|  |  |
| --- | --- |
| Tool | A few descriptive statictics from Maths Teachers' data |
| Data Dump | 6th September 2016 |
| Preliminary analysis done by | Arundhati |

2. I believe that

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Strongly agree | Agree | No opinion | Disagree | Strongly Disagree |
| Students who find math difficult do not have the ability to do mathematics |  29.46  |  48.84  |  2.33  | 16.28  | 3.10 |
| 2.2. Students who solve problems quickly are good at maths | 40.31 | 42.64 | 0.78  | 13.18 | 3.10 |
| 2.3. Students who stick to the procedures told in class do well in maths | 3.10 | 26.36  |  6.20  | 56.59 |  7.75  |
| 2.4. Geometry does not have any practical use for our students | 51.94 | 44.96  | 1.55  | 1.55  |  |
| 2.5. For some reason boys are better at doing mathematics than girls. | 43.41  |  53.49  | 3.10  |  |  |
| 2.6. Games and activities are suitable for primary school maths, not for highschool maths | 51.16 |  48.06  |  0.78  |  |  |

3. In the Mathematics classroom that I teach:

|  | Strongly agree | Agree | No opinion | Disagree | Strongly Disagree |
| --- | --- | --- | --- | --- | --- |
| 3.1. I have no time to do additional activities, because I have to cover allcontent in the textbook. | 5.43  |  13.95  | 6.20  | 59.69 | 14.73 |
| 3.2. Students need to know only the standard procedures because alternative procedures confuse them | 26.36  | 60.47  | 1.55  | 11.63 |  |
| 3.3. Connecting maths with out-of-school contexts is not useful | 13.18 |  48.84  |  4.65 | 31.78  | 1.55 |
| 3.4. Boys answer questions more frequently than girls |  |  6.20 |  6.20 | 68.22 | 19.38 |
| 3.5. When students make mistakes, the best remedy is to give them repeated practice of similar problems. |  0.78  | 10.85  | 7.75 |  59.69 | 20.93 |
| 3.6. Only one concept is taught at a time because discussing many concepts together confuses students. | 3.88  |  27.91  | 17.05 | 44.96 | 6.20 |

**3. In the Mathematics classroom that I teach:**

|  | Strongly agree | Agree | No opinion | Disagree | Strongly Disagree |
| --- | --- | --- | --- | --- | --- |
| 3.1. I have no time to do additional activities, because I have to cover allcontent in the textbook. | 11.63  | 35.66 | 7.75  | 36.43  | 8.53  |
| 3.2. Students need to know only the standard procedures because alternative procedures confuse them | 2.33 | 24.03 | 10.85  | 54.26  | 8.53  |
| 3.3. Connecting maths with out-of-school contexts is not useful | 1.55  |  9.30  | 10.08  |  63.57  | 15.50  |
| 3.4. Boys answer questions more frequently than girls | 1.55  | 8.53  | 6.20  |  67.44  |  16.28 |
| 3.5. When students make mistakes, the best remedy is to give them repeated practice of similar problems. | 31.01  | 55.81 | 2.33  | 10.85  |  |
| 3.6. Only one concept is taught at a time because discussing many concepts together confuses students. |  15.50 | 55.04 | 3.10 | 25.58  | 0.78  |
|  |  |  |  |  |  |

In the Mathematics classroom:

|  | Always | Frequently | Sometimes | Never |
| --- | --- | --- | --- | --- |
| 4.1. I solve one/two problems on the board & ask students to solve the rest of the textbook exercises in their notebooks | 23.26  |  19.38  | 39.53  | 17.83 |
| 4.2. I do learning activities (games, puzzles) with students | 16.28  | 9.30 | 68.22 |  6.20  |
| 4.3. I do activities that involve group work that allow students to see, share and discuss their class work/maths problem solutions with each other | 13.18  | 20.16  |  58.14  |  8.53 |
| 4.4. I maintain silence/ discipline because students must concentrate and individually do maths | 52.71 | 24.81  |  20.16  |  2.33  |
| 4.5. I encourage students to come up with their own ideas about how to solve problems. |  58.14 |  27.91  |  13.18  |  0.78  |

How well prepared do you feel you are to teach the following topics?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Very well prepared | Somewhat prepared | Not well prepared | Not applicable |
| Computing, estimating or approximating with whole numbers | 54.26  | 40.31 | 3.10  |  2.33  |
| Representing decimals and fractions using words, numbers, or models |  55.81  | 36.43  |  6.20  |  1.55  |
| Computing with fractions and decimals | 62.79 |  35.66 |  1.55  |  |
| Representing, comparing, ordering, and computing with integers |  59.69 |  35.66 |  4.65  |  |
| Problem solving involving percents and proportions | 62.02 | 34.11  |  2.33 |  1.55  |
| Numeric, algebraic, and geometric patterns or sequences(extension, missing terms, generalization of patterns) |  60.47  |  35.66 |  2.33  |  1.55  |
| Simplifying and evaluating the algebraic expressions |  71.88 | 25.00  | 2.34  |  0.78  |
| Simple linear equations and inequalities, and simultaneous (two variables) equations | 71.88  | 24.22 | 2.34  | 1.56  |
| Equivalent representations of functions as ordered pairs, tables, graphs, words, or equations |  59.38  | 36.72  | 2.34  |  1.56 |
| Geometric properties of angles and geometric shapes (triangles, quadrilaterals, and other common polygons) |  64.06  | 32.03  |  3.12  | 0.78  |
| Congruent figures and similar triangles |  58.59  | **39.84**  | 0.78  | 0.78  |
| Relationship between three–dimensional shapes and their two-dimensional representation |  44.53 | 47.66  |  4.69  |  3.12  |
| Using appropriate measurement formulas for perimeters,circumferences, areas of circles, surface areas and volumes |  67.97  | 28.91 | 0.78  | 2.34  |
| Cartesian plane - ordered pairs, equations, intercepts, intersections, and gradient Translation, reflection, and rotation | 40.62 | 46.09  |  6.25  |  7.03  |
| Reading and displaying data using tables, pictographs, bar graphs, pie charts and line graphs | 59.38  |  33.59 |  5.47 |  1.56  |
| Interpreting data sets (e.g., draw conclusions, make predictions, and estimate values between and beyond given data points) | 50.00  | 40.62  |  3.91 |  5.47  |
| Judging, predicting, and determining the chances of possible outcomes | 46.88  | 44.53  |  5.47  | 3.12  |

How often do you have the following types of interactions with other teachers?

|  | Daily or almost daily | 1-3 times per week | 2 or 3 times per month | (almost) Never |
| --- | --- | --- | --- | --- |
| 6.1. Discussions about how to teach a particular concept | 22.66  | 31.25 |  36.72  |  9.38  |
| 6.2. Working on preparing lesson plans | 43.75  | 23.44 | 24.22  | 8.59  |
| 6.3. Visits to another teacher’s classroom to observe his/her teaching | 4.69  |  9.38  | 19.53  | 66.41  |
| 6.4. Informal observations of my classroom by another teacher | 3.12 |  6.25  | 32.03 | 58.59  |

In the past two years, have you participated in professional development in any of the following?

|  |  |  |
| --- | --- | --- |
|  | yes | No |
| 7.1. Mathematics content |  62.50  | 37.50  |
| 7.2. Mathematics pedagogy/instruction | 56.25  | 43.75  |
| 7.3. Mathematics curriculum |  53.91 |  46.09  |
| 7.4. Integrating information technology into mathematics |  35.16  | 64.84 |
| 7.5. Improving students’ critical thinking or problem solving skills | 61.72  | 38.28 |
| 7.6. Mathematics assessment | 62.50 | 37.50 |

8. How many students are in class 9 that you teach?



9. How many hours per week do you teach mathematics to the Class 9?



10. How do you use a textbook(s) in teaching mathematics to the class 9?

|  |  |  |
| --- | --- | --- |
| As the primary basis for my lessons | As a supplementary resource | Do not use |
| 71.88  | 27.34  |  0.78  |

12. In teaching mathematics to the students in the class 9, how often do you usually ask them to do the following?

|  | Never | Some lessons | About half the lessons | (Almost) every lesson |
| --- | --- | --- | --- | --- |
| 12.1. Practice adding, subtracting, multiplying, and dividing without using a calculator | 17.97 | 16.41  |  3.91  |  61.72  |
| 12.2.Work on fractions and decimals | 5.47  |  57.81 |  11.72  |  25.00  |
| 12.3. Use knowledge of the properties of shapes, lines and angles to solve problems |  2.34 |  71.88  | 14.06  |  11.72  |
| 12.4. Interpret data in tables, charts or graphs |  5.47 | 78.91 |  3.91  | 11.72  |
| 12.5.Write equations and functions to represent relationships |  3.91  |  75.00 |  7.81  | 13.28  |
| 12.6. Memorize formulas and procedures |  1.56  | 35.16  |  7.81  |  55.47  |
| 12.7.Apply facts, concepts and procedures to solve routine problems | 2.34 | 35.94  | 10.94  | 50.78  |
| 12.8. Explain their answers | 2.34 | 39.06 | 9.38  | 49.22  |
| 12.9.Relate what they are learning in mathematics to their daily lives |  2.34 |  40.62  |  14.84 | 42.19  |
| 12.10. Decide on their own procedures for solving complex problems |  8.59  | 55.47  | 8.59  |  27.34  |
| 12.11. Work on problems for which there is no immediately obvious method of solution | 14.06 |  60.94  |  7.03  | 17.97  |
| 12.12. Work together in small groups | 11.72 |  62.50 | 8.59  |  17.19 |

|  | Yes | No |
| --- | --- | --- |
| 13.Do students in Class 9 have computer(s) available to use during their Math lessons? | 22.66 | 77.34  |
| 14.Do any of the computer(s) have access to the Internet? |  31.82  |  68.18 |
|  |  |  |

15. In teaching Math to Class 9, how often do you have students use a computer for the following activities?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Never | Some lessons | About half the lessons | Every or almost every lesson |
| 15.1. Practice solving mathematics problems | 66.41  | 20.31 | 3.12  |  10.16  |
| 15.2. Play mathematics based games | 68.75 | 28.91  | 0.78 | 1.56 |
| 15.3. Learn new mathematical concepts |  57.03  | 28.91  | 3.12  |  10.94  |
| 15.4. For mathematical calculations | 65.62  |  20.31  |  4.69  |  9.38  |

16. In your view, to what extent do the following condition limit how you teach Math for class 9?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Students | A lot | Some | A Little | Not at all | No applicable |
| 16.1.1. Students with different academic abilities |  37.50  | 44.53 |  14.84 |  3.12  |  |
| 16.1.2. Students come from a wide range of backgrounds (example economic, language). |  39.84  | 38.28  |  17.19 |  4.69  |  |
| 16.1.3. Students with special needs (e.g., hearing, vision, speech impairment, physical disabilities, mental or emotional/psychological impairment) |  19.53 |  28.91 | 39.06 |  7.03  |  5.47  |
| 16.1.4. Uninterested students |  21.88  |  36.72  | 22.66 |  7.81 |  10.94 |
| 16.1.5. Disruptive students |  10.94 |  28.12  |  32.81  |  17.19  |  10.94 |

| 16.2. Resources | A lot | Some | A Little | Not at all | No applicable |
| --- | --- | --- | --- | --- | --- |
| 16.2.1. Shortage of computer hardware | 42.19 |  23.44 | 11.72 | 7.03  |  15.62  |
| 16.2.2. Shortage of computer software | 40.62  | 25.00  | 11.72 |  6.25 | 16.41  |
| 16.2.3.Shortage of support for using computers | 47.66  | 22.66 |  10.16  | 8.59  | 10.94  |
| 16.2.4. Shortage of textbooks for student use |  11.72  |  19.53  |  11.72  |  49.22  | 7.81 |
| 16.2.5. Shortage of other instructional equipment for students’ use |  18.75 |  41.41  | 23.44  | 12.50 |  3.91  |
| 16.2.6. Shortage of equipment for your use in demonstrations and other exercises | 19.53  |  41.41  |  26.56 |  9.38 |  3.12  |
| 16.2.7. Inadequate physical facilities | 23.44  | 40.62  | 26.56 | 5.47  |  3.91  |
| 16.2.8. High student/teacher ratio |  28.12  |  32.81  | 20.31  |  14.06  |  4.69  |

How often do you usually assign mathematics homework to the Class 9?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Every or almost every lesson; | About half the lessons | Some lessons | Never |
|  |  89.76  |  3.15  |  7.09  |  |

19. When you assign mathematics homework to class 9 students, about how many minutes do you usually assign? (Consider the time it would take an average student in your class.)

|  | Less than 15 minutes | 15-30 minutes | 31-60 minutes | 61-90 minutes | More than 90 minutes |
| --- | --- | --- | --- | --- | --- |
|  | 31.50 |  40.94 | 22.05  |  4.72  |  0.79 |

20. How often do you assign the following kinds of mathematics homework to class 9?

|  |  |  |  |
| --- | --- | --- | --- |
|  | Never or almost never | Sometimes | Always or almost always |
| 20.1. Doing problem/question sets |  | 40.94  | 59.06 |
| 20.2. Gathering data and reporting | 15.75  |  77.95  |  6.30  |
| 20.3. Finding one or more practical applications of the content covered |  11.81  |  76.38  | 11.81  |

21. How often do you do the following with the mathematics homework assignments for the Class 9?

|  | Never or almost never | Sometimes | Always or almost always |
| --- | --- | --- | --- |
| 21.1. Monitor whether or not the homework was completed |  0.79 |  24.41 |  74.80 |
| 21.2.Correct assignments and then give feedback to students |  1.57  |  25.98  | 72.44  |
| 21.3. Have students correct their own homework in class |  11.02  | 50.39 | 38.58  |
| 21.4. Use the homework as a basis for class discussion | 11.02 |  52.76 |  36.22  |
| 21.5. Use the homework to contribute towards students’ grades or marks | 22.83  | 51.97 | 25.20 |

22.How much emphasis do you place on the following sources to monitor students’ progress in mathematics?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | No emphasis | Little emphasis | Some emphasis | Major emphasis |
| 22.1.Classroom tests (for example, teacher made or textbook tests) |  0.79  |  4.72 | 38.58 | 55.91 |
| 22.2. National or regional achievement tests | 11.02 | 22.05 | 41.73  |  25.20  |
| 22.3. Your professional judgment |  3.94  |  11.02 |  37.01  | 48.03  |

23. How often do you include the following types of questions in your mathematics tests or examinations?

|  |  |  |  |
| --- | --- | --- | --- |
|  | Never or almost never | Sometimes | Always or almost always |
| 23.1. Questions based on recall of facts and procedures |  3.15  | 61.42  | 35.43  |
| 23.2. Questions involving application of mathematical procedures |  3.15  |  45.67  |  51.18 |
| 23.3. Questions involving searching for patterns and relationships |  7.87  | 63.78 | 28.35 |
| 23.4. Questions requiring explanations or justifications |  4.72  |  62.20  | 33.07  |

How strongly do you feel the need to have the following included as part of the Math Teacher Professional Development Course to contain?

|  |  |  |  |
| --- | --- | --- | --- |
|  | I strongly need training in this | I need some training in this | I don't need training in this |
| 24.1. Subject understanding |  14.17 |  65.35  |  20.47  |
| 24.2. Pedagogical tools and techniques |  16.54  |  71.65  |  11.81  |
| 24.3. Integration of technology in teaching | 37.01  |  57.48  |  5.51 |
| 24.4. Student Assessments | 11.81  |  64.57  | 23.62  |

I would like teacher professional development to be offered in the form of:

|  |  |  |
| --- | --- | --- |
|  | Yes | No |
| 25.1. Face to face lectures | 78.74  |  21.26  |
| 25.2.Computer based training sessions | 85.04  | 14.96  |
| 25.3. Interactions with other teachers (peer learning) | 93.70  | 6.30  |
| 25.4. Referring to books, magazines | 88.19 | 11.81 |
| 25.5. Hands-on activities for teachers |  95.28  |  4.72  |

26. How would you characterize each of the following within your school?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Very low |  low | Medium |  high | Very high |
| 26.1.Teachers’ job satisfaction |  3.15  |  4.72  | 36.22 |  46.46  | 9.45  |
| 26.2.Teachers’ understanding of the school’s curricular goals | 2.36  | 3.94 |  31.50 |  55.12  | 7.09  |
| 26.3.Teachers’ degree of success in implementing the school’s curriculum | 1.57  | 2.36 | 41.73  | 46.46  | 7.87  |
| 26.4.Teachers’ expectations for student achievement |  0.79  | 2.36 | 30.71  | 51.97  | 14.17  |
| 26.5.Parental support for student achievement | 18.11  | 27.56 | 26.77  |  19.69  |  7.87  |
| 26.6.Parental involvement in school activities | 26.77 | 33.07  | 22.83  | 13.39  | 3.94  |
| 26.7.Students’ regard for school property | 7.87  | 18.11  | 40.94 | 24.41  | 8.66  |
| 26.8.Students’ desire to do well in school |  3.94  | 10.24  | 38.58  | 36.22  | 11.02 |