they have articulation disorders in their speech, that is, having difficulty in producing speech sound, abnormalities in the pitch, loudness and quality of the voice during speech, having problems in the smooth flow of speech expressions, not being able to use gestures and facial expressions of non-verbal communication and cannot communicate with other people, they show different developmental characteristics than their peers in terms of communication skills (Light & Mcnaughton, 2015).

Each individual diagnosed with a intellectual disability shows different characteristics compared to their peers, depending on their personal characteristics. Considering these differences, some arrangements are needed in educational environments in order to minimize the communication problems experienced by individuals with intellectual disability in society (Bozkurt, 2017). New media is a concept that exists with the emergence of internet technology and its widespread use in technological devices. Today, the use of the internet has become so widespread that all devices such as televisions, computers, and smart boards have started to be used as new media tools. After the meeting of devices such as tablets, televisions, and computers with the internet, it is clear that these devices have now replaced games and toys for many children, thanks to the content produced. New media tools, which attract the attention of individuals with different developmental characteristics from their peers as well as normal individuals, are used in many educational environments today. New media technologies offer various opportunities to minimize the difficulties experienced by individuals with intellectual disability in communication and social skills. The inclusion of new media technologies in the educational environment, taking individual differences into account, allows individuals with intellectual disability to have rich learning environments regardless of time and place (Çelik, 2019).

Disability Concept

In order to understand the conceptual dimension of the disability phenomenon, first of all, the concept of disability should be defined. Disability can be briefly defined as the problems experienced by individuals with disabilities in the process of adaptation to the environment. In a broader sense, disability is the inability of individuals with different developmental characteristics from their peers to fulfill social roles properly due to various reasons (Aksoy, 2016). It is observed that there are different perspectives in the definitions of disability. The common point in these perspectives is that individuals with disabilities show different developmental characteristics compared to their peers and need the support of an individual with normal developmental characteristics in the life process (Kara, 2017). Disability is the experience of any condition that makes it difficult for individuals to perform certain activities and have equal access in social life (Francis & Silvers, 2016). Disability causes individuals to differ significantly from their peers in terms of their mental and physical characteristics due to damage to the sensory organs (Bognar, 2016). This disability causes problems for individuals to adapt to their environment and communicate. Individuals with this condition are generally referred to as individuals with disabilities. In addition to the expression disabled, these individuals are also defined in society with expressions such as 'Intellectual Disability, stupid, blind, lame, and deaf' (Ataman, 2003). The most accurate definition for these individuals, whose individual characteristics differ from their peers and who have limitations in adapting to society, performing their daily life skills, and communicating with other individuals in particular, is 'individuals with special needs'.

Causes of Disability

Disability is handled in three basic phases; it is known that these are listed as prenatal causes, birth causes, and postpartum causes (Payne & Isaacs, 2017). Prenatal causes of disability are shown as the mother’s not having a healthy pregnancy period, inadequate and regular nutrition, the diseases that the expectant mother has had, the use of addictive substances, excessive drug use, and the level of exposure of the mother to radiation (Pratt & Greydanus, 2007). The causes of disability at the time of birth are generally shown as the use of devices such as vacuums and forceps by unqualified persons, incorrect interventions at the time of birth such as choosing the wrong birth position, premature birth, and the baby’s lack of oxygen as a result of the umbilical cord entangling the neck of the baby (Payne & Isaacs, 2017). Postpartum causes of disability are shown as febrile diseases, wrong interventions in postpartum diseases, exposure to infection, and nutritional disorders (Pratt & Greydanus, 2007).

Disability Groups

Groupings of individuals with disabilities are generally categorized based on four main functions. The factors that cause disability can differentiate the situation of individuals affected by disability. In this context, when it comes to disability groups, we generally encounter a model based on the body organs affected by the disability. According to this model, disability groups are categorized under four main headings: physical, mental, hearing and visual disabilities (Crow, 2008). In this context, if the conditions that cause disability have affected the physical abilities of the individual, they are called physically disabled individuals, if they have affected visual activities, they are called visually impaired individuals, if they have affected hearing activities, they are called hearing impaired individuals, and if they have affected mental activities, they are called mentally disabled individuals.

Physical disability is defined as the loss of the person’s physical abilities and the inability of his or her body parts to perform the tasks expected of him or her at all due to damage to the

muscle, nervous system, or any other reason that causes disability (Girgin & Balcı, 2015). The physical inadequacies experienced by individuals with physical disabilities, the lack of mobility of some body parts or their absence, difficulties in control, and deficiencies affecting the central nervous system are encountered. These deficiencies can negatively affect all the vital activities of individuals with disabilities. (Heward, 2003). The process of transferring the sound in the environment to the inner ear through the outer ear, stimulating the nerve cells in the inner ear, and transferring this sound to the brain is called the hearing process. The fact that the hearing process is not carried out in a healthy way is called hearing disability (Aslan & Özkan, 2013). Individuals who have lost all or part of their hearing and whose educational status, such as speaking, communication skills, interpersonal harmony, reading, and writing, has been adversely affected are called hearing-disabled individuals (Baglama, et al., 2017). Different denominations are available for individuals with hearing impairments. The most common among them are deaf, hearing-disabled, and hearing-impaired individuals. When we look at the literature review on what kind of hearing loss is considered a disability, some experts define moderate and higher hearing loss as a disability, while others include very mild and mild hearing loss as a disability and describe these individuals as individuals with hearing disabilities (Werts, et al., 2007). Visual disability is the state of a partial lack of vision or the absence of vision at all due to any reason that causes disability. On the other hand, visually disabled individuals are known as individuals who use a tool such as a cane to find direction, recognize objects by feeling, use a special relief alphabet in literacy learning, and are generally described as 'blind' in society (Gürsel, 2017). Individuals who need special education about vision are divided into two groups in terms of education. Individuals whose vision ratio is between 1/10 and 3/10 in both eyes despite all interventions, who require special devices and methods in educational activities and social integration studies, and who can transfer their vision to the learning environment with the help of these devices, are defined as individuals with low vision. Individuals whose vision is less than 1/10, whose vision is impossible to realize in educational activities, and who learn with other senses such as touching, feeling, and hearing are called blind (Özgür, 2008). When the visually impaired individual is mentioned in society, a common concept is formed in people's minds. This concept is often called blindness or visual disability. In other words, society puts the person who has no vision in the same mold as the person who has low vision or a low vision problem.

Intellectual Disability

People with intellectual disabilities have existed in all cultures throughout human history. At any given time, in any given human population, they represent only a small fraction of an extremely wide variety of people. Although identifying and grouping people with intellectual disabilities is useful for scientific studies, they are not distinct groups of people, but part of the rich diversity that characterizes human history (Patel & Brown, 2017).

Individuals with intellectual disabilities have been categorized and named in different ways in every period of history. In the early periods when individuals with intellectual disabilities were included in the social life, terms such as idiot, imbecile, retard, moron, mental retardation were used, while in recent periods, different nomenclatures have been used due to the fact that these terms are seen as pejorative terms. Recently, terms such as learning disability, learning retardation, mental retardation, intellectual disability, individual with intellectual disability and intellectual deficiency and individual showing different developmental characteristics from their peers have started to be used to name individuals with intellectual disabilities (Harris & Greenspan, 2016).

There are various definitions of intellectual disability, also known as "general learning disability" or "mental retardation". Intellectual disability is defined as the situation in which the retardation in mental functions negatively affects at least two of the processes of individuals' language and speech, adaptation to society, meeting personal needs and learning skills (Schalock, et al., 2021). According to Kara, intellectual disability means having problems with intelligence and mental development from the early stages of life and throughout the growth period (Kara, 1992).

The American Association on Intellectual and Developintellectual disability (AAIDD) has created a definition that most researchers have adopted. The association uses the term intellectual disability instead of mental retardation or mental disorder and defines intellectual disability as limitations in intellectual functioning and maladaptive behaviors including daily living skills, social adaptation skills and practical skills before the age of 22 (Tassé, et al., 2013).

Among individuals with intellectual disabilities, autism, Down syndrome and Angelman syndrome stand out as the groups with the most communication problems. Autism spectrum disorder is defined as a neurodevelopmental difference characterized by limited interests, difficulties in social interaction and communication, and repetitive behaviors. Communicative differences of individuals with autism are generally stated as eye contact, communicative joint attention and delays in language and speech development (Prelock & Nelson, 2012). Down syndrome is a genetic disorder caused by the failure of chromosome 21 to separate from the cell during cell division. This alters the development of the individual's body, including brain development. When Down syndrome occurs specifically, it is not recognized as a disease, but as a lifelong condition. Down syndrome is characterized by several psychophysical features that are mostly common to all individuals. Common features include poor muscle tone, slanted eyes, round face, short hands, low cognitive memory, short stature, as well as auditory, visual and tactile sensitivity, speech, language and communication difficulties (Kozma, 2008).

Although individuals with Down syndrome have common characteristics, it is important to note that the range of variation in mental capacities, communication abilities, behavioral and developmental abilities is quite large (Bull, 2020). One of the syndromes in which expressive language and communication difficulties associated with intellectual disability are a key feature is Angelman syndrome (Buckley, et al., 1998). Although Angelman syndrome is a genetic disorder, it is currently recognized as a type of autism (Peters, et al., 2004). The lack of speech is striking in Angelman syndrome; 71% to 90% of individuals do not speak at all or rarely speak (Mertz, et al., 2014). In individuals who do speak, vocabulary is limited; the literature reports a vocabulary of between two and fifteen words, with an average of five words (Micheletti, et al., 2016). However, it is also reported that these words are rarely used for communication (Didden et all., 2009).

Classification of Intellectual Disability

Individuals with intellectual disability show different characteristics according to the state in which they are affected by the disability. For this reason, in order to receive the right education and be directed to the right educational institution, it is necessary to make the right decision about which disability group to belong to. In this sense, the classification of Intellectual Disability individuals is extremely important. In our country, psychological classification is used in order to carry out the education and training activities of individuals with intellectual disability in a healthy way, to adapt these individuals to society, to develop their communication skills, and to place these individuals in the right educational institutions. Psychological

classification is named as mild, moderate, severe, and profound intellectual disability (Sucuoğlu, 2010).

The American Psychiatric Association considers certain criteria when grouping individuals with intellectual disabilities. The first of these criteria is that the individual scores below 70 points in intelligence tests, the second criterion is that there is inadequacy in at least two of the skills such as communication, self-care, social adaptation and daily living skills and the functionality of mental skills, and the third criterion is that these characteristics are seen in the individual before the age of 22. The American Psychiatric Association groups individuals with these characteristics as shown in Table 1 (DSM-IV, 1994).

Table 1. Intellectual disability groups according to apa

The Level of Intellectual Disability	Score Ranges
Mild Intellectual Disability	50-55/70 -75
Moderate Intellectual Disability	35-40/50-55
Severe Intellectual Disability	20-25/35-40
Profound Intellectual Disability	20 or less

Mild Intellectual Disability

Individuals whose scores on standard intelligence tests are in the range of 50/55–70/75 points fall into this group. These individuals fall behind their peers, especially in reaching developmental milestones and in the process of acquiring communication skills, and they especially experience problems in developing problem-solving, critical thinking, and interpersonal communication skills (Pratt & Greydanus, 2007). These individuals, who need special support, especially in the development of literacy and interpersonal communication skills, can also benefit from special education services at a limited level since their intellectual disability levels are close to the limit. Individuals with mild intellectual disability who do not have problems maintaining their vital activities can reach a level similar to their peers with effective guidance services and the right education.

Moderate Intellectual Disability

Moderate intellectual disability is defined as intellectual and adaptive functioning measured between three and four standard deviations from the mean, and the scores of these individuals on intelligence tests are in the range of 35/40-50/55 points (Harris, 2006). The rate of acquisition of basic language skills is slow in individuals with moderate intellectual disabilities. The ability to learn and gain proficiency with the acquisition and development of language is quite limited. Individuals with moderate intellectual disabilities show significant limitations in reading, writing, math and other skills that require understanding basic concepts (Banerjee, et al., 2022). Since their comprehension abilities are considerably lower than their peers, they need lifelong assistance in basic academic skills, but progress in these skills is limited (Shree & Shukla, 2016). Individuals with moderate intellectual disabilities have difficulties in social communication, interpersonal interactions, and grasping the expected norms of behavior within the age and social context. Since their communication abilities are very low compared to their peers, they can develop very simple friendships and communicate with simple expressions in everyday language (Pratt & Greydanus, 2007). Individuals with moderate intellectual disabilities need significant and ongoing support to maintain independence in activities of daily living. With ongoing support and instruction, individuals with moderate intellectual disabilities can relatively acquire daily living and self-care skills.

Severe Intellectual Disability

Individuals with severe intellectual disabilities primarily have communication skills, language and speech skills, and significant psychomotor impairments. Due to the lack of communication skills, social communication and interpersonal relationships may develop at a limited level (De Bildt et al., 2005). They need constant support in activities of daily living due to retardation in psychomotor skills. Behavioral disorders are frequently observed in these individuals (Harris, 2006).

Profound Intellectual Disability

These individuals with intelligence test scores of 20 points or less are more likely to need clinical care. They need intensive special education and care. They are not expected to develop academic skills (Greydanus & Pratt, 2005). Their education is mostly focused on self-care and daily living skills. They need the support of an adult to survive (Sucuoğlu, 2010). In this disability group, different types of disabilities usually accompany intellectual disabilities (Pratt & Greydanus, 2007).

Communication

Communication is the general name given to all behavior, expression, and information exchange that takes place consciously or unconsciously between individuals. The communication process, which is integrated with daily life and includes language and speech, includes all verbal or non-verbal messages used to exchange information between people. In its most general definition, communication is the exchange of feelings, thoughts, and information between individuals (Pearson, et al., 2017). To establish communication in terms of human relationships, there must be a source, a message to be transmitted, a channel through which the message is transmitted, and a receiver to make sense of the incoming message. The communication process starts with the source forming the message in his or her mind. The source encodes this message and transmits it to the other part through the channel it will use. When the other part makes sense of these codes and gives feedback, the communication process is realized in its simplest sense. Coding may not always be done through language. It can also be through signs used by hearing-impaired individuals, which we call sign language (Mehrabian, 2017). Communication can occur voluntarily or involuntarily, but it can also take place verbally or non-verbally. Communication can also be defined as the exchange of information between two systems; however, communication in the interpersonal sense is defined as the transfer of feelings, thoughts, or information from one individual to another. In order to avoid problems in the communication process and to realize the process effectively, messages must be sent correctly by the sender and understood and responded to correctly by the receiver (Elgünler & Fener, 2011).

Communication Skills of Intellectual Disability Individuals

Being connected with people, whether in the family, in the classroom, or in groups of friends, helps people to feel good about themselves. Communication takes place in different ways such as speech, hand gestures, body language and facial expressions (Cascella, 2005). People need to communicate in order to share their experiences, express their requests and refusals, and express their feelings (Petry, et al., 2005). Good communication offers individuals choice and control over daily life. Communication improves individuals' quality of life by affecting their ability to establish and maintain relationships, communicate their needs, and make choices (Smith, et al., 2020).

Since communication is a process that includes the neurophysiological structure and takes place on the axis of skills such as sensory development and hand-eye coordination, the communication skills of individuals with intellectual disability differ according to their level of disability (Wilken, 2006). It is stated that there is a linear relationship between the severity of an intellectual disability and the lack of communication skills. It is known that as the scores obtained from intelligence tests decrease, the quality of the communication skills of individuals with intellectual disabilities decreases (Mervis & Becerra 2007). One of the most common situations encountered by individuals diagnosed with intellectual disability is communication-related problems. It is known that approximately 50% of individuals with this diagnosis have communication and social skills problems (Sucuoğlu, 2010). It is stated that communication and social skills, which cover an important part of mental development, are quite limited in individuals diagnosed with intellectual disabilities (Henry & MacLean, 2002). The communication skills of these individuals differ from individual to individual depending on their level of intellectual disability (Sucuoğlu, 2010). Children begin to develop communication and language skills from birth. These skills are divided into receptive communication skills and expressive communication skills. Having receptive language and communication skills means being able to understand what other people communicate with you. Receptive language refers to individuals' ability to understand and comprehend language (Topbaş, 2007). It involves processing and making sense of the words and sentences they hear from others. We can express this situation as the input of language. To explain with an example, if you ask your toddler to give a ball to your child by pointing to it, his/her ability to fulfill this instruction correctly responds to receptive language skills. It is known that the receptive language skills of individuals with autism differ from their peers with normal developmental characteristics. Homophones and responding to only a part of what is spoken are among the problems that children with autism experience in their receptive language skills (Gernsbacher, et al., 2016). People with autism tend to take words literally and have difficulty understanding metaphors, irony and humor (France & Kramer 2001). Expressive language skills allow individuals to convey meaning to other people. Expressive language skills enable individuals to convey their wishes, feelings and thoughts. The sounds that an individual makes to obtain an object he/she wants can be shown as an example of using expressive language. Expressive language skills include the ability to produce sounds, form words and sentences, and use grammatical patterns correctly. Expressive language skills in individuals with autism may differ from individual to individual. There may be individuals with autism who have never been able to communicate throughout their lives (Gernsbacher, et al., 2016). Receptive language skills develop earlier than expressive language skills in individuals with Down syndrome, which is a strength of individuals with Down syndrome. Individuals with Down syndrome can understand more than they express (Roberts, et al., 2007). It is known that individuals with intellectual disability show fewer behaviors to initiate and maintain the communication process, cannot learn to express their emotions, and avoid making eye contact. This shows that the joint attention behavior necessary for initiating and maintaining mutual communication has not developed (Kane, 1992). In order for individuals with intellectual disability to adapt to daily life, lead an independent life, and exist in social life, it is extremely important to gain communication skills.

New Media

Humanity has passed through important stages throughout history until it reached the information society. The first of these stages is the agricultural society, which is based on a hunter-gatherer lifestyle and is more sedentary, domesticates animals, uses domesticated animals in production, and grows grain (Giddens, 2000). The other important stage humanity

has passed through after the agricultural society is the industrial society. This process, which started with the invention of the steam engine, led to a total change in people's work and social lives (Kocacık, 2003). The third and biggest revolution that humanity has experienced is the transition to an information society with the change in the fields of communication and informatics. An information society is generally known as a society in which societies have easy access to various types of information, have the opportunity to process the information they access as information, and have the opportunity to develop themselves (Webster, 2014).

The information society is a society in which knowledge-based production and technological opportunities come to the fore instead of the material-based production that is the basis of the industrial society. This society is shaped by the axis of information technologies. Production, consumption, and management in society are completely affected by technological possibilities and take direction accordingly. In this social structure, there is a mass production and consumption of information. In other words, an information society is a society where information is produced, stored, distributed, and consumed. In the information society, where all systems of society are intertwined with information, the education sector seems to be the sector that needs information the most. Technological possibilities such as computers, radio, and television, which are among the most important components of the information society, have moved to a very different dimension with the introduction of the Internet into human life, and the need for information and information technologies has increased day by day.

In an environment where the need for information technologies is increasing day by day and societies are now moving to digital media, the new environments emerging from the combination of the internet and the computer are called digital media, or, as it is more commonly called, new media. New media covers a very wide area in terms of scope. In his definition of new media, Manovich mentions that new media includes all communication technologies, makes traditional media interactive, and offers the opportunity to produce, distribute, and share through the Internet and computers (Manovich, 2001). After the integration of the internet into communication tools, interest in social media channels has increased, and thanks to rapidly developing and changing communication technologies, people have become able to communicate with each other anywhere and anytime (Çalişir & Çakıcı, 2015). New media makes communication processes particularly effective and makes this process less one-way, allowing for mutual communication. New media is a type of media that enables people to access information more easily, increases interaction in communication, increases communication between individuals, makes it measurable with the effect of digital tools, enables information and communication to spread faster than traditional media, and is constantly renewed. Unlike traditional media tools, new media has features such as providing users with mutual communication, using multimedia, and eliminating borders. Unlike traditional media, the differences between new media and traditional media have started to decrease, as have the differences between media and tools (Törenli, 2005). The fact that the telephone, which used to be used only as a means of communication, can now be used as a computer is an example of this situation. With the new media, it is seen that a period in which media can be accessed independently of time and space, participatory and interactive communication, and speed come to the fore. It is noticeable that a form of usage has emerged in which it is possible to transfer media such as audio and video mutually and to communicate with many people from a single center (Altunay, 2015).

All devices and systems that are formed by the combination of computers and the Internet and that work with this logic are included in the new media group, such as smartphones, tablets,

new-generation televisions, etc. The content produced using web 2.0 tools, especially social media, video streaming sites, and different internet addresses that are open to the use of these devices, is also characterized as new media. The tools that individuals use most intensively are tablets and phones, which have prominent touch features and offer the opportunity to use mobile applications, and the most used environments are applications produced with social media and web 2.0 tools. In addition, computers in online education and smart boards in face-to-face education stand out as the most frequently used new media channels. New media has gained its main existence with the application of technological advances in the field of communication, especially in the field of computers, which work with this system. Computers, smartphones, tablets, and e-mail receiving and replying systems are becoming more advanced every day (Fidler, 1997). Today, new media tools have taken society completely under their influence. In this context, new media have become indispensable for the most important practices of social life, such as education, health, and trade (Dolgun, 2016). As technological opportunities started to take place in educational environments, education and training activities started to be carried out mainly with technology support. Technologically supported educational environments also make it possible for students with different learning levels to apply learning models designed for their own pace. Digital materials used with new media technologies have started to replace printed materials in education and training environments, and these technologies offer important opportunities to achieve the quality required in the education of individuals in need of special education. Besides that thanks to new media, various forms of assessment in education such as learning oriented assessment have also emerged specifically in language learning with the implementation of Computer Mediated Collaborative Writing (Er & Farhady, 2023). All in all, new media tools are also utilized to help individuals with special education needs acquire daily life skills and social skills and eliminate communication barriers (Pettersson & Fahlström, 2010).

New Media Use by Intellectual Disability Individuals

Individuals with mild intellectual disability stand out as the group most likely to use new media technologies, as they are the closest group to their peers with normal development. In addition, individuals with moderate and severe intellectual disability can also benefit from new media technologies with the help of their parents. It is known that individuals with intellectual disability are generally interested in new media and new media content, especially television, because it is easier to use (Çelik, 2019). Among the digital tools known to have an impact on different developmental areas of individuals with intellectual disability, tablets have replaced many games and toys (Goodwin, 2018). Among the new media tools preferred by individuals with intellectual disabilities, youtube ranks first. It is stated that individuals with autism are interested in new media tools that offer digital content such as youtube, follow these new media tools from devices such as tablets and phones, are interested in the content produced here, vocalize the names of objects or people they see and recognize during the content, and imitate some movements (Çelik, 2019).

For individuals with autism and other individuals with intellectual disabilities, tablets, computers and other portable devices can be used as speech generating devices. The fact that these devices come together with the internet and produce content in this way allows these applications to be evaluated in the category of new media tools. It is stated that individuals who use these devices learn to communicate faster and individuals with different mental developmental characteristics prefer to use these devices (Lorah, et al, 2014). New media offer new possibilities for people with a disability often referred to as a "pervasive communication disorder". Indeed, a common view among autism activists is that autistics are best suited to

meet the challenges of the new media age. Autism therefore provides an appropriate occasion to consider how disability plays a role in the relationship between technology and society, with consequences far beyond those affected by disability. Among the new media tools, social media channels enable individuals with intellectual disabilities to be more willing to communicate with other people (Pinchevski, & Peters, 2016).

New media tools do not separate individuals with different developmental characteristics from their peers from individuals with normal developmental characteristics. For this reason, they are used quite frequently. Installing digital interactive books, matching skills, videos that will develop imitation skills, and enabling individuals to use them on tablets from new media tools allows individuals to teach skills such as chatting, introducing themselves, and following social rules (Van Laarhoven, et al., 2009).

Smartphones, which have become an indispensable part of our lives, are one of the most important tools of new media environments. Smartphones incorporate many features provided by new media environments. Smartphones have a wide range of applications for different areas of development for cognitive, communication, motor, etc. activities. With smartphones, individuals with different intellectual disabilities can practice many skills such as expressing their feelings and thoughts, expressing their wishes, making choices, matching, motor skills through a fun environment. (De Leo, et al.,2011). Large touchscreen displays connected to a computer are one of the new media tools used today under the name of smart boards. Thanks to these tools, interaction skills of individuals can be increased by using elements such as writing, audio, video, graphics together. Considering the principle of individuality of learning, multiple learning environments can be achieved through interactive boards (Xin & Sutman, 2011). Today, it is known that in many special education schools and rehabilitation centers, education is carried out through digital media known as 'interactive whiteboards'. It is known that this colorful world that appeals to children's interests is used to develop concept skills, reading and comprehension skills, and social communication skills. Thanks to new media tools, virtual reality environments can be designed by taking into account the characteristics of individuals with different developmental characteristics than their peers. It is stated that these environments have positive effects on understanding and expressing the emotions of individuals with autism, making eye contact, and gaining joint attention skills (Boser, et al., 2014).

CONCLUSIONS AND SUGGESTIONS

In the current social structure, which is called the information society and the information age, it is clear that all practices of society are based on information. In this social structure where almost, everything is rapidly changing and consumed, the education sector is also included in this change. In the information society, where technological developments and changes occur at the speed of light, the world of education is also in a constant state of renewal. It is an undeniable fact that this change has led educational environments to become more technologically supported. Supporting educational environments with technological opportunities offers students the opportunity to learn at their own pace. From this point of view, classrooms equipped with technological facilities such as computers, the internet, tablets, and smart boards have the potential to contribute to improving the quality of life of individuals with intellectual disability by improving aspects such as daily living skills, communication skills, and social skills.

While the educational environments of individuals with intellectual disability are enriched with technological opportunities, the weaknesses of these individuals should be supported and their strengths should be emphasized. At this point, new media tools that emerged with the combination of the internet and technology come into play. New media tools used as auxiliary materials in educational environments help individuals with intellectual disability overcome the difficulties they experience in educational environments. In addition, it improves the ability of individuals with intellectual disability who have difficulty expressing themselves to initiate communication by increasing their self-confidence and ability to act independently. In addition, games and new media applications produced with the support of Web 2.0 and suitable for children's levels have the potential to improve listening skills, which is one of the most important elements of communication, by attracting the attention of individuals with intellectual disabilities.

When we talk about new media tools used in the educational environment, we should not only think of high-tech products or high-skill games and media playback systems. New media has developed with simple adaptations that can be used with tools such as tablets, phones, and smart boards, and almost any content related to the courses can be given as examples of new media used in educational environments. For example, a simple color-matching game or a video in which the student can imitate body movements on the screen can contribute to supporting communication skills. Two of the basic steps in the development of speaking skills are imitation and matching. People learn to speak by imitating the sounds of their environment and to read by matching the sounds they hear with the visuals of letters. From this perspective, new media applications have an important role in the development of listening and speaking skills, which are important elements of communication skills.

Bozkurt (2017) stated in his research that in recent years there has been an increase in the use of technology such as computers, smart boards, and the Internet for the education of individuals with special education needs and that these applications have had positive results in the development of areas such as communication skills, cognitive skills, motor skills, and self-care for individuals with special education needs. Such positive results pave the way for the widespread use of technology in education, but technology is never an educational tool in itself; it is a material that is sometimes used as a reinforcer and sometimes as a tool. To make the learning process effective, it is crucial to determine which new media tool or application best fits the students' level and supports their skill area. Effective selection and use of technology can enhance the learning environment, increase productivity, promote interpersonal communication, and make lessons more enjoyable for learners.

Considering that individuals with autism spectrum disorder generally have difficulty communicating, applications with new media content on tools such as television and tablets can be an important entertainment tool for these individuals. According to Çelik's (2019) study of 12 children with autism, the children had television-watching habits. He found content that interested them on devices like phones, tablets, and computers, which allowed them to learn, have fun, and exhibit cultural behaviors. Those who have the chance to conduct research, enjoy it, and develop themselves can communicate with the people they trust about their research. Modern media tools like television, tablets, and smart boards draw the interest of both individuals with intellectual disabilities and normal individuals, enabling them to explore and learn. Çelik stated in his research that new media tools, which are simple to use and appropriate for their level, have an educational and entertaining function for children. Today, it is important to digitize educational environments. This can be achieved by promoting the use of media like

TV, smart boards, and applications. They help individuals with intellectual disabilities socialize and develop interpersonal communication skills.

In their study about the use of technologies to support learning in vocational schools that educate people with intellectual disability, Çay et al. reported that computers and mobile phones were the main tools used in teaching. They found that these devices helped make abstract concepts more concrete, resulting in better student comprehension of the subjects being taught. The researchers also observed that the technologies used motivated students to engage more with their lessons, interact more with teachers, and increase their active participation time (Çay et al., 2020).

In 2012, Yalçınkaya conducted a study with 10 students who had a mild intellectual disability and found that teaching social skills through the Internet was effective for people with intellectual disability. According to the results obtained from parent interviews, Yalçınkaya stated that before the study, the students in the experimental group tried to communicate with their families only when meeting their daily needs (such as eating, toileting, and cleaning) and used 5–10 words in an understandable way when expressing their needs. According to Yalçınkaya, after conducting interviews with teachers and parents, it was found that using tablets and computers as speech-generating devices led to increased communication behavior with families among the subjects, and they also exhibited this behavior beyond the usage of these devices.

Terzioğlu (2017) studied the use of tablet computers and a video model to teach social skills to a student with autism spectrum disorder. The skills that were targeted include introducing oneself, sharing belongings with others, and participating in ongoing activities. As a result of the study, it was shown that video model instruction with a tablet computer was effective in teaching social skills to students with autism spectrum disorder and that the student was able to maintain the retention of the targeted social skills after the instruction was completed and generalize them to the use of different videos with different people. Plavnick (2012) examined the effectiveness of developing imitation skills with a student with autism spectrum disorder using video modeling via a smartphone. When exploring the generalization results, it was found that smartphones and tablets can be easily transferred to different locations because they are portable. Additionally, tablet computers are suitable for using video models in teaching. At the end of the study, it was concluded that training with smart devices and applications helped children with autism spectrum disorder develop imitation skills and generalize this situation to different environments. Imitation skills are one of the lower steps of speaking skills, so it is a skill that needs to be learned in order to improve the communication skills of individuals with intellectual disability. This study demonstrated the importance of new media tools and applications in developing the communication skills of individuals with intellectual disability. A review of the literature reveals that there are also studies investigating the effects of speech-generating devices that replace communication in children with intellectual disability who have limitations in communication skills. Lorah, et al. (2015) investigated the effectiveness of speech-generating programs on two children with autism, a boy and a girl, over a period of twelve weeks. The study revealed an improvement in the children's communication skills. In a similar study conducted with one individual with autism, the effectiveness of speech-generating programs via tablet was investigated, and at the end of the study, it was revealed that the social communication aspects of the student improved (Van der Meer et al., 2012). Since such tablet-based applications will attract children's attention, they are very useful for children when used correctly.

The findings of a study investigating the effects of using interactive social stories on individuals with autism showed that interactive social stories were perceived as interesting and fun by children. At the end of the interviews with both the mothers and teachers of the children, it was concluded that interactive social story applications contributed to the development of children's communication skills (Sunagul et al., 2017). Many websites have tools to help students practice their imitation, matching, speaking, and communication skills. There are also websites that offer the opportunity to develop their own applications for similar skills. Research shows that these and similar new media applications can improve the communication skills of individuals with intellectual disability. However, there are issues to be considered when using these and similar applications. First of all, the communication stage of the student should be determined correctly, and an application should be preferred accordingly. For instance, helping someone who is still learning by imitation to use an app to improve his or her ability to express themselves will not be helpful. We need to involve the family in communication activities and use new technologies and tools to make communication easier at home.

Ethical Text

In this article, research and publication ethics rules are followed. The responsibility of any violation regarding the article belongs to the author(s).

REFERENCES

Aksoy, V. (2016). *Özel eğitim.* Pegem Akademi.

Altunay, A. D. (2015). Bir sosyalleşme aracı olarak yeni medya. *Selçuk İletişim*, *9*(1), 410-428.

American Psychiatric Association, A. P., & American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders: DSM-IV* (Vol. 4). American psychiatric association.

Baglama, B., Haksiz, M., & Uzunboylu, H. (2018). Technologies used in education of hearing-impaired individuals. *International Journal of Emerging Technologies in Learning*, *13*(9), 53.

Banerjee, S., Munshi, A., Li, C., & Ayub, M. (2022). Editorial: Developmental delay and intellectual disability. *Frontiers in genetics*, *13*, 934815. https://doi.org/10.3389/fgene.2022.934815

Bognar, G. (2016). Is disability mere difference?. *Journal of Medical Ethics*, *42*(1), 46-49.

Bozkurt, S. S. (2017). Özel eğitimde dijital destek: Yardımcı teknolojiler. *Açıköğretim Uygulamaları ve Araştırmaları Dergisi*, *3*(2), 37-60.

Buckley, R. H., Dinno, N., & Weber, P. (1998). Angelman syndrome: are the estimates too low?. *American Journal of Medical Genetics*, *80*(4), 385-390.

Bull, M. J. (2020). Down syndrome. *New England Journal of Medicine*, *382*(24), 2344-2352.

Çalişir, G., & Çakıcı, F. O. (2015). Toplumsal cinsiyet bağlamında sosyal medyada kurulan benlik inşasının Temsili. *Electronic Turkish Studies*, *10*(10).

Cascella, P. W. (2005). Expressive communication strengths of adults with severe to profound intellectual disabilities as reported by group home staff. *Communication Disorders Quarterly*, *26*(3), 156-163.

Çay, E., Yıkmış, A., & Özgüç, C. (2020). Özel eğitimde teknoloji kullanımına ilişkin özel eğitim öğretmenlerinin deneyim ve görüşleri. *Eğitimde Nitel Araştırmalar Dergisi*, *8*(2).

Çelik, A. (2019). Otizmli çocukların televizyon izleme davranışlarının yeni medya kullanımlarına etkisi. *Yeni Medya*, *2019* (6).

Chew, K. L., Iacono, T., & Tracy, J. (2009). Overcoming communication barriers: Working with patients with intellectual disabilities. *Australian Family Physician*, *38*(2), 10-14.

Crow, K. L. (2008). Four types of disabilities: Their impact on online learning. *TechTrends*, *52*(1).

De Bildt, A., Sytema, S., Kraijer, D., & Minderaa, R. (2005). Prevalence of pervasive developmental disorders in children and adolescents with mental retardation. *Journal of Child Psychology and Psychiatry*, *46*(3), 275-286.

Didden, R., Sigafoos, J., Korzilius, H., Baas, A., Lancioni, G. E., O'Reilly, M. F., & Curfs, L. M. (2009). Form and function of communicative behaviours in individuals with Angelman syndrome. *Journal of Applied Research in Intellectual Disabilities*, *22*(6), 526-537.

Dolgun, U. (2016). Kitle iletişim araçları ve yeni medya. İçinde A. Arslan & M. Çağlayandereli (Eds), *Sosyoloji: Günlük Yaşamı Anlamak (s. 345-369).* Paradigma Akademi.

Elgünler, T. Ç., & Fener, T. Ç. (2011). İletişimin kalitesini etkileyen engeller ve bu engellerin giderilmesi. *The Turkish Online Journal of Design, Art and Communication, 1*(1), 35-39.

Er, H. K. & Farhady, H. (2023). The effects of learning oriented assessment on academic writing. *International Journal of Assessment Tools in Education*, *10* (2), 197-217.

Fidler, R. F. (1997). *Mediamorphosis: Understanding new media*. Pine Forge Press.

France, J., & Kramer, S. (2001). *Communication and mental illness: theoretical and practical approaches*. Jessica Kingsley Publishers.

Francis, L., & Silvers, A. (2016). Perspectives on the meaning of "Disability". *AMA Journal of Ethics*, *18*(10), 1025-1033.

Gernsbacher, M. A., Morson, E. M., & Grace, E. (2016). Language and Speech in Autism. *Annual Review of Linguistics*, *2*(1), 413-425.

Gıddens, A. (2000). *Sosyoloji*. Ayraç Yayınları.

Girgin, B. A., & Balcı, S. (2015). Fiziksel engelli çocuk ve ailesinin evde bakım gereksinimi. *Gümüşhane Üniversitesi Sağlık Bilimleri Dergisi*, *4*(2), 305-317.

Goodwin, K. (2018). *Dijital dünyada çocuk büyütmek: teknolojiyi doğru kullanmanın yolları*. Aganta Kitap.

Greydanus, D. E., & Pratt, H. D. (2005). Syndromes and disorders associated with mental retardation. *The Indian Journal of Pediatrics*, *72*, 859-864.

Harris, J. C., & Greenspan, S. (2016). Definition and nature of intellectual disability. In *Handbook of evidence-based practices in intellectual and developintellectual disability* (pp. 11-39).

Henry, L. A., & MacLean, M. (2002). Working memory performance in children with and without intellectual disabilities. *American journal on mental retardation*, *107*(6), 421-432.

Heward, W. L. (2003). Ten faulty notions about teaching and learning that hinder the effectiveness of special education. *The journal of special education*, *36*(4), 186-205.

Kane, G. (1992). Entwicklung früher Kommunikation und Beginn des Sprechens. *Geistige Behinderung*, *4*(1992), 303-318.

Kara, B. (2017). Dünyada ve Türkiye'de zihinsel engellilerde eğitim. *The journal of academic social science studies, 61*, 277-288.

Kāra, C. (1992). *Exceptional children: Their psychology and education*. Sterling Publishers.

Kocacık, F. (2003). Bilgi toplumu ve Türkiye. *CÜ Sosyal Bilimler Dergisi*, *27*(1), 1-10.

Kozma, C. (2008). Down syndrome and dementia. *Topics in Geriatric Rehabilitation*, *24*(1), 41-53.

Light, J., & Mcnaughton, D. (2015). Designing AAC research and intervention to improve outcomes for individuals with complex communication needs. *Augmentative and Alternative Communication*, *31*(2), 85-96.

Lorah, E. R., Karnes, A., & Speight, D. R. (2015). The acquisition of intraverbal responding using a speech generating device in school aged children with autism. *Journal of Developmental and Physical Disabilities*, *27*, 557-568.

Lorah, E. R., Parnell, A., Whitby, P. S., & Hantula, D. (2014). A systematic review of tablet computers and portable media players as speech generating devices for ındividuals with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, *45*(12), 3792-3804

Manovich, L. (2001). What is new media. *The language of new media*, *6*, 1-15.

Mehrabian, A. (2017). Communication without words. In *Communication theory* (pp. 193-200). Routledge.

Mertz, L. G. B., Thaulov, P., Trillingsgaard, A., Christensen, R., Vogel, I., Hertz, J. M., & Østergaard, J. R. (2014). Neurodevelopmental outcome in Angelman syndrome: genotype–phenotype correlations. *Research in Developintellectual disability*, *35*(7), 1742-1747.

Mervis, C. B., & Becerra, A. M. (2007). Language and communicative development in Williams syndrome. *Mental retardation and developmental disabilities research reviews*, *13*(1), 3-15.

Özgür, İ. (2008). *Engelli çocuklar ve eğitimi.* Karahan Kitabevi.

Patel, D. R., & Brown, K. A. (2017). An overview of the conceptual framework and definitions of disability. International Journal of Child Health and Human Development, 10(3), 247-252.

Payne, V. G., & Isaacs, L. D. (2017). *Human motor development: A life span approach*. Routledge.

Pearson, J. C., Nelson, P. E., Titsworth, S., & Harter, L. (2017). *Human communication* (p. 416). McGraw-Hill Education.

Peters, S. U., Beaudet, A. L., Madduri, N., & Bacino, C. A. (2004). Autism in Angelman syndrome: implications for autism research. *Clinical genetics*, *66*(6), 530-536.

Petry, K., Maes, B., & Vlaskamp, C. (2005). Domains of quality of life of people with profound multiple disabilities: The perspective of parents and direct support staff. *Journal of Applied Research in intellectual disabilities*, *18*(1), 35-46.

Pettersson, I., & Fahlström, G. (2010). Roles of assistive devices for home care staff in Sweden: a qualitative study. *Disability and rehabilitation: assistive technology*, *5*(5), 295-304.

Pinchevski, A., & Peters, J. D. (2016). Autism and new media: Disability between technology and society. *New Media & Society*, *18*(11), 2507-2523.

Pratt, H. D., & Greydanus, D. E. (2007). Intellectual disability (mental retardation) in children and adolescents. *Primary Care: Clinics in Office Practice*, *34*(2), 375-386.

Prelock, P. J., & Nelson, N. W. (2012). Language and communication in autism: An integrated view. *Pediatric Clinics*, *59*(1), 129-145.

Roberts, J. E., Price, J., & Malkin, C. (2007). Language and communication development in Down syndrome. *Mental retardation and developintellectual disability research reviews*, *13*(1), 26-35.

Schalock, R. L., Luckasson, R., & Tassé, M. J. (2021). An overview of intellectual disability: Definition, diagnosis, classification, and systems of supports. *American journal on intellectual and developintellectual disability*, *126*(6), 439-442.

Sevinç, Ş., Aslan, F., & Özkan, B. (2013). İşitme engelli öğrenciler için öğretmen kılavuz kitabı. *Özel Eğitim ve Rehberlik Hizmetleri Genel Müdürlüğü*.

Shree, A., & Shukla, P. C. (2016). Intellectual Disability: Definition, classification, causes and characteristics. *Learning Community-An International Journal of Educational and Social Development*, *7*(1), 9-20.

Smith, M., Manduchi, B., Burke, É., Carroll, R., McCallion, P., & McCarron, M. (2020). Communication difficulties in adults with Intellectual Disability: Results from a national cross-sectional study. *Research in developintellectual disability*, *97*, 103557.

Sucuoğlu, B. (2010). Zihin engelliler ve eğitimleri. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Özel Eğitim Dergisi*, *8*(02), 88-90.

Sunagul, S. B., Vuran, S., & Akbulut, Y. (2017). Design and use of interactive social stories for children with autism spectrum disorder (ASD). *Contemporary Educational Technology*, *8*(1), 1-25.

Tassé, M. J., Luckasson, R., & Nygren, M. (2013). AAIDD proposed recommendations for ICD–11 and the condition previously known as mental retardation. *Intellectual and developintellectual disability*, *51*(2), 127-131.

Topbaş, S. (2007). *Dil ve Kavram Gelişimi.* Kök Yayıncılık.

Van der Meer, L., Kagohara, D., Achmadi, D., O'Reilly, M. F., Lancioni, G. E., Sutherland, D., & Sigafoos, J. (2012). Speech-generating devices versus manual signing for children with developintellectual disability. *Research in Developintellectual disability*, *33*(5), 1658-1669.

Van Laarhoven, T., Johnson, J. W., Van Laarhoven-Myles, T., Grider, K. L., & Grider, K. M. (2009). The effectiveness of using a video iPod as a prompting device in employment settings. *Journal of Behavioral Education, 18(*2), 119-141.

Webster, F. (2014). *Theories of the information society*. Routledge.

Werts, M. G., Culatta, R., & Tompkins, J. R. (2007). *Fundamentals of special education: What every teacher needs to know*. Prentice Hall.

Wilken, E. (2015). Präverbale sprachliche Förderung und Gebärden-unterstützte Kommunikation in der Frühförderung. İn E. Wilken (Eds.), *Unterstützte Kommunikation. Eine Einführung in Theorie und Praxis* (pp. 29-46). Kohlhammer