The Relationship Between Digital Media And Educational Outcomes: A Comparative Approach To Their Selection Criteria And Utilization Methods

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Abstract:

The educational process in the era of globalization is witnessing a remarkable acceleration in the field of knowledge in general and in digital media and modern technologies in particular. Amidst this rapid technological advancement, digital media has established itself as a fundamental element with a significant impact on academic achievement, especially when its selection is carefully considered and its utilization is optimized. From this standpoint, this paper attempts to explore the relationship between digital media and the educational system's outcomes and its importance in the educational process. On the other hand, we aim to identify the principles and criteria that should be considered when selecting digital media, comparing them with methods of their exploitation and how to employ them in a way that enhances learner interaction and increases academic performance.

Keywords: Digital Media, Educational Context, Academic Achievement, Educational Outcomes.

Introduction:

Digital media is currently a fundamental pillar in the teaching/learning process due to its primary role in facilitating rapid understanding and reinforcing information. In today's educational systems, across various stages, no system remains devoid of digital media as an auxiliary explanatory tool. These media have become essential in modern education, as their use enhances positive interaction between the two main elements of the educational process (the teacher and the learner) and makes the educational context more engaging, exciting, and attractive. This research paper aims to address three pivotal questions:

1. What criteria should be considered in selecting the most engaging and attractive educational digital media for learners?

2. What is the relationship between modern educational digital media and the outcomes of the educational system?

3. How are these media utilized and employed in the educational process?

Before delving into the answers to these questions, it is imperative to define some key research terms, as they form the conceptual framework of our study and because understanding these terms is essential for accessing and mastering the relevant sciences.

1. Concept of Media/Tools:

In its general sense, media refers to all tools used to transmit and present information and knowledge in various fields and domains such as education, communication, commerce, marketing, and tourism, among others.

2. Concept of Educational Digital Media and Tools:

Several definitions have been provided for educational media. Among them:

- Ahmed Hassani defines it as "any tool used by the teacher to enhance and elevate the learning process by training learners to acquire various skills and certain habits" (Hassani, 2000, p. 152).

- Emad Shoukry describes it as "a set of situations, resources, and educational devices used within teaching procedures to facilitate the learning process and achieve its goals" (Sifain, 2011, p. 1).

- Khalid Mohammad Al-Saud defines it as "all tools and materials used by the teacher to convey lesson content to learners, aiming to improve the educational process without relying on abstract terms" (Al-Saud, 2009, p. 39).

- Abdelhamid Jaber defines educational media as "various tools and methods used in educational contexts that do not solely depend on understanding words, symbols, and numbers" (Jaber, 1998, p. 27).

- Salama Al-Hafidh describes it as "a set of devices, tools, and materials used by the teacher to enhance the teaching and learning process" (Salama, 2000, pp. 74, 76).

These definitions collectively highlight that educational media, in essence, encompass all tools and methods used by the teacher in the educational context to make the lesson more engaging. This facilitates the transmission of facts, ideas, and meanings to learners, enabling them to discover and clarify new resources, illustrate and solidify facts, explain ideas, and expand on meanings in an interactive and positive environment.

Numerous terms have been used to describe the educational media employed in the educational process, reflecting the development and variety of these media. According to Mustafa Abdel Samea and others (Samea, 2001, p. 45), these terms include: audiovisual media, audiovisual explanatory tools, educational explanatory tools, educational communication tools, multiple sensory aids, educational tools, and audio-visuals (Siryani, 1999, p. 155).

The primary objectives of the aforementioned educational media include assisting the teacher in conveying knowledge and information to the learner in an engaging and lively manner, thus fostering positive interaction from the learner with the presented content.

3- The Stages of Development of Educational Media and Tools

The true genesis of the evolution of educational media/tools can be traced back to the story of the sons of Adam, as narrated in the Quran. Allah says: "Then Allah sent a crow searching in the ground to show him how to hide the disgrace of his brother. He said, 'Woe to me! Have I failed to be like this crow and hide the disgrace of my brother?' So he became among the regretful" (Al-Ma'idah, 5:31). Through this, Allah taught the son of Adam how to conceal his brother's disgrace, which is an example of learning through imitation and emulation, as highlighted by Mohammed Mahmoud Al-Hilah (Al-Hilah, 2001, p. 56) in his book titled "Communication and Educational Media."

As time progressed, media and tools evolved, encompassing means of communication and educational tools, from the dawn of ancient civilizations like the Phoenician, Egyptian, Semitic, Aramaic, Roman, Greek, and Assyrian civilizations, among others. This progression extended to the three divine revelations, which significantly advanced human life in terms of education, teaching, and communication. For instance, Moses was given the Tablets by Allah, containing guidance and admonitions: "And We wrote for him on the Tablets [something] of all things—instruction and explanation for all things" (Al-A'raf, 7:145). These Tablets are considered educational tools brought by the message of Prophet Moses.

Jesus, on the other hand, used parables to teach and guide people, and the table that descended from heaven served as a means to demonstrate God's power. Allah says: "[The disciples said], 'Jesus, Son of Mary, can your Lord send down to us a table [spread with food] from heaven?' [Jesus] said, 'Fear Allah, if you should be believers.' They said, 'We wish to eat from it and let our hearts be reassured and know that you have been truthful to us and be among its witnesses'" (Al-Ma'idah, 5:112-113). This table is one of the greatest visual teaching aids associated with the message of Jesus.

The message of Prophet Muhammad (peace be upon him) is the final and most significant of the divine revelations. It is immortalized in the Quran, the word of Allah, which serves as the constitution and guiding methodology for the Muslim community. It is the source from which Sharia and Fiqh rulings, as well as the rules of the Arabic language, are derived. The Quran, which called for reading and knowledge in its very first revealed verse, states: "Read in the name of your Lord who created—created man from a clinging substance. Read, and your Lord is the most Generous—who taught by the pen—taught man that which he knew not" (Al-'Alaq, 96:1-5). The Quran, the enduring miracle of Prophet Muhammad, remains an inexhaustible source of guidance and knowledge.

If we leap forward to the early 20th century, we observe a significant leap in the development of educational media. This period witnessed the advent of cinematic photography, wall posters, various projection devices, audio recorders, and audiovisual media like radio and television. The invention of the computer in the 1940s further revolutionized the acquisition of knowledge, establishing itself as a fundamental educational tool in advanced countries. The 1980s saw the emergence of video and multimedia systems, followed by the advent of the internet, which provided both teachers and learners with a vast knowledge space. This allowed individuals to independently explore and acquire various sciences without the need for an intermediary, provided they are adept at using educational media appropriate for their age and cognitive level.

4. Stages of Using Educational Media and Tools

The use of educational media varies depending on each stage and its specific requirements (Drane, 2014, p. 121). The stages are as follows:

- **Preparation Stage**: This includes drafting an initial work plan, preparing the necessary media, and creating an appropriate environment for the learner.

- **Utilization Stage**: This involves preparing students' minds, choosing the appropriate time, providing a simple explanation of the media's function, and involving students in the implementation and activation process.

- **Evaluation Stage**: This includes evaluating the learners, assessing the educational activity, and evaluating the media itself.

5. Types of Educational Media and Tools

Researchers and specialists have classified educational media according to various criteria, the most common being based on the method of presentation and the senses affected by the media used. According to the latter classification (based on the sense), the most commonly used educational media types are as follows:

A. **Auditory Educational Media**: These are media and tools through which auditory stimuli are presented to learners, relying primarily on the sense of hearing in the learning process and acquisition of experiences. Key auditory media that significantly impact academic and educational achievement include:

- Explanation: One of the oldest media used in the educational field, explanation functions through analysis, justification, comparison, and analogy. It relies on the teacher's skill and scientific competence to interpret and clarify facts and knowledge.

- Storytelling: This has a profound impact on learners' emotions and feelings, and it has been used as an educational art by teachers due to its emotional, moral, or historical nature.

- School Radio: Utilized to develop listening skills in learners, recording broadcasted knowledge and information for discussion and benefit, especially in imitation and emulation of the art of speech and performance.

- Recorded Tapes and Discs: Used for imitating models of Quran recitation, musical pieces, songs, or political or military speeches related to some lessons (Hani, 2006, p. 38).

B. **Visual Educational Media**: These media stimulate visual stimuli, relying on the sense of sight during the learning process. Key visual media that significantly impact academic and educational achievement include:

- Smart Boards (with other modern projection devices): Among the best media used in teaching in the age of technology.

- Traditional Blackboards: One of the oldest media used in teaching.

- Various Images (moving and static) and different models (like the globe).

- Charts, cards, and graphs; as well as exhibitions and museums.

C. **Audiovisual Educational Media**: These media target both hearing and sight, the two most important senses in the educational process. Key audiovisual media that significantly impact academic and educational achievement include:

- Television: A highly advanced technological tool that helps address educational problems. It is a successful educational medium and a good tool for helping learners acquire creative scientific skills.

- Silent and sound films; films accompanied by sound recordings; puppet theatre and film projectors like video.

There are other classifications of educational media, including:

- Classification based on contemporaneity (traditional and modern).

- Classification based on composition (simple and complex).

- Classification based on movement (moving and static media).

- Classification based on the target audience: individual, group, and mass media.

- Classification based on the source of the medium: natural from the environment, and manufactured.

- Classification based on cost: expensive and cheap.

Given these insights, it can be said that the importance of these types of media and tools used in the educational process, in all their classifications, lies in their function and value in facilitating the educational action and achieving the objectives set for the educational process with minimal effort and cost.

6. Conditions for Selecting Appropriate Educational Media and Tools

There are several conditions that govern the selection of appropriate educational media for a teaching situation, as noted by experts and specialists in the field. These conditions can be summarized as follows:

- Ensuring the safety and security of learners.

- Matching the intellectual level of the learners.

- Aligning with the educational environment and the pedagogical context.

- Being realistic, easy to use, and aligning with the desired objectives.

- Being cost-effective in terms of expense, time, effort, and maintenance.

- Conforming to the teachings of Islam and the beliefs of the community.

- Being suitable for the educational goals set by the overseeing authority.

- Having high quality to attract learners' attention and motivate their participation.

In addition, there are several other conditions highlighted by Riyad Kazem and others (Kazem, 2014, pp. 482, 486, 498) in a study on the reality of using educational technologies in special education classes in Iraq. These conditions should be considered before using any educational medium (digital or traditional):

- The educational medium should have a clear objective.

- The medium used should align with its intended goal.

- The medium should contain accurate information.

- The medium should be an integral part of the educational process.

- The medium should be suitable for individual differences and the various levels of learners.

7. Importance of Digital Media and Tools in the Educational Process

In this context, Muhammad Al-Darrij (1994, p. 105) argues that educational tools are not merely aids for explanation, as some might think, but are integral to the educational process itself (as previously mentioned). Besides clarifying concepts and overcoming difficulties, they add vitality to the content of study materials, making them more practical, effective, and applicable. A teacher who appropriately utilizes these tools makes the teaching process more engaging and attractive, helping learners understand and analyze the material, transitioning them from abstract concepts to tangible ones, thereby making the world of ideas more comprehensible and appealing to students.

Additionally, the method followed by the teacher in employing modern media/tools and utilizing all available skills and techniques to stimulate learners' thinking and attract their attention is crucial. This approach encourages learners to engage with the material passionately, thereby achieving the set educational objectives. One of the most applied modern educational approaches is the competency-based approach (Abdellatif, 2009, p. 41), which exploits all digital media and modern tools in the educational process. It is one of the modern pedagogical approaches that Western countries have relied on to enhance the quality of education and improve their educational systems. Most Arab countries have adopted it to improve academic performance and meet the challenges of keeping up with global knowledge transformations and values, striving to contribute seriously to the knowledge society. This can only be achieved by leveraging various digital media and advanced technologies that help both teachers and learners solve educational problems individually and collectively.

The competency-based approach is considered one of the most important approaches that emphasize the optimal use of media/tools in enhancing the educational process. Ahmed Rushdy Taima defines it as "a set of attitudes, forms of understanding, and skills that facilitate the educational/learning process in achieving its cognitive, affective, and psychomotor goals" (Rushdy, 1999, p. 25). According to Xavier Roegiers, it is "a framework that enables the student to solve problems within a broad context that allows for addressing all types of problem situations" (Roegiers, 2004, p. 122).

This implies that the pedagogy of the competency-based approach focuses on the principle of learning rather than teaching. The teacher's role is to present supportive educational media/tools from one perspective and to create pedagogical situations from another perspective that are significant to students, encouraging them to explore, discover, think, and observe independently, with guidance and direction from the teacher. This pedagogy (Hani, 2006, p. 38) aims to equip learners with tools for effective learning and how to handle the situations they encounter. It also aspires to bridge the gaps between different subjects within the framework of what is called transversal competencies (across various subjects).

Educational media and tools play a significant role in the learning process. The importance and uses of these tools within the classroom can be summarized as follows (Hjahjah, 2022, electronic page):

- Educational media, especially digital ones, stimulate learners' interest and motivate them to actively participate both inside and outside the classroom (in-person and remote learning).

- They save effort and overcome the limitations of time and place, as well as individual differences among learners.

- They expand learners' areas of experience, fostering teamwork and collaboration.

- They facilitate the smooth transfer of knowledge, making learning deeper and more lasting.

- They influence behavioral attitudes and scientific and social concepts.

- They enhance observation skills, reinforce information, and broaden cognitive processes.

- They teach and develop skills, increasing learners' retention and comprehension.

- They reduce effort and time for both teachers and learners, offering multiple opportunities for education and self-fulfillment.

- They simplify the teaching process for teachers and the learning process for students, even remotely without supervision.

- They provide students with essential scientific information and modern vocabulary.

- They help highlight individual differences among students in various fields, such as linguistic domains (Salama, 2000, p. 74).

- They increase opportunities for participation and cooperation among students, encouraging collaborative learning.

- They foster continuous thinking and invention, as seen with the use of field trips and animated pictures.

8. Ideal Criteria for Selecting Educational Media and Tools

The criteria for selecting educational media and tools may vary from one activity to another, from one educational level to another, and from one teacher to another. However, there are minimum common standards that should be met when choosing purposeful media and tools, as identified by specialists (Salama, 2000, p. 76). These standards include:

- **Excitement Criterion**: Excitement is a crucial element in motivating learners, facilitating the learning process, and engaging with the material enthusiastically without boredom or fatigue.

- **Appropriateness Criterion**: Appropriateness means the suitability of the medium for the curriculum content, the learner's interests, skills, and the objectives of the educational lessons at all levels. It should also match the size of the group being presented to, the type of subject matter, the learners' linguistic, cognitive, emotional, and physical levels, the timing of the presentation, societal customs and traditions, and the school environment (including the physical resources for presenting the medium, and the technical aspects such as color, shape, design, and ease of use). It should also consider individual differences among learners regarding size, image quality, sound clarity, handwriting clarity, and

correct spelling. The learners' familiarity with how to use the medium and its selection should also be considered.

- **Organization Criterion**: The medium should be presented systematically, moving from simple to complex, from whole to part, from known to unknown, and from easy to difficult. Such a system ensures the success of the educational process and the achievement of the set goals.

- **Reality Criterion**: The medium should represent what exists in the real world. For instance, a painting representing spring should not depict a barren land. Reality also encompasses the feasibility of producing the medium and the availability of its materials in the educational environment.

- **Accuracy Criterion**: The information presented by the medium should be accurate, correct, and free from contradictions.

- **Consistency Criterion**: Consistency enhances the learner's taste and captures attention due to the element of excitement, which varies according to the nature of the presented activity. Excitement is a key factor in encouraging learners to explore the medium and its value in understanding the subject matter.

- **Aesthetic Criterion**: The media and tools used should have elements of beauty and logic to achieve both attractiveness and excitement (Al-Hilah, 2001, p. 56). Additionally:

- **Safety Criterion**: Avoid using educational media and tools that may pose a danger to both the learner and the teacher, especially during chemical experiments in the laboratory.

- **Simplicity Criterion**: The simpler the educational media and tools, the more effective they are for learners. Complexity can lead to distraction, mental wandering, and boredom.

- **Clarity Criterion**: The media and tools should be modern, clear, and scientifically accurate.

9. How to Use Educational Media and Tools in the Educational Process

The method of using educational media and tools requires the teacher to utilize one illustrative educational tool at a time, as using more than one tool often leads to distracting learners and causing a lack of focus. When preparing lessons, the teacher should select the most suitable illustrative tool and ensure it is not overly complex or ambiguous, as this would necessitate further clarification. The tool should not be used at any random point during the lesson; instead, the appropriate time for its display should be chosen to ensure its purpose is clearly achieved. The tool should not hinder understanding by representing multiple concepts, which can lead to distraction and lack of attention. It must be safe to use, avoiding any potential harm to the learners during its

application, and it should be suitable for the learners' level, aligning with their developmental stages.

The use of educational media and tools requires intelligent and precise pedagogical techniques. This is emphasized by Khairuddin Hani (Hani, 2006, p. 38) in his book "Approach to Competency-Based Teaching," which asserts that the pedagogy of educational media involves distinctive techniques and skills that teachers must master. This mastery helps them fulfill the educational functions of these tools. If these conditions are not met, the improper use of these tools can be highly detrimental, transforming their intended positive impact into a negative one.

10. Barriers to Using Educational Media and Tools

One researcher (Al-Titi, 2008, p. 128) has identified several barriers to the use of educational media and tools. These include the inadequacy of appropriate media and tools prepared by the teacher, the dominance of traditional teaching methods, the lack of resources in educational institutions to provide tools such as projectors (data show), the weak conviction among some teachers about the importance of these tools, the lack of skills in using these tools, poor planning for their use, the absence of laboratories in some educational institutions, and the shortage of necessary materials and devices.

11. Strategies to Overcome Barriers to Using Educational Media and Tools

Several strategies have been adopted by educational practitioners to overcome the barriers to using educational media and tools across various educational stages. These strategies include raising awareness among the staff in educational institutions about the value and importance of educational media and tools in the educational process. Conducting surveys to identify the missing or necessary media and tools in educational institutions is also crucial. Furthermore, specialized training for teachers and lab assistants on how to use modern digital media is essential. Providing appropriate spaces for the display of educational media to achieve their objectives, and ensuring regular maintenance and preservation of these tools are also important strategies.

12. Relationship Between Educational Media and Tools and Educational Outcomes

A famous Chinese saying about the outcomes of the educational process states: "What is told to the learner verbally is forgotten; what is shown to him may be remembered; but if we involve him in the educational process, he will understand." It is also said: "Seeing is not like hearing." In this context, the use of educational media and modern technologies in presenting lessons (through hearing and seeing) enhances understanding and positively supports educational outcomes. Utilizing more than one sense in the group and individual learning process enriches the educational situation, clarifies the given information, and solidifies it, leading to better learning.

As previously discussed, especially in the section on the importance of educational media and tools in the educational process, the relationship between educational media, as input media, and academic achievement, as the output of the educational process, is directly proportional. Effective use of educational media within its scientific frameworks leads to good academic achievement among learners, which is the desired outcome. Conversely, improper use or exploitation results in negative academic outcomes.

Conclusion:

In conclusion, our research has yielded several findings that reinforce the points discussed throughout the article. These findings are as follows:

- The precise scientific integration of digital media and tools in the educational process enhances the educational setting and supports both academic achievement and the educational outcomes for learners.

- Optimal utilization of modern educational media and tools, particularly digital ones, inevitably leads to the achievement of the desired educational objectives with minimal effort, in the shortest possible time, and with positive outcomes.

- Employing and benefiting from modern educational media and technologies in the educational process serve the outputs of the educational system and align with the developments in contemporary digital education.

- The use of modern educational media and tools is not an end in itself but rather tools and mechanisms to facilitate the learning process and improve the performance of learners both in-person and remotely.

- Selecting educational media and tools for educational activities based on appropriate criteria ensures their effectiveness and success in the educational process.

- Choosing suitable modern educational media and tools is one of the crucial steps in designing an effective teaching strategy.

- The value and importance of modern educational media and tools lie in how they are used and employed.

- There is a direct relationship between the effective selection of digital media in the educational process and the methods of their utilization, and the outcomes and effectiveness of the educational process. The more effective the employment of these media and tools during the educational process, the better the academic achievement of learners, meeting the desired level, aspirations, and objectives; and vice versa.

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