Mathematics education is in life of Uighur students of Xinjiang of China—To Development Mathematics Textbooks for Depressed and Minority Area by Multi-Resources of Curricula

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Abstract:

Xinjiang is to locate China western region economic not prosperous of multiracial gather to reside the region, In this many languages and multicultural environment societies,mathematics education of ethnic minority of Xinjiang is mathematics education of ethnic minority of Xinjiang is mathematics education within various langguages and multicultural environment, For this kind of cultural background, this research on the foundation of" multicultural integration education theories", put forward the multicultural integration mathematics education theories.The multicultural integration mathematics education is for in the poor and multiracial region,various language with in the multicultural environment, circumstances the children of the worse social group, provide equal mathematics education opportunity, Discover abundant colorful traditional cultural course resources well,develop the mathematics teaching material within poor and multiracial region,is to complete the multicultural integration mathematics educational valid path.Xinjiang has abundant colorful traditional culture, the history tradition, natural appearance, have to keep the intact ecosystem environment, folk tale, the food culture, these are mathematics course resources that develops,having the important education meaning to the student's development.Under the requirement of national stipulation standard of mathematical curriculum,teachers fully tap the colorful and abundant traditional cultures of Xinjiang Uighur ethnic minority area and according to students social living experiences, psychological, development characterstics,interests, acknowledgements and individual differences,vividly seket and recombine the contents of textbooks, adjust the difficulty and speed of teaching,develop new live teaching materials to educate students.Make each students attain the nation education standard,acquire the biggest development in the ability scope, and promote multiracial student understand mutually with the respect.

Key words: Xinjiang; multiracial; various language; multicultural; mathematics education; mathematics teaching material.

1. The multicultural integration mathematics education theories

The region of Xinjiang is broad, Total area for 1665000 km^2, have the 1/6 area of whole China.The economy of Xinjiang not prosperous, multiracial gather to reside the region,Live here 47 ethnic minority, among them mainly live 13 ethnic minority,because 13 ethnic minority all use own language and own writings, mathematics education is in became various languages cultural environment background of under.The ancient Silk Road contain half is in Xinjiang, ancient and China plains culture, India

culture, Persia culture, Arabia culture,Greece culture, ancient culture of Rome and each multiracial oneself blends together, becoming to have Xinjiang of oriental culture and west culture multicultural.In Xinjiang thus the region is broad and not prosper- ous region of economy, this have Various language and multicultural environment societies, education of Xinjiang is various languages and multicultural environment education .Various languages and multicultural environment how affect to educate the problem, is to research educational important problem in this region.Currently multiracial educational cultural background in Xinjiang can is divided into three parts of the following :The first, own cultural background of this ethnic minority, The second, cultural background of Chinese,The third,cultural background of other ethnic minorities.This kind of complicated cultural background comes to a decision in Xinjiang ethnic minority education is a multicultural education.Approve the Chinese culture, and then to inherit and keep the culture of this ethnic minority, absorbing the culture of other ethnic minorities at the same time.For this kind of cultural background, our country scholar Tengxing put forward" multicultural integration education theories" in the multicultural education theories research.The contents of" multicultural integration education", include the Chinese culture, include the ethnic minority culture.The purpose of" multicultural integration education" is excellent cultural inheritance that inherits each ethnic minority;Strengthen the cultural interaction between each ethnic minority. Promote the every ethnic minority is equal development on economy;Same prosperous on the culture;Respect mutually on the politics,multiracial big incorporation of realization(1996).

This kind of" multicultural integration education" performance is in mathematics educate realm, the formation educates the theories for multicultural integration mathematics.The multicultural integration mathematics education is for in various languages and multicultural environment of the poor region and the ethnic minority region,circumstances the child of the worse social group provide the equal education opportunity. And strengthen of multiracial and multicultural group to respect mutually and comprehend.The multicultural integration mathematics education will make young man know, keeping and approving this ethnic minority and its traditions cultural, also wanting to develop them to the surroundings in the world deep understanding and understanding of mathematics knowledge, make acquire well the self-confidence and the opportunity of participate the social activities.Educational target of multicultural integration mathematics:First, is to develop Cross-cultural education ability of student,halp the student know from the other cultural of angle to observe the cultural of ethnic minority, and acquire the best ego comprehension.The second, the multicultural integration mathematics education provides the student choice culture of the right and the opportunity, The third, multicultural integration mathematics educates to provide for student of in poor region and ethnic minority region a kind of valid teaching method , wanting to raise their mathematics teaching quantity.

Discover abundant colorful traditional cultural course resources well, develop the mathematics teaching material of the poor region and ethnic minority region, is to carry out the multicultural integration mathematics educational valid path.

2.The poor region and the ethnic minority regions have abundant diverse mathematics course resources, can research to manufacture and make use of it

Various kinds of Mathematical teaching materials come from Uighur students daily life.Xinjiang Uighur autonomous region has its own advantages in the resources of teaching materials.Either in the famous historical big cities.or in the unbeknown small border towns.Uighur people have very colarful and amazing national cultures.historical traditions,human landscapes and natural complexion. And also have well-presewed.eco-logical environment,folkfore, catering culture and special marriage and funeral customs All these are good resources to develop new live mathematical teching materials for Uighur students.It has some wery important educational meaniuys for students develop-ment.

2.1The food culture of the Uighurs and the teaching of the Geometry

（1）Teaching “Circle” and “Nan”of Uighurs peoples

Uighur people in Xinjiang China have a special food made by floor called Nan, which has become a beautiful scenery in ethnic culinare culture of Xinjiang .Nan is a main food of Uighur people like bread for western people,It is a kind of pastry baked in a special stove,extremely good taste and flaver.When we teach primary school student the knowledges about “Circle”we will take Nan as an example.

（2）Teaching “ rotation and polyhedron”and “Tonur”of Uighurs peoples

Do a cooking stove of soil of“Nan” to is called“Tonur”or“Tanur”, its shape is: the inner part that have is“rotation”, the exterior is“polyhedral”.The inner part of have is“rotation”, the exterior is“rotation”, is the solid of a typical model.

Mathematics teachers in Xinjiang use “Tonur”to explain the knowledge of “ rotation and polyhedron”to juniors in senior high schools.It is very useful tu inspire students to study Mathematics. And it is a good curriculum resources to increase students awareness of Mathematical application,train their skills and develop their affection for mathematics.

2.2 The Uighurs Traditional buildings and teaching of the geometry

Teaching “polyhedron and rotation ”and “Architecture of mosques,Uighur tombs,High Tower of Turpan”

Mosques of Uighurs,There is about at least one Mosques in each village in Xinjiang.Tombs of Uighur people.Every little Uighur boy goes to tombs at least two times each year (in two big traditional festivals) to visit their relatives passed and pray for them. Rural children go once almost every week.So they are very familiar with the structure of these buildings.

Turpan(a famous old city of Xinjiang) have a high tower.And there is another typical building .

In Urumqi amed as market international of Grand,All of there buildings are full of geometric solid figures as polyhedrons,rotators and spheres. when we teach students the knowledges“polyhedrons and rotators”.will with take these building as examples.

2. 3The Uighurs traditional crop farming the instrument and teaching of geometry

（1）Teaching “positional relationship between line and plane”and “Ketman”of Uighurs Farmers

“Ketman”is a kind of farming instrument aed to turn sod of the farmlands.It is made according to the fall of ground level,in order to dig the sod.It has a heavy steal hoe. And a wooden pole about 140centimeters long. Although at ancient time,Uighur peasants did not have any kind of measuring equipments.they could figure out correetly the fall of ground level and the angle between the pole and plane of Ketman.That is an acute angle between 60^0 and 90^0.If it is too big ,you can not get the aim of digging ,And if it is too small besides you can not digging. May be you will slash your own legs.So only if the angle is calculated exactly.It will raise the efficiently of digging to a large extend.Every peasant in Xinjiang has about 4 or 5 Ketmans approximately.

When we teach “positional relationship between line and plane”we will talk about Ketman to our juniors in senior high school.

（2）Teaching “The size of dihedral angle ,the gradient of plane”and “Kariz”of Uighurs Farmers

Kariz is a kind of waterway engineering project. Children drink water everyday in Kariz. It is the result of uyghur people’s gathered experiences of thousands of years. With the same technique (calculating the fall of ground level).They lead springs to their farmlands.

These Kariz channels are made in this way：“first determine the exact location to springs upland and dig very deep wells which are rowed up,after then connect then to each other.Water is leaded into the highest cave and then flow into the channel. Because the land gradient Decreases gradually. Water will be leaded into each places in the plane needs to be irrigated.This is a very huge and difficult task.all is finished by manpower.For the reason that it hardly rains in some places in Xinjiang like Turpan.,Kumul and Kaxghar . During the whole year the water is very short for their daily lives their farmlands so they deal with water supply broblem by Kariz.We will tell students these exemples when we teach“dihedral angles”for juniors.

（3）Teaching “parabola and it is standard equation”and “Kemer oy”

Kemer oy means cave - house.because Xinjiang is short of wood.so peasants build Kemer oy with bricks.it is a very live exemple for students to understand Parabola and it is standard equetion in second term of juniors in senior high school.

2.4.Uighur traditional vehicles and Teaching of “plane figures”

“Harva”and the knowledges about “circle ”

Harva(or Arava)is a kind of carriage.it is wheel is mode of mulberry wood.it is a huge hoop iron wheel which is even taller than a man.for this reason ancient.Uighur people were called Gao che (means the people in high carriage)At that time without any measuring equipments.they calculated exactly the made such a big circle by woods.

These kind of examples are too many amazing to be appreciated at once .these traditional

cultures are the good materials for students to understand mathenatics and increase their awarenes of the application of mathematical kmowledges they learned in classroom .this kind of meaningful teaching .method will cultivate students sentiment to love their homeland and to defend their country.

3. Development and research to manufacture the path of mathematics teaching material

How to develop and research to manufacture mathematics teaching material?

I introduce how to research to manufacture the mathematics teaching material process.

3.1The earnest study mathematics course standard and mathematics textbook,Know the request of standard of mathematics course and the contents structure of mathematics textbooks,Know to teach what contents, know how to teach.

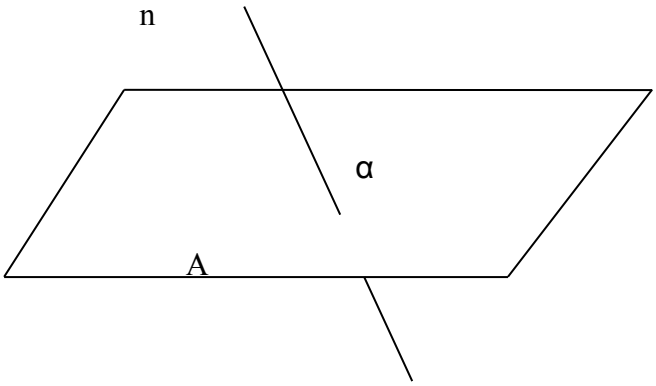
3.2The teacher wants to investigate the environment and the existence society of the student,discover the mathematics course resources.

3.3The teacher wants to understand the Psychology development characteristic of the student, the interest love, the cognition level and individual differences

3.3The adjustment mathematics textbook researches to manufacture a new mathematics teaching material

Teachers fully tap the colorful and abundant traditional cultures of Xinjiang Uighur ethnic minority area and according to students social living experiences, psychological, development characterstics,interests, acknowledgements and individual differences,vividly seket and recombine the contents of textbooks, adjust the difficulty and speed of teaching,develop new live teaching materials to educate students.

For example: Teaching "positional relationship between line and plane"and "Ketman"of Uighurs Farmers



4.Conclusions

Discover abundant colorful traditional cultural course resources well, develop the mathematics teaching material of the poor region and ethnic minority region, is to carry out the multicultural integration mathematics educational valid path.

(1) The teaching material is important tool that completes the course,Research to manufacture the new mathematics teaching material can enrich and the mathematics course of perfect school,Raise the educational quantity of mathematics of school,can shorten the education margin between poor region and ethnic minority region and economic prosperous region difference.

(2) The reasonable researches to manufacture and makes use of mathematics course resources of the ethnic minority region, developping the education special features of the ethnic minority region, adding the shortage of the nation course, thus raising the adaptability of the course to have the important meaning.

(3) The circumstances of the poor region and the ethnic minority region the child of the worse social group provides equal mathematics education opportunity,Make each students attain the nation education standard,acquire the biggest development in the ability scope, and promote multiracial student understand mutually with the respect.

(4) Provide the right and opportunities of the cultural choice to the student.

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