UNDERSTANDING THE PERSPECTIVES AND USABILITY OF DIGITAL GAMES FOR CHILDREN WITH INTELLECTUAL DISABILITIES

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ABSTRACT

Typically, the digital games are used as a medium for teaching students having intellectual disabilities, and it helps the student to enhance their learning skills and to understand their surroundings. Intellectual disability is a neurological disease that manifests as a deficit in an individual's mental and adaptive functioning during childhood. Moreover, the computer-assisted training has been shown to be the most effective method of instruction for children with disabilities in terms of conceptual learning, academic accomplishment, and skill-based development. Traditionally, some existing research works are done in this field for analyzing the effectiveness of digital games. Accordingly, the main contribution of this research work is to determine the perception of special educators and usability of digital games in educational settings for children with intellectual disabilities. By identifying the needs for their design and use in those children's classes, this study intends to further illuminate how to employ digital games in education as a contribution to improving educable intellectually impaired children's teaching and learning practices. In addition, a case study is conducted in this work using a closed-ended questionnaire on a sample of 60 special educators, handling Children with Intellectual disabilities. According to this case study analysis, the quantitative analysis suggest that special educators have a strong need to use digital games to optimize learning for children with intellectual disabilities and to promote digital inclusion. Based on the outcomes, it is inferred that the digital game based learning could be more helpful and beneficial for the student with intellectual disabilities in real time.

Keywords: Digital Games, Game-Based Learning, Children with Intellectual Disabilities (CWID), Perception, Digital Inclusion.

1. Introduction

In recent days, technology is become an essential element of our daily life, which has a great impact on practically every industry, including education (Behnamnia et al., 2020; Sirin et al., 2018). In the digital age, education has grown increasingly linked to technology. As technology improves, there is continual research and development in introducing innovative technologies to make education more enjoyable, accessible, and simple. The digital game based learning has the major characteristics of problem-solving, participation, feedback, interactivity, group communication, multitasking, strategy, reliability, and intelligent reasoning.

1.1 Background

With the advancement of technology (Anastasiadis et al., 2018; Lamrani et al., 2018; Wang et al., 2023), it is now feasible to study while playing. Playing games to learn is one of the important and most effective instructional concepts in history. Several studies (Görgen et al., 2020) have been undertaken to study the positive influence of games on learning as a result of rapid progress in industries such as IT and the video game industry. Numerous research have been undertaken to look at how games might improve learning due to the rapid development of industries like IT and the video game industry. There is proof that employing games in the classroom is a successful and desirable technique of instruction because it makes learning more interesting for both students and educators. Typically, the game based learning (Ronimus et al., 2019; Turner et al., 2022; Zuo et al., 2022) is one of the most effective way to engage learners through games, which offers educational value using various software applications (Fahlepi, 2020). It also supports to improve teaching, learning, and assessment skills, and it comprises the elements of competition, engagement and immediate reward. In order to be motivated to complete

a task and receive excellent marks, students might compete with one another and work together. Following that, users get immediate feedback and rewards. Students become motivated and actively participate in their education by completing a number of tasks. When using digital games to accomplish a specific learning objective, Game-Based Learning (GBL) (Hernández et al., 2022; Muniandy & Abdullah, 2023; Toki et al., 2022) uses learning acquisition techniques. Designing educational or serious games is a component of games-based learning, which calls on educators to include game-based methodologies into the procedures used to create conventional curricula. One more constraint applies to digital game-based learning (DGBL) (Nuraini et al., 2022; Ponticorvo et al., 2022) is the games must be digital.
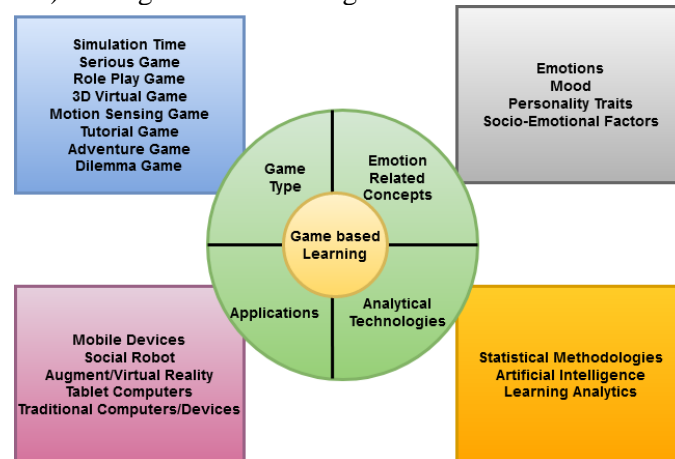

Fig.1. Digital Game Based Learning Framework

Fig 1 shows the framework of digital game-based learning system for CWID. Thus, one component of DGBL is the use of games to accomplish learning goals.

1.2 Problem Identification

According to the American Association of Intellectual and Developmental Disabilities, intellectual disability is characterized by considerable restrictions in both cognitive functioning and adaptive behavior, as shown by conceptual, social, and practical adaptive skills. It becomes apparent before the age of 18 and during the developing stage. Lack of adaptability in routine situations is one of ID's fundamental traits (Chen et al., 2021). Reading, writing, expressive and receptive language, money concepts, self-direction, responsibility, self-esteem, gullibility, understanding and following rules, daily living activities, and occupational skills are some adaptive behavior skills (Wang et al., 2022) that people with intellectual disabilities may be behind in or lacking. A neurodevelopmental disorder known as intellectual disability is characterized by a deficit in a person's intellectual and adaptive functioning that first appears in childhood. Typically, children with intellectual disabilities (Parkash, 2022) facing difficulties in cognitive, motor, auditory, language, and psychosocial functioning. On the other hand, exceptional schoolteachers consistently note that despite investing a lot of time and effort in these students' education, the outcome is never sufficient. For this reason, it is now more crucial than ever to select effective and cutting-edge teaching strategies. Also, their school performance is directly correlated to the factors of cognitive functioning, and adaptive skills. The game is used as the medium to help students with intellectual disabilities for improving their skills and learning capacity. Playing educational games is one of these innovative teaching strategies. Play is crucial for child cognitive, social, athletic, and verbal development, according to research. The child directs the game, which consists of a variety of recreational pursuits that result in psycho-motor, social, and behavioral rewards. It helps the child learn psycho-motor and social skills, as well as a means of expressing happiness, anxiety, despair, and worry. It also aids in the development of cognitive thinking. The game (Chaidi & Drigas, 2022; Gallud et al., 2021) may be useful for children with intellectual challenges because it can positively influence many elements of child development. Children get a great deal of knowledge about their body parts, forms, colors, and the cause-and-effect relationships between things and events when playing, which helps the child's cognitive development. The ability of people with intellectual disabilities to execute daily

tasks can be improved and connected directly to their therapeutic goals, which promotes independence and reduces dependence on day-to-day affairs. Moreover, the game-based learning strategies help to improve the following skills of CWID:

- Verbal Information: Providing children with phonetic and text-based digital games.
- Academic Skills: Like most commonly played digital games nowadays, children can learn the necessary ideas and problem-solving techniques.
- Intellectual Tactics: They are vital and essential components for helping players to complete the appropriate tasks in digital games.
- Social Perceptions: They are frequently crucial in digital role-playing games.
- Cognitive skills: It can be developed using control methods, such as joysticks or touch displays, in digital games.

As a result, it can be stated that improving attention skills will improve people with intellectual disabilities' ability to conduct daily tasks. Medication, psychological treatment, education, behavioral therapy, education therapies, family counseling, and learning social skills are just a few of the interventions used to treat attention issues (Panskyi & Rowinska, 2021). However, computer games can be utilized as a novel and more suitable approach to improve the students' attention and learning for several reasons, including the expensive expense of some therapies. Everyone enjoys playing the game, but children with intellectual disabilities tend to participate more frequently for a variety of reasons, such as avoiding serious curriculum activities that normally result in evaluation and criticism in the classroom.

1.3 Objectives

Games are an important part of learning and teaching of all age groups (Brooks & Sjöberg, 2022; Dadure et al., 2021; Li et al., 2021), especially of students with developmental disabilities. Teaching that perceives digital games as a concept which includes a special set of behaviors, takes into consideration the individual approach. Therefore, certain educational content can be introduced to the students in a suitable and understandable manner (Laranjeiro, 2021; Vanden Bempt et al., 2021). Due to this fact, digital game-based learning is a promising area for research, as it can help students with intellectual disabilities form a way of thinking, learn data, acquire life skills, and develop social and other skills. A game acts on a student through a social, cultural, emotional (affective), cognitive, physical and biological aspect. Research has been done on the effectiveness of digital games for children who have typical development. However, will digital games have the same impact on children with intellectual disabilities in a special education setting? Due to their cognitive deficits, CWID (Fadhli et al., 2022; Kemp et al., 2021) has been excluded from the use of computers/ games. Moreover, the digital game based learning is highly beneficial and essential for developing the education skills of CWID. Therefore, the purpose of this study is to investigate how special educators see the use of digital games for children with intellectual disabilities. The major researching objectives of this paper are as follows:

- To explore the perception of special educators towards using digital games for Children with Intellectual disabilities.
- To determine the usage of digital games for children with intellectual disabilities according to the levels of disability and course content.

1.4 Contributions

In the existing studies, a lot of research works have been carried out in this field for game based learning. However, the majority of studies facing difficulties in terms of designing complexity, ineffective data analysis, and insufficient information. The original contribution of this research work is to conduct a detailed case study analysis for analyzing the major impacts of using digital game based learning strategy for improving the learning skills and education level of children having intellectual disabilities. For this investigation, a closed-ended questionnaire on a sample of 60 special educators has been used, which comprises the different types of questions related to the teaching of digital games. It includes the followings: Importance and need of digital games for CWID, Types of Gadgets/ connectivity needed for using digital games, Types of digital games needed for CWID, Game elements needed for CWID, Course content where digital games

are needed for CWID, and Role of agencies. Based on this analysis, the opinion of educators in digital game based learning are examined, which is more beneficial for the schools or institutions to teach students with improved learning skills.

1.5 Research Questions
Moreover, the research questions formulated on this work are given in below:
1. What is the perception of special educators towards using digital games for Children with Intellectual disabilities with respect to demographic variables?
2. What level of children with intellectual disabilities can use digital games?
3. What course contents can be learnt effectively by Children with Intellectual Disability through digital games?

2. Literature Review
      The literature on game-based learning methods for enhancing the learning capacities of children with intellectual disabilities is examined in this section. It also examines the issues and difficulties that traditional works encounter.
      Generally, the concept "Intellectual Disability" (ID) (de Carvalho & Coelho, 2022) is used in educational literature to refer to a particular group of children and people who have unique limitations in their intellectual development, communication capacity, and deficient social skills. Additionally, technology allows children with special needs (Mao et al., 2022) to express their ideas because of its many subjective, intellectual, and socioeconomic advantages. It gives them access to cutting-edge software with a variety of entertaining programs and educational games that delight those young students, relieving their stress and anxiety while also boosting their motivation to learn and pick up new behaviors that includes the followings (Kiguchi et al., 2022):
- Reading and Math Skills
- Communication and Social Skills
- Health and Safety Concerns
- Physical and mental well-being Career training

      As a result, compared to their other normal mates, these impairments result in significantly slower rates of development and learning. Kim & Lee (2021) conducted a game based cognitive training program for improving the learning skills of CWID. In this study, both the pre-test and post-test results of the cognitive training program have been estimated. Typically, children who have intellectual disabilities often struggle with attentiveness, remembering, cognition, communication, and problem-solving skills, all of which are important for social engagement with other people and things in the environment. It might be challenging for children with intellectual disabilities to switch their focus from one task to another. They also show less spontaneous attention concentration and weaker stimuli discriminating capacity as a result of the short focusing period. Training in continuous and repetitive learning is necessary so that children with intellectual disabilities can respond appropriately in a variety of contexts and go about their daily lives without experiencing any difficulties. Recently, there has been a lot of activity in the implementation and analysis of cognitive training using digital devices including computers, smartphones, and tablet PCs. In this analysis, 21 different studies are selected from the database, where the results demonstrated that the digital games are particularly used for improving both cognitive abilities and adaptive skills of the children having intellectual disabilities. Kokol et al., (2020) conducted a detailed review on game based intervention strategies for improving the learning ability of CWID. This study mainly focused on developing the skills of children having disabilities such as Autism Spectrum Disorder (ASD), Developmental Coordination Disorder, Attention Deficit Hyperactivity Disorder (ADHD), and intellectual disabilities. A serious game, which is most frequently a digital game like a video game or computer game, serves a primary function other than entertainment. Examples of serious game-based healthcare applications include increasing patients' cognitive and motor abilities during rehabilitation, educating people about health issues, teaching medical professionals new skills, and diverting patients from uncomfortable procedures. Stančin et al., (2020) conducted a systematic literature review on digital game based learning strategies for students having intellectual disabilities.

Pashapoor et al., (2018) analyzed how well intellectually disabled students' attention is affected by cognitive computer games. According to the recent study, it is analyzed that between 1% and 3% of people in developed nations have intellectual disability or mental retardation, which affects millions of people globally. Children with intellectual disabilities are well-trained in various countries, much like typical children, but they do not learn as well. This failure is also linked to the cognitive traits of these kids, including their range of attention, problems with working and long-term memory, and language issues, as well as their social and psychological traits, like social contact, responsive behavior, and identity. The appropriate use of favorable circumstances and possibilities for the transmission of educational messages, directly and indirectly, verbally or non-verbally, and the deepening of social responsibility, as well as the growth of cognitive activities, the development of motor abilities, and the presentation of their highest force and energy, are of considerable importance. It is therefore advisable that parents and other caregivers pay close attention to this matter. Based on the research's findings, it is recommended that this type of games be created specifically for these children' needs and incorporated into their educational processes and programs in order to improve their cognitive development and educational and learning effectiveness. Fig 3 illustrates the typical model for the selection of digital games to teach CWID.
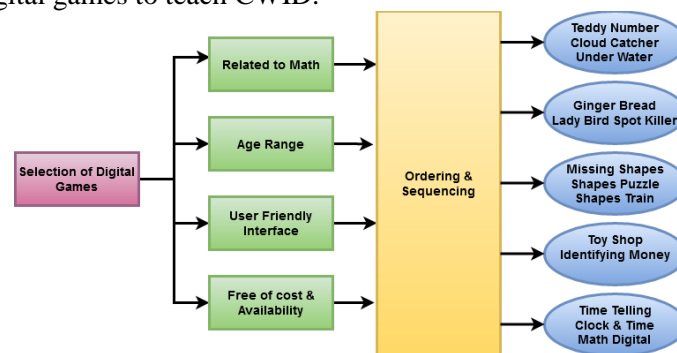

Fig. 2. Selection of digital games

Ekin et al., (2018) investigated about the smart toy applications for effectively teaching children having intellectual disabilities. The impacts of using the smart toys created for this study to teach social studies ideas to children with ID are examined using a single-subject approach. The smart toys are also being developed as part of the ongoing development. The study involved three special education teachers and three children with intellectual disability. Data on efficacy were gathered in the study under identical environmental circumstances. The three participants' average correct response rate over the course of the baseline sessions was 10.1%. Each participant was presented the same question regarding an animal notion four times in a row, however only one of their answers was accurate for the corresponding animal character. The option to select the right character from the available quartet may have influenced the outcomes. Alfredsson Ågren, et al., (2020) presented a cross sectional comparative study to analyze the digital participation of adolescents having intellectual disabilities. To enable children with intellectual disabilities to respond appropriately in a variety of contexts and carry out their everyday lives without experiencing any difficulties, continuous and repetitive learning instruction is necessary. The authors of the paper (Bendak, 2018) seek to validate the usefulness of mobile math games in improving the capabilities of youngsters with modest intellectual disabilities. In this case, the severity level was calculated using the mild, moderate, severe, and profound disabilities. In addition, adaptive functioning was measured based on the level of support. The authors in paper Terras et al., (2018) studied the potential and problems related with serious games for dealing with intellectually impaired people. The goal of this project was to provide a dependable and standard education to improve the social skills, independence, online safety, and well-being of intellectually impaired children. The authors in (Yılmaz & Soyer, 2018) explored the significant effects of physical education and play applications on students at school. The goal of this study was to present a quantitative research based on pre-test, post-research, and post-test-retention control groups for analyzing intellectually impaired children's social behavior. This study looked at self-control, academic skills, aggressive nervousness, anti-social aggressiveness, and damaging

demanding interpersonal abilities. The positive and negative ranks are estimated using the mean value based on the pre and post test results. The value of employing game-based learning methods for enhancing the learning capability of intellectually disabled learners is identified in this review. It also explores the pros and drawbacks of using a digital games-based education strategy. Overall, the analysis indicate that the digital game based learning strategy is highly beneficial and useful for the intellectual disabled students. However, the educators should be well-trained for teaching the students, and also they must be updated with the recent technologies and advancements. Therefore, the proposed work motivates to develop a new conceptual framework for CWID, where the clear study analysis has been carried out to investigate the educators in this field. For this purpose, a separate and detailed questionnaire has been created, and the opinion/feedbacks about the game based learning strategy is collected from 60 respondents. Fig 3 shows the conceptual framework model of the research work.
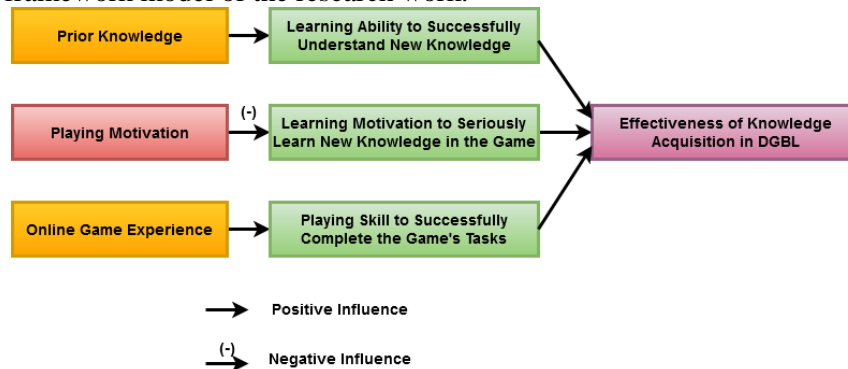

Fig. 3. Conceptual Framework of The Research

3. Research Methods

In the present study, Survey method under Descriptive research design was adopted to know the perception of special educators and usability of digital games for Children with Intellectual disability. A total of 60 special educators handling Children with Intellectual disability were selected for the present study using purposive sampling technique. The demographic details of the participants are given in Table 1.

Table 1- Demographics Characteristics of Special Educators

Variable	Category	Frequency	Percentage (%)
Gender	Male	14	23
	Female	46	77
Educational Qualification	Diploma/Undergraduate	42	70
	Postgraduate	16	30
No.of.Years of Experience	Less than 10 years	46	77
	More than 10 years	14	23
Location of the school	Rural	22	37
	Urban	38	63
Level of understanding/Usage of ICT skills	Advanced	20	34
	Intermediate	40	66

The perception of special educators and usability of digital games for children with Intellectual disability was collected by a survey questionnaire developed by the researcher. The validity of the tool was tested getting the feedback of experts. The reliability of the tool by Pearson's coefficient was found to 0.91. The tool comprises of 45 questions, and it is divided into 7 domains.

- Domain 1 includes Importance and need of digital games for CWID
- Domain 2 includes Types of Gadgets/ connectivity needed for using digital games
- Domain 3 includes Types of digital games needed for CWID
- Domain 4 includes Game elements needed for CWID
- Domain 5 includes Course content where digital games are needed for CWID
- Domain 6 includes Role of agencies

Questionnaire also included five open ended questionnaire which is asking about the types of digital games they are aware for CWID.

4. Results and Discussions

The outcomes of the current case study are validated and examined in this section to show the value of a game-based learning strategy for CWID (Khan et al., 2021). Additionally, the primary goal of this study is to look into the usability and accessibility of employing digital games for the CWID. Research questions framed based on the objectives of the study were answered by analyzing the data collected from the respondents through percentage analysis and t-test. The case study analysis data is given in following:

**PERCEPTION OF SPECIAL EDUCATORS
FOR THE USE OF DIGITAL GAMES AMONG CWID**

Demographic data of Teachers

Name: --

Gender: ------------------ **Educational Qualification:** --

No. of years of experience: ------------- **Location of institution: Rural/ Urban**

Your Level of understanding /usage of ICT skills: Excellent/ Good/Average

Part-A

Special educators will response to the following questions as YES/Not sure/No, which indicates the reaction of special educators towards the items.

S.No.	Statements	Yes	Not sure	No
Domain:1	Importance and need of digital games for CWID			
1.	Play activities are important /needed for Children with Intellectual Disability. (CWID)			
2.	Playing games are important /needed for intellectual development of CWID			
3.	Playing games are important for improving academic skill of CWID			
4.	Playing games are important for Social skill development of CWID			
5.	Playing games are important for language skill development of CWID			
6	Games with simple rules can be followed by CWID at mild level			
7	Games with simple rules can be followed by CWID at moderate level			
8	Computer assisted instruction is needed for CWID in special school setting/Inclusive setting/home settings			
9	Digital games can be used as the teaching tool for CWID			
10	Digital games can be used for CWID at mild level			
11	Digital games can be used for CWID at moderate level			
12	ICT skills are needed for CWID at mild & moderate level as prerequisite for using digital games.			
Domain :2	Types of Gadgets/ connectivity needed for using digital games			
13	Desktop are the best option to use digital games for CWID			
14	Laptops are the best option to use digital games for CWID			

15	Tab are the best option to use digital games for CWID
16	Smart mobile phones are the best option to use digital games for CWID
17	Online games are easy to use for CWID
18	Downloaded apps are easy to use for CWID
Domain :3	Types of digital games needed for CWID
19	Drill and practise games are needed for CWID
20	Interactive story telling games are needed for CWID.
21	Simulation games are needed for CWID
22	Role playing games are needed for CWID
23	Adventures games are needed for CWID
Domain :4	Game elements needed for CWID
24	Game mechanics is needed in digital game for CWID
25	Visual aesthetics is needed in digital game for CWID
26	Narratives is needed in digital game for CWID
27	Incentives is needed in digital game for CWID
28	Musical score is needed in digital game for CWID
Domain :5	Course content where digital games are needed for CWID
29	Digital games can be used for improving pre reading skills
30	Digital games can be used for improving reading skills
31	Digital games can be used for improving writing skills
32	Digital games can be used for improving arithmetic skills
33	Digital games can be used for improving social skills
34	Digital games can be used for improving Play behaviour skills
35	Digital games can be used for improving language skills
36	Digital games can be used for improving functional skills
37	Digital games can be used for improving vocational skills
Domain :6	Role of agencies
38	Special training /manual can be provided to special educators by the agencies of special education
39	Special training/manual can be provided to parents/care takers by the agencies of special education
40	Special training/manual can be provided to CWID by the agencies of special education

Part-c
Questions that require written responses

What is your opinion about using digital games as the teaching learning tool for CWID?
In your opinion, whether these digital games will help CWID for digital inclusion/in inclusive settings?
Are you interested to use digital game as the teaching learning tool for CWID in your class?
Would you like to get trained in using digital games for CWID?
What are the digital games that you are aware of that can be used for CWID?

RQ 1: What is the perception of special educators towards using digital games for Children with Intellectual disabilities with respect to demographic variables?

This research topic was addressed using information acquired from 60 special educators who work with children with intellectual disabilities. As shown in Fig. 4, it can be shown that the majority of special educators—80%, or N=48—have supported employing digital games for CWID while just 20%, or N=12, have opposed it.
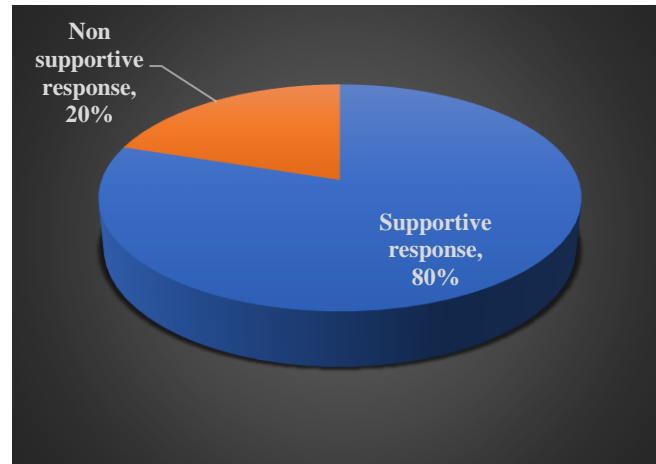

Fig. 4. Overall Perception Analysis of Using Digital Games For CWID

Table 2 - Perception Analysis of Using Digital Games With Respect To Different Parameters

	Variables	N	Mean	SD	t	P value
Gender	Male	14	31.86	5.97	2.073	0.82*
	Female	46	32.28	6.19		
Educational Qualification	Diploma/ Undergraduate	42	31.45	6.65	2.01	0.06*
	Postgraduate	16	34.18	3.6		
No. Of. Years of Experience	Less than 10 yrs.	46	33	5.70	2.11	0.95*
	More than 10 yrs.	14	35	7.58		
School Location	Rural	22	31.43	7.80	2.05	0.54*
	Urban	38	32.59	5.01		
ICT skills	Advanced	20	31.6	6.85	2.03	0.63*
	Intermediate	40	32.48	5.75		

*Indicate the significance at the 0.05 level

According to the above data, the average score for special educators' perception of digital games was 31.86 for men and 32.28 for women. The two-way t-value obtained was 2.703, which is not significant at the 0.05 level (p>0.05). This suggests that there are no discernible differences in the opinions of special educators who use digital games between men and women. The same table shows that the mean scores for special educators with diploma/undergraduate, postgraduate, and PhD level educational qualifications were 31.45 and 34.18, respectively, for their impression of digital games. The two-way t-value obtained was 2.01, which is not significant at the 0.05 level (p>0.05). This suggests that there are no discernible differences in special educators' attitudes regarding adopting digital games across those with undergraduate, graduate, and doctoral degrees. The aforementioned chart also reveals that the mean scores for special educators with less than and more than 10 years of experience in regards to their view of digital games were 33 and 35, respectively. The two-way t-value obtained was 2.11, which is not significant at the 0.05 level (p>0.05). It suggests that there is little variation in special educators' attitudes regarding adopting digital games between those with less than 10 years of experience and those with more. The average ratings for special educators working in rural and urban schools about their perception of digital games were 31.43 & 32.59, respectively. The two-way t-value obtained was 2.05, which is not significant at the 0.05 level (p>0.05). Therefore, there is no discernible difference between special educators' attitudes about using digital games in urban and rural classrooms. The same table demonstrates that the average ratings of special educators' perceptions of digital games with advanced and intermediate levels of ICT abilities were 31.6 and 32.48, respectively. The two-way t-value obtained was 2.03, which is not significant at the 0.05 level (p>0.05). Therefore, there is

no discernible difference between special educators' perceptions of using digital games at advanced and intermediate ICT ability levels. Fig 5 depicts the comparative analysis of gender, qualification, experience, school location, ICT skills based on the mean values.
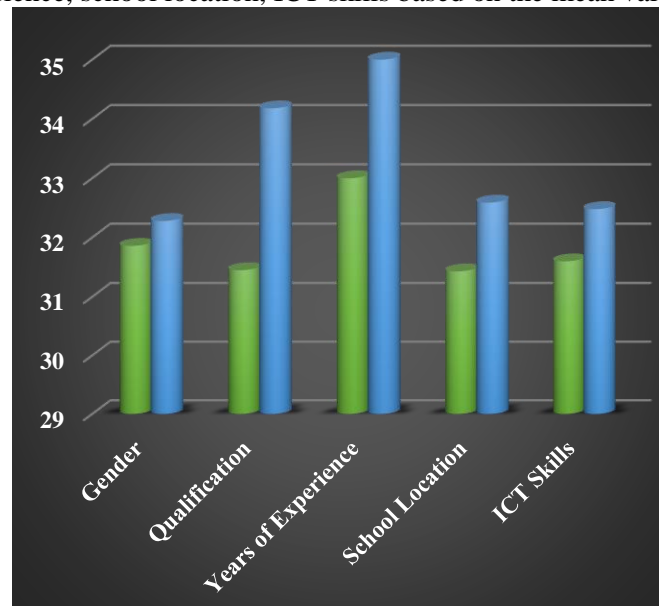

Fig. 5. Comparative Analysis Of Mean Values

RQ2: What level of children with intellectual disabilities can use digital games?

Table 3 lists the replies about the use of digital games by children with varying degrees of intellectual disability. The results shown in Fig 6 and the preceding table indicate that the majority of special educators supported the use of digital games for children with mild intellectual disabilities (88%) and children with moderate intellectual disabilities (75%). Digital games can be used to teach academic subjects including reading, writing, spelling, mathematics, and more to kids who have modest intellectual disabilities.

Table 3 - Digital games for individuals with various level of intellectual disability

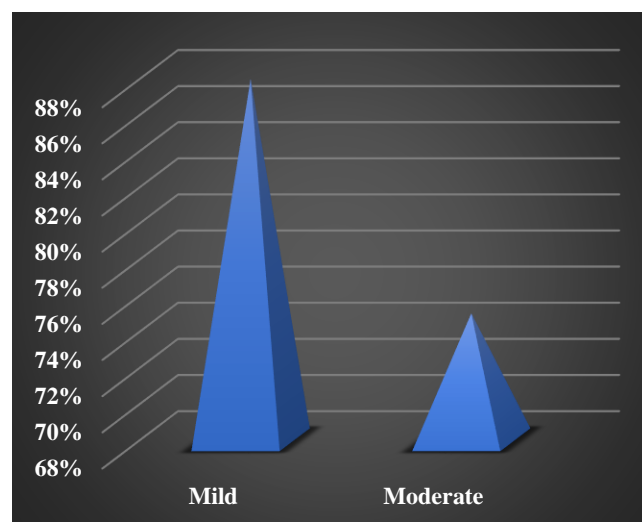| Statements	N (yes)	Percentage
Digital games can be used for CWID at mild level	53	88%
Digital games can be used for CWID at moderate level	45	75%

Fig. 6. Digital Games for Individuals with Various Level Of Intellectual Disability

RQ3: What course contents can be learnt effectively by Children with Intellectual Disability through digital games?

There are different course topics for children with intellectual disabilities, just like there are academic subjects taught in schools. Table 4 contains the responses about the use of digital games for teaching different course topics to children with intellectual disabilities.

Table 4 - Course Contents That Can Be Learned Effectively By CWID Using Digital Games

Course content	N	Percentage (%)
Pre-reading	52	86
Reading	47	78
Writing	35	58
Arithmetic	48	80
Social	45	75
Play behaviour	46	76
language	46	76
Functional	52	86
Vocational	45	75

According to the results, children with intellectual disabilities can learn pre-reading, reading, writing, math, arithmetic, social skills, play behavior, language skills, functional skills, and vocational skills via digital games. Digital games can be used to teach a variety of subjects, including social and occupational skills (75%) as well as functional skills and pre-reading skills (86%), reading (78%), play behavior and language (78%), and writing skill (56%), as shown in Fig. 7 and Table 3.
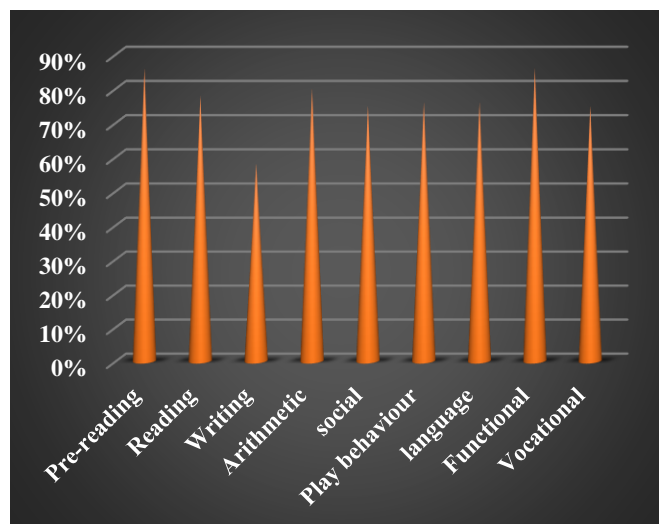

Fig. 7. Course Contents That Can Be Learned Effectively By CWID Using Digital Games

Discussion

The findings of this study suggest that special educators have a positive outlook on employing digital games for CWID. There are little substantive differences between the attitudes of male and female special educators. Additionally, there are no different views on the usage of digital games depending on a special educator's degree, years of experience, school location, or level of computer ability. Additionally, when compared to higher levels of intellectual disability, children with mild disabilities can play digital games. Digital games can be used to teach children with intellectual disabilities pre-reading, reading, writing, arithmetic, social skills, play behavior, language skills, functional skills, and vocational skills despite their cognitive deficiencies. Interpreting the results obtained in the light of previous studies reveal that there is an enormous support towards using digital games for children with Intellectual disability among special educators. Children with disabilities can benefit from using digital games as a tool to learn and acquire new abilities. However, because to their cognitive impairments, CWID are not permitted to use a computer or play games on it. According to the study, students with intellectual disabilities found digital games to be a less daunting and more engaging form of instruction. The replies show that digital games are appropriate for CWID, and the majority of special educators agree with this statement. However, up until recently, users with cognitive disabilities mainly

used digital games in the classroom as reward or to get outside motivation. The researcher concludes as a result that special educators can use digital games into the CWID curriculum for their overall development

5. Conclusion

Game-based learning is one of the most effective methods for boosting the academic standards of children with intellectual disabilities. Furthermore, game-based learning provides a tremendous platform for students with disabilities. The goal of this work is to undertake a thorough case study analysis for enhancing the intellectually disabled children's learning capacities and capabilities. So, digital games are needed for CWID in order to enhance their learning and mastering the skills contributes to their overall development. Based on this case study, it has been determined that using practical digital game implementation is crucial for CWID. Furthermore, it is increasingly important in modern times to make sure that digital games are used in accordance with CWID concepts and life skills. The use of digital games for enhancing CWID's learning abilities should also be supported by parents and instructors working together.

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