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Digital technologies for Gifted Students' Education

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Abstract

In order to highlight the finest ICT strategies for talented students, this article will examine the use of information and communications technology (ICT) in gifted education. The application of ICT in gifted education, in particular, has proven successful. Teachers can engage gifted students through ICT techniques, which would be highly beneficial for them as they can grow in their aptitude and proficiency. We give a quick overview of the publications that best represent ICT techniques applied to giftedness in this study. Also shown are pu-pils with ICT talent.

Keywords: Gifted; Giftedness; ICT; Techniques

1. Introduction

Information and communications technology (ICT), which has grown quickly, has now become essential to daily life, which would be severely dysfunctional without some type of technology. Everyday, we utilize tablets, laptops, mobile phones, and other modern technology in all facets of our lives. It is a fact that technology has altered everything, including education. Students with various educational needs and characteristics can use ICT [1].

The phrase "special educational needs" covers a variety of issues and learning challenges. Gifted kids also fall into this category; yet, despite the widespread belief that their academic success is certain, they encounter many difficulties. It might be difficult to define gifted students. Despite numerous attempts to define them, none of them are precise. Children who are talented typically have unique talents, high IQs, and intelligence. Because the talented are not a homogeneous group but do share some traits, it can be challenging to define them. The traits that are most frequently displayed are: curiosity, initiative, imagination, originality, and imagination, commitment to their work, and joy of learning. The three components of successful intelligence, according to Robert Sternberg's Triarchic Theory of Intelligence, are analytical intelligence, creative intelligence, and practical intelligence [2]. He also thinks that a person can be gifted if they have developed a particular talent or know how to balance their talents in order to succeed. Therefore, intelligence is a dynamic rather than a set thing [3]. Renzulli and the Three-Ring Conception hypothesis assert that brilliant students exhibit above-average aptitude, dedication to their work, and inventiveness [4].Some important characteristics of gifted students are:

- They learn rapidly, easily and efficiently.
- They have a wide range of interests.
- They are good guessers and makes hypotheses.
- They like to study some subjects more than other ones.
- They have a long attention span in the areas of knowledge.
- They have creative thinking

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- They have problem solving thinking.
- They provide multiple solutions or responses to problems.
- They achieve good grades in most of the subjects.
- They concentrate on a task.
- They ask more questions.
- They are curious and have unusual ideas.
- They prefer to work on their own.
- They come up with new solutions.
- They are used to supporting their ideas [5].

It is a common misconception today that talented children are good scholars and will succeed. However, it is highly likely that these kids lose interest in school and grow bored more readily, especially if the class starts to become sterilized. However, there's a good chance that educators are unaware of their abilities. These students are therefore overlooked and dropped. ICT use could support the education of gifted students.

2. Education and ICT

O'Malley et al.'s [1] study looked at how high school pupils were using language learning techniques to learn English as a second language. On the basis of the discovery of 26 learning strategies, a taxonomy was created, which was then extended, classifying the strategies into three main groups: cognitive (specific to different learning activities), social/affective (related to attitudes, feelings, or interpersonal relationships on learning), and metacognitive (knowing about learning). The last one includes the following strategies:

- Planning: the ability to recognize the organization principle of a text, to organize effectively the learning tasks, to pay attention to major grammatical points and finally to identify successful learning experiences and take advantage of diverse learning opportunities.
- Monitoring: the identification of the weaknesses and the strengths
- Evaluation: the self-assessment of the learning strategies employed

The qualitative analysis revealed that the effectiveness of the students was reflected also in the their ability to be monitored in order to to use the appropriate strategy successfully.

The use of metacognitive techniques by teachers and students of mathematics was examined by Du Toit et al. [2] in their investigation. On twelve of the following thirteen metacognitive methods, the questionnaire data was based:

- Planning strategy
- Generating questions
- Choosing consciously
- Setting and pursuing goals
- Evaluating the way of thinking and acting
- Identifying the difficulty
- Paraphrasing, elaborating and reflecting ideas
- Clarifying terminology
- Problem-solving activities
- Thinking aloud
- Journal-keeping
- Cooperative learning
- Modeling

The study's findings showed that learners evaluated their ways of thinking and acting, planned tactics, made deliberate decisions, and identified the areas of most difficulty. Conversely, the least amount of time was spent on cooperative learning, thinking aloud, and journaling. Du Toit came to the conclusion that, although it is important to be encouraged to verbally express one's opinions in a group context, learners looked to be well-organized and aware of their strengths and shortcomings in an effort to explain the various performance.

Parlan et al. [3] made an experimental study on the quality of prospective chemistry teachers' scientific explanations. After dividing 62 students of chemistry education program into two classes, the first group was taught by expository learning and the experimental class by metacognitive strategies. The strategies involved in the training sessions were:

- Preparing: reviewing the teaching ability, determining the learning goal, choosing the learning strategy, arranging the learning schedule, identifying the significant goals, the relevant prior knowledge and the concepts that have been understood and finally making question lists
- Doing: involvement in the learning activity
- Checking: monitoring the planning, assessing the learning, checking the effectiveness of the learning method, reflecting on the learning process used

Assessing and Following-up: giving the feedback and following up with the learning outcome

The results of data analysis showed that metacognitive learning strategies not only improve the students' ability to construct scientific explanations but also enable students to learn meaningfully.

Novia et al. [4] explored the effect of metacognitive-based learning associated with developing metacognitive awareness. Researchers provided 17 pre-service physics teachers with a six weeks metacognitive-based learning that consist of five stages:

- Identification
- Define the problem
- examine the solution
- act the strategy
- look back and evaluate

Before and after learning, participants completed a metacognitive awareness inventory questionnaire that included two components of metacognition:

- Metacognitive knowledge: knowledge of efficient skills and strategies that work in diverse tasks
- Metacognitive regulation: planning, management information, monitoring, debugging and evaluating

Overall, the results clearly show that the average of metacognitive awareness for each aspects increase due to metacognitive-based learning. Furthermore, management information and evaluation are two of all aspects that change better.

In the Betty's Brain, a computer-based open-ended learning environment, Segedy et al. [5] established an integrated cognitive and metacognitive paradigm for effective and self-regulated learning procedures. The aforementioned model's primary objective was to create an intervention tool that would assist learners in adopting more effective pre- and post-learn tactics. Betty's brain environment is built on the notion of learning through instruction. In order for middle school pupils to get familiar with and use a variety of cognitive and metacognitive skills, they are specifically given the responsibility of teaching a computer agent with the assistance of a mentor agent. The model exemplifies the following metacognitive techniques in the domain of metacognition: Goal-setting & planning: identify, choose, plan to achieve goals

- Knowledge of construction: knowledge acquisition/ verification
- Monitoring: Assess understanding, identify misconceptions and incomplete representations, correct misconceptions and incomplete representations, assess progress toward goal
- Help-Seeking: identify impasse or difficulty, Ask mentor for specific advice, ask mentor for hint

The application of this model could motivate learners in difficulty in developing more effective learning strategies, seeking feedback through a conversation with the mentor agent, taking control of their learning and gain metacognitive awareness.

Nosratinia et al. looked at the connection between metacognitive learning techniques and proficiency in listening in English as a Foreign Language. In order to achieve this goal, a total of 60 male and female students (Mage=26) were recruited as study participants and split into four homogeneous groups: two control groups and two experimental groups. Based on Anderson's 2002 approach, the last group got Metacognitive Strategies training. The aforementioned model states that metacognitive methods have five main parts:

- Preparing and planning for learning: setting and achieving one's own goals
- Selecting and using learning strategies in a given context for a specific purpose: thinking and making conscious decisions about the learning process
- Monitoring strategy use: directing one's own progress, revisiting the strategies that are employed, ensuring about the correct implementation of the strategy

- Orchestrating various strategies: coordinating, organizing, relating different strategies
- Evaluating strategy use and learning: self-questioning, debriefing discussions after strategy practice

Intensive statistical analysis on listening post-test revealed a significant difference in scores between the experimental group (M=23.43, SD=1.54) and the control group (M=19.95, SD=2.54). The magnitude of the difference in the means was so large that Nosratinia concluded metacognitive learning strategies have a significant effect on EFL learner's listening comprehension.

A quantitative study on the relationship between reasoning abilities and degrees of metacognitive learning strategies was conducted by Ersozlu et al.. The first-year Education Faculty students were given the Mathematics Reasoning Rating Scale and the Metacognitive Learning Strategies Scale. The following meta-cognitive subscales were represented by the final scale:

- Planning strategies
- Organizational strategies
- Controlling strategies
- Assessment strategies

The findings revealed a positive but weak relationship between reasoning and using planning. A positive and average relationship with organizational ($r=0.545$, $p<.01$), controlling ($r=0.463$, $p<.01$) and assessment ($r=0.422$, $p<.01$) was found. Ersozlu concluded that the candidate teachers may use metacognitive learning strategies at higher level as their levels of mathematical reasoning increase enabling thinking about mathematical concepts and creating logical links between mathematical relationships.

Through players' social problem-solving, Bokyeong et al. investigated the effects of metacognitive methods on academic and gaming successes. In order to accomplish this, the MMORPG Gersang was employed as a game-based learning environment in economics, offering a framework for problem-solving and encouraging intrinsic motivation. Following testing, 20 economic ideas were taught to a homogenized group of 132 ninth graders who shared the same gaming prowess. The three aspects of metacognition used in this study are self-planning, self-monitoring, and self-evaluation. There were created three metacognitive techniques:

- Self-recorded strategy: Students are engaged in a reflective metacognitive process by recording experiences related to the learning plan, learning process and learning outcomes. Self-recording is divided into three phases. Firstly, recording their prior knowledge before students start game play. Secondly, determining and monitoring if the activities were related to the game mission. Thirdly, recording reflections, upon finishing their game play.
- Modeling: the ability of making strategies by observing the others. Modeling requires identification of the game missions and activities, determination of the target player to observe during the play, observation of targets player's strategies and conceptualization of player's own strategies, application of player's own strategies and finally evaluation of their efficacy compared to the target player.
- Thinking aloud: verbal expression of the covert mental processes. Students use glossaries with the intention of relating their learning plan to their learning objectives before they start playing and explaining their game process to their fellow players throughout the game play.

For ten weeks, participants played the online game twice a week for 45 minutes each time. Students completed three checklists for the metacognitive methods after every 20 game-based learning sessions. The post-tests for social problem solving and academic accomplishment were also finished at the last session. Path analysis showed that social problem solving skills, which are the path for academic and gaming achievements, appear to play a significant role in met-acognitive methods. Additionally, the "thinking aloud" technique is recommended as the most effective way to develop problem-solving skills.

Shannon looked into the most popular metacognitive techniques for independent learning. The Perceptual Modality Preference Survey (PMPS), used in the study project as a tool for evaluating learning strategies, was administered to a total of 40 students in chemistry. There are seven different perceptual modalities, according to the Institute for Learning Styles Research: print, aural, visual, interactive, haptic, kinesthetic, and olfactory. The students were then taught a new metacognitive technique each week for the following ten weeks of the study. In order to become more self-directed learners, the students eventually discussed how effective each technique was. The following strategies make up the adopted paradigm of metacognitive techniques: Predicting outcomes: understanding the kinds of information that lead to successful problem solving

- Evaluating work: determining the strengths and weaknesses within the work

- Self-assessing: reflecting on the effectiveness of one's own learning
- Self-questioning: using questions to check one's own knowledge during the learning task
- Questioning by the teacher: the teacher asks students as they work
- Selective strategies: deciding which strategies are useful for a given task
- Using directed or selective thinking: choosing consciously a specific line of thinking
- Using discourse: discussing ideas with each other
- Critiquing: providing feedback to other students about their work in a constructive way
- Revising: returning work after receiving feedback

Shannon came to a conclusion regarding the relationship between metacognitive techniques and learning styles. The results, in particular, showed that interactive learners liked criticising and revising whereas haptic and kinesthetic learners favored picking strategies. Additionally, aural learners questioned, print learners self-assessed, and visual learners employed self-questioning and outcome prediction procedures. Most students favored asking metacognitive questions. One of these outcomes was that students who used metacognitive questions had greater curiosity and motivation. Finally, the researcher discovered that throughout the study, all of the students consistently evaluated their performance and growth, regardless of the preferred learning style.

The relationship between metacognitive techniques or skills and degrees of learning confidence was examined by Kisac et al. 400 college students from various schools and departments were given the Managing Metacognition In-ventory assignment. The following metacognitive techniques and three crucial abilities (planning, monitoring, and evaluation) were the focus of the study.

- Note taking: main ideas as one's makes decisions about what to write
- Summarizing: writing brief statements that represent the main ideas
- Outlining: main points of the material in a hierarchical format
- Reflecting: relating the prior knowledge with the existing information
- Reciting: stating points out loud, asking and answering questions
- Reviewing: asking one's own self questions, repeating one's own learning

The results showed that higher self-confidence is related with the use of metacognitive strategies emphasizing on note taking, summarizing, outlining and reflecting. On the other hand, reciting and reviewing means are averages indicating that students prefer less recalling and repeating.

When utilized in desktop teaching, Bautista was able to distinguish the effects of cognitive and metacognitive learning strategies on student learning. On twenty-eight first-semester students who participated in the study and provided responses, a descriptive-correlation research design was used. A questionnaire created by Pintrich et al. was used to determine the cognitive and metacognitive strategies, which included the following strategies:

- Rehearsal strategies: activation of information in working memory via enumeration, recitation, memorization of key words and context clues and listing. These strategies influence attention and encoding processes.
- Elaboration strategies: storage of information into long-term memory by building internal connections between items to be learned. Paraphrasing, summarizing, creating analogies and note-taking are some common strategies that help the learner associate new information with prior knowledge.
- Organization strategies: selection of the appropriate information and construction of connections among to information to be learned. Examples of an organizing strategies are clustering, outlining and selecting the main idea.
- Critical thinking: the application of previous knowledge to new situations in problem solving, decision making and in critical evaluation.
- Self-regulation strategies: Activities that lead to control of cognition and awareness through three general processes: planning (goal setting, task analysis), monitoring (self-testing, questioning) and regulating (checking and correcting learning behaviors).

The study revealed that the student respondents not only employ a variety of cognitive and metacognitive learning strategies, but also associate their capacity for learning with those strategies' success in desktop instruction.

In the setting of English as a foreign language, Penuela carried out a qualitative action research study on the effects of utilizing metacognitive methods to the language awareness of stress and intonation. In a three-cycle research process, which involved training in three metacognitive strategies, identifying suprasegmental features from video or audio input, and monitoring the feature using the metacognitive strategy they had learned, ten adult learners who had trouble

using suprasegmentals took part. Regarding primarily Oxford's approach, three metacognitive techniques were chosen for the current investigation.Overviewing: “centering one’s learning”, understand why an activity is being done, pay closer attention in a conscious way, relate previous theoretical knowledge to the upcoming tasks

Setting goals and objectives: “arranging and planning one’s learning”, setting one’s own aims for language learning and keeping track of these objectives in a journal along with deadlines

Self-evaluating: assessing learners’ own progress in the target language by recording and listening to themselves in different controlled and spontaneous tasks

The study revealed that the student respondents not only employ a variety of cognitive and metacognitive learning strategies, but also associate their capacity for learning with those strategies' success in desktop instruction.

Penuela concluded that language awareness was promoted as a result of the learners' apparent understanding of the real usage of stress and intonation, recognition of their communi-cative value, and knowledge of their strengths and shortcomings after reviewing the learning logs, recorded artifacts, and field notes. Students who listened to themselves had a more accurate assessment of themselves as understandable speakers and felt more confident despite the challenges. Penuela proposed a triadic metacognitive-based awareness-building method that integrates processes for language awareness, self-awareness, and learning awareness.

The learning techniques used for metacognition were identified by Adaylarinin et al.Organization strategies: prepare the mind while starting to study, determining the information according with the existing metacognitive schemas, define the subjects and the key concepts, review the context to be learned

- Planning strategies: do things in time, prepare the right conditions for pre-preparation and mental preparing regarding courses
- Observation strategies: focus on the continual self-learning during a learning activity, compare new with the previous information assessing the accuracy, determine validity and hierarchical structure of information during learning enabling self-observation
- Evaluation strategies: self-assess what is learned and to what extent it is learned, use strategies including self-testing in terms of information and analyze unknown information according to test results

According to the data gathered, female candidates do better than male candidates, and students generally use organization and observation tactics more efficiently than evaluation and planning. Future studies can concentrate on the factors that discourage male students from using metacognitive learning techniques. Additionally, first-year students outperform second- and third-year students, despite literature's argument to the contrary. Academic achievement and positive self-perception are associated with metacognitive learning practices as a whole.

An experimental study was conducted by Heidari et al. to determine how learning cognitive and metacognitive methods affected nursing students' academic performance. 40 nursing students who were separated into two subgroups—a control group and an experimental group—made up the study population. A 10-session course on cognitive and metacognitive learning techniques was given to the last group. A pre-test, post-test, and follow-up academic achievement test were done at the conclusion of the course. The following metacognitive methods—skills for observing, directing, and adapting the cognitive strategies as needed—were given to the students after the sixth session:Planning: determine the objective of the study, predict the required time for the study, identify speed of study and select a particular cognitive strategy

Control and Monitoring: assess the study progress, monitor attention and learning, pose self-questions during the study, control study time and speed, predict examination questions

Regulation: adjust study speed and study time, modify or alter cognitive strategy for study.

The current study found that metacognitive learning strategies improve the academic achievement. The Anova showed that the mean value of the experimental group was higher than the control group on both tests. For instance, at the post-test the mean values were 16.67 for the experimental group and 13.47 for the control group. Heidari put emphasis on teaching this strategies in order to help students academic achievement.

The world has changed due to the technology's rapid development in recent years, and its use has an impact on every aspect of our everyday life. Since the fundamental requirements of education have also altered, the impact of all these

technological advances on education could not be avoided. ICT should be used in modern education in order to keep up with technology. The fact that they can fill in the gaps between various educational needs is another justification for their employment.

According to Mooij [6], a teacher using ICTs can create varied lesson plans for various students. High ability students do, in fact, require cognitive stimulation in order to develop their unique skills. These pursuits provide more difficult accomplishments and enrichment. They can assist talented students in integrating into many activities. At school, giftedness needs to be encouraged. ICT is therefore the most efficient method. In a separate study, Mooji [7] presents a conceptual framework for how ICT might support all students' learning through a system of varied instruction. Therefore, in order to maximize each student's learning, consideration should be given to their unique qualities. These procedures improve how learning differences are integrated.

Sheffield [8] also holds that technology and education are related for three reasons. First off, technology plays a big role in teen life. Second, educators need to get kids ready for a future when new technology will be a big part of life. Thirdly, because they apply their skills when using ICT, bright and talented students may become more productive. It goes without saying that technology can help pupils express their creativity and unique personalities. Young people today live in a digital age. As a result, they must adapt to the new reality if they are to succeed and be effective.

Another research in technology in gifted students; Periathiruvadi and Rinn [9] believe that technology could serve gifted minds in order to advance their critical thinking and their social-emotional needs. Teachers can use technology to promote the gifted minds without disregarding the interests of students and, at the same time equip them with important skills of tomorrow.

Wells [10] presents a more computer-based curriculum in order to take the students beyond a conventional one. Every day our children are exposed, outside school, to innovations and advances of technological outcomes. Nevertheless, this new technological development does not transfer into the classroom special programs and the curriculum is not based on reality.

To close the gap between the demands of gifted students and what really occurs in schools, we might employ a variety of strategies. Technology helps children who are smart and talented to increase their cognitive skills, which enhances their learning. The talented will feel productive, creative, and confident when using these methods. They will be able to hone their own talents and passions, improve their creativity, go deeper into information than what is commonly known, and attend to their own needs. As a result, kids won't have a sense of marginalization or being the class's forgotten children. On the contrary, they will feel like engaged students.

3. Techniques based on ICT

There is a very important research which encourages the use of ICT in the learning environment. This chapter contains a review of some developments in this direction.

3.1. Mobile learning

A growing and incredibly promising method of education is mobile learning. Actually, it is e-learning's next evolution. The shift to mobile services has had an impact on the educational sector as well. Smartphone use provides anytime, anywhere access to educational resources. Any type of learning that takes advantage of wireless portable technologies and doesn't require the learner to be at a certain location is referred to as mobile learning, or m learning. According to Sharples et al., mobile gadgets like phones, tablets, and laptops are always on the move and conducting business wherever. Because of this, education must be planned to enable people to interact with the virtual world and establish mobile learning communities. Thus, learning will not take place in a specific location but will move in space, time, themes and technologies [11].

According to Traxler [12], mobile learning is a concept that needs clarification. He observes that due to the ubiquitous diffusion of technology, the nature of knowledge is constantly changing and thus altering the way in which learning disseminates, as well. Also, mobile learning supports personalized learning, which acknowledges the different and can support individualized and individual learners. So, students can take advantage of space and time to expand their knowledge.

The promotion of programs enhanced in accordance with mobility learning is a key goal in the design of gifted education. The first stage in developing a theory of mobile learning, according to Sharples et al. [13], is to establish how and why it

is superior to other learning methods. Second, mobile learning requires both inside- and outside-the-classroom processes. Thirdly, for mobile learning to be successful, current methods must be used. The notion of mobile learning must also take into account how technology is used everywhere. According to the mobile learning theory, mobile technology can improve the learning process for students.

Additionally, mobile learning could support individualized instruction that focuses on the requirements of each learner. According to Cobcroft et al. [14], mobile technology can encourage students to be creative, work together, engage in critical thinking, and communicate with one another. Teachers and students can utilize these digital tools in a wide variety of ways. As a result, gifted children will have access to all of these opportunities to showcase their unique talents and participate more actively in class.

3.2. Digital classroom

The qualities of a "traditional class" are present in a digital classroom, but the students are not required to be physically present. The network, not the classroom, is where students congregate. Through the use of the internet, students in a virtual class have the chance to engage with one another and share their questions and ideas.

Gifted students need a class without boundaries and limitations where they can use their unique and special learning needs. The digital classroom is an innovative technique, which can be used to gifted students. Certainly, it is a fact that contemporary students, according to Prensky [15] are the generation who is growing up with new technology and for that reason he calls them “digital natives”, because they are “native speakers” of the digital language of laptops, phones, internet and other media.

The digital classroom has no limitations to space and time and it is a classroom without boundaries. The gifted can use technology to look up information about things that they are interested in and to communicate easily with others using social applications. Because of their ability to absorb a lot of information and process it even faster, they need a vast variety of knowledge to use in their own way. Moreover, the digital classroom provides the gifted with the opportunity to interact with each other inside and outside the classroom [16].

According to Xenos [17], some typical characteristics of the digital classroom include video, chat, a function that allows students to provide feedback, a whiteboard, slide presentations, and discussion moderator features. The digital storytelling is another effective technology option Robin [18] suggests for the digital classroom. An application called digital storytelling aids students in developing their storytelling skills. This can help talented pupils hone their abilities, express their creativity, and think more critically. Last but not least, wikis are a potent tool that can support collaborative work by enabling users to manage, add, update, and delete material. Students can build their expertise by using wikis as a source of information and knowledge [19].

3.3. Online discussion

Online conversation is another ICT method that might be applied to gifted children. Online discussion takes place in virtual "discussion" rooms where students can have synchronous or asynchronous conversations about a range of subjects. An effective communication tool is a discussion room [20]. With this approach, gifted students can interact with other gifted students and it can be very beneficial for them as they meet other "like minds."

Online discussion forums, according to Marra et al. [21], are a crucial component of online courses. They encourage higher order thinking, problem solving, critical thinking, and the creation of knowledge. Asynchronous discussion groups also require the role of the instructor and the development of higher order thinking, according to An-dresen [22], in order to be successful. Beuchot and Bullen [23] assert that the interaction between students is crucial and that the instructor should pay attention to the social and emotional atmosphere of online groups.

With gifted children, online discussion groups help to increase social interaction. Due to the rarity of gifted pupils, the internet community can facilitate communication amongst these kids.

4. ICT and Gifted

Although gifted children do not all share the same traits, as we have previously established, they do. Additionally, many of them are highly capable of carrying out a variety of tasks, and they possess unique talents. One of them may be technology. Finally, we should draw attention to the talented ICT students in this review.

It is possible amongst the gifted students that some have excellent abilities in ICT and are computer technology talented. The students that are gifted and talented in ICT should be recognized as unique talents in this domain in order to be able to develop their potential. According to Siegle [24], there is a great variety of talents, one of which is the talent in technology. The most important thing is the recognition of this talent and the characterization of this student as technologically gifted.

Additionally, O'Brien et al.'s research [25] distinguishes between two groups of computer technology skills. Programming for computers is the first, while interface design is the second. O'Brien [26] asserts in a different study that computer technology skill combines high-tech computer expertise with the capacity for greater knowledge. Additionally, O'Brien searches for characteristics in his research that indicate the growth of this gift and divides them into four groups using Gagné's Differentiated Model of Giftedness and gift (DMGT): Natural aptitudes, intrapersonal catalysts, environmental catalysts, and talent are the possible causes.

The technologically bright and talented view the use of ICT in education favorably; they wish to increase their knowledge in this area and develop fresh ideas and abilities. ICT specialists should identify gifted kids and provide them with help so they may develop their skill and, eventually, surpass them. The talented can satiate their curiosity by learning these talents [27]. utilizing ICT with ease despite their age, picking up new abilities fast, taking initiative, utilizing ICT creatively, problem-solving, and developing interests and talents are all characteristics of gifted users, according to Hook [28].

5. Conclusions

The positive and useful contributions that digital technologies provide to the field of gifted education should be highlighted as a final point. Mobile devices (35–39), a range of ICT apps (40-52), AI & STEM ROBOTICS (53-68), and games (69-71) are some examples of the technologies that enable and improve educational processes including evaluation, intervention, and learning. Additionally, the use of ICTs in conjunction with theories and models of metacognition, mindfulness, meditation, and the development of emotional intelligence [72-105], as well as with environmental factors and nutrition [31-34], accelerates and improves educational practices and outcomes, especially for gifted student's education.

More specifically, the goal of this study was to demonstrate how modern technology, particularly Information and Communication Technology (ICT), may aid kids who are brilliant. We concluded from the study's findings that using ICT in gifted education could provide a number of benefits and advantages for gifted kids. Gifted students who possess specialized academic abilities must also be treated particularly. ICT approaches can be used to support this and play a significant part in defining knowledge and skills. The gifted can participate more fully in society by making use of the right educational tools that technology provides by putting their unique skills and abilities to use. We must recognize that ICT is a very helpful instrument that can assist these pupils since it has the potential to establish independent, productive environments that are perfect for tailored instruction and intervention. In general, individualized intervention approaches are excellent for gifted people and can produce the best outcomes. Additionally, we think that since technology is so pervasive now, the educational system must adopt it. Finally, we believe that more study is needed in the areas of gifted education and ICT-based intervention.

Compliance with ethical standards

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Disclosure of conflict of interest

The Authors proclaim no conflict of interest.

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