# Teachers rating about Learning of Mathematics in Gandhinagar District of Gujarat State 

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## 1. Introduction

Math is the consistent investigation of shape, size and circumstance and it is essentially founded on the ideas of numbers and calculation of figures. It has come to assume a noteworthy part in the designing of parkways, the quest for energy, the plan for TV sets, the investigation of scourges, and the route of boats. The vocation and monetary possibilities of each individual rely vigorously upon his numerical information and learning. Subsequently, according to social and logical perspectives there has fostered a developing revenue by the way one learns math, and how one's brain works in the investigation of a numerical issue. Numerous a marvel of the universe can be anticipated through numerical computations. For example, on 24th October, 1995 individuals watched the sun-based overshadowing and the 'Precious stone Ring' during its entirety, which amazed the shroud gazers. Be that as it may, the specific date and season of the shroud was determined significantly sooner by the sun powered researchers, utilizing numerical computations. In reality, arithmetic is the study of thinking. It empowers a person to know the laws of nature.

Keywords: Teacher Rating, Learning Mathematics, Education, Learning Teaching Process, Secondary Education

## 2. Understanding of math

The Mathematical experience emerged from numerical idea. Fundamentally, the numerical idea began because of specific components which were the necessities of the human progenitors to satisfy their requirements. The necessities were ordered into three primary gatherings. They were specifically the useful need, the logical need, and the tasteful need.

### 2.1 The applied need

This need was worried about the need of masteries, normal troubles introduced by the actual world around the crude individuals. It very well may be called as the reasonable need. It was to defeated the challenges presented by the down to earth battle and to beat the troubles presented by the actual climate. The crude man developed the least difficult and essential thoughts for all intents and purposes about number, amount, and space. To cite a model, the shepherd used to slice indents on his stick to count his sheep, and the developer utilized a stick of the length of his foot of his step as a genuinely steady, unit of measure (the crude foot - rule)

### 2.2 The systematic need

This need could be ascribed to the motivation of mankind for arranging and getting regular and social real factors. For instance - The huge advancement of numerical information, actual maths, and PC maths in the previous many years were because of the logical motivation. This is the second improvement in the advancement of arithmetic. So, it very well may be called as the logical need.

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### 2.3 The esthetical need

It manages the enthusiasm for excellence felt by the human psyche. For instance, the formation of an artistic creation needs shading organizations dependent on measurement. Information on the techniques for music/documentation is required for an artist. The numerical sense and application were diverse among the races of the world. It spread from one rush to the next. The advancement of math could be credited to the way that it's Import to individuals by the mindful instructive organizations.

### 2.4 Math in Daily Life

Math has consistently been viewed as a device for honing the acumen. For this reason, one needs to think efficiently, legitimately and unequivocally. Brahhmagupt, the incomparable Indian mathematician of the eighth century said, "Assuming you need to sparkle in the organization of the learned, propose numerical issues and tackle them." As we move into the 21 " century, there is agreement among the specialists about the need for all understudies to have string numerical capacity. Larger part of famous educationists of the past just as of the present, including Herbart, Fraebal, Pastolazi, Mareea Montessori, Sri. T. S. Nenn and so forth have pushed the significance of arithmetic. As they would like to think, the scholarly and social improvement of an individual is preposterous without the investigation of math. In a few fields focused round human action, for example, Accounting Techniques, Funding, Shopping or Buying or Selling, Businesses, Artisan and so on there is the utilization of math. It has turned into the premise of the world's whole business and business framework. In this manner Math has been an indistinguishable piece of human action.

## 3. Review of literature

Johnston, Kelly, and Rebecca Bull (2022) the initial three years of life are distinguished as a period where youngsters are prepared for numerical reasoning, and a period where huge and basic improvement happens. Furthermore, numerical capacity long before youngsters start school fills in as areas of strength for an of later accomplishment. Nonetheless, numerous youth instructors don't perceive the significance of focusing on numeracy with exceptionally small kids, and there stays a lack of exploration on numerical reasoning and learning with baby and baby matured youngsters. This study tried to examine youth teachers' points of view on arithmetic for kids' birth to 5 years old. Teachers were welcome to finish a web-based overview and a blended strategies approach was utilized to decipher the reactions. The discoveries uncovered that despite the fact that math was viewed as pertinent and significant across the birth to five age range, these qualities were not altogether reflected in teacher's liked or embraced educating rehearses. The concentrate likewise distinguished a scope of variables that emphatically and harmed instructor self-viability and manners towards math across their life expectancies. Expert drove research projects are proposed as a compelling type of expert figuring out how to integrate into future exploration projects. Zakariya, Yusuf F. (2022) the motivation behind this review is to dissect relations between understudies' disposition towards arithmetic, earlier information, self-viability, anticipated grades, and execution in math among 115 first year designing understudies. We join two measurable methods to break down the information we created by surveys and two tests. In the first place, thing level demonstrating, as far as corroborative variable examination, which we use to register the element scores of build approved measures, and to control for estimation blunders. Second, composite displaying, as far as way examination, which we use to test the exploration speculations. The discoveries show that both self-viability and expected grades significantly affect understudies' exhibition. Earlier information meaningfully affects self-viability which, thusly, assumes a huge part in understudies' grade assumptions. Any remaining theorized relations are not huge. They contend that these discoveries affirm a few essential principles of social mental hypothesis. Thomas J. Smith, Zuway-R Hong, Wen-Yi Hsu, Ying-Yan Lu. (2022) the current review analysed the 2015 Patterns in Global Math and Science Review "High level" information to look at how the instructive qualifications of maths educators and other instructor qualities were connected with disposition towards cutting edge arithmetic and view of connected instructing among twelfth grade understudies signed up for cutting edge math courses in the U.S. As

[^1]attitudinal results in this review, two proportions of mentality towards science were utilized - the Understudies Like Learning Progressed Arithmetic scale and the Understudies Worth High level Math scale, and one proportion of understudy impression of connected educating - the Understudies' Perspectives on Drawing in Showing in Cutting Edge Math Illustrations. A bunch of staggered relapse examinations were directed foreseeing each of these previously mentioned results. No measurably huge consequences for the attitudinal results were noticed for instructor factors. Beneficial outcomes were noted for parental schooling on understudies' esteeming of cutting-edge arithmetic. A noticeable finding was that more elevated levels of parental training were related with higher understudy levels of esteeming math, which probably mirrors a family/home culture that certainly or unequivocally puts high worth on science and math. Distinguishing factors that could work with uplifting outlook is vital to improve the probability that understudies will pick, and be held in, math and STEM training and professions. Ma, Xin, and Jiangmin Xu (2022) the reason for this review was to decide the causal requesting (prevalence) between mentality toward science and accomplishment in math in auxiliary school (grades 7-12). Primary condition models were utilized to examine information from the Longitudinal Investigation of American Youth. Results showed that accomplishment exhibited causal transcendence over disposition across the whole optional school. Distinctions in sexual orientation in this causal relationship were not found, however first-class status in arithmetic (estimating whether understudies took analytics) directed this causal relationship. We tracked down an imbalanced complementary connection among mentality and accomplishment across practically whole optional school for nonlife understudies, with accomplishment showing causal prevalence over demeanour. Such a proportional relationship was missing among tip top understudies. At the point when there was a causal connection among demeanour and accomplishment among those understudies, accomplishment generally guaranteed (unidirectional) causal power over disposition. Cevahir, Hakan, Muzaffer Özdemir, and Meltem Huri Baturay (2022) this review looks at the impact of utilizing activity based worked models (ARAWEs) that are arranged utilizing Expanded Reality (AR) innovation as opposed to utilizing customary paper-based worked models (TWEs) on the accomplishment, inspiration, and mentality of secondary school understudies during their programming training. The examination was planned through the "Non-equivalent Benchmark Group Model", one of the semi exploratory models. The members comprised of second year understudies ( $\mathrm{N}=94$ ) who were taking the "Nuts and bolts of Programming" course in the Division of Data Advances a professional and specialized Anatolian secondary school in Turkey. An accomplishment test was applied to the members as pre-test and last test. Inspiration of the understudies was estimated through the "Informative Materials Inspiration Review" created by Kutu and Sözbilir (2011), and member mentalities towards utilizing AR was estimated through the "AR Demeanour Scale" created by Küçük, Yılmaz, Baydaş and Göktaş (2014). As per the outcomes, both the accomplishment and inspiration levels of the understudies concentrating on ARAWEs expanded fundamentally contrasted with those concentrating on TWEs. There was an elevated degree of connection between the last grades and the mentality levels of the understudies concentrating on ARAWEs. Taking into account that educational materials containing movement based worked models arranged involving AR innovation increment understudies' revenue and inspiration in the subject, their utilization in examples that incorporate showing critical thinking abilities, like math, physical science, and science, can be executed in ongoing examinations. Suherman, Suherman, and Tibor Vidákovich (2022) in this review, it is meant to psychometrically assess of understudies' mentalities toward science stock in optional schooling (ATMSE). The legitimacy of the model's four-factor structure was assessed utilizing corroborative component examination (CFA). Unwavering quality qualities for the four subscales ran somewhere in the range of 0.79 and 0.89 both consistency dependability utilizing Crba and composite unwavering quality utilizing $\omega$. ATMSE is a reasonable instrument for surveying understudies' mentalities toward math in Indonesia. Rahayu, Ayu Tunggal, Arif Muchyidin, and Budi Manfaat (2022) this study intends to decide the impact of applying the Directed Note Taking (GNT) learning technique on how understudies might interpret numerical ideas. This study utilizes quantitative strategies and depends on the recently examined results. It can presume that most

[^2]understudies answer emphatically to the Directed Note Taking (GNT) learning technique in learning arithmetic on the grounds that, in view of the circulation of polls, they got understudies' reactions to the utilization of the Directed Note Taking (GNT) learning strategy, the rate score acquired is $77 \%$ which is remembered for areas of strength for the. Likewise, how understudies might interpret numerical ideas is remembered for the great class. The typical worth of understudies' numerical idea understanding test brings about the trial class was 80.44 , while the typical worth of the numerical idea understanding test brings about the control class was 75.67 . This shows that the understudies' capacity to comprehend numerical ideas in the exploratory class is better.

## 4. Application to data

### 4.1 Rating analysis for various areas of mathematics

The collected information for grade, gender, types of organizations and dichotomy are examined in context of their understanding level of various areas of mathematics. The particulars for each of the parameter under study are tested in three phases of understanding - High, Medium and Lower. All 200 students are examined in terms of percentage of their level of understanding of mathematics.

Table 1 Gender and Grade VIII wise rating for areas of math

|  | Male |  |  |  |  |  | Female |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | High | \% | Medium | \% | Lower | \% | High | \% | Medium | \% | Lower | \% |
| Number System | 32 | 15 | 39 | 20 | 29 | 15 | 15 | 11 | 22 | 12 | 63 | 22 |
| Air thematic | 36 | 17 | 40 | 20 | 24 | 13 | 24 | 18 | 42 | 23 | 34 | 12 |
| Algebra | 42 | 20 | 45 | 23 | 13 | 7 | 20 | 15 | 33 | 18 | 47 | 16 |
| Geometry | 31 | 15 | 30 | 15 | 39 | 20 | 34 | 25 | 28 | 15 | 38 | 14 |
| Mensuration | 37 | 18 | 21 | 11 | 42 | 22 | 24 | 18 | 32 | 18 | 44 | 16 |
| Statistics | 32 | 15 | 24 | 12 | 44 | 23 | 16 | 12 | 26 | 14 | 58 | 20 |

Above table 1 shows that the general guys' understudies confronting high problems, moderate problems and low problems in happy region is $35 \%, 33 \%$ and $32 \%$ though for Girl understudies $22 \%$, $30 \%$ and $48 \%$ individually. It implies Males understudies are somewhat brilliant than female understudies. females and guys' understudies are thinking about number framework, variable based math and measurement's themes were simple in VIII class math as opposed to calculation, numbercrunching and mensuration. according to the scale manual the understudies who gets low score on low problems some level is viewed as high problems in learning math. While whose score is at more significant level on high problems level are viewed as high problems in learning arithmetic.

Chi Square: In request to test above invalid speculation, the chi-Square test is utilized. The Chi-Square test applied to ascertain the distinction between the two gathering upsides of guys and females of optional school understudies on satisfied. To test the above speculation, the chi-square test was likewise utilized to figure out the relationship between the guys and females of optional school understudies on satisfied problems. The consequences of the test are given in table 2.

Table 2 Chi- square test for grade VIII students

| Gender | High <br> Difficulty | Moderate <br> Difficulty | Low <br> Difficulty | Chi- <br> square | Cramer's <br> $\boldsymbol{\phi}$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Males (O) | 35 | 33 | 32 | 0.14 | 0.026 |
| Expected | 33.3 | 33.3 | 33.3 |  | 0.231 |
| Females (O) | 22 | 30 | 48 | 10.65 | 0.23 .3 |
| Expected | 33.3 | 33.3 | 33.3 |  |  |

The acquired chi-square worth is not huge at any levels for all intents and purposes underneath the table worth, which demonstrates that the contrast between the scores of guys and females of auxiliary schools is low, which is 3 focuses on low problems level. in that guys are having high score as opposed to females. Thus the theory - There will be no huge varieties in the substance problems levels of VIII class understudies regarding orientation is acknowledged. The values of Cramer's co-efficient is calculated to interpreted the associations between the defined parameters. The association for understanding of mathematics for VIII grade students towards learning is not highly associated as it lies between 0.1 and 0.3 . The value of chi-square is showing acceptance of the hypothesis examined.

Table 3 Gender and Grade IX wise rating for areas of math

|  | Male |  |  |  |  |  | Female |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { 気 } \\ & \hline 100 \end{aligned}$ | 89 |  | 89 | - | 89 | $\frac{5}{50}$ | - | $\begin{aligned} & \text { E } \\ & \text { E. } \\ & \text { E. } \end{aligned}$ | $0^{2}$ | - | $0^{\circ}$ |
| Number System | 24 | 12 | 35 | 18 | 41 | 20 | 37 | 19 | 34 | 19 | 29 | 13 |
| Arithmetic | 39 | 19 | 32 | 17 | 29 | 14 | 24 | 13 | 26 | 14 | 50 | 22 |
| Algebra | 34 | 17 | 24 | 13 | 42 | 21 | 34 | 18 | 21 | 12 | 45 | 20 |
| Geometry | 38 | 19 | 32 | 17 | 30 | 15 | 37 | 19 | 28 | 16 | 35 | 15 |
| Mensuration | 34 | 17 | 31 | 16 | 35 | 17 | 22 | 11 | 39 | 22 | 39 | 17 |
| Statistics | 35 | 17 | 38 | 20 | 27 | 13 | 38 | 20 | 32 | 18 | 30 | 13 |

Above table 3 demonstrates that the variable IX class orientation towards level of content problems, Males understudies bunch felt high problems, moderate problems and low problems is $34 \%, 32 \%$ and $34 \%$ while females' understudy bunch felt $32 \%, 30 \%$ and $38 \%$ separately. It shows that guys bunch felt less problems in learning math when contrast with female understudies. In IX class math more problems level is found in the substance region calculation for the two classifications for example guys and females for variable orientation. To test invalid speculation, the Chi-Square test is utilized. The Chi-Square test applied to ascertain the contrast between the two gathering scores of guys and females of optional school IX class understudies on happy problems. To test the above theory, the chi-square test was likewise utilized to figure out the relationship between the guys and females of auxiliary school understudies on happy problems. The aftereffects of the test are given in table 4.

Table 4 Chi- square test for grade IX students

|  | High <br> difficulty | Moderate <br> difficulty | Low <br> difficulty | Chi- <br> square | Cramer's <br> $\boldsymbol{\phi}$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Males (O) | 34 | 32 | 34 | 0.08 | 0.02 |
| Expected | 33.3 | 33.3 | 33.3 |  |  |
| Females $(\mathbf{O})$ | 32 | 30 | 38 | 1.041 | 0.07 |
| Expected | 33.3 | 33.3 | 33.3 |  |  |

The Chi-Square worth is not critical at any levels which demonstrate that the distinction between the scores of males and females of IX class understudies is somewhat contrast, which is the almost 2 focuses. According to the scale manual the understudies who gets low score on low problems some level is viewed as high problems in learning math. Though whose score is at more significant level on high problems level are viewed as high problems in learning math. Henceforth the speculation "There will be no huge varieties in the substance problems of IX class understudies concerning orientation is acknowledged. The results of Cramer's V are computed much lower; it is indicating the poor association between the various areas of mathematics for IX students.

[^3]Table 5 Organization and Grade VIII wise rating for areas of math

|  | GIA |  |  |  |  |  | SF |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | E | 0 |  | 0 | 毛 | 8 | 菏 | 0 |  | 0 | - | 0 |
| Number System | 26 | 12 | 31 | 18 | 43 | 20 | 39 | 19 | 30 | 19 | 31 | 13 |
| Arithmetic | 41 | 19 | 28 | 17 | 31 | 14 | 26 | 13 | 22 | 14 | 52 | 22 |
| Algebra | 36 | 17 | 20 | 12 | 44 | 20 | 36 | 18 | 17 | 11 | 47 | 20 |
| Geometry | 40 | 19 | 28 | 17 | 32 | 15 | 39 | 19 | 24 | 15 | 37 | 15 |
| Mensuration | 36 | 17 | 27 | 16 | 37 | 17 | 24 | 12 | 35 | 22 | 41 | 17 |
| Statistics | 37 | 17 | 34 | 20 | 29 | 13 | 40 | 20 | 28 | 18 | 32 | 13 |

It very well may be seen from the table 5 that the actions are rattled off and the reactions under three levels are given for example high problems, moderate problems and low problems. Here in general GIA understudies on high problems level have ( $30.8 \%$ ), while self-finance understudies have ( $69.2 \%$ ). It demonstrates that self-finance understudies feel simple to learn math contrast with GIA understudies. From the table it is likewise seen that for GIA understudies content mensuration is problems some, though for self-finance understudies' math is problems some substance for VIII class. To test invalid theory, the chi-square test is utilized. the chi-square test applied to work out the distinction between two gathering scores of grant in aid and self-finance understudies on satisfied problems in math. to test the above speculation, the chi-square test was likewise utilized to figure out the relationship between the public authority and self-finance optional school understudies on happy problems. the aftereffects of the test are given in table 6.

Table 6 Chi- square test for grade VIII students and Organization

|  | High <br> difficulty | Moderate <br> difficulty | Low <br> difficulty | Chi- <br> square | Cramer's <br> $\boldsymbol{\phi}$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| GIA (O) | 36 | 28 | 36 | 0.56 | 0.02 |
| Expected | 33.3 | 33.3 | 33.3 |  |  |
| SF $(\mathbf{O})$ | 34 | 26 | 40 | 2.96 | 0.122 |
| Expected | 33.3 | 33.3 | 33.3 |  |  |

The Chi-square worth is critical at 0.05 level which demonstrates that there is a huge distinction between two groups for example GIA and self-finance understudies on problems level in happy area of math for VIII class. The contrast between two gathering scores is 26 focuses. According to the device on low problems level who got less score is considered will be viewed as more satisfied problems in learning math, though whose score is more elevated level are viewed as less problems in math. Thus the theory - there is no critical variety in the substance hardships levels of VIII class secondary school understudies in learning math as for Organization" rejected. Cramer's value is also represented weaker association between the types of organization and understanding of different branches of mathematics.

Table 7 Organization and Grade IX wise rating for areas of math

|  | GIA |  |  |  |  |  | SF |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 哥 | 89 |  | $0^{2}$ |  | 89 | 気 | $0^{\circ}$ | $\begin{aligned} & \text { En } \\ & \text { En } \\ & \hline \end{aligned}$ | $0^{2}$ | - | $0^{2}$ |
| Number System | 22 | 11 | 39 | 18 | 39 | 20 | 35 | 19 | 38 | 19 | 27 | 13 |
| Arithmetic | 37 | 19 | 36 | 17 | 27 | 14 | 22 | 12 | 30 | 15 | 48 | 22 |
| Algebra | 32 | 17 | 28 | 13 | 40 | 21 | 32 | 18 | 25 | 12 | 43 | 20 |
| Geometry | 36 | 19 | 36 | 17 | 28 | 15 | 35 | 19 | 32 | 16 | 33 | 15 |
| Mensuration | 32 | 17 | 35 | 16 | 33 | 17 | 20 | 11 | 43 | 21 | 37 | 17 |
| Statistics | 33 | 17 | 42 | 19 | 25 | 13 | 36 | 20 | 36 | 18 | 28 | 13 |

It very well may be seen from the table 7 that there is a slight distinction between the GIA and Selffinance understudy bunch on satisfied problems level for IX class. By and large 72.1\% Self-finance understudies were communicated low problems and just $71.9 \%$ of GIA understudies communicated least problems in math. In this manner the contrast between two groups is low. In Number System Self-finance understudies felt simple though the GIA understudies felt simple. The distinction between their score is 0.2 points. Essentially, the Self-finance understudies felt Geometry is problems some, though for GIA understudies Mensuration is hard for IX class on High problems level.

Chi-Square: In request to test invalid theory, the Chi-Square test is utilized. The Chi-Square test applied to work out the contrast between the two gathering upsides of GIA and Self-finance the executives' understudies of high school IX class understudies on satisfied problems. To test the above speculation, the chi-square test was additionally utilized to figure out the relationship between the GIA and Self-finance the executives understudies of High Schools on happy problems. The aftereffects of the test are given in table 8 .

Table 8 Chi- square test for grade IX students and Organization

|  | High <br> difficulty | Moderate <br> difficulty | Low <br> difficulty | Chi- <br> square | Cramer's <br> $\boldsymbol{\phi}$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| GIA (O) | 32 | 36 | 32 | 0.32 | 0.04 |
| Expected | 33.3 | 33.3 | 33.3 |  |  |
| SF $(\mathbf{O})$ | 30 | 34 | 36 | 0.56 | 0.053 |
| Expected | 33.3 | 33.3 | 33.3 |  |  |

The Chi-Square worth is not greater than at any levels which show that the distinction between the scores of grant in aid school understudies and Self-finance understudies is extremely low. Which is one mean focuses. Henceforth the theory - There is no critical varieties in the substance problems levels of IX class high school understudies in learning Mathematics concerning variable administration is accepted. Cramer's value is also represented weaker association between the types of organization and understanding of different branches of mathematics.

Table 9 Dichotomy and Grade VIII wise rating for areas of math

|  | Urban |  |  |  |  |  | Rural |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | E | 09 |  | 09 |  | $0{ }^{\circ}$ | 䨗 | 09 | $\begin{aligned} & \text { n } \\ & \text { n } \\ & \end{aligned}$ | $0^{\circ}$ | － | $\Delta$ |
| Number System | 30 | 16 | 32 | 14 | 38 | 20 | 30 | 18 | 29 | 13 | 41 | 20 |
| Arithmetic | 34 | 18 | 40 | 18 | 26 | 14 | 33 | 20 | 36 | 16 | 31 | 15 |
| Algebra | 30 | 16 | 39 | 18 | 31 | 16 | 18 | 11 | 47 | 21 | 35 | 17 |
| Geometry | 31 | 16 | 46 | 21 | 23 | 12 | 34 | 20 | 40 | 18 | 26 | 13 |
| Mensuration | 30 | 16 | 40 | 18 | 30 | 16 | 28 | 17 | 38 | 17 | 34 | 17 |
| Statistics | 36 | 19 | 24 | 11 | 40 | 21 | 25 | 15 | 36 | 16 | 39 | 19 |

From the table 9 it very well may be seen that the general happiness level in VIII arithmetic as for variable division is as per the following．Urban dichotomy understudies felt $68.4 \%$ ，though Rural area understudy felt $31.6 \%$ on low degree of problems．For urban Students low degree of challenging for each satisfied area of Mathematics is as per the following．The table additionally shows that both gathering of understudies are confronting number－crunching and math as a problem some substance．

Chi Square：In request to test the invalid theory，the Chi－Square test is utilized．The Chi－Square test is applied to ascertain the contrast between the two gathering mean upsides of Urban and Rural region High School understudies on happy problems．To test the above speculation，the chi－square test was additionally utilized to figure out the relationship between the urban and rustic area of High School understudies on happy problems．The consequences of the test are given in table 10.

Table 10 Chi－square test for grade VIII students and Dichotomy

|  | High <br> difficulty | Moderate <br> difficulty | Low <br> difficulty | Chi－ <br> square | Cramer＇s <br> $\boldsymbol{\phi}$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Urban（O） | 32 | 37 | 31 | 0.559 | 0.053 |
| Expected | 33.3 | 33.3 | 33.3 |  |  |
| Rural（O） | 28 | 38 | 34 | 1.52 | 0.087 |
| Expected | 33.3 | 33.3 | 33.3 |  |  |

The acquired chi－square worth is not critical at any level of the table worth，which show that the contrast between the urban and rural region high schools understudies in happy problems level of math has not huge connection．Subsequently the theory－There is no huge variety in the substance problems in learning mathematics of VIII class high school understudies as for variable dichotomy is acknowledged．Cramer＇s value is also represented weaker association between the types of organization and understanding of different branches of mathematics．

Table 11 Dichotomy and Grade IX wise rating for areas of math

|  | Urban |  |  |  |  |  | Rural |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 毕 | 69 |  | 8 | 毛 | $\Delta$ | 毕 | 0 or | 者 | 8 | － | 0 |
| Number System | 28 | 15 | 36 | 15 | 36 | 20 | 28 | 18 | 33 | 13 | 39 | 20 |
| Arithmetic | 32 | 18 | 44 | 18 | 24 | 13 | 31 | 20 | 40 | 16 | 29 | 15 |
| Algebra | 28 | 15 | 43 | 18 | 29 | 16 | 16 | 10 | 51 | 21 | 33 | 17 |
| Geometry | 29 | 16 | 50 | 21 | 21 | 12 | 32 | 20 | 44 | 18 | 24 | 12 |
| Mensuration | 28 | 15 | 44 | 18 | 28 | 16 | 26 | 16 | 42 | 17 | 32 | 16 |
| Statistics | 36 | 20 | 24 | 10 | 40 | 22 | 25 | 16 | 36 | 15 | 39 | 20 |

From the above table 11 it shows that the general substance region problems level in IX class arithmetic concerning variable polarity the urban classification understudies were communicated $76.6 \%$ towards low problems level contrast with Rural understudies $64.8 \%$ in IX class．It implies urban understudies felt straightforward math look at Rural understudies．The table additionally expresses those Urban understudies felt high problems in satisfied region Mensuration and Rural understudies felt high problems in Geometry．

Chi－Square：In request to test the invalid speculation，the Chi－Square test is utilized．The Chi－Square test applied to compute the contrast between the two－gathering worth of Urban and Rural school understudies of IX class on happy problems level．To test the above theory，the chi－square test was additionally utilized to figure out the relationship between the Urban and Rural school understudies of IX class on satisfied problems level．The consequences of the test are given in table 11．The Chi－ Square worth is huge at 0.01 levels which demonstrate that the contrast between the upsides of urban and rural is high，which is 2 degree of freedom．In that urban region understudies are having high score as opposed to Rural region understudies in happy problems for IX class understudies．Thus the speculation－There is no huge variety in the substance problems levels of high school understudies as for variable polarity for IX class is rejected．

Table 12 Chi－square test for grade IX students and Dichotomy

|  | High <br> difficulty | Moderate <br> difficulty | Low <br> difficulty | Chi－ <br> square | Cramer＇s <br> $\boldsymbol{\phi}$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Urban（O） | 36 | 24 | 40 | 4.16 | 0.144 |
| Expected | 33.3 | 33.3 | 33.3 |  |  |
| Rural（O） | 25 | 36 | 39 | 3.26 | 0.128 |
| Expected | 33.3 | 33.3 | 33.3 |  |  |

The acquired chi－square worth is not critical at any level of the table worth，which show that the contrast between the urban and rural region high schools understudies in happy problems level of math has not huge connection．Subsequently the theory－There is no huge variety in the substance problems in learning mathematics of IX class high school understudies as for variable dichotomy is acknowledged．Cramer＇s value is also represented weaker association between the types of organization and understanding of different branches of mathematics．

Table 13 Class and Grade VIII wise rating for areas of math

|  | VIII（ $\mathrm{n}=200$ ） |  |  |  |  |  | IX（ $\mathrm{n}=200$ ） |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 気 | 0 O |  | 0 | 苋 | $8{ }^{\circ}$ | 菏 | 0 or |  | O？ | － | 0 |
| Number System | 60 | 17 | 96 | 19 | 88 | 23 | 58 | 20 | 88 | 16 | 54 | 15 |
| Arithmetic | 52 | 15 | 94 | 19 | 54 | 14 | 28 | 10 | 110 | 20 | 62 | 17 |
| Algebra | 54 | 15 | 108 | 22 | 38 | 10 | 60 | 21 | 96 | 18 | 44 | 12 |
| Geometry | 52 | 15 | 96 | 19 | 52 | 13 | 48 | 17 | 92 | 17 | 60 | 16 |
| Mensuration | 68 | 19 | 56 | 11 | 76 | 20 | 46 | 16 | 80 | 15 | 74 | 20 |
| Statistics | 72 | 20 | 48 | 10 | 80 | 21 | 50 | 17 | 72 | 13 | 78 | 21 |

Table 13 demonstrates that $12 \%$ of the understudies of class VIII communicated high problems in figuring out the Number System，2\％of the understudies communicated moderate problems level．8\％ of the understudies felt number framework is low problems some．Generally，it can induce that it is low problems level part in math are number framework and measurements．Accordingly，over 75\％of understudies concur Number System is effortlessly perceived in VIII class arithmetic．Though staying happy like geometry is problems some in VIII class math．Though IX class understudies communicated $13 \%$ High problems in number system， $14 \%$ felt moderate problems and $62 \%$ felt Low

[^4]problems. It implies practically $75 \%$ of understudies communicated number framework and insights are straightforward in happy area of IX class arithmetic. For both VIII and IX class understudies' calculation is not simple substance to realize when contrast with different items in math. In generally speaking all items areas of math we can say that the expansion in Class, the expansion in it is seen to figure out level. Here IX class understudies have less problems when contrast with VIII class understudies in math. Chi-Square: In order to test the null hypothesis, the Chi-Square test is employed. The Chi-Square test applied to calculate the difference between the two group values of VIII and IX class of High School students on content difficulty in mathematics. To test the above hypothesis, the chi-square test was also employed to find out the association between the VIII and IX class of high school students on content difficulty. The results of the test are given in table 14.

Table 14 Chi- square test for grade VIII students and Class

|  | High <br> difficulty | Moderate <br> difficulty | Low <br> difficulty | Chi- <br> square | Cramer's <br> $\boldsymbol{\phi}$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| VIII (O) | 25 | 38 | 37 | 3.14 | 0.125 |
| Expected | 33.3 | 33.3 | 33.3 |  |  |
| IX $(\mathbf{O})$ | 21 | 50 | 29 | 13.47 | 0.26 |
| Expected | 33.3 | 33.3 | 33.3 |  |  |

The acquired Chi-Square worth is exceptionally low and could not get critical at any levels which demonstrate that the contrast between the mean upsides of VIII class and IX class is extremely low. Which is the 198 focuses according to the device whose get less score as viewed as high satisfied problems learning in math understudies while whose score is at more elevated level on the instrument are viewed as least problems looking in math subject. It implies VIII class understudy confronting more problems in learning math. Thus, the invalid theory is acknowledged as for the variable class. Cramer's value is also represented weaker association between the types of organization and understanding of different branches of mathematics.

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