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3.3.2 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five years

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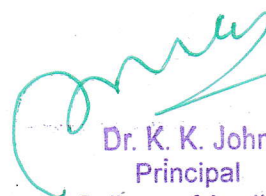# Research Challenges in Science, Engineering and Technology

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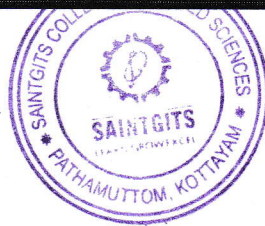
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RESEARCH CHALLENGES IN SCIENCE, ENGINEERING AND TECHNOLOGY

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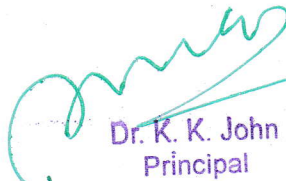Kottayam- 686 532, Kerala

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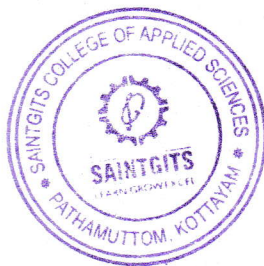*A. K. Haghi (Editor)*
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R. NAGARAJAN

AND

M. SHANMUGANANTHAM
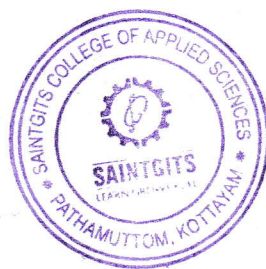
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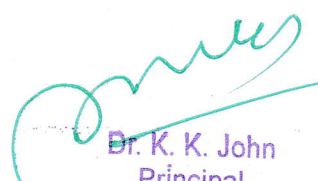
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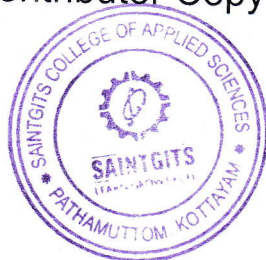
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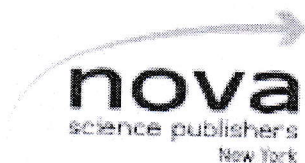Kottayam- 686 532, Kerala

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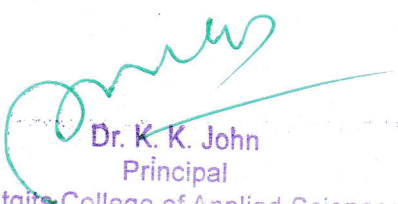
Chapter 1

EVALUATION AND LEARNING METHODS OF ARTIFICIAL INTELLIGENCE

Neenu Ann Sunny*

Department of Computer Applications, Saintgits College of Applied
Sciences Pathamuttom, Kottayam, India
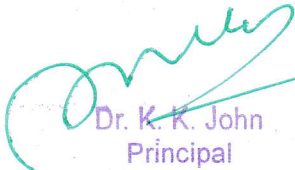
ABSTRACT

This part of software engineering is worried about causing PCs to act like people. Man-made brainpower incorporates game playing, master frameworks, neural organizations, characteristic language, and mechanical technology. Presently, no PCs show full man-made consciousness (that is, can reproduce human conduct). The best advances have happened in the field of games playing. The best PC chess programs are presently equipped for beating people. Today, the most sweltering zone of man-made reasoning is neural organizations, which are demonstrating fruitful in various teaches, for example, voice acknowledgment and normal language handling. There are a few programming dialects that are known as AI dialects since they are utilized solely for AI applications. The two most regular are LISP and Prolog. Man-made brainpower is working a great deal in diminishing human exertion however with less development.

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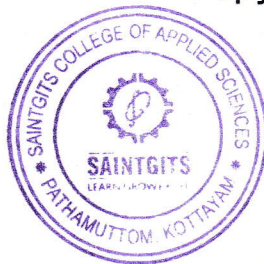
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INTRODUCTION

Man-made brainpower is characterized ascreating computer projects to take care of complex issues by human thinking measures. It is that part of software engineering that reviews and creates astute machines and programming. The field was established on the case that a focal property of people, knowledge - the intelligence of Homo sapiens - can be so exactly portrayed that it very well may be mimicked by a machine. This raises philosophical issues about the idea of the psyche and the morals of making fake creatures, issues which have been tended to by fantasy, fiction, and reasoning since vestige. Man-made brainpower has been the subject of colossal hopefulness however has likewise endured shocking difficulties. Today it has become a fundamental piece of the innovation business, giving the hard work to a significant number of the most troublesome issues in software engineering.

The focal issues (or objectives) of AI research incorporatethinking, data arranging, learning, correspondence, observation, and the capacity to move and control objects. There are a huge number of instruments utilized in AI, including variants of search and numerical improvement, rationale, strategies dependent on likelihood and financial aspects, and numerous others.
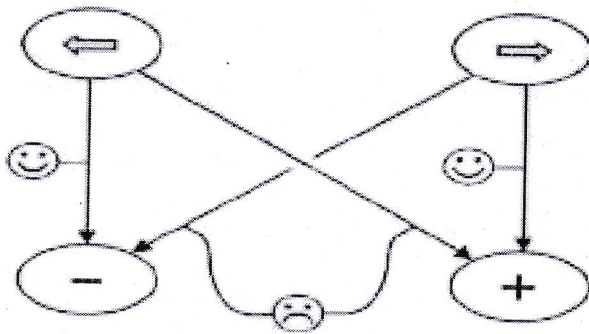
Figure 1. Artificial intelligence.
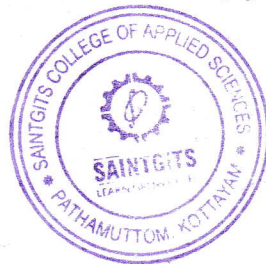
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LITERATURE REVIEW

The writing audit ought to exhibit that the writer has decent information on the exploration territory. Writing survey ordinarily possesses a couple of entries in the presentation area. An elegantly composed writing audit ought to give a basic examination of past investigations identified with the ebb and flow research region as opposed to a straightforward outline of earlier works. The creator shouldn't avoid calling attention to the deficiencies of past works. Notwithstanding, scrutinizing other's work with no premise can debilitate your paper. This is an ideal spot to coin your examination address and legitimize the requirement for such an investigation. I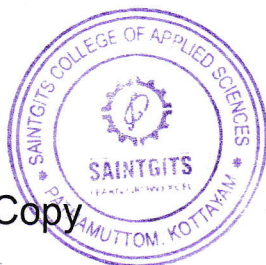t is likewise worth bringing up towards the finish of the survey that your investigation is exceptional and there is no immediate writing tending to this issue. Add a couple of sentences about the meaning of your examination and how this will enhance the assortment of information.

HISTORY OF ARTIFICIAL INTELLIGENCE

Man-made consciousness is certainly not another word and not another innovation for scientists. This innovation is a lot more established than you would envision. Indeed, even there are legends of Mechanical men in Ancient Greek and Egyptian Myths. Following are a few milestones in the history of AI which define the journey from the AI generation to date development.

Maturation of Artificial Intelligence (1943-1952)

- The year 1943: The primary work which is currently perceived as AI was finished by Warren McCulloch and Walter pits in 1943. They proposed a model of counterfeit neurons
- The year 1949: Donald Hebb exhibited a refreshing standard for adjusting the association strength between neurons. His standard is currently called Hebbian learning.
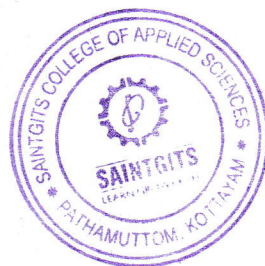
Chapter – 21

INDIAN EDUCATION SYSTEM

Neenu Ann Sunny

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Abstract

Instruction is intended to set up a person forever, prepare him actually, mentally, sincerely and profoundly to manage the difficulties of existence with confidence, dauntlessness, settling on the correct choices, and expanding their points of view. The essential goal of training is to guide the person to carry on with his life in a helpful and in an important manner. One of the predominant issues in the schooling framework in the current presence is the variety in the nature of instruction; the nature of training will in general be the impression of the flourishing. For an individual to thrive in the general public, training is viewed as objective. The principle reason for this exploration paper is to comprehend the issues in the Indian schooling framework, the fundamental zones that have been featured are, need and meaning of training, issues in the Indian instruction framework, challenges in the Indian training framework and proposals for making enhancements in the Indian training framework.

Keywords : Advantages and Disadvantages of Indian Education system, Different type of education systems, History of education system immediate changes needed in the Indian education system, Overview of education system.

****

Introduction

All degrees of instruction, from essential to advanced education, are managed by the Department of Higher Education and the Department of School Education and Literacy. The Indian government has also strongly supported the preparation, despite the way that there is an action to make the high level training not entirely self-financing. The Indian Education System has various stages, for instance, the Nursery, the Primary, the Secondary, the Higher Secondary, the Graduation, and the Post Graduation. The Preprimary or the Nursery has the Lower

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Kindergarten and the Upper Kindergarten, where the crucial examining and forming capacities are made. The Primary school has the young people between the ages of six and eleven. It has the coordinated classes of one to five. The Secondary younger students are between the ages of eleven and fifteen and the classes are coordinated from six to ten. The higher auxiliary school understudies are between the ages of sixteen and seventeen and the classes are coordinated as eleven and twelve. In certain states, the classes somewhere in the range of six and eight are likewise alluded as the Middle schools and those somewhere in the range of eight and ten are alluded as the secondary schools. There are a wide range of streams accessible after auxiliary training. The Higher Education in India targets giving training to work in a field and incorporates numerous specialized schools, schools, and colleges. The schools in India are constrained by different sheets, for example, the Central Board of Secondary Education (CBSE) board, the Council for the Indian School Certificate Examinations (CISCE) board, the state government sheets, the National Open School and the International schools.

There are a lot of government-financed schools in each significant Indian city taking into account the common labourers. Despite the fact that there are numerous Government secondary schools with English as the mode of guidance, the understudies are typically instructed in the local language. These organizations are vigorously sponsored and the examination materials are likewise financed once in a while. The Government schools have the state educational plan. The optional training is likewise given by various tuition based schools and these schools will either follow the public educational plan or the state educational program.

Basic Structure of Education in India
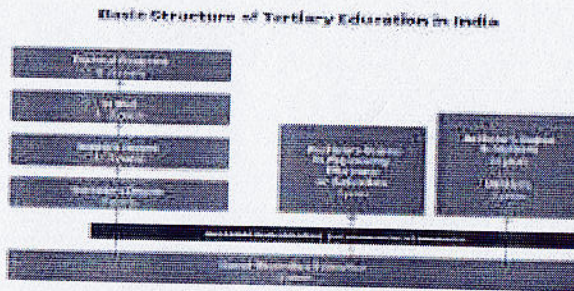
Fig 1: Basic Structure of Education System

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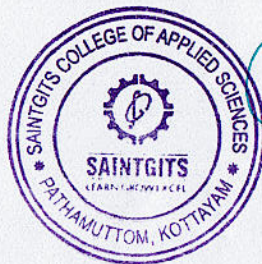
History of education

The year 1937 was every time of importance throughout the entire existence of instruction in India. During that period, fundamental instruction was presented which depends on the philosophy of Mahatma Gandhi in the wake of distributing of Wood Abbott report. Mahatma Gandhi separated proficiency and schooling. Proficiency is just getting the hang of, perusing and composing however schooling is the aces and corn progressment of a youngster. In old days, the youngsters used to go to the master's home and solicitation the master to show him/her. The youngsters used to learn sacred writings and so on The training framework is started under management of masters previously. It is called as VEDHA NILAYAM. The masters needs to choose the sishyas (understudy), to whom the master need to teach the abilities.

Schooling assumes a significant part in the general improvement of a country. Instruction is the significant patron for character improvement of an individual and subsequently assists with accomplishing a good situation in the society.] According to Plato, training assists with advancing a developed individual qualified to manage and to be ruled.2 The Growth of society is unimaginable without schooling. It is with this explanation that practically all the prominent educationists have collectively concurred that schooling is the column on which the whole texture of the country lives? Training assumes a significant part in conservation and transmission of social qualities. The cycle through which they are communicated is instructive and the interaction through which individuals are raised and made aware of their privileges and obligations is social. A non-social individual gets social through and instructive cycle and consequently training is called social interaction.

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Indian Education System
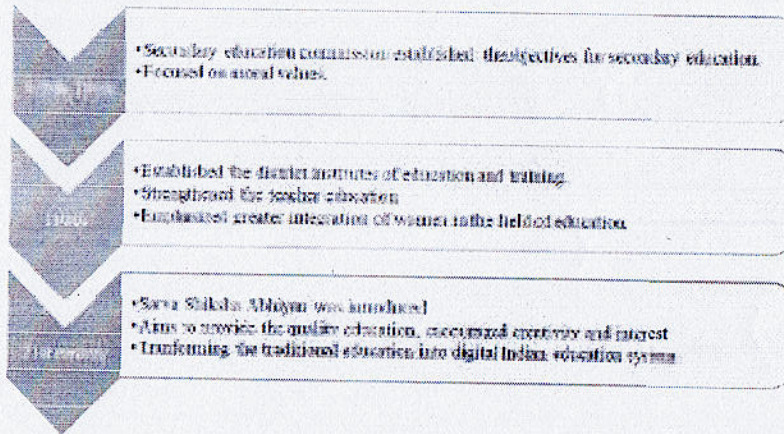
Fig 2: History of Indian education system

Overview of Indian Education System
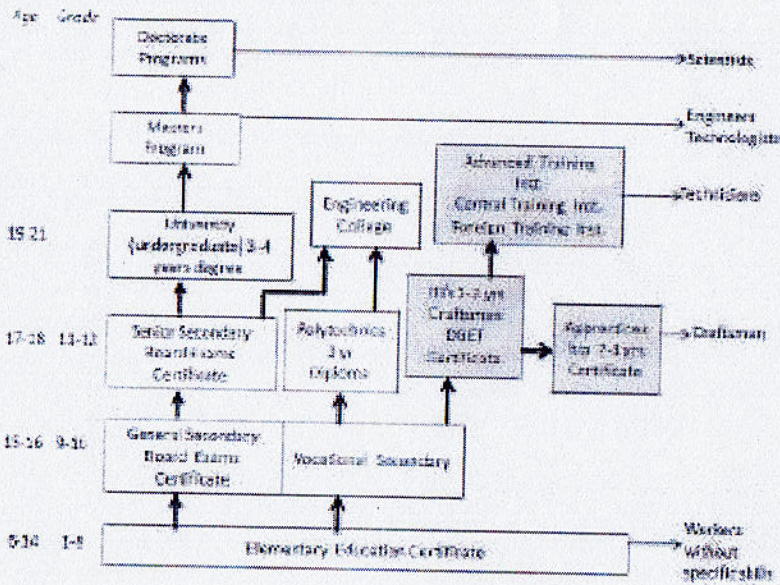
Fig 3: Overview of Indian education system
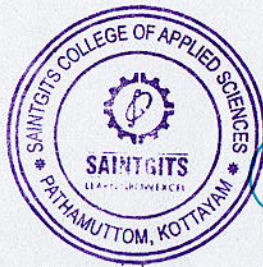
Immediate changes needed in the Indian education system

➤ **Rote learning**

Repetition learning is characterized as the remembrance of data dependent on reiteration. The two best instances of repetition learning are the letters in order and numbers. Somewhat more convoluted models incorporate duplication tables and spelling words. At the secondary school level, logical components and their synthetic numbers should be retained through repetition. Furthermore, ordinarily, educators use repetition learning without acknowledging they do as such

➤ **Evaluation system**

Execution assessments, which give managers a chance to survey their representatives' commitments to the association, are fundamental for building up a ground-breaking work group. However in certain practices, doctors and practice directors set execution assessments aside for later, frequently due to the time in question and the troubles of investigating representatives with whom they work intently. The advantages of execution assessments exceed these difficulties, however. At the point when done as a component of an exhibition assessment framework that incorporates a standard assessment structure, standard execution measures, rules for conveying input, and disciplinary strategies, execution assessments can uphold the satisfactory limits of execution, advance staff acknowledgment and viable correspondence and inspire people to put forth a valiant effort for themselves and the training.

The essential objectives of a presentation assessment framework are to give an evenhanded estimation of a worker's commitment to the labor force, produce exact evaluation documentation to secure both the representative and boss, and acquire a significant degree of value and amount in the work created. To make a presentation assessment framework in your training, follow these five stages:

1. Develop an evaluation form.

2. Identify performance measures.

3. Set guidelines for feedback.

4. Create disciplinary and termination procedures.

5. Set an evaluation schedule.

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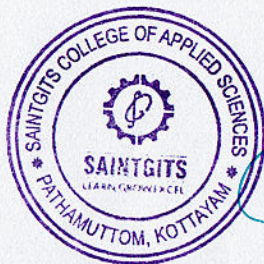
> ### Equal respect to all the subjects

We keep on making due in the schooling framework where science stream overturns the stream progressive system. Understudies are pushed to turn into a machine which just goes for prominent subjects and subjects like dialects, correspondences, expressions are peered down and are not viewed as high-profile. Students ought to rather be pushed to seek after the subject that they like as opposed to making a separation between subjects.

> ### Better training of educators

- Too many (and here and there clashing) objectives and needs seeking instructors' time, energy, and consideration.

- Unrealistic assumptions for what amount of time it will require for schools and instructors to embrace and execute objectives.

- Professional improvement preparing occasions that are wrong in size, extension, or construction to help mastering novel thoughts or abilities. Social occasion 100 instructors into one space for a preparation occasion won't ever give them the time they need to think about the material, pose inquiries, tune in to their companions, or experience exercises to upgrade their cognizance.

- Lack of help for educators' execution of new instructional practices. Examination shows there's a usage hole in educators' expert turn of events. They may learn, comprehend, and concur with a groundbreaking thought or strategy introduced in a workshop, however it's difficult for them to actualize that thought without progressing support.

- Failure to give educators input about how actualizing new abilities impacts understudy mastering.

> ### Introduction of technology

We as a whole realize we have incepted in the period of the fourth mechanical unrest. We are experiencing the renaissance of innovation and in such a state, innovation and training framework can't be kept separated.

Understudies should be instructed about innovation directly from the early long periods of their schooling so it doesn't come like something outsider in their later times. Indian schools should accept innovation and training with an open heart and engender the equivalent

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to the understudies all things considered there, where their future untruths.

> ## Personalize education

Indian schooling needs to understand that the ingestion force of each understudy can't be the equivalent. Henceforth, the encouraging strategy likewise can't continue as before for each understudy in a class of 30.

A few understudies have quicker learning speed and some are moderate. Instructors should have a sharp eye on noticing every one of their students. While it isn't humanly workable for a solitary educator to focus on each understudy, schools should begin taking a gander at the utilization of advances like computerized reasoning and chatbots who can turn into the assistance to the instructors just as understudies.

> ## Teach them the purpose of education

Our schooling framework is as yet having the highlights what pioneer instructors inbuilt. Instruction isn't generally about turning into a major, rich individual. It ought to be about humanism. Students should likewise be instructed inside and out about the ethics of life and taught with humanistic qualities. They ought to be encouraged that life is much past cash and achievement isn't estimated in money. If the Indian training framework begins bringing these focuses into genuine thought, we can accomplish the level of the best instruction framework on the planet. It is high that we as a nation, begin taking schooling over the average level that we have been engrained with and see training from the comprehensive methodology.

Pre-Primary education

The youngsters under the age gathering of 1 to 6 yrs should get development and extension in the field of school scholastics as preschoolers. To bear the cost of the all encompassing advancement likened to intellectual, social, expressive and collaborating abilities or all in all the improvement of the children tallying with an assortment of development and information in a kid like impressive, enthusiastic, energizing, mental, moral, fine engine, net engine, verbal correspondence, instruction, appreciating, reaction and so on with other distinction develop at this stage. To advance an insight of self-assurance and an idealistic individual similarity in the overall population likewise develop. To deal with acknowledgment and appreciation expected for

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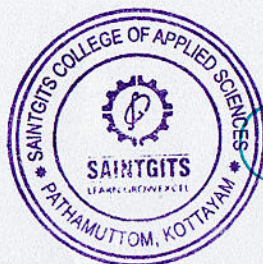
others over the span of the incentive for grown-ups and love for the adolescents create among the children.

At the point when youngsters develop and turning out to be to be the grown-ups, we want them by including them to receive the fundamental proceeded with presence abilities or knowledge, for example, language and Vocabulary abilities with sight words. Autonomous consolation, the fitness to banter on one's person's courtesy, is an objective and directing impact for posterity and adults, especially the people with afflictions.

By acquiring the way of life ahead of time with capabilities that empower the freedom as a youthful kid, we initiate to concrete the methodology for them to effectively use their inflection or different assets to chat up and doing on their own ethics. At this stage while the brood includes the inclination to collaborate just in their first language, they gain the idea and motivation of comprehension or to impart themselves in English and Hindi dialects in the general public, which they are cognizant.

Primary education

Essential schooling, additionally called rudimentary training, is for kids in kindergarten through 6th grade. Essential training gives understudies a fundamental comprehension of different subjects just as the abilities they will use for the duration of their lives. Peruse on to find more on what essential instruction.

Secondary education

Optional instruction, generally known as secondary school, normally incorporates grades 9-12. Optional training understudies find out about broad subjects, for example, English, math and science, and complete elective courses. Auxiliary training schools take numerous structures and offer an assortment of learning conditions.

Private schools

As indicated by current assessments, 29% of Indian kids are secretly instructed. With over half youngsters trying out non-public schools in metropolitan zones, the equilibrium has just shifted towards private tutoring in urban communities; and, even in country regions, almost 20% of the kids in 2004-5 were taken a crack at tuition based schools. Private tutoring has come to be related with an obvious view of

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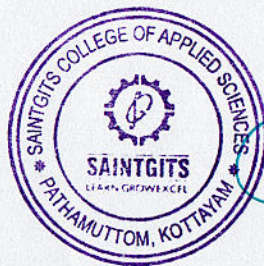
value and in this manner alluring according to the partners, regardless of their financial status.

Most working class families send their kids to tuition based schools, which may be in their own city or at removed all inclusive schools, for example, Rajkumar College, Rajkot, the most seasoned non-public school in India. At such schools, the mechanism of training is regularly English, yet Hindi or potentially the state's true language is additionally instructed as a necessary subject. Pre-school instruction is generally restricted to coordinated area. As per some examination, tuition based schools regularly give prevalent outcomes at a various of the unit cost of government schools. The explanation being high points and better vision. In any case, others have recommended that non-public schools neglect to give training to the least fortunate families, a particular being just a fifth of the schools and have in the past overlooked Court orders for their guideline.

In support of themselves, it has been called attention to that tuition based schools cover the whole educational plan and offer extra-curricular exercises, for example, science fairs, general information, sports, music and dramatization.

International schools

As indicated by current assessments, 29% of Indian kids are secretly taught. With over half kids trying out tuition based schools in metropolitan zones, the equilibrium has just shifted towards private tutoring in urban communities; and, even in country territories, almost 20% of the kids in 2004-5 were selected tuition based schools. Private tutoring has come to be related with a clear view of value and along these lines alluring according to the partners, independent of their financial status.

International schools

As of January 2015, the International Schools Consultancy (ISC) recorded India as having 410 global schools. ISC characterizes an 'global school' in the accompanying terms "ISC incorporates a worldwide school if the school conveys an educational program to any blend of pre-school, essential or auxiliary understudies, completely or part of the way in English external an English-talking nation, or if a school in a country where English is one of the authority dialects, offers an English-medium educational plan other than the country's public educational plan and is

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global in its direction." This definition is utilized by distributions including The Economist.

Home-schooling

Self-teaching is legitimate in India, however it is the less investigated alternative. The Indian Government's position on the issue is that guardians are allowed to show their kids at home, in the event that they wish to and have the means. The, at that point HRD Minister Kapil Sibal has expressed that in spite of the RTE Act of 2009, in the event that somebody chooses not to send his/her youngsters to class, the public authority would not meddle.

Higher Education

Subsequent to finishing the Higher Secondary Examination (the Standard 12 assessment), understudies may join up with general degree projects, for example, four year certification in expressions, business or science, or expert degree program, for example, designing, law or medication. India's advanced education framework is the third biggest on the planet, after China and the United States. The fundamental administering body at the tertiary level is the University Grants Commission (India), which authorizes its principles, prompts the public authority, and helps arrange between the middle and the state. Accreditation for higher learning is managed by 12 self-ruling organizations set up by the University Grants Commission.

The main features of the modern education system in India are as follows:

- A arrangement of mandatory schooling to all or any youngsters up to the time of fourteen. Under this age, all youngsters should be given instruction in any administration or tuition based school

- If any youngster is compelled to do some other occupation barring from being taught the individual worried in such exercises will be treated according to law.

- After acquiring essential instruction, a youngster can be given Secondary Education For giving this degree of schooling each, the focal and state governments are included through their sheets, which are made for this reason.

- There are likewise private sheets who direct a secondary school or halfway tests.

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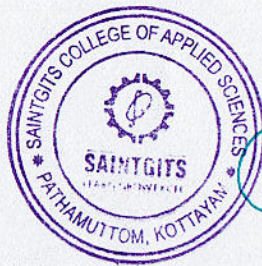
- After their 10+2 (auxiliary tutoring), an individual can seek after unhitched male, ace and an elective specialization degree in a few fields of their determination.

## Advantages and Disadvantages of Indian Education system

> ## Advantages of Indian education

With the headway of schooling, India has seen a fantastic improvement inside the field of economy. Individuals are less jobless and some of them are in any event, outsourcing or rather independently employed. A standout amongst other positive things is that youngster work has gone down to a superb degree. There are additionally reservation frameworks accessible for the socially oppressed individuals. The current insights is 7.5% of the booked clans, 15% for the planned ranks and 27% of the other in reverse class, however the specific rates change from state to state. In Haryana, the booking is 18% for SCs and 1% for OBCs and 0% for STs, in view of neighborhood socioeconomics. In Tamil Nadu, the booking is 18% for SCs and 1% for STs, in view of nearby socioeconomics.

As of now there are mostly two sheets except for the state sheets passing on instruction until higher optional, that is, ICSE and CBSE. Likewise, there are additionally Open Universities giving examination at home office. On the off chance that you crosscheck the specialized fields, there are a few organizations giving advanced education. Also, you will discover some establishment giving the office of e-Tutorial.

Disadvantages of Indian education

The significant disadvantage of the predominant arrangement of instruction is that it isn't effectively reasonable. These days in India, over 37% of individuals are living underneath the neediness level. Thusly, they can't manage the cost of training even at the essential level. Another purpose behind the low quality of instruction is the low quality of educators in government schools. The degree of training that administration schools are not true to form and they don't have a genuine picture among individuals. The following chance is the private organizations, which gives degrees from private to postgraduate. Nonetheless, they are expensive an additionally the confirmation system is excessively confounded for regular individual to get to.

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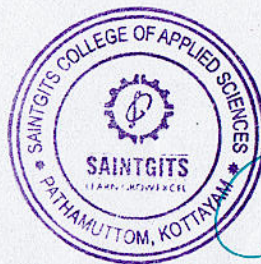
Conclusion

Indian training framework should improve. It should give the understudies equivalent freedoms to sparkle better later on. We need to relinquish the old and conventional ways and upgrade the encouraging principles so our childhood can improve world.

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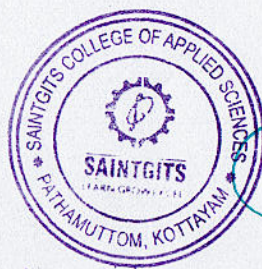
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