

Mathematics research paper example

[Countries](#), [United States](#)



Independent Research

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Education is the process through which organized knowledge is passed from one generation to the other. The passing of knowledge occurs through teaching, research or can happen through guidance from educational specialist. Education is a basic right recognized by the international convention on Economic, social and cultural rights. Most governments in the world have recognized the need for education.

Education is compulsory in most jurisdictions, unlike the schooling. Schooling in western countries is not compulsory. The need to go to a classroom and get instructions from a tutor has been replaced by e-learning. E-learning creates a virtual learning environment that enables the student and the tutor to interact regardless of the physical distance between them. It was first experimented by Professor Patrick Supples and Richard Atkinson from the Stanford University who attempted to teach students in California basic mathematics.

In the United States of America, public education is controlled by both the state and the federal government. The federal and the state government are responsible for the funding of education. Education policies are laid out by locally elected school boards. The state governments, on the other hand, standardize the quality of the education. They enact measures to ensure that the quality of education is consistent across the United States of America. The majority of the students in the United States of America attend public schools. A few students have home based learning system, while the remaining lot attends the private schools. Education is compulsory for

children between five and eighteen years. The range varies depending on the educational requirements of the state. The legal age that a student is required to leave schools also varies from state to state.

The lowest age the student is supposed to leave school is fourteen years in some states and seventeen years in others. The United States government spends five hundred billion dollars annually in a bid to ensure that every American citizen gets quality education. The long term outcome of the educational spending is that approximately eighty-five percent of the population is educated. Education is divided into twelve grades that approximately take twelve years to accomplish. Under No Child is Left behind Act, the public schools have standardized tests that ensure that all children acquire basic education.

Saudi Arabia became a country in the 1932. Education in the country was majorly inclined to the Islamic schools method of learning. At the independence, education was limited in the Arabian country with few Islamic institutions providing education to the privileged few. In the contemporary world, education is available for every Saudi Arabian citizen from the primary school level to the university level. In Saudi Arabia, the education is handled by the Ministry of Education and the Ministry of Higher Education. The educational policies are enacted by the Supreme Committee of Education. The Supreme Committee was founded in 1963 to ensure that the quality of education in Saudi Arabia is uniform and standardized.

Preprimary education is available for but is not a requirement for joining primary education system. Private nursery schools have been established with the aim of providing education to the students between the age of three

and five years. Unlike in the western nations primary education in the kingdom of Saudi Arabia lasts six years. Unlike other Islamic countries that put emphasis on the male child, the kingdom of Saudi Arabia has a similar rate of enrollment of both boys and girls in primary and secondary schools.

There is no commonly agreed definition of mathematic, but the majority of the mathematician's posit that mathematics is the scientific study of numbers, structure, change and space. This definition id, however, shrouded with controversy as mathematicians and philosophers attempt to define the nature and essence of mathematics. Elementary mathematics was an important in ancient Greece, and it was considered as an important subject in the development of cognitive abilities in medieval schools. Mathematics is taught to establish that students learn basic numeracy in schools. The complexity of the mathematical calculations and computations differed from one level of education to the other with complexity increasing with the advancement of years in the schooling system.

Mathematics is compulsory in almost all centers of learning, and its applicability can be noted in the day to day life. The students who fail to pass the basic numeracy tests are not allowed to proceed to the next level of education. Mathematics is taken as a subject in all public and private schools.

Saudi Arabia has been accused of failing to provide mathematics skills in its education system. Since independence, the literacy level has risen from ten percent tone hundred percent in a period of almost half a century. The Kingdom of Saudi Arabia spends a large part of its gross domestic output in education. The result of this is an increase in the level of literacy.

Nevertheless, the students have failed to grasp the simple mathematics skills.

International Mathematics and Science study conducted research on the skills in advanced mathematics and found that only fifty percent of the students in the Kingdom of Saudi Arabia were able to perform complex mathematical calculations. The same study proved that the corresponding thirteen year olds in South Korea and England scoring 99 percent and 88 percent respectively. The method of teaching in Saudi Arabia encourages students to senselessly commit facts to memory without analyzing the content.

In Saudi Arabia education system is largely skewed towards Islamic religion. The students are taught the simple addition and subtraction in the lower level of education. Emphasis is put in the need to remember the computations, as opposed to the education system in the United States of America which focusses on the need to integrate and solve mathematical solutions. A student in the kingdom of Saudi Arabia is required to memorize algebraic equations. These equations and the answers are also expected to be remembered during the exam. The mathematics exam is set in a way that the student is required to remember the equation that he or she was taught in class.

The United States of America system is very different in the way the mathematics is taught in school. The students are expected to apply the knowledge they have been taught in school. As a result of which a new mathematical problem is tested in the exam room. The student is expected to recall the formula and apply it in the exam setting. In the United States of

America, emphasis is placed on the method that is used to arrive at the answer. The formula is alien to the Saudi Arabian students who are required to remember the steps in the calculation that were used to arrive at the answer.

The method of learning encourages the Kingdom of Saudi Arabian Students to memorize the facts and the figures they are taught in class. The method of teaching mathematics creates a problem of rote learning whereby the exam only tests the memorization capacity of the student, as opposed to the analytical skills. The students have been found not to fare well in mathematics and science when compared with the international standards of mathematics literacy. Learning mathematics is compulsory in the United States of America, education in the kingdom of Saudi Arabia is fundamental; however, emphasis is placed on the religious education. The schools have a poor attitude towards mathematics as a subject because it is considered to be the subject of the west.

The education curriculum focuses on the basic numeracy skills in the primary and secondary school level. The students are taught counting, multiplication and other simple numeracy skills. The complex mathematical calculations in calculus and trigonometry that are easily performed by eleventh and twelfth graders are taught in the tertiary level, in the Kingdom of Saudi Arabia. The university education also focusses on the basic numeracy skills to ensure that the students who did not grasp the simple mathematics skill in the lower level of education are not at a disadvantage. At the university level in the United States of America, the university focusses on the advanced levels of education such as pure mathematics and applied mathematics.

The Departments of mathematics in the United States Ivy League universities have shifted their focus from simple mathematics equations such as dynamic equations and are now focusing on the chaos theory and the string theory applications. Computational mathematics is taught in the high school level, in the kingdom of Saudi Arabia. Skills such as the fluid dynamics and mathematical cryptography have been taught in the university level, in the kingdom of Saudi Arabia while some of these complex equations are taught in the high school level. The numeracy literacy level of the Kingdom of Saudi Arabia has been criticized for being below the minimum expectation in spite of the fact that the kingdom spends more from its Gross National Output than other wealthy nations that are at the same level of economic development with Saudi Arabia.

Science

Teaching in Saudi Arabian schools is largely limited to the topics that are consistent with the religious dictates outlined in the Quran. Topics such as evolution are not taught in the primary or secondary schools. Controversial topics are avoided in the classroom. Religion in this part of the world is a great hindrance to the study of science in schools. Students are indoctrinated with the moral principles that were handed down to Prophet Mohamed. The Quran is the major source of knowledge in the Islamic Kingdom. In schools, the students are taught that everything has a prime mover and a chief reason for its existence. In the natural world, flora and fauna are taken attributed to the Supreme Maker of the universe. Science in Saudi Arabia is taught in a way that the flame of curiosity in the minds of young learners is extinguished and instead all the questions that might arise

from the fertile imagination of the students get their answers from the Quran. The diminished curiosity in the Arabic world is responsible for the diminished inventions from the Arab world.

In the United States of America, the study of science is considered as the panacea of curiosity in the young children who are brought to schooling institutions by their parents to receive learning. Science is taught in the United States without religious bias and prejudice. The ability to question the nature of fauna and flora is motivated by exams that seek to develop the curiosity of the learner. Students both at the University and high school level are taught of the need to develop their intellectual capabilities by avoiding the orthodox explanations that have been given to occurrences in the physical world.

The separation of the state from the religion is empathized by ensuring that public schools do not subscribe to any religion or religious denomination. Science teachers do not accord every explanation to religion or a supernatural being. The teachers advise the students to investigate and test the postmodern theories that are inclined to religion to ensure that they meet the logical expectations of the scientific method. Mainstream religious beliefs have been challenged in the scientific debates. A case in point is the theory of evolution, which challenged the creation theory. Unlike in the Kingdom of Saudi Arabian schools, the theory of evolution is taught in American schools. The difference in the application of the scientific facts is brought under investigation again in the Saudi Arabian schools. The majority of the Saudi Arabian schools encourage the students to cram the facts and commit them to memory. The information is once again accessed during an

exam.

The system of teaching science as a subject in the United States is fundamentally different in the United States. Students are forced to learn the application of the scientific facts and theories in the high school level. The Saudi Arabian system fails to put emphasis on the need to learn the practical application of the theories and facts learnt in class. IN the United States of America, students are required to do a practical exam before completing their twelfth grade.

The practical exams are paramount in ensuring that the student graduates successfully in high school. Although, students in the Kingdom of Saudi Arabia are important they are not given many emphases as the exams that are done by the American students. Saudi Arabian system of teaching science is pegged on memorization and the subsequent retrieval of the information during the exam period. The differences in the manner in which science is taught in the Kingdom of Saudi Arabia and the United States of America form the basis for the differences in technological advancement between the two nations.

Social studies

Social studies in the Kingdom of Saudi Arabia are heavily inclined to the Islamic religion. Social studies usually involve the geographic and historical study of the Islamic world. Social studies are the integrated study of the humanities and social science that is taught to ensure to promote civil obedience and enable citizens to understand their duties and responsibilities. In the United States of America, social studies are taught both in secondary and primary school level. The topics of study are drawn from fields such as

sociology, political science and geography. The disciplines are then integrated into the school curriculum. Social studies in the kingdom of Saudi Arabia are a combination of religion and the history of the Arab world which is synonymous with the history of Islam.

Religion is taught in every aspect of life, in the Kingdom of Saudi Arabia.

Social studies firmly entrenches the extremist viewpoints on Jews, Christians and Sunni Muslims who are considered as outcasts in the Islamic religion.

The extremist doctrines have incited many Muslims both in Saudi Arabia and other Islamic countries to join terrorist organizations such as the Al-Qaida and the Alshabab. Social studies entail in the Kingdom of Saudi Arabia is taught through repetition. Historical facts are repeated by the tutors until the learners commit them to memory. The repetitive learning from the pre unit level to the university level entrenches the facts deep into the minds of the readers. The exams are set in a similar manner. They require the students to recall information and subsequently write the facts in the exam room.

Testing of social studies in the United States of America is done through the analysis of current issues. Issues that will be most likely considered as historical facts in the future are analyzed by the students. The education system is inclined towards contemporary events.

The United States of America and the Kingdom of Saudi Arabia are two worlds apart in terms of mathematics, science and social studies. The United States has the most prestigious universities in the world. Students travel from all over the world to come and attend Ivy League universities. The Kingdom of Saudi Arabia has been accused of offering substandard education that does not meet international standards. The poor teaching

methods that have been adopted by the public schools in Saudi Arabia have contributed to the low education standards in the country.

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