ORIGINAL ARTICLE

The relationship between intelligence (logic-mathematics) and media literacy

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ABSTRACT

Background: Intelligence is one of the categories that has long been considered by human beings and is one of the most important factors that lead to individual differences. One of the differences between individuals that leads to the emergence of unique characteristics in them. The research was to find relationship between intelligence (logic-mathematics) and media literacy among high school females.

Materials and Methods: In terms of objective, this research is an applied one and, in terms of method, it is a correlation research. So 357 female students at seventh grade at high schools in Tehran's district 4 education organization were selected by Morgan table among 4959 by cluster randomly sampling method. The research tools involved Gardner's Multiple Intelligences with a reliability value of 0.92, media literacy questionnaire (Hasankhani, 2018) with a reliability value of 0.86.

Results: The relationship between intelligence (logic-mathematics) and media literacy was analyzed using Pearson correlation coefficient by SPSS21. It was revealed that the positive and significant relationship between intelligence (logic-mathematics) and media literacy among high school females.

Conclusion: Possessing media literacy and mastering various softwares, especially in the field of methodology and statistics, will play an important role in shaping the structure of knowledge in individuals.

Keywords: logic-mathematics Intelligences, Media literacy

INTRODUCTION

Intelligence is one of the categories that has long been considered by human beings and is one of the most important factors that lead to individual differences. One of the differences between people that lead to unique characteristics in them is the differences in their intelligence. According to the traditional view, intelligence is an inherent, integrated and measurable trait.[1] With the advent of cognitive psychology as one of the basic models in education, thinkers have dramatically tended to create ways of thinking in individuals, especially students (2017).[2]

Gardner is one of the leading contemporary psychologists who believes that every human being has different intelligences and has a set of intelligences, instead of a single intelligence, such as (linguistic-verbal intelligence, logical-mathematical intelligence, musical intelligence, physical-kinetic intelligence). Interpersonal Intelligence, Intrapersonal Intelligence, visual-Spatial Intelligence and Naturalistic Intelligence).[3]

These multiple intelligences can be nurtured and strengthened or weakened or ignored. Gardner believes that individuals can respond to environmental stimuli in a variety of ways, and that the average person has the minimum basic abilities in each type of intelligence, but everyone is more prominent in some intelligence than others.[4]

Howard Gardner's theory is based on the identification and cultivation of all human intelligence capabilities, and based on this principle, individual differences in this approach make human beings have different intelligence combinations. The existence of different abilities in a person can be a clear reason for the existence of multiple intelligences that may be used both individually and in combination.[5]

Given that Howard Gardner's theory can be of considerable help to teachers and educators in the field of education, it can be used to identify and enhance any of the competencies in students and to have life skills.

Students are trained in the educational system as the architects of the future of the country, to build the future of the country. They need to master the life skills of today, one of which is media literacy.

In today's world, the media is one of the main components of human societies; In this sense, media literacy means research, analysis, education, awareness of the effects of the media, including radio, television, film and cinema, music, periodicals, the Internet, on individuals and communities.6 Media literacy people versus information Media outlets are less vulnerable because they identify messages that are designed and sent to influence them at different levels. By becoming aware of how information is created by the media, even children will be able to have more authority.[6]

Media literacy includes all special abilities and media knowledge. So media literacy involves a set of skills and knowledge that we actively use them to be exposed to the media. To better analyze and interpret the meaning of the messages conveyed by the media.[7]

According to the definition published by the Canadian Media Literacy Web site (http // www.mediasmarts.com), media literacy is the ability to access the analysis, critique, and communication of a variety of media messages. A person with this skill is able to think critically about what he sees, reads and hears in books, newspapers, magazines, television, radio, movies, music, advertisements, video games, the Internet, and so on.[8] For media literacy, dimensions have been considered which are: cognitive dimension, moral dimension, aesthetic dimension and emotional dimension.[9]

In all the components mentioned in the media, it can

be clearly seen that we see one or more multiple intelligences and their conflict with each other. The researcher seeks to state whether there is a relationship between Gardner's multiple intelligences and media literacy. Saeedi et al.[8] showed a positive and significant relationship between Gardner's multiple intelligences and students' life skills at the level of 0.99. Hanafin[10] states in his research that when teaching based on multiple intelligences is implemented in the classroom, teachers report the overall success of students. They say students come to class with interest and motivation and their learning deepens. Their self-confidence rises and they are happier. This project will also be challenging for teachers. They need a more precise schedule, better management and changes in teaching methods. Sulaiman[11] stated that the application of the theory of multiple intelligences is not only for children. Adults can also use it. He conducts this research in online classes and reports the desired results. Primak et al.[12] conducted a study entitled "Assessing Media Literacy and Conventional Education to Prevent Tobacco Use". Findings showed that a school-based media literacy course is more effective than a standard curriculum in teaching media literacy and improving perceptions of the prevalence of perceptions among adolescents.

According to the cases and researches done and the importance of the subject of multiple intelligences, the researcher decided to study more and more carefully the necessity of multiple intelligences and its relationship with media literacy, which is also one of the new issues in how to choose media and clean information.

Research Methods : In the present study, Pearson correlation coefficient was used to find the relationship between variables.

Statistical Society: The statistical population of this study includes all female students of the first secondary school of the seventh grade of the 4th district of education in Tehran in the academic year 2018-2019, which numbered 4959 people.

Statistical sample and sampling method : Using Morgan table by cluster random sampling method, the sample size was 357 people

Data collection method :

Library Studies: In this research, the library method, sites, internal and external articles and master theses have been used.

Field method: Two questionnaires of Gardner (2017) and media literacy (Hassan Khani, 2018) were used.

RESEARCH TOOLS

Multiple Intelligences Questionnaire : Gardner Intelligence was used through the standard Gardner Intelligence Questionnaire, which has eight types. This test is considered very low, low, medium, high, very high in a 5-point Likert scale. For each type of intelligence, 10 phrases and the sum of types of intelligence will be 80 points and a maximum of 400.

Execution method : After obtaining permission from the entire education of Tehran province to attend the selected high schools, the teachers of the selected classes and then the students were introduced. After stating the objectives of the research to the students and assuring them about the confidentiality of personal information and then providing the questionnaires to the students which took about 45 minutes to complete during the completion of the questionnaire by the students, the researcher Facilitates some questions, attendance.

Data analysis: Pearson multiple regression was used to test and analyze the hypotheses.

RESULTS

Table 1 Pearson correlation coefficient between the relationship between intelligence (logic-mathematics) and media literacy of female high school students

Variables	Std. dev.	Covariance	Pearson correlation	df	Sig.	Determination coefficient
Media Literacy	28.01	784.65	0.259[**]	373	0.001	6.71
Logical-Mathematical	7.77	56.43				

According to the results of the table, it can be concluded that there is a significant correlation between intelligence (logical-mathematical) and media literacy of female high school students in the study population. The calculated coefficient of determination shows that 6.71% of the changes of the two variables are explained by each other.

DISCUSSION

The results showed that there is a significant and positive relationship between intelligence (logical-mathematical) and media literacy of female high school students. The results of this hypothesis with the findings of Salehi Haji Abadi (2018), Taylor (2011), Jones (2012), Singh (2012), Hanafin (2014), Primak et al. (2014) are consistent.

It can be said that logical-mathematical intelligence refers to the ability of logical reasoning, especially in mathematics. Having this intelligence makes people capable of quickly solving mathematical problems and formulating hypotheses based on observation and testing. According to Gardner, these people are successful in areas such as deep knowledge mathematics in a field (being a scientist). This intelligence deals with deductive thinking, reasoning, numbers and the recognition of abstract matters. This type of intelligence is often associated with scientific thought. Students and teachers can use media and technology to compare and classify real objects by shape, color, size, and how to use them, to learn how to do a task, to watch a video program, and to reconstruct its main and sub-points. Use a series of numbers that have a latent relationship to enhance logical-mathematical intelligence.

Mathematical and logical intelligence is the second variable that can affect media literacy. People with this intelligence use inductive and deductive reasoning to gain knowledge. Their method is that they start their observations from partial events and happenings on a subject and after classifying and thoroughly examining,

they derive general principles from those observations (induction). And they use these principles in predicting future events (analogy). Those who use deductive and inductive reasoning correctly in solving problems will be more likely to have reliable knowledge of the phenomenon. People with logical mathematical intelligence make good use of the scientific method, which is the combination of induction and analogy, in solving their problems. It is natural to have media literacy and mastery of various software, especially in the field of methodology and statistics will play an important role in shaping the knowledge structure in individuals. Media literacy facilitates speculation about issues and prevents the development of unreliable statements in the mind. In the field of mathematics, media specialists have provided a wide and varied service to the scientific community, and with a little searching in cyberspace, examples can be found in any field and course assignment. It is natural that one of the ways to improve students' mathematical and logical intelligence is to enrich and use such facilities in the educational environment. In fact, it is necessary to consider arrangements in the classroom and school environment based on the principle of enrichment so that the environment is enriched with the software related to that lesson in order to take a positive step in the development of their mathematical and logical talents.

Suggestions based on research findings are presented. New teaching methods with the help of new educational materials and ICT can make abstract mathematics tangible and immerse the curious student in applications and applied mathematics.

The computer is a fast device that can easily perform tedious calculations, and its unique effect on mathematics is similar to that of a typewriter on reading and writing. A calculator or computer can produce faster and more realistic feedback that is impartial and fair. The ability to change something simply encourages students to make guesses, then test it, and ultimately modify their ideas.

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