Developing Skills of Students on the Basis of Interdisciplinary Communication Function of Mathematics at Primary School

Abdinazar Abdivosikhovich Salomov[1], Rustam Sayfiddinovich Khurramov[2]

[1]Surkhandarya region in-service Teachers, Training and Retraining territorial Center
gavhar.salomova@mail.ru
[2]Masters art of Termez State University, Republic of Uzbekistan, Surkhandarya region
rustamkhurramov@mail.ru
+998 90 376 87 88

Abstract. In this article, the primary class based on the interdisciplinary connection function of mathematics The skills and abilities of students are explored, ideas and methodological recommendations. The expediency of many years of research, taught by many teachers and use of mathematical statistical methods in the processing of experimental data characterized by another subject is the knowledge acquired by students in general secondary school issues such as linking to the basics, integrating, focusing on specializations are rare they are the formation of students' mathematical skills and competencies. The development is considered insufficient and studied based on some observations and experiments we go out.

Keywords: mathematic, integration of subjects, physics, pedagogic, news, information, innovation, information technology, pedagogical technology, electronic board, monitor, syllabus, electron pointer.

Introduction

It is known that the existing textbooks and manuals do not fully meet today's requirements in terms of content, structure and function, as well as the facts of the content of teaching. Because the concepts of the interdisciplinary connection function are poorly covered in teaching materials and textbooks, they are not sufficiently involved in the development of students 'mathematical skills and competencies. Issues such as linking, integrating, and specializing students 'knowledge with other disciplines are poorly covered, which is insufficient to ensure the formation and development of students' mathematical skills and competencies.

Today, the President of the Republic of Uzbekistan Sh.M.Mirziyoev has set a number of important tasks for the system of general secondary and higher education to bring up the younger generation in a harmonious spirit, to ensure their high potential, and adopted government decrees and presidential decrees. In this regard, Presidential schools have been established to attract talented young people and train them at a high speed.[1]

Based on the function of interdisciplinary communication, the field of development of mathematical knowledge, skills and abilities in high school students, its connection with physics, chemistry and biology, medicine, information technology, social sciences and humanities, interdisciplinary connections are not sufficiently disclosed in science. Many researchers under the scientific guidance of Professor of Tashkent State Pedagogical University named after Nizami T.R. Tulaganov conducted experiments in this field. They have made great strides in their research work, science. Interdisciplinary relations are one-sided or two-sided, depending on their component, and it is incumbent on one science to translate a concept, law, fact, formula into the laws of another science concept[2].

That is why the concept of interdisciplinary interdependence has a very deep historical development based on its perfect structure, in which many scholars have approached and participated with their own opinions. In the history of pedagogy, along with the accumulation of a certain amount of pedagogical and methodological ideas on the theory and practice of interdisciplinary communication, various systems of activating the process of reading and teaching have been developed. The coherent form of interdisciplinary communication is important in shaping students 'mathematical skills and competencies.

---

[1] Mirziyoev Sh.M. Speech at the joint session of the Oliy Majlis of the Republic of Uzbekistan on the occasion of the inauguration of the President of the Republic of Uzbekistan "Building a free and prosperous, democratic state of Uzbekistan and our noble people." –T .: "Uzbekistan", 2016.

[2] Толаганов Т.Р Профессиональная направленность обучения математика в школе. –Т.: ТГУ, 1989. – 52 с.

Introduction of new management principles into the public education system of the President of the Republic of Uzbekistan dated September 5, 2018, the Law of the Republic of Uzbekistan "On Education" and "On the National Training Program[3]", "Action Strategy for further development of the Republic of Uzbekistan" for 2017-2021 Resolution of Ministers of the Republic of Uzbekistan dated April 6[4], 2017 No 187 "On measures to approve the state educational standards of general secondary and secondary special, vocational education" Based on the content of priorities set by the Decree of the President of the Republic of Uzbekistan dated April 29, 2019[5] "On approval of the Concept of development of public education in the Republic of Uzbekistan until 2030" PF-5712, it is aimed at improving the content of teacher training implies increasing professional competence.

It is known that the coherent form of interdisciplinary communication has important features and stages according to its methodological requirements and needs. State policy of the Republic of Uzbekistan in the field of education, legal and regulatory documents on the organization of the educational process, professional competence and skills of the teacher, psychological approach to the educational process, the use of information and communication technologies in teaching, innovative approaches to teaching foreign languages, mathematics , the methodology of teaching mathematics includes modern methods of organizing the learning process and determines that they are aimed at the formation of relevant new knowledge, skills, competencies and competencies.

The working curriculum of the module "Application of information and communication technologies in the educational process" is based on the curriculum of the training course for public educators and teachers, which allows the use of information and communication technologies in the teaching process, the creation of electronic multimedia resources[6].

It follows from the above considerations that the formation of knowledge, skills and competencies in interdisciplinary relations and the many aspects and classification of its development are revealed[7]. It is determined by the general goals of teaching and arises from the fact that the content of education is inextricably linked in terms of the structure of the disciplines. It is much more difficult to fully understand this problem without describing the ways in which interdisciplinary communication takes place, without showing their educational developmental and pedagogical tasks[8]. It is known that the educational tasks of interdisciplinary relations are the central direction of the problem of studying interdisciplinary relations in the teaching process, and the study of their educational tasks determines the basis. It is impossible to improve the content of education without taking into account the interdisciplinary links, which is one of

the most important criteria for the selection and coordination of teaching materials in related subject programs[9].

---

[3] Mirziyoev Sh.M. We will build our great future together with our brave and noble people. –T .: "Uzbekistan", 2017.

[4] Mirziyoev Sh.M. Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis. –T .: "Uzbekistan", 2018. -80 p.

[5] On February 27, 2020, the Resolution of the President of the Republic of Uzbekistan No. PP-4623 "On measures to further develop the field of pedagogical education" was adopted.

[6] Толаганов Т.Р Профессиональная направленность математической подготовки будущих учителей // докторская диссертация. – г. Ташкент. – 1990. – с. 450.

[7] Лернер И.Я., Скаткин М.Н., О методах обучения. // Педагогика. – 1965. – N3. – с. 115-128.

[8] Федорова Н.Ф., Стоюнин В.Я., Водовозов В.И. и другие Межпредметные связи. –М.: // Педагогика. –1972. – 152 с.

[9] Фрид Э., Пастор И., Рейман Н., Ревее П. Ружа и Малая математическая энциклопедия. – Будапешт:, 1976. – 693 с.

In science, the development of concepts takes place in several directions, that is, new concepts are formed. Old concepts are clarified, concrete and deepened as a result of higher abstraction, previous concepts are discarded as non-scientific concepts, and new concepts are formed instead. Therefore, the search for methodological equivalents of interdisciplinary relations is not a mechanical lifting of the main directions of science integration into the educational process, but the creation of an effective methodological system of interdisciplinary communication that reflects the important features of its prototype and the main pedagogical issue[10].

The development of students' knowledge, skills and abilities, based on generalized, inductive and deductive reasoning, is of great importance through the application of the laws of mathematics to other disciplines in the process of change. Therefore, in mathematics, every reasoning can be generalized, inductive, and deductive[11].

One of the urgent tasks today is to develop students' knowledge, skills and abilities on the basis of algebraic reasoning through the application of mathematical concepts, its application in physics, engineering, computer science and other sciences based on trigonometric data.

It is also important to recommend the following program for in-service training of primary school teachers in secondary schools.

1. According to the scientific-theoretical and practical results of the formation of skills and competencies in high school students on the basis of the interdisciplinary function of mathematics, the basic laws, facts, rules and pedagogical experiments are described in the following stages.
2. Ensuring the modeling of information through the solution of vital problems, which has been proven in practice, is one of the important guarantees of expanding the interdisciplinary function of mathematics, raising it to a qualitative level and improving teaching.
3. At present, it is known that the process of integration of knowledge in high school students through the interdisciplinary function of mathematics, such issues as their orientation to specialties, is poorly covered in all experiments. This has shown that it is not sufficient to ensure the formation and development of students 'skills and competencies at a high level.

In conclusion, it should be noted that the work of self-teaching and learning of mathematics, in turn, is inextricably linked with theory and practice. Because there are some mathematical theories that when mathematics reaches a certain level of development it may not have its own practical application, but after a certain period it will have its own application and development stage in a broader sense again. There are some theoretical considerations, i.e. it always ensures self-replenishment at the expense of practice.

It is expedient to suggest the formation of mathematical knowledge, skills and abilities of students in the upper grades of secondary schools, the implementation of the main objectives of development in the following order[12].

1. Implement the function of interdisciplinary communication based on the development of mathematical logic and thinking in students[13].

---

[10] Особенности решения задач по изучению геометрии в школьной практике. // Актуальные проблемы гуманитарных и естественных наук. Ежемесячный научный журнал. Москва. - 2015. март.- № 03 (74). -Б.10-12.

[11] Михайловский Э.Э. Методика изучения свойства замечательных линии треугольника. International Scientfic And Pratikal Conference. World Science. proceedings of the conference. Topical Researches Of The World Science. (June 20-21.2015). vol. 2. rost publishing. Dubai.-2015.-Б.52-61.

[12] А.А.Саломов. Развитие, умений и навыков у учащихся старших класов при реализатции межпредметной функции математики. - Ташкент: 1996 год. // Дисцертационное исследование//.

[13] Саломов А.А., Мирзаева М. Активизация и познавательная деятельность учашихся на уроках математики // Основная роль педагогических идей: Тезисы докладов конференции. - Челябинск, 1990. – с. 90-92.

2. The interdisciplinary function of mathematics is to increase and develop the worldview of high school students. Including understanding and comprehending the mathematical content of events and changes in the environment.
3. Forming skills and competencies in students by improving the creation of a mathematical module of change.
4. The content of mathematical concepts and their creation on the basis of knowledge of the properties and laws of interdependence.
5. Organize the work of achieving the abstraction of mathematical concepts, laws and rules, their implementation and application to a certain extent.
6. The task of enriching the theories developed in practice and expanding its scope and level of influence leads to the acquisition of significant importance[14].

REFERENCES

1. Mirziyoev Sh.M. Speech at the joint session of the Oliy Majlis of the Republic of Uzbekistan on the occasion of the inauguration of the President of the Republic of Uzbekistan "Building a free and prosperous, democratic state of Uzbekistan and our noble people." –T .: "Uzbekistan", 2016.
2. Mirziyoev Sh.M. We will build our great future together with our brave and noble people. –T .: "Uzbekistan", 2017.
3. Mirziyoev Sh.M. Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis. –T .: "Uzbekistan", 2018. -80 p.
4. On February 27, 2020, the Resolution of the President of the Republic of Uzbekistan No. PP-4623 "On measures to further develop the field of pedagogical education" was adopted.

5. Толаганов Т.Р Профессиональная направленность обучения математика в школе. –Т.: ТГУ, 1989. – 52 с.
6. Толаганов Т.Р Профессиональная направленность математической подготовки будущих учителей // докторская диссертация. – г. Ташкент. – 1990. – с. 450.
7. Лернер И.Я., Скаткин М.Н., О методах обучения. // Педагогика. – 1965. – N3. – с. 115-128.
8. Федорова Н.Ф., Стоюнин В.Я., Водовозов В.И. и другие Межпредметные связи. –М.: // Педагогика. –1972. – 152 с.
9. Фрид Э., Пастор И., Рейман Н., Ревее П. Ружа и Малая математическая энциклопедия. – Будапешт:, 1976. – 693 с.
10. Особенности решения задач по изучению геометрии в школьной практике. // Актуальные проблемы гуманитарных и естественных наук. Ежемесячный научный журнал. Москва. - 2015. март.- № 03 (74). -Б.10-12.
11. Михайловский Э.Э. Методика изучения свойства замечательных линии треугольника. International Scientfic And Pratikal Conference. World Science. proceedings of the conference. Topical Researches Of The World Science. (June 20-21.2015). vol. 2. rost publishing. Dubai.-2015.-Б.52-61.
12. А.А.Саломов. Развитие, умений и навыков у учащихся старших класов при реализатции межпредметной функции математики. - Ташкент: 1996 год. // Дисцертационное исследование//.
13. Саломов А.А., Мирзаева М. Активизация и познавательная деятельность учашихся на уроках математики // Основная роль педагогических идей: Тезисы докладов конференции. - Челябинск, 1990. – с. 90-92.
14. Саломов А.А. Самостоятелъные занятия на уроках математики. // Совершенствование организационных форм и методов преподавания математики, информатики и ВТ в школах и педагогических вузах: Тезисы докладов Всесоюзного семинара-совещания. - Гулистан. 1990.

Internet resources

www.uzedu.uz
www.edu.uz
www.avloniy.uz
www.ziyo.uz

---

[14] Саломов А.А. Самостоятелъные занятия на уроках математики. // Совершенствование организационных форм и методов преподавания математики, информатики и ВТ в школах и педагогических вузах: Тезисы докладов Всесоюзного семинара-совещания. - Гулистан. 1990.