**Plan for Revival of Educational**

**Proposals**

1. **Primary schools—survey to know**
2. Total numbers of schools in walled city.
3. Name of the school and locality.
4. Single/double shift.
5. No. of sections in every school for every shift.
6. No. of students in every section with names if possible.
7. Name of head of Institution.
8. No. of teachers.
9. Conduct a written test of 5th class of every school in order to gauge the knowledge of students.
10. **Enterprise Resource Planning (***Centralized)*: complete profile and regular academic record maintenance of every individual student.
11. Profile of parents of all the students.
12. Involvement of parents in academic proceedings.
13. Monthly/quarterly report of academic progress to be submitted by **HoS.**
14. Good infra structure and good furniture including the washroom facility.
15. Talent identification and personality development through computers and modern technology.
16. Installation of CCTVs and monitoring through cloud computing.
17. Strategic planning for academic improvement in association with HoS and the teachers.
18. Co-curricular activities.
19. Coaching of weak students by the teachers after the school hours.
20. Special arrangements for monitoring of mathematics.
21. Start teaching of English from class 2nd .
22. Formation of a team of volunteers for survey and other poses.
23. Formation of team of educated volunteers for academic survey order to check the academic progress of schools.
24. Monitoring of proper use of financial aid given by government.

**Middle, Secondary and Senior Secondary Schools**

Muslims in India are falling behind the framework of the education system that is required for establishing good schools or maintaining the standard of existing schools. The schools in question are not the exceptions. Managements of minority aided schools have the liberty of managing the schools in their own style of functioning. Government agencies avoid interfering in the management system but that doesn’t mean these schools have the liberty to commit mismanagement all the while. Resultant of that are the deplorable and unproductive results in quality considerations and even in quantity. English medium schools are sailing in the same boat of unsatisfactory performance. Their performance is not under the deliberations or scrutiny at least at the moment.

Improvement of academic quality is the only solution to cope up the frenetic pace of educational march that is taking place globally. It is the responsibility of heads of the institutions and the administrators to keep their eyes open. They are liable to look out for the lacunae in the academic scenario prevailing in school. Reformation of the quality of education contains no readymade solution. It involves all of the stake holders

**Essentials for standardization of Academic Revival Plans**

Needless to say that our Academic Institutions Urdu medium, aided or un-aided, are grappling with a common factor that is the unacceptable under par academic performance. Consequent to the Psychological, technological and philosophical researches in the field of education many newer techniques and approaches have been incorporated to the repertoire of teaching-learning process.

Society has changed altogether. Education is no exception. Revival plan for education deserves the whole hearted and concerted efforts from all quarters especially from the local MLAs, for political patronage and financial help and a good, elaborated and strategic planning for Ascent of Pedagogy, the elevation of standard of education from educationist/s.

**Stake holders of a School**

1. Students (and their requirements)
2. Parents
3. Teachers and quality of teaching (teaching activity)
4. Head of the institution
5. Administrators and above all
6. The community members

Beside the stakeholders as named above, there are a lot of other factors which determine the smooth track for ascent of pedagogy in schools. The factors may be summarized as under;

1. **Attributes of a good school**
2. Good Principal
3. Vision, mission and strategic planning
4. Expectations of the community
5. Conducive learning environment
6. Conducive academic atmosphere
7. Optimistic school atmosphere
8. Good infra-structure and good and comfortable furniture
9. Skilled and dedicate staff (that includes teaching and non-teaching staff)
10. Supportive administrators
11. State of the art equipment and facilities
12. Sports and co-curricular activities
13. Counseling and career counseling
14. Motivational activities for students
15. Future booster acts such as talent search and personality development
16. Moral education
17. Discipline
18. Monitoring of teaching and other activities
19. Job satisfaction of school’s employees
20. Parental involvement
21. Positive environment
22. Community development and social changes
23. Use of resources
24. Students’ mutual support
25. Confess limitations and measures for success
26. Qualities of ideas
27. Teachers professional development
28. Transparent projection
29. Worth of stake holders
30. Flexible policy
31. Realization of ambitions
32. Affinity with school
33. Co-operative with other schools
34. No un-necessary meetings
35. Financial regulations
36. Avoid pessimism
37. Equal opportunity for students
38. Skill augmentation
39. Persistent performance
40. Health and environment
41. Positive climate
42. Clean and conducive environment
43. Satisfaction for all
44. **What is a bad School**

The increased focus on our Urdu medium and so called English-medium schools in Delhi has revealed some disturbing questions about the continuous low performance at secondary and senior secondary school examination and our response at the community level. Administrators of these schools failed to identify the reasons behind and their cold response to the impending failure. The genuine educators know from their experience that no school fails from one day to the next. The reasons for school failure must have been manifest for some or a longer duration of time. **Why then were not these problems** **addressed in time** to help the students? Administrators may have been the shining stars in their respective fields, yet they failed to administer. The reply is as simple as that.

1. **A) Absence of head of school for a considerable time due to any reason.**

**B) Inefficient leadership of HoS.**

1. The school’s principal fail to include the staff members in the process of strategic planning.
2. The principal shows or behave in authoritarian style of leadership. The teachers feel apprehensive to approach and talk to him.
3. The school principal is afraid of confrontation and avoids making decisions on issues that are, or appear to be controversial.
4. In-effective teachers are tolerated and no action is taken against them.
5. It is considered to be the duty of principal to visit classrooms in order to gauge the quality of teaching. If the principal fail to perform his duty, constructive feedback may not be provided to the teachers.
6. **Teachers**
7. Students and the teachers who are good performers require appreciation for their motivation and encouragement. The act may generate positive energy to do more quality work.
8. Teachers have low academic and behavioral expectations of their students.
9. Teachers have a high rate of high rate of absenteeism, both excused and un-excused.
10. Teachers and the staff exhibit a low level of confidence, and rarely arrive more than a few minutes before their students in the morning or stay more than a few minutes after their students have been dismissed for the day.
11. Teachers shout at their students as a means of maintain order and discipline in the classroom.
12. Teachers fail or casual in making contact with their parents.
13. Teachers are required to revive the knowledge.
14. Lesson plans are to be prepared always in advance. Teaching without it may not draw the desired results.
15. If teachers wear inappropriate attire, it attracts disrespect from the students.
16. When students fail to respect their teacher, classroom gets noisy and out of control. Naturally quality of teaching-learning process gets plunged.
17. **Warning signs directly related to school’s culture**
18. The school building is in bad shape and in a poor state of cleanliness, needs a repair or an urgent repair, both indoors and outdoors.
19. There is poor lightning in the hallways and classrooms.
20. The school is noisy during the school hours due to reasons of traffic or otherwise.
21. Students roaming outside the classroom without purpose or permission.
22. If there is high rate of absenteeism, excused and un-excused both.
23. There is little regard for authority of principal, of teachers.
24. **Warning signs associated with strategic planning**
25. The school’s leadership does not understand the value of **strategic planning** that is a must for success of the school.
26. The school either does not have a strategic plan or no one can remember when the plan was last discussed.
27. The school’s staff and teachers do not know the school’s mission and they do not have a vision for the future.
28. The school’s principal does not pay any attention to the budget and has little or understanding of how it was developed or has to be developed.
29. **Warning signs related to a school’s communication network.**
30. There is no formal mechanism for teachers to either collaborate on best practices or discuss school’s wide concerns.
31. There are few or no staff meetings.
32. Staff meetings are disorganized and used by the staff as a time to complain about the school.
33. The school does not keep the parents informed through news letters or other forms of communications about what is happening in the school.
34. Parents are not expected to meet with teachers face-to-face at least twice in a month to discuss their children’s overall progress.
35. The school fails to provide parents with ample time left (at least 3 or 4 months) that their children may be at risk of academic failure.
36. **Warning signs related to the use of student performance data**
37. School leaders and staff do not use data to support their instructional strategies.
38. Teachers do not understand the value or proper use of formative evaluations or summative assessments.
39. There is limited or no use of bench mark testing to identify each student’s academic starting point for the school year and his or her progress throughout the year.
40. Teachers cannot determine if a child has made progress or the extent of that progress.
41. The school is using assessments to measure academic progress but teachers do not know how to interpret the associated diagnostic tool.
42. **Other important warning signs**
43. The teachers, who are teaching in the school, don’t admit their children because they know the school is not worthy or good.
44. Existence of groupism or sycophancy rule.
45. Basic amenities like sports equipments, labs and its equipments, potable water are in scarcity.
46. The students are taught what to think and not “how to think”.
47. Marks take the precedence and not the talent in any other field.
48. A few students are polished and rest are treated like dust.

**Conclusion**

* a school’s failure should not be seen as surprising or inevitable.
* The warning signs are neither difficult to recognize nor difficult to correct.
* The biggest question facing the community is the willingness of the management to realize the failing signs and act accordingly.
* There are no excuses for school failure.
* Waiting until the end of academic year or consequent years to realize that the school has failed simply means that we have consciously allowed our children to be left behind.

**Remedial steps to check a failing school**

There is magic bullet to turn around the failing schools. A series of remedial steps need to be taken. Each step’s impact depends and builds on the previous step in the sequence, because the later determines the access to good leaders, teachers and students.

**1. Don’t improve the teaching first**

This is a very common mistake. It is not worthwhile to improve teaching while still struggling badly behaving students or having a poor head of school in charge. We cannot expect teachers to sort out all the problems themselves—we need to create right environment first.

1. **Do improve governance, leadership, and structure first**

Otherwise we are putting great teachers in a position where they fail—they will waste time doing or managing the wrong things**.**

1. **Don’t reduce class sizes**

While reducing class size works, it is not the best use of reduces. It is expensive and we can create the same impact by improving students’ motivation and behavior, which fewer resources. Class size of 30 may perform well as the class size of 15. Hence there is no use of reducing the class size.

1. **do improve students’ behavior and motivation level**

The best way to create the right environment for good teachers is to improve students’ behavior and motivate them. Conversely we will find that the fastest way to do this is to exclude poorly behaved students. Move these poorly behaving students into another pathway, so that they can be managed differently and reintegrated into the main pathway once their behavior is improved.

1. **Avoid the zero tolerance policy**

Schools which tried to come down hard on poor behavior with a “zero tolerance” policy to bring positive impact may get success but for a short term. Students may revolt and even indulge in riots.

1. Keep the students from the nursery to class X under the cultural umbrella. In this way the, school leaders can create the right culture early on and ensure that poor behavior never develops. It also makes teaching at senior secondary level much easier.
2. **No super head policy**

Avoid bringing a super head from other successful institutions. It didn’t create the right foundations for sustainable long term improvement. Exam results may dip after they left.

1. **Do improve all your groups**

Although schools can improve short term performance by cutting and reallocating resources, they will not create sustainable improvement unless they invest in all age groups and subjects.

1. **Don’t expect spending more money to solve your school’s problem any faster**

More resources can help to overcome specific challenges, such as attracting good leaders and teachers, but what matters the most to the overall speed of improvement is the right changes in the right order.

1. But at the same time, don’t expect to improve without spending more, at least in the short term. To improve students’ learning, schools must have the basic resources they need to improve students’ behavior, pay higher salaries to attract good teachers, and employ staff to manage parents so teachers can spend more time at academic matters.

**Conclusion**

* **First:** we need to create the right environment before improving teaching standards. Great teaching is wasted without the right governance, leadership and structure with well behaved students.
* **Second:** the most significant improvement occurs when the schools change their students by excluding poor behavior students by creating multiple pathways for students with differing needs and keeping students of Nursery to X separate.

1. **Vision and Mission**
2. Vision of the school for a period of at least 3 years
3. Mission to achieve the same ensuring participation of all the stake holders
4. **What is a vision and Mission?***Without a vision people perish (Proverb)*
5. To see the school success, say after 3-5 years, how will people describe your school? Think about the answer and go for it.
6. It is needed for clarity and direction of the school
7. Absence of vision can lead to failure in identifying the priorities and conflicts
8. Vision and Mission go hand in hand, where there is no vision there is no mission to achieve the success.
9. The school is bound
10. **Strategic Planning**;
11. What is a strategic plan and strategic planning
12. How to make it
13. Procedure for its successful accomplishment
14. **Principal**
15. Attributes/Responsibilities of a good
16. What is a good governance
17. **Vic-Principal/Had-teacher**
18. Need to appoint Vice Principal/s
19. Attributes of V.P.
20. **Teacher/s**
21. Requisites and responsibilities of a good teacher.
22. Grooming and Counseling of teachers
23. Motivational activities for teachers, such as
24. *appreciation certificate,*
25. *cash award*
26. Appointment of guest teachers in order to fulfill the need of required no. of teachers
27. Planning for the ensuing session along with a perfect or almost desirable timetable
28. **Timetable**
29. What is a complete timetable
30. Kinds of timetable
31. Importance of an unbiased timetable
32. Who should be given the responsibility to make a good and un-biased timetable
33. **Students’ Requirements**
34. Technology-based education;
35. Learning through computers and a well furnish computer lab.
36. Smart-classrooms
37. Audio-visual room
38. Installation of CCTVs for surveillance
39. Classroom audio-technology
40. School broadcast system
41. **Students’ Problems**
42. Late coming
43. Chronic Absenteeism
44. Drop-out problem (reasons and preventions)
45. Vocational Education for drop-outs
46. **Parents**
47. Counseling of Parents
48. PTA meetings for students performance in exams
49. **Monitoring of Teaching Activity**
50. Monitoring and evaluation of school Academics and administration
51. Inspection of School
52. **Coaching**
53. Emphasis at 9th & 10th class Coaching
54. Coaching for Meritorious Students of class 11th & 12th
55. Arrangement/Establishment of Coaching and counseling Centers equipped with modern technology, at Schools and other Important places
56. **Career Counseling**
57. **Important Subjects**
58. Teaching of Mathematics deserves a systematic approach
59. Efforts to improve English speaking and writing skills
60. **Science laboratories**
61. Physics
62. Chemistry and
63. Biology laboratories
64. Improvement of Teaching Skills of Science Teachers
65. **School Library**
66. Importance of Academic Library in School
67. Replenishing of the Library
68. Motivation of students to develop reading habits
69. Monitoring of reading habits of the students
70. **Activities to Motivate the Students**
71. Motivational activities
72. Award for Students
73. Motivational Speeches by Various Personalities
74. Motivational speeches by ex-students
75. Responsibility of teachers in monitoring the motivational activities of children
76. Science Olympiad Foundation
77. Participation of students in National Talent search examination
78. Quiz competition
79. Quiz-Bee Competition
80. **Activities to stay in Lime-light**
81. Importance of Plantation and Plantation activities
82. Blood-donation Camps
83. Inter-schools Science Fair
84. Drawing competition
85. **Discipline**
86. Maintenance of Discipline in and outside the. Classroom
87. Maintenance of discipline inside and outside the School
88. **Examination Exertions**
89. Exam Stress and its Management
90. Guidance for Preparation of Exams
91. Fear Factor and its management (exam-phobia)
92. The art of writing answers in Board-exams getting maximum possible marks
93. What to do after Board-exams and before Results
94. **Spots and Games**
95. **Co-curricular Activities & Annual Cultural Program**
96. **Health & Environment—**School Health program & Eco-Green Club
97. **Formation of Different Committees for Administrative purpose**
98. **Required Software—**ERP (Enterprise Resource Planning)
99. **Collaboration with other schools in walled city area.**
100. **Advanced Technologies**
101. Robotics
102. Nanotechnology
103. Artificial Intelligence (AI)
104. **Introduction of Foreign Language**
105. French
106. German
107. Arabic
108. **Establishment of a Central Information/performance Center**

***Following five activities are crucial for collective educational improvement of students.***

1. Talent Search through information provided by relevant schools on the basis of established criteria
2. Personality development activities
3. Guidance for selection of streams at class 10th
4. Counseling
5. Career Counseling

**Choice of Subject and Admission guidance**

1. **Names of the courses of all the 3 streams after 12th**
2. **Total Colleges and Universities in India**
3. **Different subjects in individual Indian colleges**

**Information regarding individual subject**

1. **Introductory information** about the subject
2. **Courses available**—at different levels such as *certificate course, UG level, PG level, Ph.D. level etc*
3. **Eligibility** for admission further studies at the desired level
4. **Percentage required** for admission.
5. **Admission Procedure**
6. **Name of College/Institution/University**
7. **Duration of the course**
8. **Fee Structure**
9. **Desired Skills**
10. **Placement/Job opportunities**
11. **Employability**
12. **Expected salary**
13. **Data sharing with other such establishments/individuals**
14. **Bulletin of Information for Admission to the following Universities is available at Google;**
15. Delhi University
16. Jamia Millia Islamia
17. Aligarh Muslim University
18. IGNOU

**Foreign Destination—proper guidance**

1. IELTS (International English Language Testing System)
2. Popular exams besides IELTS include
3. *SAT, ACT, GMAT, GRE, TOEFL*
4. Importance of University Ranking
5. Select the course : identify the interest, aptitude, career aspirations and choose the desired subject
6. Select the country: USA, UK, Canada, Australia, New Zealand, Germany, France, Norway, Holland, Denmark, Sweden etc. and Russia, Tajekistan, Uzbekistan, etc
7. Good Universities in different countries for a specific subject
8. Procedure for seeking admission in a particular subject
9. Request for admission form
10. Skills required
11. Students visa
12. Arrangement of fund
13. Admission time
14. Fee structure
15. Fee concession and scholarships etc
16. Boarding charges and lodging expenses
17. Working options during studies
18. How to apply
19. Weather conditions
20. Permission to work
21. Documents required
22. Agencies to seek help for foreign destination

**28(A) Robotics**

It is the branch of engineering-technology that involves the conception, design, manufacture and operation of robots. Most of the machines that we use today are a part of the Robotic technology that has encompassed our entire society and our lives.

**History of robotics in Education**

* The first educational robotics program called LOGO was introduced by Seymore Papert in 1980.
* LOGO is actually a programming language, he developed it to control robot “turtles”—to move them forward and backward, a specified distance, turn right or left a specified degree, drop a pen and draw.
* One of the next iteration of robotics education was LOGOs collaboration with Lego. It was first controlled through personal computers and later in the form of fully programmable bricks.
* This became what we know today as ***Lego Mindstorms.***
* Lego has continued to provide educational programs with its products for grades K-12 (from kindergartens to 12th class) with a variety of robotic capabilities.
* In addition to Lego, many companies now provide robotic building kits that educators can use to build systems thinking learn engineering and practice STEM concepts, following the theories of constructions.
* Options are out there for the smallest of budgets, as well as large-scale budgets. Worldwide, non-profit organizations have inspired the formation of robotics clubs, as well as international robotics competitions.

**What is “Robotics” in broad sense?**

* Robotics is related to the science of electronics, engineering, mechanics and software development.
* Robotics is a branch of technology that deals with design, construction, operation, structural disposition manufacture and application of Robots.
* An earliest design of a humanoid Robot was given by Leonardo Da Vinci.
* The concept of robotics was originally introduced in the middle ages for entertainment.
* Robotics has changed the structure of the society.
* With the advancement of science, robots are programmed to perform human functions.
* Robotics has crept into our daily lives.
* From calculators to the laptops, and large mechanical appliances like washing machines and cars, these robotic machines have helped to cut down the labour cost, thereby enhancing the end user product.

**Career options in Robotics**

* With the rising demand, a career in robotics has steadily gained pace among the creative and talented students.
* Revolution is created in the field of Robotics when imagination is coupled up with technology.
* Robotics is an essential component in any modern manufacturing environment.
* As factories increase their use of robots, the number of robotics related jobs will grow.
* Most of the machines that we use today are a part of robotic technology that has encompassed our entire society and our lives.
* Robotics has changed the structure of the society by providing safer work conditions, be it a production plant or extracting data from CD drives to cooking food in microwave, robotics has certainly made human life easier.
* As technology progresses, so too does the scope of what is considered robotics.
* 90% of robots could be found assembling car and other vehicles in automobile factories.
* With a wide spectrum of applications, there is an immense scope for a specialization in this ever expanding field.
* Robotic arms and legs will help disabled people.
* Robotics is a multi disciplinary stream or a career choice that helps students to acquire knowledge on each subject.

**Essentials of Robotics**

* Every branch of engineering plays a vital role when you get into robotics.
* Mechanical engineering
* Electrical engineering
* Computer engineering
* Electronics
* You need to be good at mechanical, electrical engineering and also be a good programmer and material scientist.
* Robotics allows multiple points of access to science and technology for students.
* In a vast expending and lucrative career options in robotics, researchers continue to improve on design, technology, machinery and overall benefits to end user.

**Learning of Robotics at school level**

* Robotics is a production-based learning module.
* While learning how science, technology, engineering and mathematics work and interact together, creativity is increased.
* So, teaching robotics in schools gives students the opportunity to address the growing demand of teaching STEM subjects.
* In today’s technology-driven world, it is more important than ever before to prepare students for the future.
* Teaching robots to young students throughout their schooling can increase their ability to be creative and innovative thinkers and more productive members of the society.
* By teaching our students the basics of robotics, we can open the whole new world to them and exciting opportunities that they would not have access otherwise.

**Requirement of funds**

* Introducing robotics into the curriculum is a bit costly affair for schools which are not in a position to spare funds for the purpose, but grants may be sought to fund such useful endeavors.
* There are some more affordable kits that are available to suit the school budget.

**K-12 Robotics Kits and other Programming Applications**

* Lego Mindstorms has a programmable graphic user interface that enables programming, but can be modified to use common languages instead, like ‘Java’ or ‘C’.
* In addition to Lego Mindstorms and ‘WeDo’, some of their other products, for early learners are also available.

**Robotic Providers**

* Wonder Workshops ‘Dash and Dot’ robots, are a big hit with elementary-aged learners. Wonder Workshop also offers a number of kid’s programming applications, such as ‘Blockly’, which has been effective in introducing programming in classrooms at the elementary level.
* ‘Blockly’ and ‘Scratch jr’ both are kid-friendly.
* There are so many other ‘programmable’ units available for use at different stages of curriculum, such as ‘Code.org’, ‘mama.codes’ ‘Sphero’.
* “Vex Robotics” are the popular robotics provider.
* There are so many other robotic providers in America which have been going strong for more than the quarter century. We can also have a beginning, if we desire so.

**Reasons to teach robotics in schools**

* An introduction to basic programming.
* Teaching of robotics increases creativity.
* To prepare them for future
* Teaching children how to turn frustration into innovation.
* Promoting inclusivity in order to avoid marginalization.

**An introduction to basic programming**

* Teaching programming computer is an excellent skill to begin with.
* But, the abstract subject of programming can be a challenging feat for young students. .
* Robotics is simpler to understand and more tangible introduction to programming.
* When students program physical robots, it’s easier to them to see what goes wrong as they learn what robots can and cannot do.
* They learn the skills needed to create precise and accurate instructions and fun while learning valuable lessons.
* Teaching robotics in schools gives students the opportunity to address the growing demand of teaching STEM subjects while learning how science, technology, engineering and math work together and interact.

**2. Increase Creativity**

* Robotics is a production-based learning module.
* Students have the opportunity to create something tangible and make it perform the action that they program it to do.
* Not a lot of fields combine creativity with engineering and technology—robotics does.
* When students are given the opportunity to create something interactive that they think is cool, their engagement level increases and they retain more information.
* We might be surprised to see at the things kids can create when given the right information and tools.

**3. Prepare them for future**

* To make students more likely to get a job in future and earn more money in their life-time.
* It is no secret that the jobs in the STEM field are the fastest growing careers, and are projected to grow further many folds in the next decade.
* Industries such as the **“drone industry”** have grown dramatically and rapidly in the last couple of years.
* It has been reported that 15,000 drones are being sold in the USA every month.
* Growing industries are going to need people, who can come up with new and innovative ideas, and equipped with the knowledge to designed and create the technology.
* When students are introduced to robotics in their school years, they can discover any interests and talents that they may have in this job market.
* Without the knowledge or access to the robotics education, there is no way for students to build interest in these fields.
* There are lots of potential creators and inventors in schools, especially public schools, who, if given a chance and resources may realize their potential.

**4. Teaching children how to turn frustration into innovation**

* Learning how to build and program a robot can be a complex and difficult process. Many students will struggle with the concept at first and often get frustrated.
* Robotics in schools can help these students turn their frustration into creativity and innovation.
* This is a valuable life lesson that teaches our students perseverance and determination when faced with challenges.
* Students learning robotics are able to channel their frustration into trying harder and aiming higher.
* All their hard work makes them feel sweeter, when they look at that finished product.
* Teaching robotics to students is to teach them how to persist and solve problems.
* It also helps them increase their maturity levels and prepare them for real world situations.

**5. Promoting inclusivity**

* Robotics is a field that is easily accessible to a wide range of students with varying talents and skills.
* Robotics is also a field that has the ability to empower the young girls in the classroom.
* STEM focused fields are traditionally male dominated, leaving young girls to question their ability to program or build computers.
* Because the tech world is not one that focuses on or is created for the girls, by engaging them with robotics and technology in the classroom we can begin to change that.
* When girls realize their ability to build robots and program, they are empowered to have successful futures and create innovative technology.

***By the time our students graduate in a few years or so, over half of the available jobs will be in STEM field and the large chunk of the rest will require employees to have some STEM knowledge. Robotics allows multiple points of access to Science, Technology, Engineering and Mathematics for students.***

**28(B) Nanotechnology**

Nano-science and Nanotechnology are the study and application of extremely small things those can be used across all the other science fields, be it chemistry, biology, physics, material science engineering or medicine.

It is hard to imagine just how small nanotechnology is

* One (I) nanometer is a billionth of a meter
* There are 25,400,000 nanometer in an inch
* A sheet of newspaper is about I00,000 nanometer thick
* Consider this—if a marble (kancha) were a nanometer, then one meter of marbles would be the size of the earth.
* Nanoscience and nanotechnology involves the ability to see and to control individual atoms and molecules, we know that everything on earth is made up of atoms—the food we eat, the clothes we wear, metal, nonmetal and everything just everything.
* The right tools for nanotechnology are “**scanning tunneling microscope (STM)** and **atomic force microscope (AFM)**
* With the advent of these tools nanoscience and nanotechnology were born. It is not possible to see the atoms with naked eye or the simple microscope.
* Engineers and the scientists today are capable of finding a number of ways to make materials properties enhanced such as higher strength of materials with lighter weight, increased control of light spectrum, greater chemical reactivity etc.
* Nanotechnology is hailed as having the potential to increase the efficiency of energy consumption, help clean the environment, and solve major health problems.
* It is said to be to massively increase manufacturing production at significantly reduced costs.
* Products of nanotechnology will be smaller, cheaper, lighter yet more functional and require less energy and fewer raw materials to manufacture, as has been claimed by nanotech advocates.

**28(C) Artificial Intelligence (AI)**

1. Use of AI in Schools
2. Teaching of AI in Schools
3. Why AI is way forward
4. Streamlining the Education System
5. Assistance to teachers
6. Accessible and inclusive Education
7. Proctored online Assessment
8. Answer sheet evaluation
9. AI in our classroom
10. Arrangement of books on AI

**29. Introduction of Foreign Language**

**Foreign languages provide a competitive edge in career choices:**

* The benefit of learning a foreign language is that one is able to communicate in a **second language. Foreign language study** enhances listening skills and memory.
* He/she participates more effectively and responsibly in a multi-cultural world if he/she knows another language.
* Foreign language study creates more positive attitudes and less prejudice towards people who are different.
* Analytical skills improve when students study a foreign language.
* Business skills plus foreign language skills make an employee more valuable in the market place.
* Dealing with another culture enables people to gain a more profound understanding of their own culture.
* Creativity is increased with the study of foreign languages.
* Graduates often cite foreign language courses as some of the most valuable courses in college because of communication skills developed in the process.
* International process is made easier and more pleasant through knowing a foreign language.
* Skills like problem solving, dealing with abstract concepts are increased when you study a foreign language.
* Foreign language study enhances one’s opportunities in govt., business, medicine, law, technology, military, industry, marketing etc.
* A second language improves your skills and grades in math and English.
* Foreign language study enhances listening skills and memory.
* One participates more effectively and responsibly in a multi-cultured world if one knows another language.
* Your marketable skills in the global economy are improved if you master another language.
* Foreign language study offers a sense of the past, culturally and linguistically.
* The study of a foreign language improves the knowledge of one’s own language.
* The study of foreign language teaches and encourages the respect for other people. It fosters an understanding of interrelation of language and human nature.
* Foreign language expends one’s view of the world, liberalize one’s experiences, and make him more flexible and tolerant.
* Foreign language expends one’s world view and limit the barrier between people, barriers cause distrust and fear.
* Foreign language study leads to an appreciation of culture diversity.
* One is at a distant advantage in the global market if one is as bilingual as possible.
* Foreign language opens the doors to art, music, dance, fashion, cuisine, film, philosophy, science etc.ete.
* Foreign language study is simply a part of very basic liberal education. To educate is to lead out, to lead out of confinement and narrowness and darkness.
* With the study of foreign language, English vocabulary skills increase.

**French**

**Why learn French?**

* French is the second most spoken language after English.
* Native language of around 200 million people.
* Spoken in France, Switzerland, Luxembourg, Canada, South East Asia, North Africa and much of central Africa, and Caribbean.
* It’s a key language of European Union’s 25 Nations, the world’s largest economic entity with a population of 350 million
* Working language in United Nations, UNESCO, NAATO, International Red Cross, International courts,
* Proficiency in French is a prerequisite for anyone planning on a career in International Organizations.
* It is a base language for learning other languages such as, Spanish, Italian, Portuguese, Roman etc.
* French is a language of business. More than one million jobs in US require French.
* French is a language of technology and medicine
* French fashion designers, artists, writers, musicians and film-makers have had a wide influence in United States and the rest of the world.
* Learning French grants access to new horizons.
* French is a language of influential, religious, and intellectual movements.
* France is the no.1 tourist destination and attracts more than 70 million visitors a year.
* French is an asset for anyone interested in working in International Organizations.

**German**

**Some good reasons to learn German;**

**German is easy to acquire.**

* German and English share the same Germanic root. Consequently, there are many thousands of words which are closely related known as “cognates”. e.g. the English Chin is *Kinn* in German. Water becomes *Wasser* and Father turns into *Vater.* Not so hard.

**German is the language of inventors and innovators**

* Over one hundred Noble Prizes have gone to brilliant Germans for accomplishments in physics, medicine, chemistry, literature, and so many other areas. Many of the recipients from other nations received their training at German universities.
* In the English speaking world, German is the most taught language

**German is an important language in academia**

* German is very important in the academic community. In fact it ranks second as the most commonly used scientific language.
* German book-market is the third largest in the world, right after the Chinese and English publishing industries.
* Percentage of these books translated into other languages in fairly limited, only knowledge of German language will give you access to them.

**German is the gateway to a world-class higher education**

* German universities have an excellent international reputation. It is a popular destination for students from abroad with more than a quarter million foreigners are being enrolled in German schools.
* German system for higher education boasts a number of universities with a very low or non-existent tuition fee.

**Germany is an economic powerhouse**

* Germany is the biggest economy within the European Union and the fourth largest worldwide.
* With knowledge of German language, there exist chances of professional relationship.

**German companies are global market leaders**

* Germany is home to a large number of economic global players. Siemens, Volkswagen, Adidas, and Lufthansa are globally recognized brands and corporations.
* Berlin is turning into a hub for innovative startups. It is being referred as the ‘silicon valley’ of Europe. As a consequence, knowing German has the potential to greatly enhance your career opportunities.

**German is the most widely spoken native language in Europe**

* English, French and German are the three official working languages of the European Union.
* German is the second most spoken language of Continent Europe.
* In the English-speaking world, German is the most taught language.

**German has a big online presence**

* German websites make up a huge part of the internet.
* Germany’s ***.de*** is the most popular top level domain out there.
* In terms of absolute numbers ***.de*** takes second place to ***.com*** which is way ahead of everything else.

**Germans are everywhere**

* German citizens are some of the world’s most voracious travelers.
* Those who are in tourist industry can tap into this market with German-speaking guides and staff.

**German culture is part of the world heritage**

* Learning German gives you the opportunity to appreciate the master pieces of some of the great artists in their original form.
* It lets you tap into parts of the world’s cultural heritage in a direct and unfiltered manner

**Arabic**

“Arabic is not just a language”, for we people it is crucial to understand our culture, values, beliefs and identity. It is required for understanding of where we come from.

* Arabic, therefore, makes for an important language to develop due to a wide use of it.
* Arabic is the official language of 27 countries.
* It is understood and spoken in 58 countries.
* There are 400 million Arabic speakers across the world.
* It is also one of the languages of the United Nations.
* A study of Arabic opens up endless possibilities and opportunities for those who embark upon it.
* A rich and sophisticated language, it is both challenging and rewarding to learn.
* Knowledge of Arabic is instrumental to gaining a real understanding of the people, societies and politics of the Arab world.
* It becomes easy to access a range of employment opportunities in the region’s finance, media and commercial sectors.
* As the social, political and commercial importance increases, demand to learn Arabic is set to grow.
* Learning Arabic opens a lot of doors for the learner.
* A good understanding of Arabic can lead to a job in diplomatic service or security forces, media and communications, finance and banking, the oil and gas sectors.
* Arabic is in great demand and there is a shortage of well qualified speakers.
* You gain vital language skills when you learn Arabic.
* French and Spanish, being easier to learn in comparison to learning Arabic, there is more competition as there are more learners and speakers in these languages. But, if you learn Arabic, you are sure that there would be a great demand for your language skills, as less is the supply.
* You have an edge over competition even if you are in west. The demand for people fluent in Arabic is quite high and only a few people from the west attempt to learn Arabic
* The secret services in U.S. needs people who are fluent speakers of Arabic.
* There are many sectors including translation and interpretation that need Arabic speakers.
* Other fields that need Arabic speakers include intelligence and Foreign Service, banking and finance, education and journalism.
* Many opportunities are available in Arab Nations for those engaged in business.
* You will be able to learn ISLAM better if you are able to read the ‘QURAN’ and understands its teachings.
* So, for Muslims who are interested in learning and understanding ISLAM, learning of Arabic will be so helpful.
* Moreover, the Arabic language is a part of ISLAM, and knowing Arabic is an obligation. ‘QURAN’ and ‘SUNNAH’ cannot be understood without knowing Arabic.

1. **Introduction of subject**
2. **Courses**
3. **Eligibility**
4. **Institutions/Colleges/Universities**

**…………………………………………………………………………….**

1. **Desired Skills**
2. **Admission criteria**
3. **Percentage required**
4. **Duration of curse**
5. **Fee per annum**
6. **Job opportunities**
7. **Salary expected**
8. **Entrance Test**

* **No. of Universities in India**
* **Central Universities 054**
* **State Universities 416**
* **Deemed Universities 125**
* **Private Universities 361**
* **Institutes under state legislature Act 007**
* **Institutes on National importance (IIT,IIM) 159**

**Total…...…1122**

* **No. of Colleges in India………………………….. 52627**
* **Name of Important Engineering Colleges in different cities and Courses.**