# EDUCATIONPLUS

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Shraddha Bharatiya

oday, we are constantly bombarded by information with Each day bringing a deluge of news, social media updates, and diverse opinions. As a result, the ability to engage in critical thinking is more essential than ever. Without the capacity to critically evaluate this flood of information, there's a significant risk of making hasty decisions based on incomplete or misleading data. Recognising this, the World Economic Forum has highlighted critical thinking as one of the paramount skills for the 21st century.

The quality of our personal and professional life is deeply intertwined with the quality of our thinking. However, our cognitive processes are influenced by personal experiences, biases, and preconceptions, leading to a disconnect between perceived realities and the actual world. This can have adverse effects on interpersonal interactions and our relationship with the environment. Thus, fostering intellectual autonomy through critical thinking is imperative to bridge this cognitive gap.

Critical thinking, as defined by Richard Paul and Linda Elder from the Foundation for Critical Thinking, involves skillfully taking charge of the structures inherent in the act of thinking and imposing intellectual standards upon them. This intricate

process requires a deliberate slowing down of one's thought process to meticulously observe and evaluate information before

The relevance of critical thinking today is underscored by the phenomenon of "fake news". For instance, during the 2016 U.S. presidential election, false stories proliferated on social media, significantly influencing public opinion and voter behaviour. Moreover, the emergence of deepfakes highly realistic digital forgeries of videos and images – further complicates our ability to discern truth from falsehood. In such a landscape, individuals equipped with critical thinking skills hold a distinct advantage.

#### **Early beginnings**

Acquiring critical thinking skills is not an overnight Richard Dawkins advises parents and educators to cultivate independent thinking in children. Encourage them to ask probing questions and base their opinions on sound reasoning rather than blindly following trends or

A fundamental way to

accepting it.

process; it requires nurturing from a young age. ideologies.

cultivate critical thinking is to encourage a child's natural curiosity. Children are inherently inquisitive, constantly asking questions about the world around them. Parents and educators can nurture this curiosity by providing thoughtful and detailed Think, explore, reflect, decide Teaching students to cultivate critical thinking early lays the foundation for lifelong learning and effective decision-making.

answers, prompting children to think deeper about their questions.

Teaching children to ask open-ended questions is another effective strategy. This encourages exploration of various possibilities and thinking more broadly. Questions such as "What do you think would happen if...?" or "Why do you believe this character acted in this way?" stimulate critical thinking and help children develop the ability to consider multiple perspectives.

Children should also be encouraged to develop their argumentative skills. This involves teaching them how to construct logical arguments, support their viewpoints with evidence, and respectfully challenge opposing views.

Activities such as debates, discussions, and persuasive writing exercises are beneficial.

#### In the curriculum

Integrating critical thinking into the educational curriculum is essential. Subjects like Science, Maths, Literature, and Social Studies lend themselves to critical thinking naturally. For instance, in Science, students can design experiments, test hypotheses, and analyse results. In Literature, they can interpret texts, analyse characters' motivaand explore themes. History classes can focus on evaluating sources, understanding cause and effect, and considering different historical perspectives.

Reflection is a crucial component of critical thinking. Encouraging children to reflect on their learning processes and outcomes helps them understand how they arrived at their conclusions and consider how they might improve. This can be facilitated through reflective journals, where students write about what they learnt, the strategies they used, and what they found challenging.

Modelling critical thinking behaviours is essential for adults. When parents and teachers demonstrate critical thinking in their daily lives, children are more likely to adopt these behaviours. This might involve thinking aloud when solving a problem, discussing how to evaluate information sources, or reflecting on decisions and their outcomes.

#### Creating a safe and supportive environment for discussion is essential. Children should feel comfortable expressing their ideas and opinions without fear of ridicule or harsh criticism. Encouraging respectful dialogue and valuing diverse per-

spectives helps children

learn to consider different

viewpoints. In the current digital age, media literacy is a crucial component of critical thinking. Children need to learn how to navigate the vast amount of information available online and discern credible sources from unreliable ones. Educators can incorporate lessons on evaluating websites, understanding biases in media, recognising and misinformation.

Cultivating critical thinking from a young age lays the foundation for lifelong learning and effective decision-making. By encouraging inquiry, promoting argumentation, integrating critical thinking into the curriculum, and providing a supportive environment, we help children develop the skills they need to navigate an increasingly complex world. As they grow, these skills will enable them to think independently, evaluate information critically, and contribute meaningfully to society.

The writer is Assistant Professor, Institute of Management, JK

#### **SCHOLARSHIPS**

**Nilam Patel Bahushrut Foundation SSC Students Scholarship** 

Eligibility: Open to applicants domiciled in Gujarat or Maharashtra who are classified as hearing-impaired and have completed the SSC exam this June from a regular secondary school in either Maharashtra or Gujarat.

Rewards: Scholarships, prizes, and special awards **Application:** Through post to Nilam Patel Bahushrut Foundation 303, Aries Palms, Tower - B 5/6 Shobhana Nagar Vasana Road, Vadodara, 390015 Gujarat, India **Deadline:** August 31

www.b4s.in/edge/NPBF3

#### **Corteva Agriscience Scholarship Programme Eligibility:** Female students from Classes 11 or 12 with STEM subjects or in UG, PG or doctoral programmes; Annual family income must be ₹ 6 lakhs or less.

**Rewards:** For PG students: ₹50,000; for UG students: ₹25,000; for school students: ₹10,000

**Application:** Online **Deadline:** September 13 www.b4s.in/edge/CASP4

#### **INSPIRE Awards MANAK Scheme**

**Eligibility:** Open to students enrolled in Classes 6 to 10 at a recognised school/institution. **Rewards:** ₹10,000 one time **Application:** Online **Deadline:** September 15 www.b4s.in/edge/IAMS3

Courtesy: buddy4study.com

### **Explore** and research

Uncertain about your career options? Low on self-confidence? This column may help



Nandini Raman

I am 19 and in the second year of B.A. History. I would like to do my PG abroad. Which colleges can I consider? Also what are my career options? Anuranj

Dear Anuranj, In the U.S., some of the best colleges for PG in History are Harvard University, Stanford University, Yale University, Princeton University, and University of California-Berkeley. In the U.K., the University of Oxford, University of Cambridge, London School of Economics and Political Science (LSE), University College London (UCL), and King's College are the ones to consider. In Canada, look at University of Toronto, McGill University, and University of British Columbia (UBC).

As far as career options go, you can be a historian, archivist, curator in a museum, or teacher / professor in academia and research. You can also be a content writer, a policy analyst, or a cultural consultant.

Research and identify programmes offering Master's and PhD programmes in History. Historical Studies, and related disciplines in the U.S., U.K., Canada, Australia, Europe, and other preferred destinations. Explore the curriculum, faculty, research areas, facilities, and opportunities to identify the most suitable one based on your interests, aspirations, and preferences.

I am 25. I have completed my Master's and qualified in the NET. But I am only lost and don't know what to do further. Saima

Dear Saima,

While this feeling is common to many people, it's never too late to explore new opportunities, reassess your career goals, and make informed decisions about your future. Seek professional guidance from qualified career counsellors to get insights on your personality and aspirations. This will help you identify, evaluate, and explore a suitable career path. Reflect on your core interests, strengths, and values to identify the industry, and role that will best align with your personal and professional preferences.

Consider your academic background and work experience to identify the areas of expertise you have acquired. Consider industries, and sectors that align with your interests, qualifications, and aspirations, and identify a potential path that may offer growth, development, and personal fulfilment. Then invest in continuous learning, skill development, and professional growth by pursuing additional courses, certifications, training programmes, workshops, and educational opportunities to stay competitive and relevant. Connect and network with professionals, experts, and others in the field to gain insights, advice, and

I am in the final year of B.Com. Finance. I am confused about the next step. Some say I should

recommendations regarding

career paths, opportunities,

and strategies to succeeds.

do a PG but others say that is of no use. How can I decide? Partha

Dear Partha.

This decision depends on your career aspirations. interests, goals, personality and personal circumstances. Reflect on your career goals and inherent passion to gain clarity and insights into the types of careers, industries, and roles that align with you. What do you enjoy: finance, accounting, banking, investment, financial planning, analysis, consulting, research, entrepreneurship? Research the different options available to individuals with a B.Com. in Finance, and see what excites you. A PG degree in Finance, Accounting, Business Administration, Economics, or related fields will add specialised knowledge and skills, enhance your qualifications and open up advanced career opportunities. You will also be able to connect, network, and collaborate with industry professionals, experts and others and expand your professional relationships, and connections to gain valuable insights, guidance, and recommendations regarding career paths, opportunities, and strategies for success.

I am 20 and a B.Sc. PCM graduate. I took a year off to prepare for the M.Sc. entrance exams in an IIT but couldn't clear that or leverage my UPSC preparation. Now, I want to dedicate myself to preparing for the civil services but don't want to drop another year. I don't know what else I can

study. Unnati

Dear Unnati,

Identify your career goals and aspirations. What interests and motivates

of careers, industries, roles, and opportunities that align with your skills. qualifications, and overall life plan. Reflect on your preparation, learnings, and feedback from your UPSC

preparation, and use those to enhance your performance. Also, explore alternate career paths available in Science, Technology, Engineering, Maths, R&D, Education,

Entrepreneurship, Healthcare, Information Technology, Data Science, Artificial Intelligence, and other related fields Consider postgraduate studies, specialised courses, certifications, training programmes, and advanced qualifications to enhance your knowledge, skills, and qualifications. Develop a comprehensive career plan and a roadmap that outlines and defines your short-term and long-term goals, and objectives. Identify and prioritise actions, initiatives, and decisions required to achieve success. If you still feel overwhelmed and confused, consult a qualified career counsellor who will help you identify, evaluate, and decide on a suitable career path based on your interests.

**Disclaimer: This** column is merely a guiding voice and provides advice and suggestions on education and careers.

qualifications, and

personality.

The writer is a practising counsellor and a trainer. Send your questions to eduplus.thehindu@gmail.com with the subject line Off the Edge

# Hit the refresh button

The habits formed during one's college years now can have a major impact on well-being in the years to come.

Smriti Pahwa

L embark on a journey of independence, exploration, and maybe even a few late-night study sessions fuelled by questionable food choices. But amid the whirlwind of new experiences, don't forget to prioritise one thing: your health.

The habits you form now can have a major impact on your well-being for years to come. This is especially true because adolescence isn't exactly known for its focus on preventive health. Remember that invincible feeling you had back in high school? Yeah, Science says it's not quite accurate.

Research shows that teenagers tend to underestimate the long-term consequences of their choices. Also, according to a study published in the *Journal* of the American College of Cardiology found that individuals born in the late 20th century have a higher prevalence of cardiovascular risk factors compared to previous generations, putting them at greater risk of early-onset cardiovascular diseases. But here's the good

news: College is your chance to hit the refresh t's that time of the button on your health havear when students bits. Here's why and how:

> **Take charge:** You're probably more independent now than ever before. This means you get to make your own decisions about things like food. sleep, and physical activity. Now is the perfect time to ditch unhealthy habits and embrace practices that support your longterm health.

> New challenges: College throws a lot your way; new schedules, academic pressure, and may be even a part-time job. While these can disrupt healthy routines, they also present an opportunity to build resi-

lience

and develop coping mechanisms that will benefit you throughout your life.

**Build a foundation:** The choices you make now can set the stage for vour future health. According to the Centers for Disease Control and Prevention (CDC), regular physical activity can lower the risk of developing heart disease, stroke, type 2 diabetes, and certain types of cancer. By prioritising preventive measures like healthy eating, regular exercise, and enough sleep, you can reduce your risk of chronic diseases later in life.

What you can do **Embrace** your squad: Your

friends aren't just there for late-night talks and movie marathons. They can be a powerful influence on our health choices. Find friends who motivate you to make healthy decisions, and be that friend for them

Campus resource centres: Most colleges offer a variety of health and wellness programmes. Take advantage of free health screenings, fitness classes, and workshops on topics like nutrition and stress management.

**Tech for good:** There are tons of apps and online tools designed to help you track your fitness, manage your sleep, and make healthy food choices. Find ones that fit your lifestyle and make staying on track a little easier.

Remember, you are (literally) in charge of your health. College is a time of transformation, and developing healthy habits now is an investment in your future self. So grab your water bot-

tle, hit the gym, and fuel your body with nutritious food. Lay the groundwork for a future filled with vitality and resilience.

The writer is the Regional Director,

Last date: October 31

#### SAVE THE DATE

**Admission** The University of

**Sheffield,** the U.K. invites applications for its four-year Civil Engineering M.Eng. course in September 2025. Eligibility: Between 80% and 90% depending on the Indian board. IELTS score of 6.5 with minimum 6.0 in each component.

https://tinyurl.com/yc84u8n8 **Scholarships** 

**Strathclyde Business School,** Glasgow, the U.K., is offering upto 35 Masters Scholarships for its M.Sc. programmes. Eligibility: Candidates must

be self-funded and hold an offer of a place on an SBS M.Sc. programme for the September 2024 intake and be deemed International with regards to Fee Status.

Last date: August 31 https://tinyurl.com/ bdwvkba9 Amazon invites applications

for the Amazon Future **Engineer Scholarship** Programme.

**Eligibility:** Female students pursuing an undergraduate degree in Computer Science Engineering or a related field; academic excellence and leadership potential: financial need.

https://tinyurl.com/2s3duruw **Hyundai Motor India** Foundation (HMIF) has launched the 'Hyundai Hope Scholarship Programme,' to help under-privileged aspirants preparing for Civil Services Exam. Common Law Admission Test and projects of IIT students across India. For eligibility, selection and more information, visit hyundai.scholarsbox.in

ecently, the Ministry of Education (MoE) published the ninth edition of the National Institutional Ranking Framework (NIRF) that ranks higher education institutions across 13 categories. The parameters include: Teaching, Learning and Resources, Research

and Professional Practice,

Outreach and Inclusivity,

Outcomes,

Graduation

and Peer Perception. When the NIRF was first launched in 2015, many educationists believed it would foster healthy competition among institutions and enhance the quality of higher education in the country. However, some had questioned the approach. Any ranking system is subject to biases, and the NIRF is no exception. Since its inception, educationists have identified several biases, including those related to urbanrural divides, resource availability, research output, peer perception, inclusivity and outreach, regional disparities, data reporting, and standardi-

Despite these concerns, some institutions have consistently appeared in the top 10 lists across all editions. But how significant are their contributions to society? Moreover, to what extent do they adhere to

ethical practices in their pursuit of higher rankings? What actions have been taken against those institutions engaging in unethical practices, such as providing inaccurate or fabricated data? Has the ranking system promoted healthy competition and improved the quality of higher education? After nearly nine editions, has the MoE taken any concrete measures to modify the criteria and improve the framework?

#### **Question of weightage** The robustness of the rank-

ings depends on how well the various criteria reflect the actual quality of education and how they are weighted. Rankings are more robust when their weightage aligns with the core values of education. Currently, higher weightage is assigned to the first two parameters: Teaching, Learning and Resources (TLR) and Research and Professional Practice (RP), while lower weightage is given to Outreach and Inclusivity (OI). Teaching, Learning and

search and Professional Practice (RP) are undoubtedly crucial aspects of higher education. However, with mandatory accreditations and the growing emphasis on rankings, unhealthy competition has emerged among institutions striving for higher rankings. This has led some to pressure faculty into publishing more research papers, often prioritising quantity over quality. The mantra "publish or

Resources (TLR) and Re-

# Does rank matter?

With the ninth National Institutional Ranking Framework out recently, an educator makes a critical assessment of the various issues involved



lue being placed on documentation than on teach-

Moreover, the rise of predatory journals and instances of plagiarism have undermined professionalism and ethics in academia. How many research papers genuinely impact society? How many Ph.D. theses are read by academics and found useful? How valuable are funded projects? These questions challenge institutions that

prioritise quantity over quality and may expose uncomfortable truths about their practices.

**Academic freedom** Academic freedom is considered essential in higher education institutions, as it empowers teachers, scholars, and students to engage in critical inquiry. However, there have been instances where teachers were dismissed for expressing their views on is-

Journey of perseverance

How a team of Indian students built

a lunar rover for a competition in

NASA, the U.S.

sues such as supporting the Palestinian cause or speaking out against the commercialisation of education. In the context of ranking institutions, it is important to ask how many of these so-called top institutions truly allow their faculty, scholars, and students to enjoy academic freedom? Does the ranking system assess whether faculty and students genuinely experience this freedom? Why is "academic freedom" not a criterion in the ranking process?

#### **Inclusion**

In the Indian context, the parameter of "Outreach and Inclusivity" is particularly significant. While the NIRF includes aspects such as the percentage of students from other states or countries, the percentage of women, economically and socially challenged students, and facilities for physically challenged students, it does not address the need for diversity among faculty. According to reports, some topranked IITs and IIMs do not have a single faculty member from Scheduled Castes, Scheduled Tribes, or Other Backward Castes, and SCs, STs, and OBCs together make up only 6% of the total faculty at IIMs. Paradoxically, the parameter of "Outreach and Inclusivity" itself falls short of being inclusive.

Global university rankings, such as Times Higher Education (THE) and Quacquarelli Symonds (QS), have historically focused on research output, teaching quality, and inter-

national reputation. While they consider aspects of inclusivity through metrics like international diversity, they do not comprehensively address social justice, ethics, or integrity. However, the Times Higher Education Impact Rankings for 2024, which celebrates universities contributing to the United Nations Sustainable Development Goals including those related to social justice, inclusivity, and ethical practices, reflects a growing awareness of the importance of these values. As the global educational landscape evolves, there is a need to incorporate these principles more explicitly into university evaluations in India too. It is crucial to assess the

relevance, usefulness, and robustness of the NIRF and to modify its criteria to better reflect the needs of society. Being good is as important as being brilliant. Being ethical and socially responsible is as important as being academically excellent or highly reputed. Institutions that achieve top rankings but lack ethics and integrity cannot produce socially conscious, community-oriented citizens. True excellence in education must be paired with a commitment to moral values to genuinely contribute to the betterment of society. Will the ranking system consider this aspect to create a transformative effect on society at large?

The writer is an ELT resource person and education columnist ravanal@vahoo.co.uk

#### **GREEN CAREERS HUB**

perish" has led to more va-

## Women to the fore

Wildlife biologist Purnima Devi Barman on how she mobilised the Harginal Army to save the Greater Adjutant Stork

with them as a mother and

thought, "What is the use

of my education if I can't

influence people?" I knew I

had to change the mindset

of those around me to-

wards this beautiful bird.

This was no easy task. I be-

gan visiting homes and

communities and speaking

with locals to show people

how beautiful the bird tru-

ly is, contrary to its

My approach involves en-

gaging women and con-

necting conservation to

culture through cooking

competitions, baby show-

ers for the hargila, tradi-

tional Assamese prayers,

and other ceremonies. We

focus on providing liveli-

hood opportunities for wo-

men who weave hargila

motifs onto traditional

clothing and raise aware-

ness. Over time, the bird

has gradually become a re-

vered part of our tradition,

leading to the formation of

the women's group called

the Hargila Army, which

grew into a sisterhood

model and expanded to

protect other birds,

creating a wider jour-

meetings – held in

backyards, pad-

dy fields, and

temples – are

open to eve-

ryone.

engage

school

change.

ney of behavioural

We

stu-

Our Hargila Army

Forming the army

reputation.



Barman's life-changing moment came about when she saw a man cutting down a tree that housed

The injustment adjutant is to special in the specia ries by WWF-India that highlights niche and unconventional green careers through the stories of wellknown personalities from the field of environment and conservation

rowing up in a small village in Assam, a connection with Nature was embedded in me from a young age. My grandmother had an immense influence on me, which led me to pursue Zoology. I also earned a Green Teacher Diploma from the Centre for Environment Education. It was then that my path to forming the Hargila Army

After my Master's, I volunteered with the NGO Aaranyak and met many people in the field of conservation. I dreamt of pursuing my Ph.D., becoming an academician, and studying the Greater Adjutant stork, called hargila, or bone swallower in Assamese. This scavenging bird was considered a bad omen leading to its global population declining to around 1,000. My professional ambitions took an unexpected pause when I married and became a mother. While this period brought new challenges and responsibilities, it also set the stage for what would forever change my life: I saw a man cutting down a tree that housed nesting Greater Adjutant

Watching the helpless

dents too, which is particularly important, as we can mould young minds into conservationists and build hope for a secure future. It is a common miscon-

ception that only conservation scientists can save Nature; the success of our model proves otherwise. Over the past 17 years, we have rescued more than 500 baby birds that, to me, represent hope and resilience. The intense blue eyes and the majestic eight-foot wingspan of the adult hargila inspire dreams of soaring high. Today, our Hargila Army boasts over 10,000 members. It is my wish to embed the *hargila* further into our art, tradition, and culture.

To engage a large audience in conservation, communication skills are key. I believe that everyone has an inner artist and this creativity can be used to bring about change. My research background helps me convey information about the hargila to

communities. Looking ahead, my vision is to undertake ecosystem restoration through plantation drives, restoring wetlands, and mobilising communities. I hope to replicate this model in other areas and collaborate globally to expand conservation efforts.

To budding conservationists, and especially young girls, be consistent, innovative, and creative in anything you do.

Respect your cul-

ture and tradition and, most importantly, be unstoppable.

#### **Yatharth Vaish**

s I stood amid the bustling activity at NASA's facility, watching our lunar rover take shape, I couldn't help but marvel at how far we'd come. Just months ago, this dream seemed distant, but here we were: a team of Indian students competing in NASA's Human Exploration Rover Challenge (HERC).

Our journey began in August 2023 when we formed a new team, mostly third-year students from various departments from the KIET Group of Institutions: Tuhin Srivastava, Vaibhav Raj Chandel, Suvash Tripathi, Sajal Bhilatia, Aditya Agarwal, Ankit Parihar and Aadi Kumar. We started with design discussions, progressing to fabrication, often working through the night to ensure everyone learned the ropes.

The challenge? To build a human-powered rover capable of traversing simulated lunar and Martian terrains. Every aspect – from design to testing – had to be student-led.

We poured over designs, analysed data, and conducted rigorous tests across our college

creation to its limits.

#### At NASA

Our efforts paid off when we arrived at NASA. Our rover, weighing just 52kg, was the second-lightest among all entries; a feat we took immense pride in. The competition itself was a whirlwind of activity. We assembled our seven-foot rover from the configuration of a fivefoot box to its workable state in just 24 seconds (allotted time two minutes); a puzzle that tested our problem-solving

On the third day, Nature threw us a curveball with a hurricane but our rover performed admirapost-interruption, completing the track in just over six minutes, well within the simulated eight-minute "oxygen supply" limit. The real test came when we faced unexpected breakdowns. Mud from the rain caught us off-guard, and our rover suffered a major malfunction during the first run. We spent hours fixing and improving, applying lessons learned on the fly. This resilience led us to win the "Crash and

Burn" award for our spirit and our hard work paid off when we learnt we were the only Indian team to be ranked globally: ninth.

Participating in HERC was more than just a competition; it was a crucible for personal growth. Leading the team taught me valuable lessons in leadership, teamwork, and perseverance. We learned to innovate under pressure, to find solutions with limited resources, and to keep pushing forward even when faced setbacks.

As we left NASA, we carried with us not just memories and accolades, but a profound sense of achievement. We had represented our country on a global stage and had proven that, with dedication and teamwork, even the sky isn't the limit.

The writer is a fourth-year student at KIET Group of Institutions,

#### Dr. Suruchi Aggarwal

he last couple of decades have seen rapid advances in Science and Technology that have contributed to innovations across industries. One such field is Genomics, which offers crucial actionable insights into familial health histories and predisposition to certain diseases, and designing tailored treatment. The demand for skilled professionals in the field of Molecular Biology, Cancer Biology, Bioinformatics, Data Analytics and Interpretation, Genetics, and Microbiology is rapidly on the rise. Careers in Genomics can be divided into the following categories:

#### Lab operations

Experts in Microbiology, Molecular Biology, Genetics, Biochemistry, and Allied Life Sciences play crucial roles in laboratory settings, performing research and analysis of biological samples to uncover genetic variations, understand molecular mechanisms, elucidate biological pathways, and pave the

### Down to the molecule

A career in the constantly advancing field of Genomics helps unravel disease complexities and pave the way for a healthier future.

way for targeted treatments and drug discovery. **Qualifications:** M.Sc. in

Human Genetics, Ph.D. in Computational Biology, Medical Laboratory Technician (MLT), Masters in Microbiology, M. Tech. in Biotechnology, Biochemistry, Biomedical Genetics or Genetic Engineering

#### **Data Analytics** Professionals from the

field of Bioinformatics, Software Engineering, Statistics, and Data Science handle vast amounts of genomic data generated from various sources such as DNA sequencing, gene expression profiling, and population studies. They develop algorithms, design computational tools, and employ statistical methods to extract useful data from complex data sets and contribute to the identification of genetic



patterns, predicting disease risks, and guiding precision medicine techniques. They have to be proficient in Biology, Statistics, Maths, and have hands-on expertise with software platforms.

**Qualifications:** MBA or Business Analytics

#### **Genetic Counselling**

Genetic counsellors advise patients and their families before and after taking a genetic test. They explain the genetic basis of the

clinical disorder, inheritance pattern, and recurrence risk, availability of tests, appropriate course of action. A combination of clinical knowledge, communication skills and empathy is essential.

**Qualifications:** M.Sc./ M. Tech in Genetic Counselling (BCGI certification is mandatory) or Diploma in Genetic Counselling.

#### **Genomics-led research:**

Biologists, epidemiologists, life sciences professionals and researchers leverage genetic data to explore fundamental biological processes, investigate disease aetiology, and conduct population-based studies to uncover genetic associations, biomarkers, and elucidate gene-environmental correlation. These findings drive advances in medical research, influencing public health initiatives, treatment plans, and diag-

nostic methods. **Oualifications:** M.Sc. in Human Genetics, Ph.D. in Computational Biology, Medical Laboratory Technician (MLT), Masters in Microbiology, M. Tech. in Biotechnology, Biochemistry, Biomedical Genetics or Genetic Engineering

#### **Clinical Practice**

Becoming a Clinical Geneticist involves specialising in testing, counselling, and guiding individualised treatment regimens. He/ she can also move into sales and marketing in Genomics companies, where their knowledge of patient requirement and industry needs can help in product development.

Qualifications: MBBS, MD or DM in Pathology or **Human Genetics** 

With to its ability to provide insights into health risks at the molecular level, Genomics helps unravel disease complexities and pave the way for a healthier future.

The writer is Head - Scientific Affairs, MedGenome