

EDTECH INNOVATIONS:
FUTURE OF EDUCATION

The educational landscape has undergone a significant transformation over the past few years, primarily driven by advancements in technology.

This evolution, known as EdTech (Educational Technology), has redefined how teaching, learning, and administration occur. From personalized learning experiences to AI-powered tools, EdTech innovations are rapidly reshaping traditional educational models, making education more accessible, inclusive, and efficient. Here are some key innovations that are transforming the future of education:

Artificial Intelligence (AI) and Machine Learning (ML) are two of the most transformative technologies in EdTech today. These technologies can create personalized learning experiences for students, adapting to their pace, learning styles, and strengths.

AI-driven platforms, such as Squirrel AI and DreamBox, offer adaptive learning technologies that tailor lessons to individual student needs. By analyzing students' responses and progress, these platforms adjust the content, providing the right level of challenge and support.

AI-powered grading systems can assess assignments and exams, offering instant feedback. This not only saves time for educators but also provides students with timely insights into areas that need improvement.

Tools like Kahoot! and Classcraft allow students to learn through quizzes and interactive games. These platforms combine educational content with fun challenges, increasing student participation and making subjects like mathematics, science, and history more engaging.

Virtual Reality and Augmented Reality have made it possible for students to experience immersive learning environments, providing deeper engagement with the material.

Platforms like Google Expeditions allow students to explore historical landmarks, distant planets, or the human body through VR, providing learning experiences that go beyond textbooks.

AR apps such as Anatomy 4D or ZSpace enable students to interact with 3D models of organs, molecules, or even whole ecosystems, enhancing understanding through visual and tactile experiences.

EdTech innovations have not only enhanced the quality and accessibility of education but have also empowered both teachers and students with tools that cater to different learning needs. As these technologies continue to evolve, we can expect even more transformative changes in the way we teach and learn. The future of education is undoubtedly digital, and the possibilities for innovation seem endless, making it an exciting time for learners and educators alike.

Global diabetes cases increase four-fold over past decades

■ MOHAMMAD HANIEF

About 830 million people worldwide have diabetes, the majority living in low-and middle-income countries. More than half of people living with diabetes are not receiving treatment. Both the number of people with diabetes and the number of people with untreated diabetes have been steadily increasing over the past decades.

In the past three decades the prevalence of type 2 diabetes has risen dramatically in countries of all income levels. Type 1 diabetes, once known as juvenile diabetes or insulin-dependent diabetes, is a chronic condition in which the pancreas produces little or no insulin by itself. For people living with diabetes, access to affordable treatment, including insulin, is critical to their survival. There is a globally agreed target to halt the rise in diabetes and obesity by 2025.

Diabetes is a chronic, metabolic disease characterized by elevated levels of blood glucose (or blood sugar), which leads over time to serious damage to the heart, blood vessels, eyes, kidneys and nerves. The most common is type 2 diabetes, usually in adults, which occurs when the body becomes resistant to insulin or doesn't make enough insulin.

The starting point for living well with diabetes is an early diagnosis - the longer a person lives with undiagnosed and untreated diabetes, the worse their health outcomes are likely to be. Easy access to basic diagnostics, such as blood glucose testing, should therefore be available in primary health care settings. Patients will need periodic specialist assessment or treatment for complications.

A series of cost-effective interventions can improve patient outcomes, regardless of what type of diabetes they may have. These interventions include blood glucose control through a combination of diet, physical activity and, if necessary, medication; control of blood pressure and lipids to reduce cardiovascular risk and other complications; and regular screening for damage to the eyes, kidneys and feet to facilitate early treatment.

The World Health Organization (WHO) has already issued a medical product alert on falsified semaglutides, the type of medicines that are used for treatment of type 2 diabetes and obesity in some countries.

The alert addresses 3 falsified batches of product of semaglutide class of medicines (of specific brand Ozempic), which have been detected in Brazil in October 2023, the United Kingdom of Great Britain and Northern Ireland in October 2023, and the United States of America in December 2023. WHO Global Surveillance and Monitoring System (GSMS) has been observing increased reports on falsified semaglutide products in all geographical regions since 2022. This is the first official notice issued by WHO after confirmation of some of the reports.

The number of adults living with diabetes worldwide has surpassed 800 million, more than quadrupling since 1990, according to new data released in The Lancet on World Diabetes Day. The analysis, conducted by the NCD Risk Factor Collaboration (NCD-RisC) with support from the World Health Organization (WHO), highlights the scale of the diabetes epidemic and an urgent need for stronger global action to address both rising disease rates and widening treatment gaps, particularly in low- and middle-income countries (LMICs).

The study released recently was conducted by the NCD Risk Factor Collaboration (NCD-RisC), a worldwide network of over 1500 researchers and practitioners, in collaboration with WHO. It is the first global analysis of trends in both diabetes rates and treatment coverage that is based on data from over 140 million people aged 18 years or older that were included in more than 1000 studies covering populations in all countries. The study used an updated methodology of measuring diabetes prevalence in populations from previous studies to provide a more accurate overview of the global diabetes epidemic.

"We have seen an alarming rise in diabetes over the past three decades, which reflects the increase in obesity, compounded by the impacts of the marketing of unhealthy food, a lack of physical activity and economic hardship," WHO Director-General Dr.TedrosAdhanom Ghebreyesus has said in a WHO press release and added that "To bring the global diabetes epidemic under control, countries must urgently take action. This starts with enacting policies that support healthy diets and physical activity, and, most importantly, health systems that provide prevention, early detection and treatment."

The study reports that global diabetes prevalence in adults rose from 7% to 14% between 1990 and 2022. LMICs experienced the largest increases, where diabetes rates have soared while treatment access remains persistently low. This trend has led to stark global inequalities: in 2022, almost 450 million adults aged 30 and older - about 59% of all adults with diabetes - remained untreated, marking a 3.5-fold increase in untreated people since 1990. Ninety per cent of these untreated adults are living in LMICs.

The study further reveals substantial global differences in diabetes rates, with the prevalence of diabetes among adults aged 18 and older around 20% in the WHO South-East Asia and the Eastern Mediterranean Regions. These two regions, together with the African Region, have the lowest rates of diabetes treatment coverage, with fewer than 4 in 10 adults with diabetes taking glucose-lowering medication for their diabetes.

Addressing the soaring diabetes burden, WHO is also launching a new global monitoring framework on diabetes. This product represents a crucial step in the global response, providing comprehensive guidance to countries in measuring and evaluating diabetes prevention, care, outcomes and impacts. By tracking key indicators such as glycaemic control, hypertension and access to essential medicines, countries can improve targeted

interventions and policy initiatives. This standardized approach empowers countries to prioritize resources effectively, driving significant improvements in diabetes prevention and care.

WHO's Global Diabetes Compact, launched in 2021, includes the vision of reducing the risk of diabetes, and ensuring that all people who are diagnosed with diabetes have access to equitable, comprehensive, affordable and quality treatment and care. The work undertaken as part of the Compact will also support the prevention of type 2 diabetes from obesity, unhealthy diet and physical inactivity. In addition, the same year, a diabetes resolution was endorsed at the World Health Assembly urging Member States to raise the priority given to the prevention, diagnosis and control of diabetes as well as prevention and management of risk factors such as obesity.

In 2022, WHO established five global diabetes coverage targets to be achieved by 2030. One of these targets is to ensure that 80% of people with diagnosed diabetes achieve good glycaemic control. Today's release underlines the scale and urgency of action needed to advance efforts to close the gap.

The upcoming year 2025 presents a significant opportunity to catalyse action against the alarming rise in diabetes worldwide with the Fourth High-level Meeting of the United Nations General Assembly on the prevention and control of non-communicable diseases (NCDs) to take place in September. This meeting brings heads of states and governments together to set a powerful vision for preventing and controlling NCDs, including diabetes, through a collective commitment to address root causes and improve access to detection and treatment. By aligning efforts towards the 2030 and 2050 goals, this high-level meeting is a pivotal moment for strengthening global health systems, including primary health care and halting the rise in the diabetes epidemic.

Challenges and Opportunities in Urban Agriculture

■ DR. BANARSI LAL

Urban agriculture has become a burning topic on growing and producing the food in the urban areas. It can be defined as the growing of plants and raising of animals within (intra-urban) and around (peri-urban) cities. Urban agriculture is distinguished from rural agriculture as it is integrated into the urban economic and ecological system. Such linkages include the urban residents as labourers, urban resources such as organic wastes like compost and urban wastewater for irrigation, urban consumers, urban ecology, urban food system, etc. It has been observed by the United Nations that the earth population will increase by 40 per cent and cross nine billion by 2050. It is estimated that 80 per cent of population will reside in cities. It has been observed that many countries produce around 20% of their food in cities. Now the developmental agencies have started to integrate urban agriculture in their policies to solve the urban people problems. Urban poor people are mainly engaged in urban agriculture. In many cities it has been observed that lower and middle class government officials, school teachers, rich people are involved in urban agriculture. Women constitute an important part of urban farmers as agriculture and related agro- processing activities are efficiently performed by them.

Agriculture is the mainstay of Union Territory of Jammu and Kashmir's economy. About 80 per cent of J&K population depends on agriculture. Over the years, the farmers of J&K have adopted new agricultural technologies to increase the agricultural production. Like other states/UTs of

the country, people from rural areas of Jammu and Kashmir are migrating towards the urban areas. Rapid urbanization has increased the urban poverty. Cities like Jammu and Srinagar are not able to generate sufficient income and employment opportunities for the rapidly growing population. The costs of supplying and distributing food from rural areas to the urban areas or to import food for the cities are continuously rising and it is expected that urban food insecurity will increase in future. Food prices are increasing which is an emerging problem for the poor urban consumers. Urban agriculture has immense scope in the Union Territory of Jammu and Kashmir as it can create income and employment opportunities for the urban poor people. Keeping the scope of urban agriculture in view, there is need to create awareness on urban agriculture among the urban and peri-urban people of J&K. Urban agriculture is different than urban jobs that require travelling to the town centre and industrial area. Urban agriculture may take place inside the cities (intra-urban) or in the peri-urban areas. Urban agriculture is possible on the homeland or on land away from the residence, on private land or on public land (parks, conservation areas, along roads, streams and railways), or semi-public land (school yards, grounds of schools and hospitals). By urban agriculture food products from different types of crops and animals as well as non-food products like aromatic and medicinal herbs, ornamental plants, tree products etc. or combinations of these can be produced. Production units in urban agriculture in general tend to be more spe-

cialized than rural enterprises. Urban agriculture includes agricultural production activities as well as food processing and marketing activities. In urban agriculture, production and marketing tend to be easier in terms of time and space.

Multi-storeyed buildings apart from providing the residential and commercial space can also take care of the city's food needs. Growing crops in urban areas is quite challenging but possible across the globe. It requires specific knowledge depending upon the location and limitations of land available in the urban areas. Urban agricultural production is mostly done for self-consumption with surpluses being traded. However, the importance of the market-oriented urban agriculture both in volume and economic value should not be underestimated. In urban agriculture mainly fresh products are sold and some part of it is processed for own use, cooked and sold in the streets, or processed and packaged for sale. In urban agriculture, we may encounter individual or family farms, groups or cooperative farms and commercial enterprises at various scales ranging from micro- and small farms to medium-sized and some large-scale enterprises. The technological level of the majority of urban agricultural enterprises in most of the cities like Jammu and Srinagar is still low. However, in some cities of the country like Bangalore and Hyderabad technically advanced and intensive agriculture can be found. Urbanization is rapidly increasing together with the rapid increase in urban poverty and urban food insecurity. Most of the cities in the state have great difficulties to cope

with the development and are unable to create sufficient formal employment opportunities for the poor people. Disposal of urban wastes and waste water and maintaining air and river water quality problems are also increasing.

Urban agriculture can provide a source of fresh and healthy produce for individual families, community groups and urban markets. It provides a source of complementary strategy to reduce urban poverty and food insecurity and enhance urban environmental management. Urban agriculture plays an important role in enhancing urban food security since the costs of supplying and distributing food to urban areas based on rural production and imports continue to increase and do not satisfy the demand, especially for the poor people. Urban agriculture also contributes to local economic development, poverty alleviation and social inclusion of the urban poor and women in particular, as well as to the greening of the city and the productive reuse of urban wastes. The importance of urban agriculture is being recognized by many international organizations like the UN, Food and Agriculture Organization (FAO) and municipalities. Urban agriculture contributes to food security and healthy nutrition in urban and peri-urban areas. Urban agriculture may improve both food intake and the quality of the food may improve. In certain countries, 40-60 percent of food consumed by low-income groups is self-produced. It has been observed that the children aged five years or less in low-income farming households were found to be significantly better-off nutritionally (less

stunted) than the counterparts in non-farming households and urban farmers generally eat more vegetables than non-urban farmers of the same wealth class. In addition to production for their own consumption needs, large amount of food is produced for other categories of the population. In certain cities urban dwellers are actively involved in agriculture. These urban farmers produce substantial amounts of food for urban consumers.

Urban agriculture to a large extent complements rural agriculture and increases the efficiency of the national food system. It provides products that rural agriculture cannot supply easily (e.g. perishable products). Urban agriculture can play an important strategy for poverty eradication and social integration. It can give the positive stimulus especially to the poor urban women. Several municipalities or NGOs have initiated urban agriculture projects that involve disadvantaged groups such as orphans, disabled people, women, immigrants without jobs, or elderly people, with the aim to integrate them more strongly into the urban network and to provide them with a decent livelihood. The participants in the project may feel enriched by working constructively, building their community, working together and in addition producing food and other products for consumption and for sale. Urban agriculture may be undertaken for the physical or psychological relaxation. Also, urban and peri-urban farms may take on an important role in providing recreational opportunities for citizens or having educational functions such as bringing youth in contact with animals, teaching about ecology, etc.

Urban agriculture and urban forestry can contribute to disaster risk reduction and adaptation to climate change by reducing runoff, reducing urban temperatures, reducing dust and CO₂, while growing fresh food close to consumers reduces energy spent in transportation, cooling, processing and packaging. Urban agriculture can improve the urban ecological system and can play an important role in the urban environmental management system. Now-a-days cities produce more and more wastewater and organic wastes. For most of the cities the disposal of wastes has become a serious problem. Urban agriculture can help to solve such problems by turning urban wastes into a productive resource. In addition, compost-making initiatives create employment and provide income for the urban poor. The use of freshwater has the additional advantage for urban poor farmer because it contains lot of nutrients. Technologies such as hydroponics or organonics, drip irrigation, zero tillage etc. substantially reduce water needs and health risks and are very interesting for the urban environment. Urban agriculture can positively impact upon the greening and cleaning of the cities. Degraded open spaces and vacant land are often used as informal waste dumpsites and are a source of crime and health problems. When such zones are turned into productive green spaces not only an unhealthy situation is cleared but also the people can actively enjoy the green area. Such activities may also enhance community self-esteem in the neighbourhood.

(The writer is Chief Scientist & Head, KVK Reasi, SKUAST-J).

Caring For The Children

■ G.L. KHAJURIA

How many of us often accept our attachment in real sense of term in so far as love affection and fantasies of our kids and children are concerned. Well, the children mean much more than what we think of them. They are not only our children merely by giving birth to them but in broader spectrum they are the fountain head of the nation. They are the light and hope of the nation for the future. Pandit Jawahar Lal Nehru and Dr. A.P.J Kalam were most affectionate towards children. It has rightly been quoted, child is a father of the nation. Today's children are tomorrow's scientists, Scholars, Educationist and ofcourse plentitude of Doctors, Engineers and bureaucrats apart from distinguished luminaries, cine stars and record breaking sports stalwarts.

They are the best guardian of Borders who play with their lives defending the nation. Children are the future of the nation in more than many ways. They are the blooming flowers of dawn and seedlings of the Nurseries which make the surrounds vibrant and slabrous when nurtured and nourished.

Children are of utmostly warranting care of molding the first step to success in life's run -race. Any right or wrong step can make them heaven or hell apart landing into the Sea of troubles. It, therefore, becomes our boundan duty to boost their upbringings with rightful and dedicated devotional perspectives. If the natural and social cohesiveness between the father and the mother is carefully maintained, the children by all means are sure to succeed but if the same delicate fabric is distorted, there is every apprehension of their being carried away on wrong track.

It is no denying the fact that the parents do their utmost and sacrifice their everything for their children. Right from the time a child is born, the conscientious young parents see to it that their child has everything as for example Education, Clothings, Toys and whatever is available within their best possible reach. They leave no stone unturned for their child's upbringing and fulfilling his every demand and desire.

However, many strings are attached to their children by the over ambitious parents who expect the child as miniature adult, a mas-

ter of all trades they also expect them to excel in every field whether in studies or sports, reading, writing, oratory so to say on all aspects of life and aspire them second to none. And there lies their happiness and all hope.

In such pursuits, the children are deprived of their fundamental rights of being child. The kaleidoscopic magic of childhood, the charms of wandering through delightful avenues are get lost. Apart from all these, the rainbow-coloured fantasies vanish like a silver lining in dark clouds. Do we as wise parents are doing justice by depriving them of charming dream from which they don't want to part with.

Now, let us have a glimpse of surrounding scenario currently looming large amongst little kids and up springing children. The early morning picture is too amusing to have appreciations for all the wise parents in that their little kids are pushed into the labyrinth of learning with heavy load of books and note books beyond their caring capacity on piggybacks. This way they are confronted with triple-load - Physical, mental and Psychological.

Are we meting out justice to our budding kids and children is a very pertinent point to ponder upon. The higher authorities at the helm should come to the forefront in framing policies and promulgating parameters in association with the conscientious parents.

How is the life of children of today? They are weaned straight from milk bottle to the nursery school! The more the homework he or she carries, the better school is considered to be. Not to be left behind in race for excellence, the child is sent for tuition and the teacher imparting tuition to more than 30-40 children at a time.

Things are no better at home too. In many rich homes where parents are over-obsessed with their pursuits, the children are oftenly diverted to video games, expensive toys, computers to the extent of internet and social medias apart from mobile of all hues in a way that the very spirit and sanctity becomes somehow obliterated by overuse, misuse or to say abuse.

The enigmatic scenario doesn't stop over here. The generous amount of pocket money even in mediocre families, whether the mother is employed or otherwise

routinely a housewife, there is hardly any time for the family members who can share their feelings to foster their togetherness. Whatever little leisure is there it is squeezed out of the marathon of life and is swallowed by the TV serials which instead of creating congenial environment add fuel to fire in hassle-packed progression which way in becomes like a quick-fix in family trifling over frivolous issues thereby hooking the altitudinal inertia of our kids, children and their associates. Surveys show, the more children watch the less they observe. Their thinking and responses become adultlike in other words around the minds of the children find shortcuts into adulthood without having the know-how of natural process of growing. And all these factors in togetherness are sure to create a generation of mini adults lacking imitative, motivation and enterprise. There is a tendency to put the whole blame at the door of school and the education system. It is an admitted fact that schools complicate the matters but at the same time, solution lies at home. It is, infact, the home that moulds the character of the child.

The kids and the small children are

extremely sensitive and receptive as they are growing all the time and in the process they are accepting or rejecting the goods and bads as they are physically fragile and mentally fertile. So, in all manifestations, parent's guidance play a pivotal role in moulding the life of the children.

The educationist opined that a child is influenced by three prominent factors- the school where he studies, the friends and his associates with whom he plays and shares his feelings and finally home where he spends maximum time with parents and other kids/ children of his relation. So, home is predominantly the best school for the kids and young children.

Considering today's lifestyle, in almost all families dinner time is an ideal time. It is worthwhile to say that after the dinner is over, there is a cool and congenial environment when the children can conveniently be convinced to share their feelings and aspirations with their parents and the relatives and their kids and children on all matters and so such this can play a prominent part in moulding and shaping the future of both the kids and the children.

(The writer is former Deputy Conservator of Forest, J&K).