



Manthan

EDUCATION NEWSLETTER

February 2024

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Preface

Intersection of the Traditional and New age Advancements in Education

In this edition of Manthan, we apply a “two-eyed seeing” lens, a concept by Murdena and Albert Marshall, that blends an “indigenous” way of knowing and a “western” way of knowing such that do we not sacrifice the basics, the traditional and the effective ways of foundational learning at the altar of the newer technologies. To be relevant and to thrive in a future where human interaction and ingenuity are irreplaceable, where innovation has impact, and learning a purpose, it is necessary to build collaboration between AI tools, student agency, and teacher practice.

We open with the “back to basics” movement, the timeless wisdom of traditional methods in mediating value in the learning process, and ponder over the question of what is effective learning and the Foundational Literacy and Numeracy mission outlined in our New Education Policy? Therefore, bringing together varying approaches and points of views in our cameos around AI in education, we are putting out a call to action where AI can complement and not displace traditional belief systems and pedagogies that lay stress on mental rigour, on both ‘hand’ knowledge and academic theory and for balancing the Jekyll and Hyde of technology.

While digital tools enhance learning are they rendering the cognitive processes redundant and lazy? The response to such a question becomes increasingly problematic. While AI is getting integrated into education and industry, we may be putting learning at risk. AI tools can enhance personalization in learning in tune with individual needs and pace of learning, but they can very easily dull skills like creativity, critical

thinking, and communication. The reverse is also true – to truly reap the benefits of AI which are not superficial, such that students are not merely consumers but creators of technology or creators of products that employ tools of technology, we need students to have critical thinking, design thinking, creative thinking, logical thinking, systems thinking, alongside technical proficiency. By emphasizing the development of these so called “soft skills” alongside technological proficiency, we will equip learners to navigate the evolving demands of the AI-driven world responsibly and effectively. Therefore, contrary to popular belief, these are not soft skills but skills essential for AI-driven advancements.

In a survey report India@2047 by Primus Partners “Builders of Tomorrow” (young people in the age group 12 - 24) believe in a knowledge-driven India. 37% respondents in this group believe education is the key sector which will drive India's vision forward and 55% believe IT/start-ups will drive India's growth. Students from urban India foresee challenges in coping with the fast-paced advancements in technology and job markets. They plan to adapt by engaging in continuous learning and enhancing problem-solving skills.

We see this sentiment echoed across state education programmes which are attempting to create global bridges be it bridging digital divide, language divide or curricular divide. In many instances, our indigenously developed projects may also be trend setters for the global fraternity and developing countries in the length and breadth of these initiatives.

The Vidya Samiksha Kendra (VSK) a central government initiative with digital tools for academic and administrative management of educational outcomes, the Future Skills programme of Andhra Pradesh government, the Startup programme of the Rajasthan government, SCOPE the English learning programme for Gujarati learners by Government of Gujarat or the Accelerated Functional Skill English Communications (AFSEC) programmes being implemented in Rajasthan symbolize some collective and determined strides in this direction.

To manage expectations from government policy and process, resourcing the education reform would be key. Primus also looked at the FY 2024-25 Budget which prioritizes women-led development, ease-of-living, green growth, and employment in the Education and Skills sector. The focus on higher education is a priority in the budget – establishment of higher learning institutions - 7 IITs, 16 IIITs, 7 IIMs, 15 AIIMs, and 390 universities. We have seen an increase in female enrolment by 28% in higher education in 10 years, and this focus needs to be amplified. Financial aid schemes like Vidyalaxmi Bond Yojana and insurance schemes like Vidyadeep Yojana are being implemented by the Government to provide facilities to children and families to support Education. Vidyanjali scholarship programme of Ministry of Education and EdCIL to fund the progression of Navodya Vidyalaya students from grade 12 to higher education with CSR support. Dr Amit Kapoor (President & CEO, India Council on Competitiveness), has suggested in his article in the India@2047 Report by Primus Partners, that for higher education institutes to succeed, the model needs to shift from a 'learn from anywhere' approach

(i.e. providing flexibility), to a 'learn from everywhere' approach (providing immersive learning experiences) and that gamification as an instrument is "under-utilised"

How integrally, expediently, and equitably we are able to converge on the NEP roadmap in higher education, will determine our advancement in education indicators, which will be key to how successfully we can create employment opportunities or mainstream the youth in economic activities leading to income generation, especially for those at the bottom of the pyramid. Dilip Chenoy (Chairman, Bharat Web3 Association, and Former Secretary General, FICCI) in his article in the India@2047 Report by Primus Partners sounds a cautionary note: "even during the course of a 4-year programme, skilling requirements are expected to change so rapidly that there needs to be a system to re-appraise, at every stage, what has happened, what is being taught, and therefore what has to be taught". Therefore, the curriculum design needs to build in flexibility. He also makes a relevant point that it is "equally important to move away from the traditional front-loading of education and encourage people to continue learning even after they start working". Therefore, making it prudent to align with the National Credit Framework's recommendations for multiple entry and exit. If we meet our NEP goals, we should also be sanguine that we can hope to compete at par with the best in global rankings.



01

Back to Basics

The Timeless Wisdom of Printed Books and Traditional Learning Methods

In a world rapidly embracing digital education, Sweden's recent policy shift towards prioritizing physical books and quiet reading time for young children has sparked a reflection on the evolving landscape of teaching and learning methods. This divergence in approaches is evident across the globe, with educators grappling with the integration of technology into classrooms.

Ritu Dhameja, a seasoned teacher in Delhi NCR, shares insights from her two-decade teaching career. Despite the technological advancements, her school maintains a strong commitment to traditional methods. Smart boards coexist with chalk and duster, and students diligently maintain handwritten registers. Dhameja highlights the irreplaceable value of handwritten notes, asserting that technology, while providing enhancements, cannot substitute the fundamental ways of imparting education.

On the International front, Poonam Patnaik, an International Educator with over 30 years of experience, offers a contrasting perspective. Embracing a collaborative approach, Patnaik acknowledges the prevalence of tablets in international schools but sees them as supplementary tools. She emphasizes the importance of blending technology into teaching methodologies while concurrently reinforcing traditional practices like handwriting and spelling. For Patnaik, the goal is not dependence on technology but a balanced integration that prepares students for the 21st century.

Both educators converge on the importance of foundational learning during early childhood. They

agree that the basics, such as handwriting, spelling, and hands-on experiences are crucial for neural pathways and gross motor skills development. The sentiment echoes the belief that soft skills like creativity and empathy flourish in the natural soil of traditional methods, including reading physical books, engaging in outdoor play, and exploring the environment. The joint perspective of these educators suggests a nuanced approach to education. The consensus is that while technology provides valuable enhancements, the foundation of learning is anchored in traditional methodologies, especially during the primary years (ages 3 to 7). The call is for a balanced educational ecosystem that preserves the sensory experiences of childhood – the smell of books, the touch of paper, the thrill of playgrounds, and the joy of physical activities.

Research on brain function supports the notion that human interaction contributes to the development of early readers' comprehension skills. Additionally, studies indicate a connection between reading paper books and this cognitive progress. For instance, research observed increased activation in language regions of the brains of three- and four-year-old children when reading a physical book with an adult, compared to listening to an audiobook or using a digital app. Notably, activation was lowest when reading on an iPad. Another study involving MRI scans of eight- to 12-year-olds revealed stronger reading circuits in those who devoted more time to reading paper books compared to screen-based reading.

Back to Basics

The Timeless Wisdom of Printed Books and Traditional Learning Methods

Research on meaningful learning that refers to the act of higher order thinking and development through intellectual engagement emphasizes the use of pattern recognition and concept association.

In our daily lives, meaningful learning takes various forms—whether it's children learning through play or adults acquiring new skills. Opportunities for meaningful learning abound, from engaging in conversations with friends, exploring nature, reading an intriguing book, to experimenting in the kitchen. Here are a few illustrations:

- Memorizing a phone number by associating the numbers with familiar things, like using a friend's birthday for the last four digits.
- Conducting hands-on kitchen activities to understand cooking, linking skills to prior knowledge, such as comparing kneading dough to kneading clay.
- Learning a new language by connecting words to visual representations, for instance, associating the Spanish word "arroz" (meaning rice) with a rice brand featuring an arrow in its logo.
- Collaborating in a group to brainstorm and solve problems, leveraging prior knowledge like team expertise or organizational mission for creative solutions.
- Applying math to real-life situations, such as calculating job salaries or creating household budgets.
- Memorizing state capitals by transforming them into a song with rhyme and rhythm for easier recall.
- Creating acronyms, like using "HOMES" to remember the Great Lakes in North America (Huron, Ontario, Michigan, Erie, and Superior).

Our National Education Policy (NEP) 2020 that has set a high priority for the acquisition of foundational literacy and numeracy skills by 2026 – 27 also envisions fostering an inclusive environment for universal foundational literacy and numeracy, aiming for every child to attain essential competencies in reading, writing, and numeracy by the end of Grade III. This initiative spans the educational needs of children aged 3 to 9. Emphasis is laid on a disaggregated assessment that includes more of the traditional

teaching learning methods. The foundational education phase targets three developmental goals viz; children maintain good health and well being, children become effective communicators, and children become involved learners and connect with their immediate environment. They encompass prime learning areas like physical and motor skills, socio-emotional development, language and literacy, cognitive development (including mathematical understanding and numeracy, as well as understanding the world), spiritual and moral development, and art and aesthetic development. These interconnected goals emphasize the importance of holistic and purposeful assessments to monitor children's progress, utilizing diverse techniques. Parental involvement is crucial for maximizing a child's learning and competency development.

Key aspects of the assessment framework include defining multiple learning outcomes covering literacy, numeracy, psychomotor skills, environmental awareness and more. Various methods such as art-based projects, toy making, inquiry-based learning, quizzes, group work, and role-plays can be employed for comprehensive assessment. A 360-degree progress report is achieved through assessments conducted by parents, peers, and self-evaluation.

As education evolves, the wisdom shared by these educators, research on retention and meaningful learning, and what our New Education Policy envisages with the Foundational Learning and Numeracy mission, we are reminded that the essence of learning lies in a harmonious blend of the old and the new. The "back to basics" movement resonates as a timeless acknowledgment of the enduring value of traditional methods in nurturing well-rounded individuals. For younger students, foundational learning should primarily embrace traditional approaches such as attentive listening, social interaction, outdoor play, teamwork, and other activities fostering empathy, creativity, critical thinking, collaborative learning, and refined motor skills. While digital tools can complement and enrich the learning experience, they shouldn't substitute the proven methods of traditional teaching.

<https://www.technologyreview.com/2023/04/19/1071282/digital-world-reshaping-childrens-education-reading/>
<https://able.ac/blog/meaningful-learning/>
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https://www.education.gov.in/sites/upload_files/mhrd/files/nipun_bharat_eng1.pdf

02

Artificial Intelligence

Bringing a Wave of Transformation in Education

We have gathered key voices from across the spectrum: school education, higher education, industry, and the start-up space to look at how AI is transforming the education sector and how India can be prepared to catch and ride the AI wave.



Dr Sandhya Chintala

**Executive Director, IT – ITeS
Sector Skills Council & VP
Nasscom**

Setting the Context: Potential and Challenges of Use of AI and the Need for Collaboration

AI is our reality; thanks to AI tools, education is getting more personalised and effective with the passing of time. AI tools will change the way teachers do their jobs and facilitate students in their journey of self-development through education. Students of today will be our future AI professionals, and it's important that students are exposed to AI tools. They will be the future AI generation and may end up creating AI tools with creative and complex solving capabilities, which will take the technology to another level.

AI tools, education systems, and teachers have to collaborate, start working as a team, and invest in the best attributes of machines and teachers. This collaboration will bring out the best in the students. AI tools can help with repetitive and time-consuming tasks, and teachers and education systems can focus on creative and complex tasks with human interaction. The best part of this collaboration is that students will be able to learn from both education systems and get the best of both realms.

While we embrace and cope with it, it will be our responsibility to use it carefully to obtain its maximum benefits. We have to always remember that AI tools do not need to be an all or nothing solution. The need is to carefully study and analyse the pros and cons, then use them effectively.



Sabeer Bhatia

**Silicon Valley
Entrepreneur, Co-Founder
of Hotmail & ShowReel**

An Entrepreneur's Vision: The Cutting Edge of AI in Education

As an innovator in the tech industry, I see Artificial Intelligence revolutionising education in profound ways. Currently, the most common use of AI in education centres around vertically integrated chatbots. These digital assistants support learners by providing content-related guidance, effectively acting as an on-demand tutor.

However, at Showreel, we are pushing the boundaries of AI's application in education. We leverage AI not just for content delivery, but for content creation and evaluation. Our system employs a visual mechanism to grade responses, showcasing AI's ability to understand and evaluate complex student inputs.

Most importantly, AI has the potential to personalize education. By analysing individual learning patterns and identifying specific areas of weakness, AI can tailor educational content to suit each learner's unique needs. This adaptive learning approach ensures that students aren't just learning more efficiently, but also in a way that aligns with their personal learning style.

In conclusion, AI is not just a tool for enhancing education; it's a transformative force capable of individualising learning and making education more accessible, effective, and engaging.

Artificial Intelligence

Bringing a Wave of Transformation
in Education



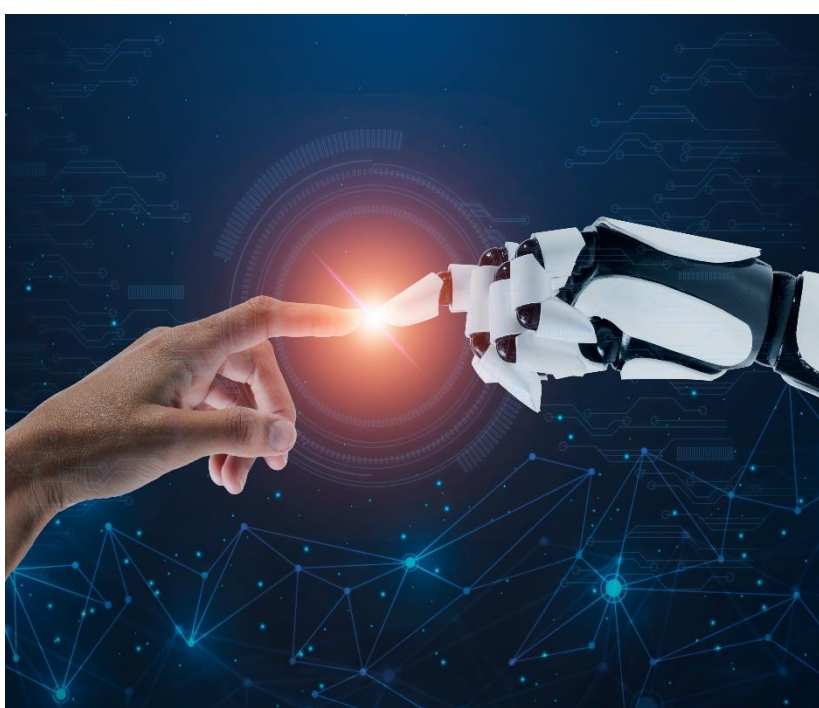
Shri Praveen Prakash

**Principal Secretary, Department
of School Education,
Government of Andhra Pradesh**

Outlining the Government's Role in Transforming the School Education System

At any point in time in an evolution, we have to transform. So when it comes to AI specifically, we ourselves have to transform, and the meaning of the education system has to transform. Lateral thinking, leadership, critical thinking, connecting the dots/convergence are becoming more and more important.

Therefore, what we teach, how we teach, and how we assess has to transform. We, in the Government of Andhra Pradesh, have understood this. Keeping this in mind, we have taken bold steps to transform – our school education board, assessment board, and the subjects we teach. We studied who can partner with us and help us in our journey of transformation, and identified the International Baccalaureate board. We envision a long partnership of 15 years, starting with jointly deciding the areas which need to be targeted, and then conducting training for all the stakeholders – teachers, headmasters, block education officers, DEO, exam department staff, SCERT, and the Commissionerate staff. And come June 2025, class 1 will be taught by joint board, with other grades being added sequentially.



Ekanto Ghosh

**Assistant Director, InfoEdge
Centre for Entrepreneurship,
Ashoka University**

How the Higher Education System Can Produce Master AI Users

Most graduates of our country are studying an outdated syllabus. The education system is usually lagging behind like a tail while the technological advancements as the muscular body of the bull steals the thunder in the colosseum of national showcasing. On the contrary, we would like the education system to wag as a tough whip which drives the technological advancements and not as the following tail.

The disruption caused by AI has shown us that jobs and livelihoods will be lost not to AI but to humans who know to effectively use AI. There will be a difference between a low, an average, and a master AI user.

Besides their core subjects, the students of today need liberal arts education to be well formed professionals. Skills like critical and creative thinking, problem solving, etc. are a must for all to make human lives humane, meaningful, and fulfilling; and make human capital engage in pressing problems of the world rather than engage in mundane tasks that can be automated.

Even though resources for mastering AI tools are available online, some are behind a paywall. Public education platforms like Swayam and NPTEL need to have more robust offerings soon to cater to market demands. They do have some good content. However, even today a lot of students are unaware of these.

The students need the right guidance to the relevant resources so that they can skill up. The industry too can step up by offering resources, workshops, certifications to make students AI-smart. The forward-looking educational institutions have already started such offerings even though they are not mandated to, and are formulating relevant AI policies to stay ahead of the curve.



03

The Roadmap for Education and Skill Sector

An Analytical Report of FY 2024-25 Budget Announcement

The Union Budget for FY 2024-25 emphasizes women-led development, ease-of-living, green growth, and employment generation when it comes to Education and skills sector. With a focus on research, innovation, and entrepreneurship, the introduction of the 'Jai Anusandhan' scheme with a ₹1 lakh crore corpus fund stands out as a significant announcement. This scheme offers interest-free loans for 50 years to private entities, fostering youth empowerment, especially the Amrit Peedhi. The PM SHRI initiative ensures high-quality education, while the Skill India Mission has trained 1.4 crore youth and upskilled 54 lakh individuals. Additionally, the establishment of numerous higher learning institutions, 7 IITs, 16 IIITs, 7 IIMs, 15 AIIMs and 390 universities' establishment also found a mention, marking a substantial stride in educational development.

The recent trends in education budget allocation and female enrollment in higher education reflect significant strides towards gender inclusivity and educational development in India. Notably, there has been a remarkable 28% increase in female enrollment in higher education, with women now constituting 43% of total enrollment in STEM courses, a figure that stands out globally.

In the fiscal year 2024-25, the Department of School Education & Literacy has received its highest-ever

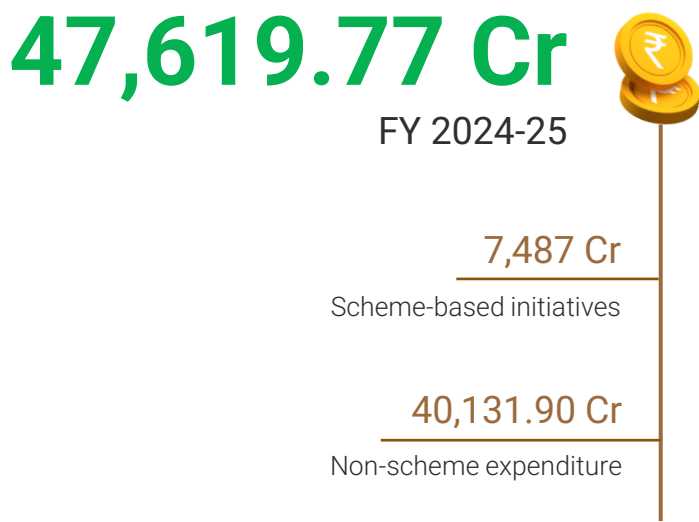
budget allocation of ₹73,498 crore, marking a substantial increase of ₹12,024 crore (19.56%) from the previous year. This increase in funding indicates a strong commitment towards enhancing the quality and accessibility of education across the country. The allocation for Autonomous Bodies such as Kendriya Vidyalaya Sangathan (KVS) and Navodaya Vidyalaya Samiti (NVS) has seen a significant boost, reaching ₹9,302 crore and ₹5,800 crore respectively. This reflects a prioritization of infrastructure development and resource allocation towards these institutions. Furthermore, there has been a notable increase in budget allocation for flagship schemes like Samagra Shiksha, PM-POSHAN, and PM-SHRI, indicating a focus on holistic educational development, nutrition, and skill enhancement.

Specifically, within the autonomous bodies, KVS has witnessed an increase of ₹802 crore, while NVS has seen an increase of ₹330 crore compared to the previous fiscal year. These increases highlight a targeted approach towards strengthening these institutions and improving the overall quality of education they provide. Overall, these trends underscore a concerted effort by the government to promote gender equality, enhance educational infrastructure, and prioritize key areas of educational development through strategic budget allocations.

The Roadmap for Education and Skill Sector

An Analytical report of FY 2024-25
Budget announcement

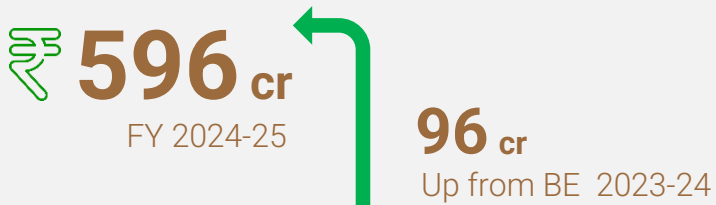
Budget Allocation Assessment for Department of Higher Education



- Furthermore, the delineation between scheme and non-scheme allocations allows for a targeted approach towards achieving specific educational objectives while ensuring the sustainable functioning of educational institutions nationwide.
- Notably, there has been a substantial increase of Rs. 3,525.15 crore (7.99%) in the budget allocation for the Department of Higher Education in FY 2024-25 compared to the previous fiscal year.
- This increased allocation presents a significant opportunity to address critical challenges such as infrastructure enhancement, faculty development, research promotion, and student support services.

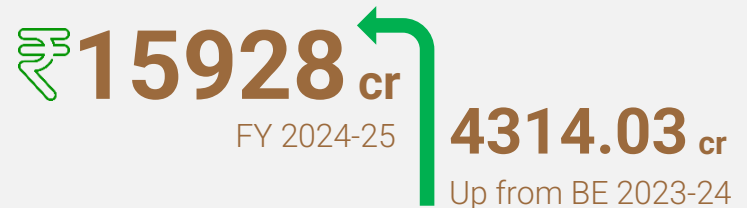
Allocation Trends In Major Autonomous Bodies

Deemed Universities:



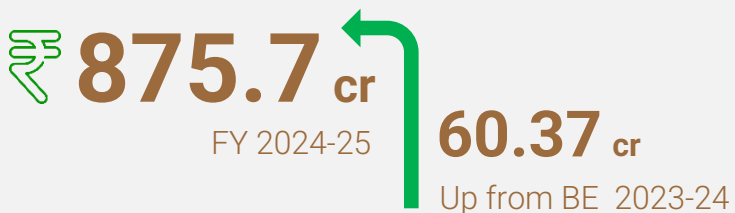
This augmented funding aims to support the diverse educational and research activities undertaken by these institutions.

Central Universities:



This substantial boost underscores the government's commitment to enhancing infrastructure, faculty development, and research capabilities in these institutions.

Indian Institute of Science (IISc):



This additional funding reaffirms the government's commitment to strengthening the research capabilities and academic infrastructure of one of India's leading scientific institutions.

Indian Institutes of Technology (IITs):



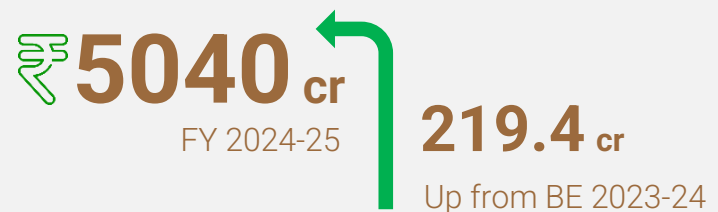
The government aims to bolster the premier engineering institutions in the country, facilitating their pursuit of excellence in education, research, and innovation.

Indian Institutes of Science Education and Research (IISERs):



This continued support aims to sustain the growth and excellence of these premier research-oriented institutions.

National Institutes of Technology (NITs):



This enhanced funding is intended to strengthen infrastructure, faculty recruitment, and industry-academia collaborations in these institutions.

The Roadmap for Education and Skill Sector

An Analytical Report of FY 2024-25
Budget Announcement

Allocation Trends In Major Education Schemes

Rashtriya Uchchatar Shiksha Abhiyan (RUSA)



This augmented funding underscores the government's commitment to enhancing the quality and infrastructure of higher education institutions across the nation.

National Apprenticeship Training Scheme (NATS)



The government aims to strengthen industry-academia linkages and enhance skill development opportunities for the youth.

Institutions of Eminence (IOE)



The government aims to nurture institutions capable of attaining global excellence. This allocation is indicative of efforts to elevate India's standing in the international higher education landscape.

National Apprenticeship Training Scheme (NATS)



It reflects the government's recognition of the transformative potential of Information and Communication Technology (ICT) in advancing education and learning outcomes.

Multidisciplinary Education and Research Improvement in Technical Education-EAP (MERITE)



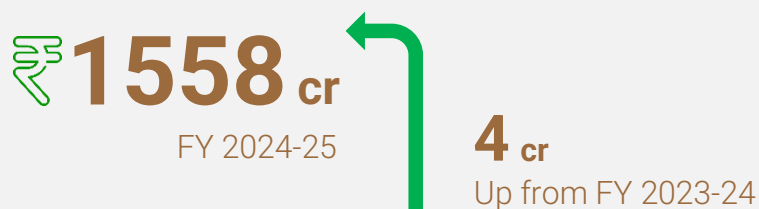
Emphasizing the government's emphasis on promoting interdisciplinary research and innovation in technical education.

3 Centres of Excellence (CoEs) in Artificial Intelligence (AI)



The government aims to catalyze advancements in AI research and development, positioning India as a frontrunner in this critical domain.

Pradhan Mantri Uchhatar Shiksha Protsahan Yojna (PM-USP):

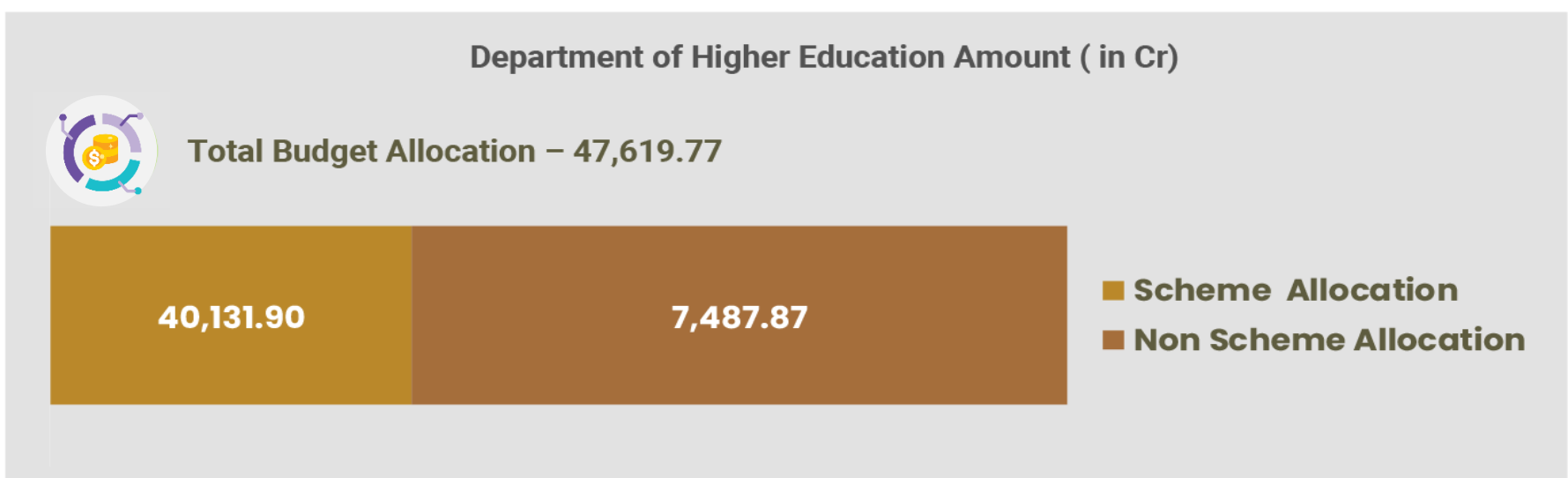
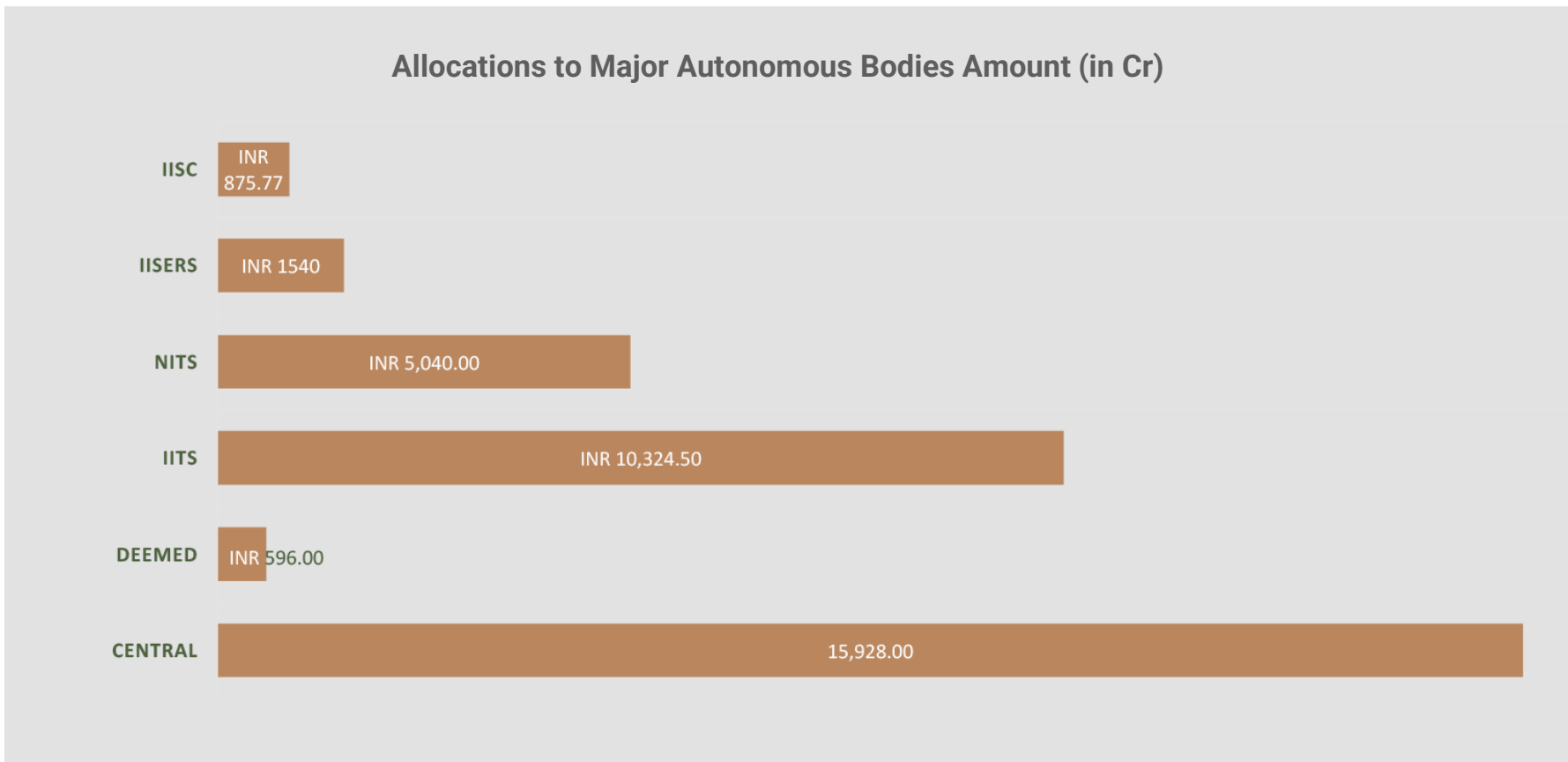
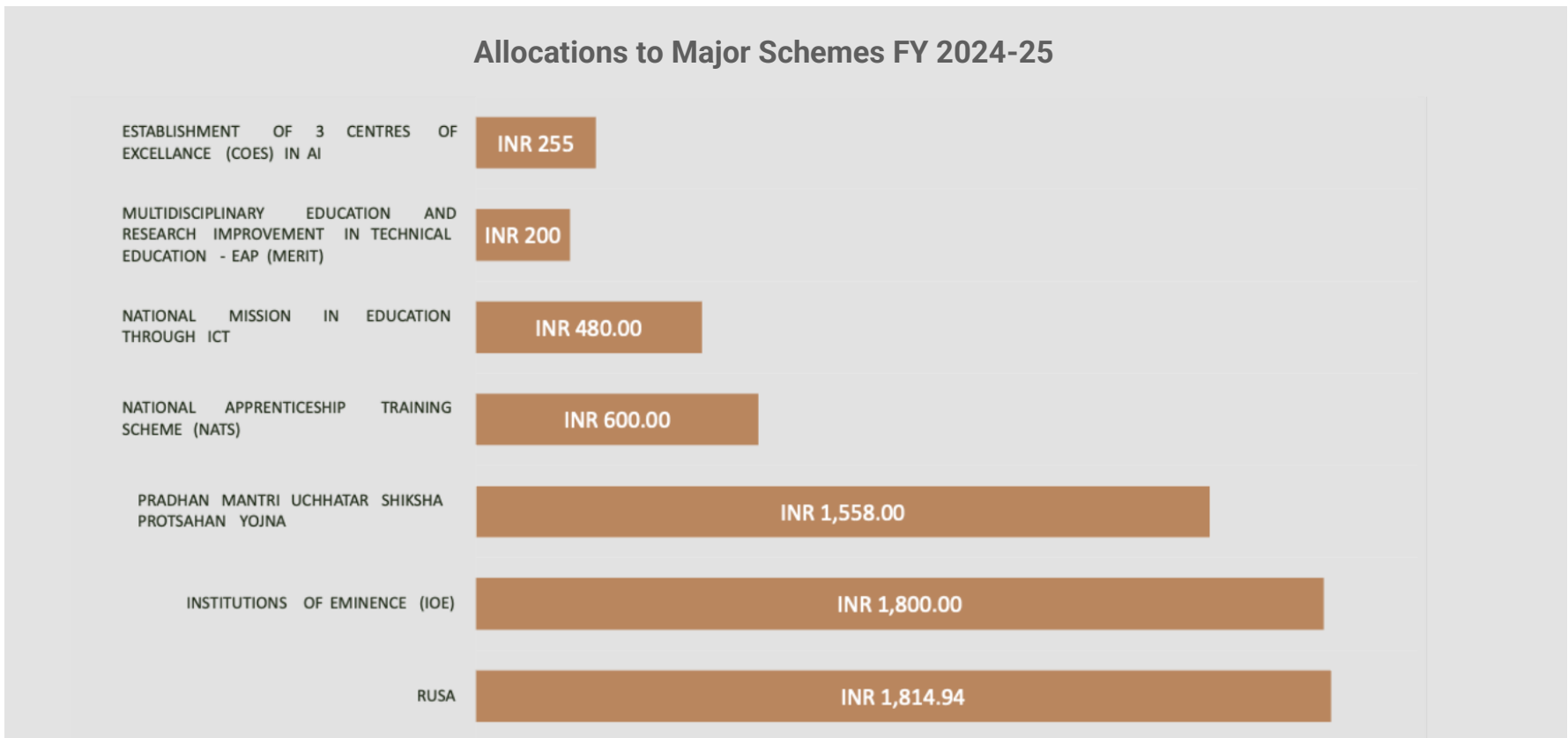


Underscores the government's focus on incentivizing excellence in higher education and research.

The Roadmap for Education and Skill Sector

An Analytical Report of FY 2024-25
Budget Announcement

These allocations signify a concerted effort by the government to address diverse challenges and opportunities in the education sector, fostering excellence, innovation, and inclusivity across various educational initiatives .





PASSION

for providing solutions to help clients achieve their goals

RESPECT

for all and alternate viewpoints

INTEGRITY

of thoughts and actions

MASTERY

of our chosen subject to drive innovative and insightful solutions

US

representing the Primus collective, where each individual matters

STEWARDSHIP

for building a better tomorrow

About Primus Partners

Primus Partners has been set up to partner with clients in 'navigating' India, by experts with decades of experience in doing so for large global firms. Set up on the principle of 'Idea Realization', it brings to bear 'experience in action'. 'Idea Realization'— a unique approach to examine futuristic ideas required for the growth of an organization or a sector or geography, from the perspective of assured on ground implementability. Our core strength comes from our founding partners, who are goal-oriented, with extensive hands-on experience and subject-matter expertise, which is well recognized in the industry. Our core founders form a diverse cohort of leaders from both genders with experience across industries (Public Sector, Healthcare, Transport, Education, etc.), and with varied specialization (engineers, lawyers, tax professionals, management, etc.).



BENGALURU

91 Springboard Business Hub 175, 176 Bannerghatta Rd, Dollars Colony, Bengaluru – 560076



CHANDIGARH

2nd Floor, Netsmartz, Plot No. 10, Rajiv Gandhi Chandigarh Technology Park, Chandigarh – 160019



DELHI

15, Tolstoy Rd Atul Grove Road, Janpath Connaught Place, New Delhi – 110001



KOLKATA

Siddhartha Apartments 4th Floor, 188/2, Block J, New Alipore, Kolkata - 700053



MUMBAI

601, 6th floor, Raheja Centre, Nariman Point, Mumbai - 400021

