

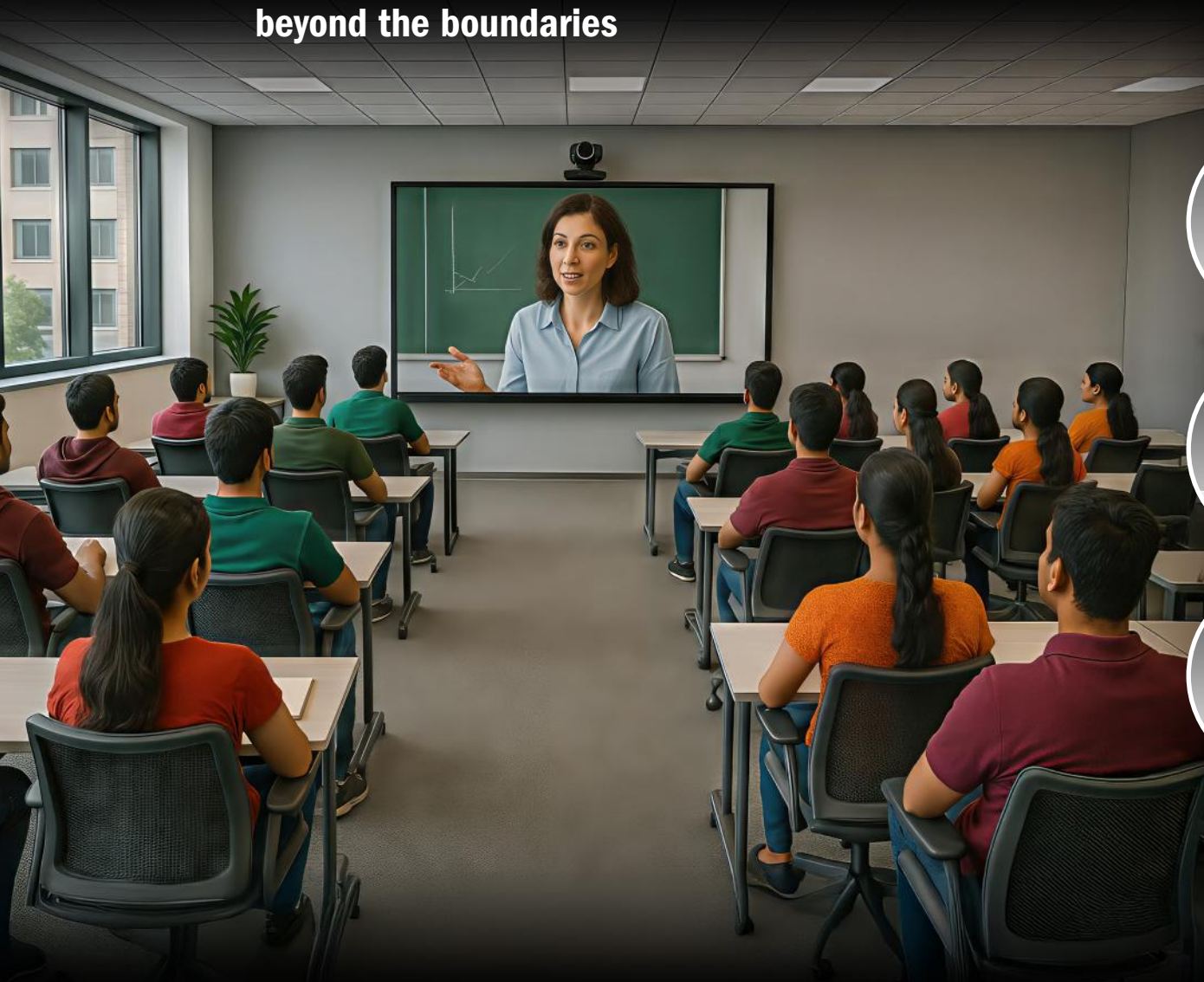
# AV TODAY

TECHNOLOGY · PEOPLE · EXPERIENCES

## NEAR AND FAR

How AV is changing the learning experience beyond the boundaries

### Insightful Conversations



**Leslie Lean**  
Managing Director,  
Ansata



**Sandeep Bansal**  
Digital Transformation  
Strategist



**Amar Bahadur**  
Founder Vesta  
Consultant

**FEATURE:**

- Impact of AV in Education

**CASE STUDY:**

- IIM Vishakapatnam

**TECHNOLOGY:**

- Interactive Flat Panels
- Virtual Reality
- Digital Signage
- Acoustics

**SPECIAL:**

- Podcast

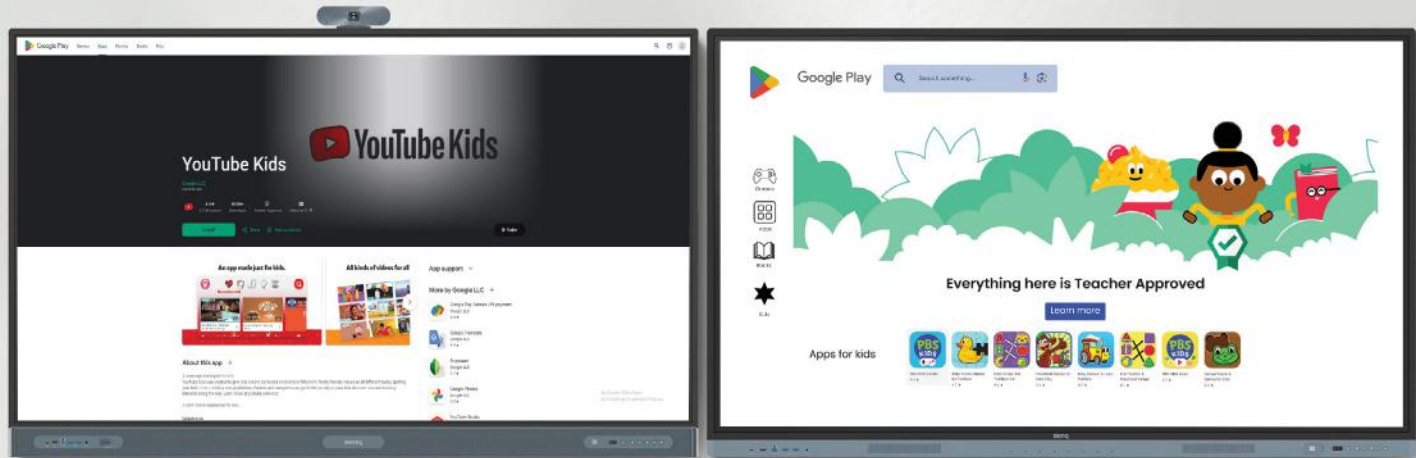
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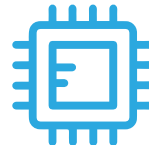
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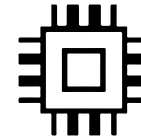
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# Founder's Note

**K David Paul Sudhakar**  
Founder & Director



Hello, dear readers,

We started AV Today with a passion for building connections and fostering learning in our dynamic AV industry. And today, I'm excited to tell you about our first-of-its-kind initiative, the WAVE 2025 event, in Bangalore on May 1st.

In this edition, we're taking you back to the classroom, a space where AV technologies are totally transforming how we teach and learn. The future classroom takes center stage in our main feature, along with a case study on the intelligent classroom experience at IIM Visakhapatnam. We also have not just one but two podcasts for you: Sandeep Bansal talks about digital transformation in India's higher education landscape, and Amar Bahadur shares his inspiring journey from sales professional to founder of Vesta Consultant.

We highlight Ansata's incredible legacy of exceptional service in the audio industry, and on the technology side, we discuss the latest, including interactive learning, the shift from passive to active participation in classrooms, and the revolutionary impact of VR on education in India. Plus, our product showcase features some excellent solutions designed to boost classroom engagement, like the DS-4CU Arec Speaker Tracking Station, Avocor S Series interactive displays, Catchbox microphone system, LOGIC Google EDLA-certified HX Series Interactive Flat Panels, and the Sennheiser TeamConnect Ceiling 2 (TCC2) microphone system.

Our guest contribution features are always special. Prashant Nair shares valuable insights on the importance of acoustics in learning environments, and Govinda Siddartha explores the fascinating world of campus-wide digital signage.

As an industry, we all play a crucial part in shaping the future of education, so I really hope you find this edition informative.

Happy reading.

David

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MAKE IN INDIA 

# The Sound of Service

## How Ansata built a legacy in audio through service excellence

**In the fast-paced world of technology distribution, where companies often prioritize quick profits over lasting relationships, Ansata tells a different story. For over three decades, this pioneering company has transformed from being an IT company into one of India's leading professional audio solution providers. The company's success stems from a simple yet powerful corporate philosophy, quality service matters more than rapid growth.**

**T**he origins of Ansata Computer Systems trace back to 1989 when Leslie Lean founded the company. Building on his successful career as a computer programmer way back in 1974—Leslie crafted Ansata with a distinctive vision that continues to be the company's foundation today.

Leslie's mantra for success has consistently been: "Service excellence must come before rapid expansion." This founding principle has shaped every aspect of Ansata's development, from hiring practices to client relationships. Leslie's unwavering commitment to service quality over sales volume has become embedded in the company's DNA, creating a corporate culture where customer satisfaction is the ultimate measure of success.

### Corporate evolution, the journey to audio leadership

Ansata's path to leadership in the audio industry began far from speakers and microphones. Initially focused on software exports, it gradually moved on to developing web applications for clients in Europe and the United States. "We specialize in innovative solutions and finding niches



**Leslie Lean**  
Managing Director, ANSATA

within the software industry," explains Leslie. Among their groundbreaking projects was remote control automation and control optimum energy consumption, virtual education platforms, web marketplace for products and services, middle ware for existing business and their migration from mainframes to new platforms.

Around 2000, during the Y2K period, a pivotal corporate decision was made when an opportunity

arose to sell the software portion of the business. The transition included a one-year handover period to ensure client continuity. This sale allowed Ansata to re-align its direction. Prior to this transition, the company oversaw a hardware division, distributing various technology products. This infrastructure became the foundation for their new focus.

Leslie's approach to business reflects his personal values: "I must be small," he determined. This commitment to manageable growth has been fundamental to maintaining the service standards that Leslie considers non-negotiable.

Ansata's journey into professional audio services began when they became one of the three Apple distributors in India, specializing in Logic Pro and Final Cut Pro—essential software for audio and video production. While this distribution model offered limited value add opportunities, it connected the company with dealers throughout the music and audio industry, building relationships that would prove invaluable.

The true turning point came through a partnership with AVID, becoming a Pro Tools dealer. This relationship transformed Ansata's future, as Pro Tools was (and remains) the industry standard for professional audio production. Their market

growth accelerated when AVID launched their Live Mixing Console, allowing Ansata to capture significant market share.

By 2004, Ansata had fully established itself in offering professional audio services and added live sound solutions to its list of services in 2010-2011. This carefully planned expansion created a comprehensive audio-visual technology business while maintaining the company's focus on excellent service above rapid growth.

## Corporate philosophy, the 'Service-First' approach

What distinguishes Ansata from other distributors is Leslie's philosophy about representation, "We looked at distribution as an extension of the brands' work in our country where they aren't physically available." This service-first approach—offering comprehensive education, training and support—has attracted top manufacturers looking for more than just sales volume. Leslie has built Ansata around the principle that customer satisfaction creates more sustainable business than aggressive sales tactics.

Today, Ansata represents some of the most respected brands in professional audio, including Avid, Waves, d&b audiotechnik, RME, DPA, Audinate and few others. "As a distributor, we are everything in audio, everything pro-audio,"

states his company leadership. The organization works across many sectors, from supplying equipment to concert touring (Rental) companies to designing permanent audio systems for religious buildings, clubs, government facilities and schools.

## Corporate strategy, building success through relationships

What truly sets Ansata apart isn't just the products they distribute but the relationships they cultivate. Under Leslie's leadership, the company focuses on being true partners to both the brands they represent and the customers they serve. "We don't just sell equipment; we sell solutions," emphasizes Leslie. This approach works particularly well in specialized audio segments like recording studios, live sound and permanent installations where technical knowledge is as valuable as the products themselves.

Ansata's team includes specialists who understand the unique challenges of different audio environments—from the acoustic requirements of churches to the reliability demands of touring sound systems. This expertise positions them as consultants rather than just vendors, building loyalty in a market often focused only on price. The management style at Ansata emphasizes thoughtful transitions and respect for employees. "Transition is very important to me because if

you don't transition correctly, you hurt someone," explains Leslie. This people-first approach extends throughout the organization. Rather than focusing solely on maximizing profits, he has created a workplace where service excellence is the core value and employees are empowered to prioritize client needs over short-term gains.

Perhaps most remarkable about Ansata's success is its controlled approach to expansion. "Growth has to be manageable. It has to continue with the same quality standards, especially with regard to delivery of service." This careful approach to expansion contrasts sharply with the "growth at all costs" mentality common in today's business world. For Leslie and Ansata, the main consideration when evaluating new opportunities isn't profitability but service capability, " ...Growth to Leslie translates as "Can we deliver service to this place? That's the primary question."

## A journey through verticals: studio, live and beyond

As part of this journey, the company steadily expanded through distinct verticals in the audio industry. Starting with Pro Tools, it quickly became a trusted name for professional studios across India. Today, their reach spans every studio setup—from home producers to some of the biggest production houses in the country—all served with



the same passion and dedication that defined their early days.

The next leap came with their entry into the live sound market, beginning with AVID's SC48 digital mixing console. This step was more than a product launch—it embodied a vision to simplify the workflow for live sound engineers and empower them to explore sonic creativity. The SC48 marked a pivotal entry into the rental industry and since then, Ansata has become a guiding force for touring sound companies, offering not only world-class brands like d&b audiotechnik but also unmatched first-call technical support.

Building on this success, the company naturally extended into the installed live sound segment, bringing trusted solutions to fixed venues. Ansata's installation portfolio is impressive with a variety of performance venues, houses of worship, government buildings and educational institutions. Their work stands out for technical finesse and a service-first attitude. Among the most notable installations are the prestigious

Nita Mukesh Ambani Cultural Centre (NMACC) in Mumbai and Kanha Shanti Vanam, the world's largest meditation center—both showcasing their strength in delivering immersive sound for performance and spiritual spaces. The corporate portfolio is equally impressive, with global giants like Meta and Deloitte relying on their expertise for audio system design. End users across these varied sectors continue to appreciate the consistent quality, reliability and after-sales support that define every deployment.

### **A tradition of corporate integrity and excellence**

At 72, Leslie continues to lead Ansata with the same vision and values that have guided the company for over three decades. What makes the company's story remarkable is their unwavering focus on excellence. Rather than expanding into many different areas, Ansata has chosen to

deepen its expertise in one field—establishing itself as India's premier audio company, trusted by professionals who demand perfection. "Interestingly, with all that, business is growing," notes Leslie with satisfaction. The company continues to expand, driven by reputation and relationships built over decades rather than aggressive sales tactics.

In a business environment increasingly dominated by large corporations and growth-obsessed strategies, Ansata Computer Systems demonstrates that corporate success comes from integrity, quality and purpose. By prioritizing expertise, service excellence and meaningful relationships over rapid expansion, Leslie Lean has created something more valuable than just another distribution business—he's built a corporate legacy that will influence India's audio industry for generations.



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# The Future Classroom

## Technology's revolutionary impact on indian education

**The traditional classroom is slowly but surely fading away. No longer confined to four walls and a blackboard, the modern learning experience is becoming immersive, experiential, collaborative and even fun. At the heart of this shift lie the innovative ways AV technologies are being integrated into nearly every aspect of the education experience. We speak to Aakriti Raina, Marketing Strategist at Vallect, Pankaj Bellad, Business Head at LOGIC and Swaroop Ram, Founder and Director of Sales at Ideas Ahead AV Solutions for insights on how AV technologies are shaping the future of classrooms and opening up limitless possibilities for a diverse, digital-savvy generation of students preparing for a highly globalized world.**

**T**he COVID-19 pandemic has dramatically accelerated digital adoption of education across India. What began as an emergency response has evolved into a lasting transformation, with many institutions embracing hybrid teaching methods. This shift has democratized access to quality education, extending beyond urban centers into semi-urban and rural areas, largely driven by governmental initiatives promoting digital infrastructure development.

In classrooms across India, the traditional blackboard is fading into history. Today's learning spaces are becoming more interactive, collaborative and engaging through advancements in AV technology. The pandemic accelerated this transformation, turning what was once considered a luxury into a necessity for educational institutions across the country.

"The entire dynamic changed after the COVID-19 pandemic," explains Pankaj. "The focus on education shifted dramatically, with increased adoption of hybrid teaching methods even in smaller rural areas."

Before the pandemic, technology in education was seen as interesting but not a priority. When schools were forced to close their physical doors, educators quickly recognized the need for digital solutions. What began as an emergency response has led to a permanent change in how teachers instruct and students learn.

"Once COVID hit, the necessity for change became clear," says Aakriti. "Educators began to recognize the real transformation that was taking place and how was benefitting them in so many ways."

This digital transformation isn't limited to major cities; it is spreading rapidly to semi-urban and rural areas, fuelled by the government's push toward digitalization.

"Digital transformation is rapidly spreading beyond urban areas to semi-urban and rural areas," notes Swaroop. "The Government's push towards digitalization and the impact of COVID set the ball rolling."

What was once considered a luxury available only in elite institutions has become more accessible. Educational institutes at all levels – ranging from village settings to prestigious universities – are now investing in AV technology.

"Digital classrooms were once a luxury and mostly restricted to tier-one cities," Aakriti points out. "Today, institutes across India want these smart classrooms, regardless of location – from Bihar to the southern states, from the eastern states to Guwahati. It's no longer restricted to premier colleges or certain areas."

Beyond the basics: The evolution of classroom technology

Educational technology has evolved from simple

projectors to sophisticated systems including video walls, interactive displays and integrated recording solutions. These tools enable real-time collaboration across campuses, allowing institutions to share expertise and resources effectively. Modern AV systems have expanded classroom capacity, allowing a single teacher to effectively engage hundreds of students simultaneously.

The technology itself has evolved significantly. What started as simple projectors and whiteboards has expanded to include video walls, interactive displays, live streaming capabilities, recording solutions and more.

"Earlier, the most common solutions would be something like a projector or whiteboard," Aakriti explains. "Now client's are looking at video walls, live streaming solutions and intelligent technologies which are enabling teachers and students to interact in a more collaborative ways."

These advanced systems allow educators to create more engaging lessons. Students can interact with content directly, share their screens, annotate presentations and participate actively in ways that weren't possible before.

One of the most significant benefits of modern AV technology is its ability to connect students and faculty across different locations. This has been particularly valuable for institutions with multiple campuses, such as the Indian Institutes of Management (IIMs) and Indian Institutes of Technology (IITs).

"For multidisciplinary discussions, there are multiple IIMs in India," Aakriti explains. "For them to interact, they need to connect with each other – faculty with faculty and students with students, for guest lectures. With solutions like live

**With the help of AV, you can address up to 500-600 students at once, which is not possible in a normal classroom where you're just addressing 50-60 students.**

*Aakriti Raina*  
Marketing Strategist at Vallect





streaming, it's become much easier."

This connectivity has practical benefits beyond mere convenience. It reduces travel costs and time, allows institutions to share expert faculty and enables more frequent collaborative sessions between campuses.

"Now good professors are in high demand," notes Swaroop. "IIMs have already established agreements to share professors when required. Professors prefer not to travel often. Earlier, there were only six to seven IIMs; today, there are 30 or even more. So, geography is becoming a challenge."

## The future today: Emerging technologies in education

The educational technology landscape is rapidly evolving with AI-powered learning systems, virtual reality environments and voice-controlled classrooms already being implemented. These innovations offer unprecedented immersive experiences, allowing students to visualize complex concepts and interact with educational content in revolutionary ways. Energy-efficient solutions and higher-resolution displays further enhance the learning experience while addressing sustainability concerns.

While video conferencing and interactive displays

have become mainstream, several emerging technologies are beginning to make their way into educational settings. Artificial Intelligence (AI) is transforming how educational content is created and delivered. "Now that we have integrated AI technology into our displays," Pankaj explains, "you can solve complex problems, generate written content, create quizzes and implement gamification."

These AI-powered systems can assist with grading, provide personalized learning paths and even help solve complex problems step-by-step.

Virtual Reality (VR) offers immersive learning experiences that were impossible before. "In VR, you can virtually enter the respiratory system; you can see how the lungs function, how the internal organs function," Pankaj explains.

Swaroop shares an example: "We have built a Harvard classroom in a Taj Hotel in Mumbai, which is directly taught by Harvard professors sometimes. The complete classroom is on VR and everybody uses VR goggles."

This technology eliminates the challenges of time zones and physical distance, allowing students to interact with professors from around the world as if they were in the same room.

Smart classrooms are becoming even smarter

***We have integrated AI technology into our displays. Now you can solve complex problems, generate written content, create quizzes and implement gamification.***

*Pankaj Bellad*  
Business Head at LOGIC



with voice control. "One technology finding its feet is the voice-controlled environment," explains Swaroop. "When a professor comes in, he simply say, 'Turn off the lights, switch on the projector,' or 'start recording, stop recording, 'mute the student microphone.' He just says what he wants to get done and everything happens automatically."

Sustainability is becoming an important consideration. "Energy-efficient products are something that people have started noticing," Swaroop notes. Educational institutions are increasingly looking for technologies that not only enhance learning but also reduces their environmental footprint.

Higher resolution displays are making their way into specialized fields. "For medical colleges, we have started giving 8K displays," says Swaroop. These ultra-high-definition screens allow medical students to see the finest details in anatomical images and surgical demonstrations.

## Challenges and opportunities: Bridging the digital divide

Despite significant progress, challenges remain in the widespread adoption of educational technology. Complex user interface, system integration challenges and budget constraints present hurdles for many institutions. Despite government initiatives, the current digital classroom penetration stands at just 9% nationwide, indicating an enormous growth potential for the future. The focus remains on establishing foundational infrastructure while working toward greater accessibility and inclusion.

Not all institutions need or can afford cutting-edge technology in every classroom. The key to successful implementation is understanding each institution's specific needs and budget constraints.

"It's important to first understand the client's current ecosystem and then their specific needs," says Aakriti. "Often, institutions show interest in high-tech options out of trend or hype, rather than genuine necessity, so a cost-effective approach is crucial."

Swaroop describes his company's approach: "We conduct a demonstration where we set up a workroom for half a month and gather feedback from professors and the main users. While we can't address all feedback, we strive to find a compromise."



Despite the enthusiasm for new technology, several challenges remain. User interface (UI) design is often a hurdle.

"UIs are a little bit of what I see as a challenge," Aakriti notes. "UIs can be quite challenging; the kind of solutions that we deliver are sometimes be a challenge for users, especially when it comes to adoption, as they are engaging with something completely new."

Integrating new technologies with existing systems can be complicated. "Integration APIs, the current system talking to the existing systems... you have to keep both things in mind," explains Aakriti. "What they have now, what they want and how scalable it is for the future."

Cost remains a significant consideration. "India has always been a price-sensitive market," Swaroop points out. "Not many providers hold their horses when it comes to the technology, the quality, the endurance. They start compromising, drop the cost, or change the product. Users might only discover the drawbacks six to eight months or even a year later; by then, they've had a negative experience and may feel disillusioned and this can tarnish their perception of all products in that category," he says adding that if customers are educated on the reasons for higher pricing, the industry as a whole will benefit greatly. It's important to convey that spending a larger amount isn't always necessary, but customers need to understand the value behind their investment.

The Indian government has played a crucial role in accelerating digital adoption in education. "I would like to thank the government here first," says Pankaj. "They are the ones who started implementing it first. The government is investing a lot of money, whether at the state or the central level."

The National Education Policy (NEP) has made digital education mandatory, further driving this transformation. Government investments in both physical infrastructure and digital tools have set a standard that private institutions are following.

Despite the rapid progress, much work remains. "We are only at 9% penetration when we see the overall number of classrooms across India," Pankaj reveals. "That means there is large scope also."

**People have started noticing energy-efficient products. Educational institutions are increasingly looking for technologies that enhance learning and reduce their environmental footprint.**

*Swaroop Ram  
Founder and Director of Sales  
at Ideas Ahead AV Solutions*



While technology is helping to bridge educational gaps, ensuring equitable access remains a challenge. The focus currently seems to be on building foundational infrastructure, with more sophisticated accessibility features to follow.

"It might come in due time, but right now the focus is more towards building that infrastructure. The foundational piece needs to be in place," says Aakriti.

As technology continues to evolve, the classroom of the future will likely become even more interactive, accessible and personalized. Collaboration tools will continue to improve interactions between students and educators while increasing the capacity of institutions.

"With the help of AV, you can address up to 500-600 students at once, which is not possible in a normal classroom where you're just addressing 50-60," explains Aakriti.

Technology will also make education more inclusive for students with special needs. "Solutions that support these students, can facilitate smooth lectures and help them in navigating what's happening in the classroom, ensuring they feel as present and engaged as any other student."

### A balanced approach

India is home to one of the largest education systems in the world. For the AV industry, this represents both a tremendous opportunity and a huge responsibility. Creating accessible, intelligent, technology-driven and collaborative learning experiences will be pivotal in shaping the future of education.

However, with these opportunities will come the need to adopt a more holistic and balanced learning approach that will blend modern technologies with traditional learning methods, centered on human interaction and guidance that only educators can provide. As classrooms become smarter, the human element of education will remain irreplaceable.

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# A Futuristic Classroom Experience

## IIM Visakhapatnam leads the way

**An innovative and thoughtful AV design delivers a futuristic classroom experience for one of India's premier management institutes.**

***Nishita H. Kalita reports.***

**T**hink management education and the Indian Institutes of Management (IIMs) are almost always the first to come to mind. Every year, scores of students from all walks of life aspire to join these prestigious institutions. But today, the IIMs are more than centers of academic excellence; they are leading the way in embracing new, intelligent AV technologies and transforming into futuristic learning environments. Swaroop Ram, Founder and Director of Sales at Ideas Ahead AV Solutions, shares insights on designing and implementing a modern classroom solution tailored to the specific needs of IIM Visakhapatnam (Vizag).

### **A futuristic campus takes shape**

IIM Vizag first started on the campus of Andhra College before moving to a 240-acre campus on the city's outskirts. "We were introduced to IIM Vizag by IIM Bangalore, who was entrusted with mentoring them in the initial stages. We already had a working relationship with IIM Vizag when they approached us to design a futuristic solution for their new campus," notes Swaroop.

In 2021, during the COVID-19 pandemic, Swaroop and his team designed a solution that won over the board of directors, leading to their selection as the AV systems integrator for the project after a competitive tender process. "For phase 1, we worked on AV systems for 24 classrooms across three academic blocks, an administrative block and multiple meeting and board rooms. Phase 2 is in progress," he explains.

### **Smart design**

What makes IIM Vizag's AV solution design unique? Swaroop explains: "The design of the classroom AV system seamlessly integrates various AV products from the market, each playing a specific role and coming together to create a functional, user-friendly environment that is extensively used."

Downtime was not an option, so the system has built-in redundancy to minimize downtime. "It was important to integrate inventory into the design to ensure replacements are readily

available in case of failures," he adds.

Swaroop describes the classroom layout: "The seating is tiered, with a specially designed podium that includes a foldable laptop shelf and an interactive monitor. Instead of using a traditional board, professors can annotate their PowerPoint presentations directly on the Wacom Monitor. If the overhead lights reflect on the monitor and bothers the professor, the podium has two switches to control the overhead light. You also have a USB port for easy access to the room's PC, a sliding tray for the keyboard and mouse and space for microphones, all operated via an Extron 10-inch TLP Pro 1025M touch panel."

### **Clear sight lines**

Good sight lines are fundamental to an effective classroom experience, Swaroop notes. "The tiered seating layout ensures that all students have an unobstructed view of the video content on show. Those seated at 90 degrees have the best visibility, while off-axis positions may experience a slight strain. To keep this compromise minimal,



we included two wall-mounted 110" Elite Saker Tab Tension projection screens on both sides of the centered whiteboard like an arc, ensuring all students could view the monitors clearly." The classroom also included a 75" Christie UHD752-L confidence monitor to help professors keep track of the slides they're presenting without turning around.

The classroom features two Epson EB-800F ultra-short throw 4000 Lumens projectors just 1.5 feet from the wall. Swaroop highlights that these projectors solve a common issue with traditional models, which are usually placed 15 feet away from the screen and are often obstructed by professors standing in front of them. "These ultra-short throw projectors allow for large image projection, as long as the professor stays out of the direct light path," he notes. Swaroop also underscores Epson's strong reputation and local support in Vizag as key factors in their choice. "Local service was essential; other top brands are available but don't offer support here," he explains.

## Natural dialogue

When it came to audio, Swaroop explains that the Institute wanted to create an environment for natural conversation that was "akin to talking to one another in the room. To ensure smooth

sound for the tiered seating classroom, we used a multi-audio system with QSC AD-S162T and AD-S802T modular column array loudspeakers and AD-C6T ceiling speakers for consistent sound pressure levels (SPL) at every seat. We also treated the acoustics and optimized speaker placement to achieve a speech transmission index (STI) of six for enhanced intelligibility."

## A cohesive learning experience

Disruptions in the world around us often prevent educational institutions from conducting regular in-person classes. Swaroop explains that the director tasked them with finding a way to ensure classes ran smoothly, regardless of

external circumstances or whether students and professors could come to the campus in person.

During the COVID-19 pandemic, social distancing meant classrooms could only hold half their capacity, making it hard for professors to teach the same class twice. "In response, we introduced 'classroom pairing,' an arrangement that allows students to sit in different classrooms and join classes in person or remotely."

How does classroom pairing work? Swaroop describes that the setup involves pairing two classrooms: one where the professor and stu-

## Unclipped and unstoppable

"At IIM Vizag, professors often move around and emote with expressive gestures. To keep them in focus, we used the HuddleCamSimpliTrack2 auto-tracking camera, with a unique tracking technology that tracks the professor without the need for wearables," details Swaroop, adding that the camera frames the lecturer by analyzing the body movements, zooming in on the upper half of the professor's body for tight, close-up framing and tracking.



dents are physically present and the other where students participate remotely. Each classroom has a retractable monitor with a LUMI motorized flip down TV ceiling mount positioned above the podium. When a professor teaches in one room, this live feed is streamed to the monitor in the other classroom. Everything is mirrored in both classrooms, giving students a seamlessly cohesive experience. "It's like you're literally there in the same room. Professors can also teach classes remotely. In this case, the center display monitor flips down to stream the presentation on the side screens. Professors also have a portable monitor for annotations, allowing students to see and hear them, watch the presentations and the white boarding," he adds.

A "trigger point" is set to prevent the camera from mistakenly tracking students who may happen to be nearby. "When the professor stands at the podium for 30 seconds, the camera follows him," explains Swaroop, stating the assumption that students will not approach the podium since the IIMs are a professional setting. When the professor leaves, the camera resets to its home position.

A key requirement for many lady professors in traditional attire, like sarees, was the ability to move freely without clips or wires attached to their clothing. Swaroop highlights how RevoLabs' lightweight wireless HD microphones, initially deployed at IIM Bangalore, addressed this challenge and received raving feedback from faculty. "These devices don't need to be clipped on and

come with a lanyard. A dual-channel rack-mount system supports two wireless microphones, one always charging while the other is in use, allowing professors to easily swap microphones when one runs low on battery. Additionally, a classroom compounder monitors all equipment, ensuring an operationally smooth teaching experience."

## Boosting student engagement

Questions, conversations and the exchange of ideas: active learning truly thrives on student interaction. "The institute wanted a solution that encourages natural dialogue. So, we moved away from traditional handheld microphones that often disrupt the flow of dialogue and installed four ClearOne BMA 360 beamforming microphone array ceiling tiles in the 100-seater classroom and three in the 75-seater classrooms," explains Swaroop, noting that ClearOne was chosen for its competitive pricing and excellent warranty.

When a student speaks, the ClearOne ceiling microphone detects the audio source and provides coordinates to the two overhead Panasonic AW-HE38 Full HD PTZ cameras which adjust focus automatically and zoom in on the student speaking.

## Capturing whiteboard visual aids

Lecture recording along with capturing the visual aids was another crucial requirement. "The faculty wanted to capture everything written on the whiteboard with a regular marker while achieving true-to-colour recordings," says Swaroop. Enter Kaptivo for HDMI Room Systems, a whiteboard capture system designed for precisely this. The

Kaptivo system features a compact camera that attaches to the top of a whiteboard and automatically streams content in real-time. But how exactly does it work? Swaroop explains that it automatically captures everything written on the whiteboard, including the presenter's hand, which is then electronically removed for a beautifully clean display of the content, adding, "It also enhances the written text."

## Campus-wide communication

Moving on from the classrooms, Swaroop discusses the public address (PA) system installed in the director's office. "PA systems are usually used for audio announcements, but the director wanted students to be able to 'see and hear' important announcements and speeches. To achieve this, we used the Aurora Multimedia En/Decoder with video functionality, allowing the director and other guests to broadcast messages via audio and video in real-time across all AV enabled rooms throughout the entire campus from within the director's office."

## Empowering flexibility

The classroom AV systems were designed for flexibility with Bring Your Own Device (BYOD) and Bring Your Own Meeting (BYOM) capabilities. Swaroop emphasizes how BYOD allows professors to present in various ways: "They can use the classroom computer, USB drives, or personal devices like laptops and tablets. Even photos taken on an iPhone can be projected directly on the screen." He also mentions that all classrooms have BYOM capabilities, which are

compatible across major platforms such as MS Teams, Zoom, Webex and Google Meet. While the system is designed to be platform-agnostic, he notes that some features may not function with less common platforms like GoTo Meeting.

## The controls

Swaroop highlights that each classroom has a small, independent control system, monitored by a central "big brain" Extron control system, which also integrates with the Global Viewer campus monitoring system. This "big brain" not only oversees the smaller classroom systems but also ensures security by powering down systems while the classrooms are locked over the weekends. "If there's an attempt to disconnect or turn on the equipment, an alarm notifies the admin."

All classroom lectures are recorded and stored on the Moodle Learning Management System (LMS). "The LMS captures everything - from the professor's facial expressions and audio to what is written on the whiteboard, all in a picture-in-picture format which is easily accessible. If a student is absent, they can easily access the recorded material and faculty can use analytics to track student engagement and identify areas where they may need extra support."

In conclusion, Swaroop says, "The results speak for themselves. These were new classrooms and we had complete freedom to innovate and design a modern classroom that augments teaching and boosts engagement. The Institute is pleased with the outcome and we take great pride in designing such a dynamic, interactive and futuristic learning environment that continues to create limitless possibilities every day for teachers and students alike."



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# Empowering Minds

## Interactive learning leads to transformed classrooms

**I**nteractive panels are more than just upgraded whiteboards or high-tech displays. They serve as the central hub for teaching, combining digital content, collaboration tools and multimedia resources into one easy-to-use screen. Unlike older systems that needed projectors, calibration and external computers, today's panels are self-contained devices with built-in processors and high-definition touchscreens.

Over the years, these panels have undergone significant enhancements.

The earlier versions had basic touch functions and minimal software capabilities. Now, they feature precise multi-touch technology, ultra-clear 4K displays with anti-glare coatings and smart software that supports a wide range of educational activities.

**Today's classrooms are evolving rapidly. The blackboards and projectors of the past are being replaced by advanced interactive panels large touchscreen displays that are revolutionizing the way we look at education. These panels are becoming common in schools around the world and when combined with modern teaching methods and artificial intelligence (AI), are changing the future of education.**

eraser. This facilitates a seamlessly intuitive writing experience that blends the tactile sensation of traditional tools with the power of digital learning.

The true strength of these panels lies in their versatility. In a single class, an interactive panel can have multiple functions. It can function both as a digital whiteboard for solving problems and also as a virtual time machine to explore history. Besides this, it can serve as a gateway for digital field trips and a platform for live quizzes. The best

part about an Interactive panel is that it can record lessons for students to review later, thereby enhancing learning accessibility and inclusivity.

### **An innovative means of Instruction**

The rise of interactive panels has led to a significant transformation in the field of teaching.

In the past, students would listen passively while through a lecture in class. However, the advent of interactive

technology has revolutionized this traditional model. Today, students are actively engaged in exploring, experimenting and collaborating to deepen their understanding of concepts.

Happy with the success, educators are now employing these panels in innovative ways. For instance, during problem-solving exercises, students can now observe instantaneous outcomes by merely adjusting the variables on the panel.

Likewise, in group learning settings like the 'jigsaw method', where each student teaches a part of the lesson to their peers, the panel becomes a shared digital space where learners can organize, highlight and explain information interactively.

These tools support teaching methods that focus on engagement, exploration and collaboration—helping students develop critical thinking and teamwork skills.

### **Bridges physical and virtual learning**

The COVID-19 pandemic highlighted the need for educational tools that would connect students and teachers both in-person and through online learning. Interactive panels played a key role during this period, acting as major communication centers that allowed teachers to host video calls while using interactive teaching aids simultaneously.

Post covid, even as schools returned to physical classrooms, this hybrid capability remains vital to use in any such circumstance. Interactive panels allow teachers to bring in guest speakers from around the world, connect with other classrooms and access global resources—all from one screen. For instance, a rural science class can collaborate in real-time with researchers in Europe and



Some panels are highly sensitive and can easily differentiate between a pen, a finger, a palm, or an

similarly, language students can practice with native speakers from different countries.

Interactive panels are helping classrooms transcend beyond physical boundaries, presenting students with opportunities that were previously inconceivable or impracticable.

## How AI makes interactive panels smarter

While interactive panels are the crucial hardware responsible for revolutionizing classrooms, AI is the software aspect of the transformation. When combined, they become powerful teaching tools that adjust to students' needs.

AI can analyse how students interact with the panel and pick up student learning patterns. It can spot misunderstandings, track progresses and suggest a tailored content based on student performance. On one hand, AI can provide extra help, if a student is struggling with academics. And on the other, if a student is ahead of class, it can offer advanced content to the curriculum. It can even recommend different teaching approaches if the current one isn't effective.

This smart technology helps address one of education's biggest challenges—meeting the needs of every student in a group setting. Teachers can use AI-enhanced panels to give a personalized feedback, show different materials to small groups based on skill level, or suggest student pairings for group work. All of this helps support individualized learning while maintaining a unified class experience.

## What the future holds

Looking ahead, interactive panels will continue to evolve. New features will blur the lines between the real and digital world. With virtual and augmented reality integration, students will soon be able to interact with 3D objects that float above the panel or step into historical scenes projected in their classroom.

More advanced sensors will also make these panels responsive to more than just touch. They'll recognize gestures, track where students are looking and respond to movements. Imagine navigating through a complex diagram by merely moving your hand or getting extra information on a topic by just looking at it.

In the future, Interactive panels will also become part of a larger connected classroom. Like the center of an Internet of Things (IoT) system, they will link with student devices, classroom sensors and specialized tools—streamlining communication and data flow. This networked setup will make classrooms smarter, more responsive and better equipped to support learning.

## Key considerations for schools

For school leaders considering the option of adopting interactive panels, here are a few important things to keep in mind— Primarily being the ease of use of technology in education. Regardless

demands top priority. These technologies hold significant potentials to improve learning, but this can only be realized when every student has equitable access to it. School districts must strategize meticulously to ensure every classroom and every student benefits equally, regardless of geographic location or available resources.

## In conclusion

Interactive panels have gone from being a luxury to becoming a core part of the modern classroom. They support active, student-focused learning, bridge physical and online spaces and integrate with AI to offer personalized, engaging educational experiences.



of the sophistication of a digital panel, its effectiveness is nullified if educators find it cumbersome to operate. Comprehensive Training and ongoing support are indispensable—not only for mastering the technology but also for integrating its use into pedagogical practices effectively.

Consequently, schools should ensure that these panels work well with existing systems and can adapt to future updates. Since this is a long-term investment, choosing products that integrate with learning management systems, student databases and digital content repositories is crucial.

Lastly, equity in accessing these technologies

As these technologies continue to grow and improve, their impact on learning will only get stronger. But technology alone isn't enough. The most successful classrooms will be those where educators understand both the capabilities and limits of these tools—using them not to replace teaching, but to enhance it.

It is no wonder then that when teachers and technology work together thoughtfully, interactive panels become more than just smart screens—they become platforms for building skills, encouraging curiosity and preparing students for the world ahead.

**LOGIC**

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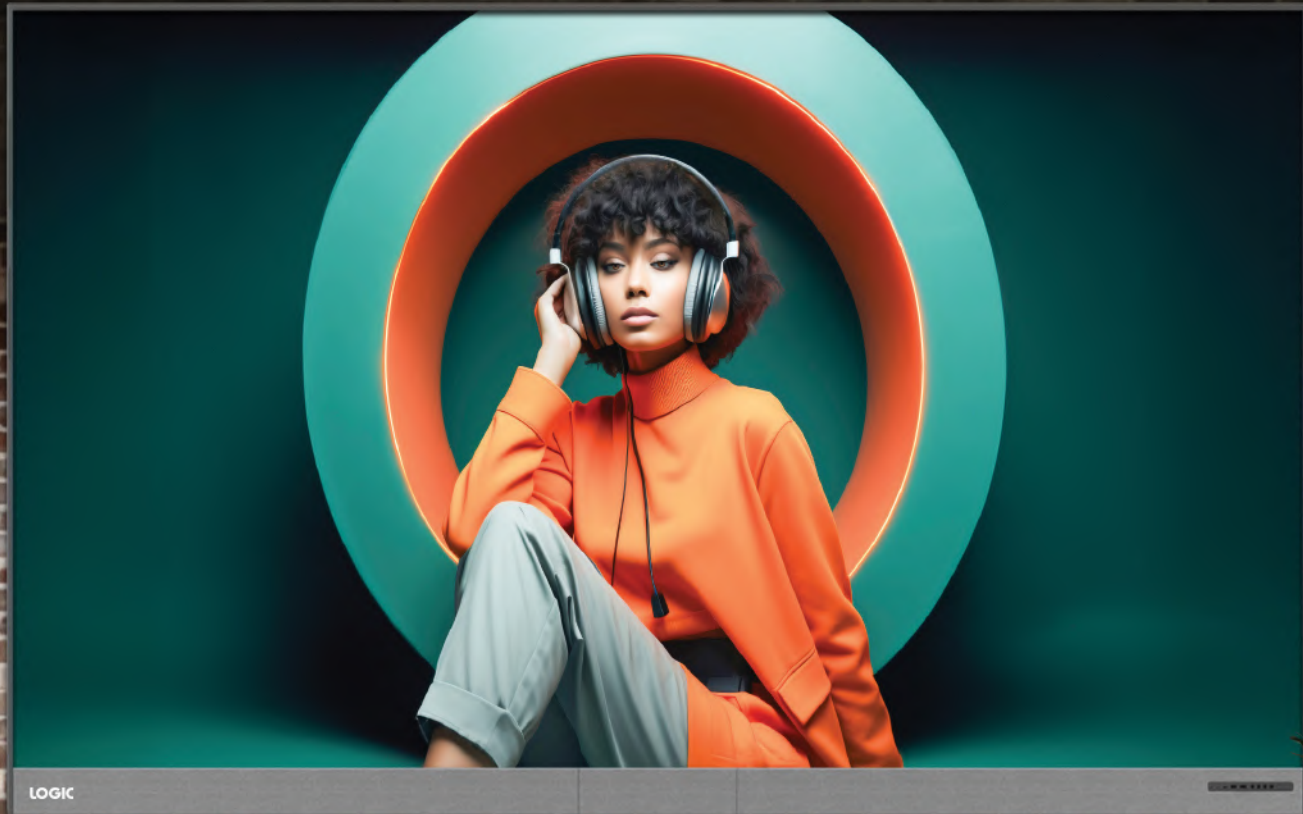
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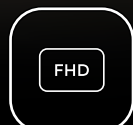
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# Virtual Classrooms, Real Revolution

## How VR is transforming India's educational landscape

In a classroom in Bengaluru, students put on special headsets and suddenly find themselves walking through ancient India. They can see how people lived during the Mauryan Empire and learn history by being a part of it. In Mumbai, medical students practice performing operations without any risk to real patients. At IIT Delhi, engineering students collaborate in virtual environments to create and test designs that would otherwise be far too expensive to realize in the physical world.

All this is happening right now in India. Virtual Reality (VR) is changing the way students learn and teachers teach. Despite the exorbitant expenses and scepticism from conventional educators, virtual reality is taking the education industry by storm, becoming increasingly accessible and beneficial within educational institutions across India.

**F**ive years ago, only the most elite private Institutions in major cities possessed VR equipment. These expensive devices were often either underutilized or merely showcased, without being integrated with the regular teaching curriculum.

Today however, things are different. Government schemes like 'Digital India' and the 'National Education Policy 2020' have helped make VR headsets affordable enough for schools in smaller cities and towns to use.

Today's VR lessons in India are aligned with the national educational curriculum and are available in a variety of Indian languages. The localization of content has been instrumental in the way it is being adopted in classrooms across the country.

The numbers reflect the change. In 2021, only 7% of high schools in India had VR technology. By 2024, this number grew to 38%. While city schools still have an excess of VR equipment, the gap between the urban and rural schools has reduced drastically, thanks to the government programs that fund the technology used in rural and small-town schools.

### Addressing India's education challenges

VR is the answer to some of India's most complex education problems. Currently, the average pupil teacher ratio in a classroom stands at approximately 25:1. This figure combines both primary and secondary levels and includes both government and private schools. As a result, classrooms are often overcrowded. India would accordingly need over 1 million more teachers to address the issue effectively. VR programs offer students with additional support and personalized attention that busy teachers may not always be able to provide.

Language differences are another challenge that VR can help with. Educational VR programs have now been released in 12 Indian languages, with plans to include all 22 official languages by 2026. This is very important in a country where students often struggle with the medium of instruction used in educational institutions.

Perhaps most importantly, VR helps schools that otherwise cannot afford expensive equipment. Schools that could never buy complete science labs can now offer virtual labs at a much lower



cost. This helps give rural students the same opportunities as those in wealthy urban schools.

### The new education policy: A game changer

The National Education Policy 2020 has helped schools adopt VR by focusing on hands-on learning instead of memorization. The policy encourages using technology and provides both rules and money to help schools use VR properly.

The new policy changed things because it focused on results and not only the equipment. Schools are now judged on how well they use technology to help students learn, not just on having the latest devices. This shift in focus has driven more meaningful VR implementation in classrooms across the country.

The policy's focus on job skills has also led trade schools across India to use VR. Students learning

car repair or manufacturing can practice skills that would otherwise require expensive equipment.

## Made in India VR content

One of the most significant developments has been the emergence of Virtual Reality (VR) content tailored exclusively for Indian students. Shifting away from foreign programs, Indian companies are now developing content specifically designed to align with the Indian curriculum and cultural context.

Previously, when schools attempted to implement foreign VR programs, many students struggled to engage with the material due to unfamiliar examples and accents. In contrast, schools now offer VR lessons that teach mathematics through the lens of Indian architecture, science lessons situated within Indian environments and historical experiences that vividly illustrate India's rich heritage. This localized approach not only enhances student engagement but also fosters a deeper connection to their educational content.

These India-developed VR programs are meticulously designed to match the NCERT textbooks and help prepare students for their board exams, making them the ideal tools for optimal academic performance. It is this alignment with the existing education system that has been instrumental in fostering widespread acceptance amongst both educators and learners.

## Unresolved challenges

Despite the advancements made in virtual reality (VR) technology, significant challenges linger before it can be widely adopted in Indian schools. Although the cost of VR equipment has decreased, it remains prohibitively expensive for many institutions, particularly in rural regions. Furthermore, unreliable electricity and internet connectivity continue to pose obstacles in various areas, hindering the effective implementation of VR in educational settings.

The digital divide is another grave concern. Without careful planning, the benefits of VR will mostly go to students who already have advantages. Educational planners must work with the objective to ensure that VR technology reaches disadvantaged communities and doesn't widen existing gaps.

Teacher training is another challenge. A recent survey found that while 65% of urban teachers felt comfortable using basic technology, only 23% were ready to use VR effectively in their teaching. The government is addressing this through training programs that now include sections on using immersive technology.

## The future of VR in Indian education

Looking ahead, several developments will

expanding VR use. The government provides rules and initial funding, while private companies develop content and provide technical support.

The most exciting development is the emergence of a distinctly Indian approach to educational VR. Rather than just copying Western models, educators are creating teaching approaches that draw on Indian educational traditions while using modern technology.

As India works to become a knowledge superpower, the use of smart technologies like VR in education will be crucial. Students who learn



shape how VR grows in Indian education. Companies like Jio and Tata are developing cost-effective VR devices such as: HTC Vive engineered to withstand some of the most challenging and extreme environmental conditions in India, offering resistance to dust and heat, especially in industrial or field settings.

The spread of 5G networks across India will solve many of the connectivity problems of limited VR use, especially in rural areas. Enhanced internet facilities will allow more advanced VR applications that don't need powerful computers at the school.

Partnerships between the government and private companies are proving to be a good model for

through these immersive experiences today will form the workforce that drives India's future growth. They will be better prepared than previous generations—not just with subject knowledge, but with the thinking skills, teamwork abilities and comfort with technology that VR naturally develops.

For a country that has always had to balance traditional education with modern global needs, VR offers a bridge—a way to honor cultural heritage while preparing students for a future that will require great adaptability and creativity. The virtual experiences Indian students have in classrooms today may shape the real world they build tomorrow.

# Campus-Wide Digital Signage

**A smarter, safer and connected educational experience**

**By Govinda Siddartha**

**In today's rapidly evolving educational landscape, the need for clear, timely and accessible information has never been more critical. As campuses grow in size and complexity and student populations become increasingly diverse, effective communication emerges as a cornerstone of successful academic environments.**

**T**raditional communication methods—bulletin boards, printed schedules, and mass emails—are increasingly inadequate for the dynamic nature of modern campus life. Enter campus-wide unified digital signage: a transformative solution that not only modernizes information sharing but fundamentally enhances the overall campus experience.

## **The evolution of campus communication**

Educational institutions face unique communication challenges. Schedules change frequently, rooms get reassigned, events materialize on short notice, and emergencies require immediate attention. Traditional static communication tools simply cannot keep pace with this ever-shifting environment.

Digital signage brings flexibility, immediacy, and visual impact to campus communications. Whether it's a student searching for an exam hall, a professor managing a last-minute classroom change, or a visitor navigating to an information session, digital signage transforms potential friction points into seamless experiences.

For years, institutions have struggled with overwhelmed students missing important deadlines, confused visitors getting lost on expansive campuses, staff managing complex scheduling manually, and outdated information failing to reflect real-time changes. Perhaps most critically, static systems have proven woefully inadequate during safety emergencies when timely communication can be lifesaving.



## **Transforming campus life through digital communication**

The applications of campus-wide digital signage extend far beyond simple announcements. When thoughtfully implemented, these systems become integral to daily campus operations.

Scheduling and classroom management becomes dramatically more efficient with digital displays outside lecture halls and academic buildings.

These screens can show real-time schedules, faculty assignments, start times, and any last-minute changes or cancellations. When integrated with learning management systems or institutional scheduling platforms, these displays update automatically—eliminating the need for printing, posting, and correcting outdated information.

Navigation challenges dissolve with interactive wayfinding kiosks and directional signage throughout campus. These tools help everyone—from first-time visitors to returning

students—confidently navigate complex campus environments. Interactive maps can provide self-guided campus tours, route planning to specific events or departments, accessibility-focused navigation options and building-specific directions during renovations or emergency situations.

Campus engagement flourishes when events receive proper promotion. Digital displays excel at promoting campus activities—from student club meetings to public lectures, sporting events, art exhibitions and more. Unlike static posters, digital content can be targeted by location, timing and audience. Engaging features like countdown timers to major events, highlight reels from recent activities, QR codes for instant registration and multilingual support for international students all contribute to a more connected campus culture.

Perhaps most critically, emergency alerts and security messaging become vastly more effective through digital signage networks. When seconds matter most, static systems inevitably fail. Digital signage enables instant, campus-wide alerts for lockdowns, severe weather warnings, evacuation notices and other emergencies. With automatic content override capabilities, integration with mass notification systems, visual and audio support and location-specific evacuation instructions, these systems provide an essential layer of safety communication.

Administrative and staff communication also benefits tremendously from digital signage systems. By centralizing important updates—HR deadlines, facility maintenance alerts, dining information, policy reminders—institutions can reduce email overload and bulletin board clutter, reaching people where they work and study rather than only where they check messages.

## The power of unified, scalable solutions

One of the most compelling aspects of campus-wide digital signage is its unified yet locally relevant nature. A single management system can control numerous displays across buildings, departments and zones—automatically updating content based on time, audience and location.

Effective deployments typically feature cloud-based content management systems allowing easy updates from anywhere, zone-specific content tailored by building or audience, consistent institutional branding across all displays, API

integrations with existing campus systems and a variety of screen types from hallway displays to interactive touchscreens.

This unified approach creates operational efficiencies while maintaining the flexibility to address specific needs across diverse campus environments.

## A student-centric future

As education continues to evolve, communication tools must evolve alongside it. Today's students are digital natives with high expectations for information accessibility and user experience. Campus-wide digital signage meets these expectations while simplifying complexity and ensuring everyone on campus feels informed, safe and welcomed.

In an environment where attention spans are shorter and information needs are greater, digital signage serves as more than just technology—it becomes a strategic enabler of campus community. It transforms physical spaces into smart, interactive environments driven by real-time data but designed fundamentally for human needs.

Educational institutions implementing comprehensive digital signage solutions report numerous benefits: reduced student confusion, higher event attendance, more efficient navigation for visitors, improved emergency responsiveness and an overall sense of campus connectedness. The technology creates virtual threads that bind campus communities together through shared information and experiences.

## Moving forward with digital transformation

For institutions considering implementing or expanding digital signage, the process need not be overwhelming. Beginning with a careful assessment of campus communication needs and identifying key high-traffic areas provides a foundation for smart deployment. Choosing a cloud-based, scalable platform that integrates with existing campus systems ensures long-term viability.

Many successful implementations start with

smaller pilot programs in specific buildings or departments, gather feedback from users and then expand based on those insights. Throughout implementation, focusing on content quality—creating informative, engaging and timely messages with consistent visual styling—remains essential to success.

The future of education extends beyond classrooms and curricula to encompass how effectively we connect people with information they need,



precisely when and where they need it. Campus-wide digital signage offers an elegant, future-proof solution to this complex challenge.

As educational institutions face increasing pressure to enhance student experience, improve safety measures and operate with greater efficiency, unified digital signage emerges as a critical tool in the modern campus communication ecosystem. By allowing campuses to speak clearly and in real-time, these systems don't just display information—they transform how academic communities connect, communicate and collaborate.



Govinda Siddartha,  
Sales Director at Aiotron Technologies

# The Digital Transformation of India's Higher Education

## The barriers and future opportunities

A significant number of India's higher education institutions have yet to fully embrace digital transformation. AV Today spoke with Digital Transformation Strategist Sandeep Bansal to explore the challenges and what lies ahead.

India's higher education is at a pivotal moment, with digital transformation being the buzzword amongst Educators. Despite recognizing the infinite potential and impact of technology on education, many institutions struggle to shift from traditional methods to integrated digital systems. This slow pace of change emphasizes the need to rethink how education is delivered and expe-

rienced in an increasingly digital world.

that enhances operational efficiency and an overall educational experience.

Change in higher education is often slow. Faculty members, already managing heavy teaching loads, hesitate to adopt new tools that require extra time and training. This reluctance stems from limited bandwidth and sometimes outdated visions, especially among leaders from a

their learning more effectively.

Additionally, technologies like Augmented Reality (AR) and Virtual Reality (VR) are beginning to make an impact in education. While these devices are becoming more accessible, the real challenge lies in creating high-quality educational content. If content creation can be made easier and more cost-effective, AR and VR have the potential to transform learning by turning complex subjects into tangible experiences.

Amidst all this progress, Sandeep emphasizes a crucial yet often overlooked aspect: data security. While institutions invest significantly in physical infrastructure and security, they frequently fall short in digital protection. With cyber threats increasing and student data becoming more vulnerable, the demand for specialized IT teams and secure systems is more urgent than ever.

He envisions the future of education as hybrid, collaborative and personalized, with a focus on discussion and applied learning over one-way lectures. For this vision to materialize, institutions need clear goals, effective strategies and strong partnerships. AV and IT partners should act as problem solvers rather than just product sellers, while institutions must clearly define their needs to align solutions with their vision.

Despite the promising future that AI and digital tools offer, Sandeep ends on a thoughtful note: while technology can enhance the learning journey, it cannot replace the human connection between educators and students. Empathy, mentorship and the personal touch will always be at the heart of meaningful education.

**To access the full podcast, scan the QR code.**



rienced in an increasingly digital world.

To elaborate on this topic, AV Today had an insightful conversation with Sandeep Bansal, an AI and Digital Transformation Strategist cum Cybersecurity Strategist. He has played a crucial role in helping institutions such as Manipal Academy of Higher Education and REVA University incorporate AI and digital infrastructure into their academic models.

Sandeep explains that digital transformation goes beyond introducing a new technology. It starts with digitization, which involves converting manual data into digital records, followed by digitalization, where software tools handle specific tasks. The true shift occurs when systems communicate through APIs and integrated platforms. Digital transformation redefines how institutions operate and think, fostering a digital-first culture

pre-digital era. Meanwhile, students immersed in technology expect learning experiences to match the digital world. As Sandeep states, "Today's students are born with devices in hand. They're not going to wait for outdated systems to catch up."

AV technology has transformed classrooms with tools like smart boards and LED video walls, fostering interactive learning environments. Events like convocations are live-streamed and smart classrooms enable hybrid learning. Digital displays have replaced traditional notice boards for real-time updates. Sandeep notes that these advancements enhance operational efficiency and the student experience.

Artificial Intelligence (AI) is revolutionizing education by capturing lectures, generating summaries and creating quizzes automatically. This reduces faculty workload and helps students reinforce



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# Acoustics in Learning Spaces

Sound quality in classrooms directly impacts learning, behaviour and achievement

By Prashant Nair



**Learning environments often overlook a crucial element that significantly impacts education outcomes: ‘Acoustics’. When students sit in classrooms surrounded with noise levels that either match or exceed their teacher’s voice, they are compelled to decipher instruction amidst an overwhelming auditory clutter. It is this veritable ‘sea of noise’ that impedes focus and hinders comprehension.”**

**This article explores the importance of acoustic design in educational spaces, identifies common problems and offers practical solutions.**

**P**oor acoustics create serious challenges for students. When children can’t understand 20-30% of what’s being said in class, their learning suffers—especially for primary students and non-native speakers. The struggle to hear clearly increases cognitive demand, leading to frequent misunderstandings and problems with language processing, memory, attention and concentration.

The psychological and physical impacts extend beyond academics. It has been observed that students experience elevated stress levels, anxiety, increased annoyance, disrupted sleep and fatigue. Teachers on the other hand, have often experienced vocal strain as they instinctively raise their voices in order to counteract the background noise in a phenomenon known as the ‘Lombard effect’, which often results in occupational voice disorders and increased absenteeism.

## Sources of classroom noise

Classroom noise comes from both external and internal sources. External noise enters through the building envelope and typically includes traffic sounds, industrial noise, equipment noise and the noise of people outside school. Urban schools particularly struggle with traffic noise.

Internal noise sources include those that emanate from the usage of teaching equipment (computers, projectors), building services and the sound that is transmitted through the walls, floor, ceilings or from other areas of the school. However, in primary school classrooms, the dominant noise source is often the students themselves especially when they participate in various activities.

These acoustic challenges significantly impact learning outcomes and teacher wellbeing. Research shows that excessive noise can reduce cognitive

performance, increase stress levels and impair speech intelligibility, especially affecting students with hearing impairments or language barriers. Proper acoustic design incorporating sound-absorbing materials, strategic classroom layouts and noise policies can dramatically improve the learning environment. Modern educational spaces must balance collaborative activities with appropriate noise management techniques to create optimal conditions for both teaching and learning.

## The reverberation problem

One of the biggest issues in acoustically untreated classrooms is reverberation—sound reflecting off hard surfaces like walls, floors and furniture. These reflections interfere with the original sound source, distorting it and reducing speech intelligibility. In spaces with many audio sources (like students talking), excessive reflections significantly

increase noise levels—similar to what happens in crowded restaurants. Reverberation is measured in time, with RT60 being the time taken for sound to decrease by 60dB.

## Common design failures

Many designers and architects lack awareness about the importance of acoustics, resulting in:

- Hard, reflective surfaces (concrete, glass, tile) that echo and reverberate
- HVAC systems and external noise (traffic, hallways) raising background noise levels
- Poor speaker placement or inadequate PA systems that distort audio
- Insufficient absorptive materials in strategic locations to capture sound reflections
- Rectangular shaped rooms that create standing waves and flutter echoes
- Failure to implement acoustic isolation between adjacent learning spaces
- Overlooking the unique acoustic needs of specialized learning environments such as music rooms, language labs, and open-concept collaborative spaces

## Best practices for classroom acoustics

### Controlling reverberation

The 'Reverberation Time' should be minimized to optimize learning. This can be achieved by installing sound-absorbing materials with high absorption coefficients, such as acoustic wall panels, treated ceiling tiles, soft seating, carpets and drapes. Hypoallergenic materials should also be used whenever possible.

Lower ceilings help reduce room volume, thereby decreasing the reverberation. Consulting acoustic specialists and speech-language pathologists during planning and remodeling ensure optimal conditions for student learning and teacher vocal health.

### Reducing background noise

The walls between classrooms, hallways, and outdoor areas should be properly sealed acoustically, with no gaps between the walls, ceilings, and floors. Speech from neighboring classrooms should not be intelligible, and noise from the hallways and outdoors should be minimized.

Furniture noise can be reduced using noise-dampening feet or pads. Low-noise HVAC systems likewise will decrease the mechanical noise in the room.

### Sound field amplification

The reinforcement of sound should be considered in larger rooms to improve speech intelligibility for students seated farthest away from the teacher. This approach also reduces the vocal stress on educators.

These systems greatly improve signal levels since only the voice at the microphone is amplified, not the background noise. Research supports signal-to-noise ratios ensuring a teacher's voice is at least 20 decibels louder than the background noise.

For best results, small speakers should be evenly distributed throughout the room rather than using a single loud speaker at the front, to improve clarity and consistency.

### Room geometry

Designers should avoid parallel walls and flat ceilings whenever possible. Introducing angled surfaces or diffusers instead to scatter sound effectively, could be a better idea.

## Design guidelines

International standards provide specific guidance for acoustic design in educational spaces:

WHO Guidelines for Maximum Noise Levels and Reverberation Times in Schools

| Space                | Noise Level, dB LAeq | Reverberation Time, seconds |
|----------------------|----------------------|-----------------------------|
| Classrooms           | 35                   | 0.6                         |
| Halls and cafeterias | -                    | < 1                         |
| Outdoor playgrounds  | 55                   | -                           |



▲ Prashant Nair, founder of KKS, is a passionate audio professional with nearly two decades of experience. He began his career at BOSE and has since led numerous large-scale audio installations, including high-performance systems for luxury hotels like Taj. Deeply driven by sound excellence, Prashant blends audio precision with practical acoustics to deliver transformative listening environments.

The classroom background noise level of 35 dB(A) assumes a typical teacher's voice level of 55 dB(A) at one meter distance, allowing for a signal-to-noise ratio of 15 dB. These guidelines note that both background noise and reverberation time should be lower for hearing-impaired children.

### ANSI S12.60-2002: Maximum background noise levels and reverberation times in learning spaces

| Volume of space                               | Background noise level, dB LAeq, 1 hour | Reverberation Time, seconds |
|---|---|-----------------------------|
| < 283 m <sup>2</sup>                          | 35                                      | 0.6                         |
| > 283 m <sup>2</sup> and ≤ 566 m <sup>2</sup> | 35                                      | 0.7                         |
| > 566 m <sup>2</sup>                          | 40                                      | -                           |

This American standard (ANSI) also includes sound insulation requirements between learning spaces and adjacent areas. For example, the minimum Sound Transmission Class (STC) between two learning spaces is 50, between a learning space and corridor is 45, and between a learning space and cafeteria is 60.

## Moving forward

The future of acoustic design in educational spaces requires treating acoustic quality as an equity issue within inclusive design principles. This means integrating acoustics into early planning stages and adopting a cross-disciplinary approach involving architects, engineers, and educators.

By prioritizing sound quality in learning environments, we create spaces where all students can clearly hear, focus, and thrive—transforming noisy classrooms into effective centers for learning and development. Research consistently shows that students in acoustically optimized environments demonstrate improved comprehension, higher test scores and better behaviour patterns. Educational institutions must recognize that acoustic design is not merely a luxury but a fundamental component of educational access, particularly for neurodivergent learners and those with sensory sensitivities. Acoustic improvements represent one of the most cost-effective interventions available to schools seeking to enhance educational outcomes and create truly inclusive learning communities.

# From Sales to Consulting

## Passion, curiosity and humility lay the foundation

In the AV industry, success comes from solving problems and building trust, not just selling technology. AV Today explores Amar Bahadur's remarkable journey from being a sales professional to becoming the founder of Vesta Consultant, defying industry norms and crossing career boundaries few dare to attempt.

In the AV industry, we often see people carefully choosing their career paths between sales and consulting. These two profiles require different skillsets and mindsets and transitioning between them can be challenging. However, some rare individuals successfully make this leap, especially when driven by passion and determination. Amar's journey from being a successful sales professional to establishing his own consulting and integration firm offers valuable insights for anyone looking to venture into entrepreneurship.

Amar's entry into the AV industry was unexpected. Starting his career in IT sales at Fujitsu, he found himself at a crossroads when the company closed its volume division. A referral led him to Visual Display, a distributor of Hyundai displays, marking the beginning of his AV journey.

Initially, Amar approached sales by pitching products, but this method proved ineffective. "You're not just selling a display," he notes. "You're selling a solution. You need to understand how and why the product will be used."

With mentorship, Amar shifted his perspective, asking about room size, application type and integration goals. This insight into the AV ecosystem laid the groundwork for his successful career.

After a successful tenure at Visual Display, Amar transitioned to Mindstack Distribution. He focused on solution-based distribution and gained deeper insights into backend systems for large-scale AV solutions. However, entrepreneurship was always on his mind.



"I always knew I wanted to build something of my own," he recalls. After three years in the AV industry, Amar co-founded his first business. Despite its initial promise, different visions led to an amicable split after a year, forcing him to start over. "I was back to zero," Amar reflects. He began offering freelance consulting services to IT system integrators lacking AV expertise, managing projects and design while coordinating with freelance installation teams for execution.

In a few months, Amar's work gained recognition, leading to the launch of Vesta Consultant in September 2021. With his wife's support, he invested modestly and dedicated the first six months to outreach and relationship-building, focusing on trust rather than immediate revenue.

Today, Vesta Consultant is known for its consultative approach. Rather than just providing quotes, Amar and his team collaborate with clients, project management consultants (PMCs) and interior designers from the outset, assessing acoustics, lighting and spatial design to ensure that audio-visual integration enhances the built environment.

"We go beyond the BOQ (Bill of Quantities),"

Amar explains. "Clients appreciate that we help them connect the dots, whether or not a contract has been awarded."

Vesta now operates with a dedicated team of seven, providing end-to-end solutions, including back-end support, installations and project delivery. The firm has executed projects valued at approximately 4 crore, earning praise from multinational corporations for their timely

and professional delivery. Looking ahead, Amar's vision for Vesta is clear: to be known not necessarily for scale, but for dependability and service excellence. "We may not chase 100 crore targets, but we aim to be the most trusted partner in the AV space," he says.

Beyond AV, Amar is also exploring turnkey project solutions and even real estate. His mindset has evolved from specialist to entrepreneur, always seeking to add value through quality and integrity. Reflecting on his journey, Amar says, "People sometimes assume it was easy. But the truth is, it took resilience, mental strength more than financial muscle. You don't get anything easily, but with focus and a positive mindset, you can build something truly meaningful."

Amar's story stands as a testament to what's possible when technical curiosity meets business courage; a rare combination that continues to shape the future of Vesta Consultant.

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# From Passive Learning to Active Participation

AV transformed learning space for every age

**E**ducation has undergone a significant transformation in recent years, moving beyond traditional chalkboards and textbooks to incorporating advanced AV technology. The integration of AV solutions in learning environments is not merely an enhancement; it represents a revolution that makes education more interactive, immersive and accessible. From early childhood education centers to corporate training programs, AV technology is reshaping how knowledge is shared and retained. This shift is particularly impactful in India, where it has the potential to bridge educational gaps between urban and rural areas, ensuring that quality education reaches every learner, regardless of location or background.

## Interactive and immersive learning

The traditional method of passive learning is being replaced with active engagement through smartboards, interactive displays and wireless presentation systems. Smartboards have turned classrooms into dynamic spaces where lessons are no longer static but enriched with animations, videos and real-time annotations. These interactive elements help students understand complex concepts with ease. Wireless presentation systems

further encourage collaboration, allowing students and teachers to share content seamlessly from their devices. By fostering teamwork and participation, AV-equipped classrooms create an environment where students become active contributors to their education rather than mere recipients of information.

Beyond interactive tools, AV technology has opened the door to immersive learning experiences. Virtual Reality (VR) and Augmented Reality (AR) have transformed how students interact with subjects that were once confined to the pages of textbooks. A medical student practicing surgery in a simulated VR environment or a history class virtually exploring ancient civilizations exemplifies how AV technology is making education experiential. Projection mapping is also gaining traction, converting ordinary classroom spaces into vibrant learning environments where students can engage with digital content in a three-dimensional format. Spatial audio solutions and assistive listening devices further enhance the learning experience by ensuring clarity and inclusivity, particularly for students with hearing impairments. The blend of visual and auditory elements in AV learning spaces makes education more comprehensive and effective for students of all learning styles.

## Personalized and hybrid learning models

Another crucial aspect of AV technology is its ability to personalize learning. Every student has a unique learning pace and adaptive AV solutions cater to this diversity. AI-powered learning platforms analyze student engagement and adjust lessons accordingly, ensuring

that struggling learners receive additional support while advanced students can progress at their own pace. The rise of hybrid and remote learning models has further demonstrated the value of AV technology. High-quality PTZ (Pan-Tilt-Zoom) cameras, ceiling microphones and video conferencing tools enable seamless virtual classrooms, allowing students in remote locations to access the same quality of education as those in urban centers. Gamification is also emerging as an effective AV-based strategy, integrating interactive quizzes, digital leaderboards and VR-based challenges to keep students motivated and engaged.

## Bridging the education gap in rural India

In India, where rural education often suffers due to inadequate infrastructure and a shortage of trained teachers, AV technology is playing a transformative role. Digital classrooms and smart schools have started making inroads into remote areas, providing students with access to quality education through pre-recorded lessons and live interactive sessions. Initiatives like DIKSHA and E-Vidyalaya have introduced digital content in regional languages, ensuring that language barriers do not hinder learning. Mobile learning units equipped with AV technology are reaching students in some of the most inaccessible regions, serving as traveling classrooms that bring education to their doorsteps. In areas where electricity is unreliable, solar-powered projectors and battery-operated smart devices are ensuring that digital learning remains uninterrupted.

## Connectivity and teacher training

While AV technology has made learning more engaging in rural areas, the challenge of internet connectivity remains a significant barrier. Expanding broadband access and improving





mobile networks are essential to fully integrating AV solutions in rural education. In response to this challenge, some educational platforms are developing low-bandwidth solutions that allow students to download learning modules for offline access. Community radio stations and digital podcasts are also being leveraged as AV tools to deliver lessons in audio format, ensuring that students in areas with limited internet connectivity still have access to educational content.

For AV technology to have a lasting impact in rural India, teacher training and digital literacy must be prioritized. Many educators in remote areas are unfamiliar with the latest AV tools, making it essential to conduct regular training workshops and host remote learning sessions for teachers. Digital literacy programs for students are designed to ensure that they are equipped to navigate AV learning platforms independently. However, the content delivered through AV technology must be contextualized and culturally relevant. Lessons should include examples that resonate with rural students, such as agriculture-based math problems or folklore-driven storytelling for language learning. By integrating traditional teaching methods with AV technology, education can become both innovative and culturally familiar.

## A new vista for AV integrators in rural India

For AV integrators, rural India presents a promising business opportunity with untapped potential. As the government and private sectors invest in digital education initiatives, AV integrators can play a crucial role in supplying, installing and maintaining AV infrastructure in schools and community learning centers. Solutions like low-cost interactive

whiteboards, solar-powered projection systems and mobile AV labs tailored for rural settings can create new avenues for business expansion.

Public-private partnerships can be leveraged to develop sustainable AV-based educational models. By collaborating with local governments, NGOs and educational institutions, integrators can ensure that AV solutions are implemented effectively and maintained in the long run. Additionally, offering training programs for teachers on

how to use AV tools can create a self-sustaining ecosystem where technology is embraced rather than resisted. Micro-financing options and flexible payment plans can also make AV solutions more affordable for rural schools, further driving adoption.

## The future of AV in education

Let's explore a few technology trends that are revolutionizing education in India. One of the most advanced technologies observed as a trend is AI-driven personalized learning systems. These AI-powered AV solutions will analyze student behavior, adapt lessons according to individual learning paces and offer real-time feedback. This will create a more customized and efficient educational environment.

Another revolutionary development is having holographic classrooms. By leveraging advanced projection and holography, educators will be able to bring life-sized 3D models into classrooms. This will make subjects like medicine, history and engineering more tangible and interactive, improving student engagement and comprehension.

With the rollout of 5G-enabled virtual learning, connectivity will no longer be a barrier to quality education. Faster internet speeds will allow seamless, immersive VR/AR-based education, ensuring that students in even the most remote areas can access high-quality digital content in real-time.

The integration of Extended Reality (XR) labs will further enhance practical learning. A blend of AR, VR and MR will create fully interactive virtual labs where students can conduct scientific experiments, practice engineering concepts and

explore creative skills that eliminate the need for expensive physical infrastructure.

In addition to content delivery, blockchain-based learning certifications will play a crucial role in the future of education. These secure, verifiable digital certificates will ensure that students' academic achievements are recognized globally, reducing credential fraud and simplifying verification processes.

Sustainability is also becoming a key focus in education. Sustainable and solar-powered AV solutions will help bridge the digital divide, especially in rural areas. AV integrators are working on solar-powered interactive boards, projection systems and mobile classrooms, making education more accessible while reducing environmental impact.

Emerging haptic feedback and sensory learning technologies will take digital education to the next level. By integrating touch-based feedback, students will be able to "feel" textures in virtual learning environments. This will revolutionize hands-on fields like medical training and arts education, offering a more immersive and practical learning experience.



Finally, the future of education will be increasingly reliant on cloud-based AV learning ecosystems. Schools and colleges will shift towards centralized, cloud-driven AV infrastructures that facilitate seamless content access, remote collaboration and AI-based assessments. This will enable a more connected and efficient education system.

These AV technologies have the potential to redefine the learning landscape in India, making education more engaging, inclusive and future-ready.

## Avocor S Series: Launching limitless learning

Designed with educators and students in mind, the Avocor S Series offers unparalleled tools and features to support interactive and engaging learning. With a sleek, minimalist design and available in sizes from 65" to 86", this 4K Ultra-HD powerhouse delivers a stunning 16:9 visual canvas—perfect for immersive learning, rich media presentations and crystal-clear annotations. It's not just beautiful; it's brilliantly functional. Certified with Google EDLA and running Android 13, the S Series comes preloaded with the Google Play Store, allowing educators to easily access and integrate essential classroom apps like Docs, Sheets and Slides.

Seamless wireless screen sharing, responsive IR touch technology and an intuitive built-in whiteboard platform make the S Series a true collaboration hub. Teachers can deliver lessons that come to life, while students stay engaged in real time. And with flexible mounting options, the S Series adapts effortlessly to any classroom layout—be it traditional or tech-forward.

Affordable, adaptable and incredibly easy to use, the Avocor S Series empowers educators to elevate learning outcomes while staying connected to the tools they rely on. It's more than just a display—it's the future of education, available today.



## Nureva HDL310 and HDL410 Enhancing classrooms

Nureva's HDL310 and HDL410 systems bring a new level of audio clarity to modern classrooms. Powered by Nureva's unique Microphone Mist™ technology, these systems create thousands of virtual microphones throughout the room, capturing sound from every angle. This ensures that every student and teacher is heard clearly, no matter where they are or how they move.

Ideal for large classrooms, these plug-and-play solutions offer professional-grade performance with minimal setup. They are designed to support dynamic teaching styles, interactive discussions and hybrid learning environments, where clear communication is essential.

With the cloud-based Nureva Console, school IT teams can easily manage and monitor the systems remotely, saving time and ensuring smooth operation.

Nureva also partners with top AV brands like Aver, Lumens, Extron, Crestron, Q-SYS, HP Poly and Logitech, delivering integrated solutions tailored to today's educational needs.

By deploying the HDL310 and HDL410, schools can create engaging, inclusive classrooms where every voice is heard and learning thrives.

<https://www.nureva.com/>



## Catchbox Revolutionising audio engagement in India

Seamless communication is essential in today's hybrid world. With its cutting-edge wireless microphone, Catchbox is revolutionising how people connect in corporate meetings, classrooms and live events. Catchbox microphones, in contrast to traditional mics, encourage spontaneous and inclusive participation by being easy to use, portable and enjoyable.

From the throwable Catchbox Cube, which makes Q&A sessions interactive, to the small, wearable Clip, the multipurpose Stick and the plug-and-play Plus Hub, each product is designed to facilitate easy and dynamic communication.

The Control Centre, Charging Docks and Mod adapter improve system management and user convenience.

These cutting-edge audio solutions are being offered to Indian businesses, educational institutions and event spaces by Nvincy Solutions Pvt. Ltd. Their expertise ensures smooth implementation and technical support.

Catchbox stands out for being entertaining, simple to use and adaptable, which makes it perfect for remote collaboration, classrooms and conferences. Catchbox and Nvincy are redefining audio engagement in India by enabling every voice to be heard clearly, no matter where they are.

Catchbox isn't just a mic – it's a new way to connect. Now available across India through Nvincy Solutions, it's the future of interactive communication.



## LOGIC's Google EDLA-Certified HX Series The future of smart classrooms in India

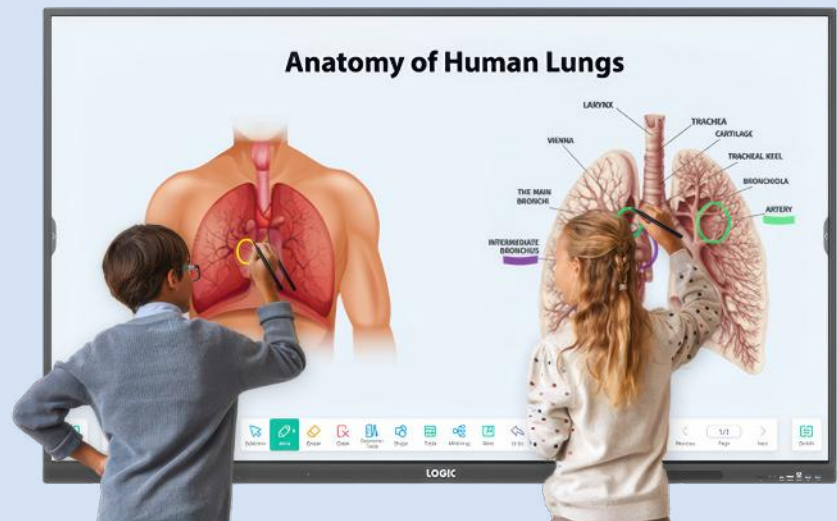
LOGIC, a leader in AV solutions, launches its Google EDLA-certified HX Series Interactive Flat Panels empowering Indian classrooms with seamless, secure and immersive learning.

Built for the Google ecosystem, the HX Series gives teachers and students instant access to Google Classroom, YouTube EDU and more, while 4K UHD clarity, 40-point multitouch and multilingual support make lessons dynamic and inclusive.

Top schools are already leveraging its real-time engagement analytics to personalize teaching, from virtual science labs to interactive math simulations. With enterprise-grade security and performance backed by Google EDLA certification, the HX Series ensures future-ready, distraction-free learning.

More than a smartboard—it's an AI-ready hub for hybrid classrooms, designed to spark creativity and critical thinking.

<https://www.logicav.in/>



## AREC DS-4CU

### Intelligent speaker tracking made easy

The DS-4CU Arec Speaker Tracking Station revolutionizes meeting and conference environments by providing seamless speaker tracking and video integration. Designed to work effortlessly with retrofit Digital Chairman-Delegate Systems and ceiling array microphones, it ensures a smooth and efficient setup without technical hassles. Once integrated, the system delivers a clear, real-time visual of the active speaker, triggered either by microphone activity or speaker positioning. When a delegate presses the Push-To-Talk (PTT) button, the paired PTZ camera (compatible with any brand) automatically focuses on the speaker. Upon pressing the cancel button, the camera reverts to a full-room view, ensuring clear and effective communication throughout the session.

DS-4CU offers high customization, allowing users to change backgrounds, add logos, switch between camera feeds and select different display overlays. It supports multiple layout options, such as full screen, picture-in-picture, picture-by-picture and multi-channel split screens. With the ability to handle up to four simultaneous video inputs, it delivers a versatile and dynamic meeting experience. Ideal for use in conference rooms, auditoriums, parliaments and city halls, the DS-4CU enhances communication clarity and meeting engagement, making it an essential tool for modern collaborative environments.

<https://arec.com/>



## Sennheiser TCC2

### Smarter sound for modern classrooms

The Sennheiser TeamConnect Ceiling 2 (TCC2) is a sophisticated ceiling-mounted microphone designed to meet the demands of today's dynamic meeting environments. Engineered for flexibility and performance, the TCC2 ensures crystal-clear audio capture in medium to large spaces such as boardrooms, classrooms and lecture halls.

At the heart of the TCC2 is Sennheiser's patented automatic dynamic beamforming technology. This intelligent system continuously adapts to the speaker's location, allowing participants to move freely without compromising speech clarity. Whether someone is seated or walking across the room, the microphone seamlessly follows their voice.

The TCC2 also includes TruVoicelift, a feature that enhances speech amplification within the room while minimizing background noise. This ensures that every word is heard clearly, even in acoustically challenging environments.

Installation is streamlined with Power over Ethernet (PoE) and support for both analog and Dante digital audio outputs. It integrates effortlessly with Sennheiser's Control Cockpit software for centralized control and is compatible with leading control systems for added convenience.

Certified for Microsoft Teams, Zoom and Tencent Meeting, the TCC2 ensures seamless performance across major conferencing platforms. Combined with its sleek design and flexible mounting options, it's a future-ready solution for professional collaboration spaces.

<https://www.sennheiser.com/en-in>





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## Fostering Academic Dialogue CUHELI unveils future-ready conference



Consultant:  
Integrator: Q Live Technologist  
Category: University  
Client: Christ University Higher Education Leadership Institute  
Contact: [www.qlivetechologies.com](http://www.qlivetechologies.com)

Christ University Higher Education Leadership Institute (CUHELI), recognized among India’s top private universities, offers diverse undergraduate, postgraduate and research programs in humanities, sciences, law and engineering. It also provides professional courses in business and management, fostering both academic and career development.

To support its commitment to excellence in education and professional collaboration, CUHELI partnered with Televic to outfit a state-of-the-art 52-seater conference room. Designed with full acoustic treatment, the space accommodates 3 Chairpersons and 48 Delegates, making it ideal for training sessions, meetings (online and offline) and collaborative discussions.

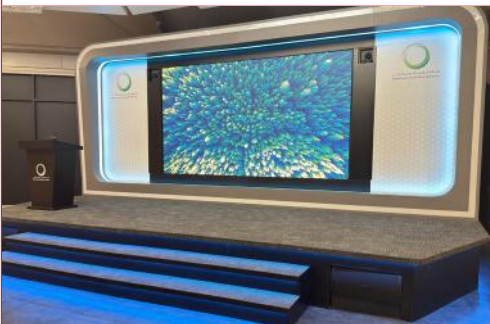
The room is equipped with two high-definition interactive displays that allow seamless content sharing and engaging presentations. Three auto-tracking cameras keep speakers and participants in focus during video conferences, while the advanced audio system ensures clarity and crispness for all attendees. Both wired and wireless presentation options are supported for maximum flexibility.

Televic’s integrated hardware includes the CONFIDEA FLEX touch tabletop unit, F-DD and F-CD flush mount panels, D Mic series gooseneck microphones, PLIXUS AE-R conference controller and associated rack-mount and network extension solutions—creating a highly interactive and efficient communication environment.

**Dubai**

**Government**

## Immersive Innovation DEWA unveils next-gen AV experience



Consultant:  
Integrator: Projection House LLC  
Category: Government  
Client: Dubai Electricity and Water Authority (DEWA),  
Contact: [www.projectionhouse.ae](http://www.projectionhouse.ae)

Dubai Electricity and Water Authority (DEWA), a recognized leader in sustainability and innovation, has reimagined its Innovation Tent—an exclusive venue for workshops, presentations and stakeholder engagement. To bring this vision to life, DEWA collaborated with Digital X and Projection House to implement a sophisticated audiovisual system designed to elevate the overall experience.

The Innovation Tent required an AV setup that was not only intuitive and flexible but also capable of delivering high-impact, immersive presentations. Addressing this need, the solution included a Samsung DOT LED display for vivid visuals and a Bose Professional Sound System to ensure rich, clear audio. Shure microphones were strategically positioned for optimal voice capture, while a Crestron control

system offered streamlined AV management with user-friendly controls.

This transformation has made the Innovation Tent a dynamic environment where DEWA can deliver compelling content, foster real-time collaboration and reinforce its commitment to excellence. The new AV infrastructure not only enhances stakeholder engagement but also showcases how cutting-edge technology can support communication, innovation and sustainability goals in a future-focused organization.

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## **Redefining Engagement** **A future-ready experience center**



Consultant:  
Integrator: AllWave AV Systems Pvt. Ltd  
Category: Corporate (Experience Centre)  
Client: LANXESS India Private Limited, Mumbai  
Contact: [www.allwaveav.com](http://www.allwaveav.com)

Lanxess, a global specialty chemicals company, partnered with AllWave AV Systems to upgrade its Experience Center in Thane, India. The objective was to enhance communication, improve client engagement and support internal collaboration through a modern, immersive environment.

AllWave AV Systems delivered a fully customized end-to-end AV integration aligned with Lanxess's operational goals. The Experience Center is now equipped with Microsoft Teams-enabled PTZ cameras for high-definition video conferencing, a professional-grade audio system for clear sound and a Surface Hub Pro Tablet for intuitive content sharing. A 110-inch LG display, Helvia 2-way open-ceiling speakers and Samsung digital signage contribute

to a cohesive and branded visual experience.

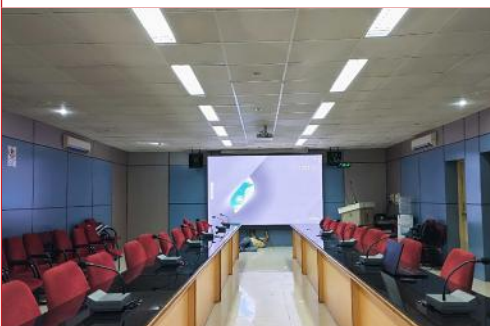
In medium-sized meeting rooms, the integration includes the Poly X52 video conferencing system, dual displays for dynamic interactions and the CUE-Dali-d control system for streamlined AV and room automation. The infrastructure is designed to be scalable and adaptable for future technology upgrades, supporting a range of use cases from global meetings to internal town halls.

This project highlights All Wave AV Systems' expertise in delivering high-performance AV solutions that enhance digital experiences and collaboration within enterprise environments.

**Bengaluru**

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## **Smarter Spaces for Scientific Minds** **IIHR's visual upgrade by avids technology**



Consultant:  
Integrator: Avids Technology  
Category: Research Centre  
Client: Indian Institute of Horticultural Research  
Contact: [www.avidstech.com](http://www.avidstech.com)

Avids Technology, authorized distributor of ViewSonic's Active LEDs, IFPs and projectors, successfully deployed a bespoke Active LED display at the Indian Institute of Horticultural Research (IIHR), Bangalore. The project addressed the institute's need for a high-quality display solution in its 60-seater boardroom, which was already equipped with advanced video conferencing infrastructure but lacked a premium visual component.

To meet the demanding requirements of daily presentations, research discussions and internal meetings on horticulture development—including NOC and SOC deliberations—ViewSonic's 146-inch diagonal Active LED display (Model LDC031-150, Pixel Pitch 1.5) was selected. This customizable, all-in-one LED display offers an IP54-rated

enclosure with GOB surface treatment, providing protection against dust, moisture and accidental impact, ensuring long-lasting, hassle-free usage.

Designed for operational efficiency, the system includes a detachable control box for clean aesthetics and easier maintenance, along with centralized LAN-based control for streamlined management.

Avids Technology's trained team ensured precise sizing, quick installation and seamless configuration—all completed within 48 hours. With strong post-sales support and installation expertise, Avids Technology continues to deliver reliable, high-performance display solutions for mission-critical environments.

Noida, UP

Education

## Smart Infrastructure for Smarter Learning

### Shiv Nadar University's future-ready campus



Consultant: ASK Consultants

Integrator:

Category: Education

Client: Shiv Nadar University - SNU

Contact: [www.askconsultantsindia.com](http://www.askconsultantsindia.com)

Shiv Nadar University (SNU), an Institution of Eminence founded in 2011 by philanthropist and tech visionary Shiv Nadar, is redefining higher education with a strong focus on research, innovation and student-centric learning. As the campus expanded across academic, administrative and residential zones, there was a clear need to upgrade its digital infrastructure to meet evolving academic demands.

ASK Consultants partnered with the university to deliver a comprehensive suite of ICT, AV, security and acoustic solutions. The vast scale of the campus brought unique challenges in network distribution, hybrid communication and resource accessibility—all requiring cost-effective, scalable solutions.

Smart classrooms were introduced to support collaborative, in-person learning with advanced AV systems enabling seamless hybrid interactions. A unified communication setup integrated Microsoft Teams, Zoom and Google Meet, while a cloud-based platform ensured secure access to recorded lectures and learning materials.

Campus safety was enhanced through intelligent surveillance and access control. Acoustic solutions, tailored to key spaces, ensured clarity and comfort, optimizing learning environments.

With a modular, upgrade-ready design, ASK Consultants helped future-proof SNU's infrastructure—bridging the gap between academic vision and technological execution.

Mumbai

Education

## Nirvana Digital Classroom

### Elevates the learning experience at WeSchool



Consultant: EYTE Technologies Pvt Ltd

Integrator:

Category: Business School

Client: WeSchool

Contact: [www.eyte.sg](http://www.eyte.sg)

Welingkar Institute of Management Development and Research, widely known as WeSchool, has long stood at the forefront of innovative education in India. In its pursuit to modernize learning spaces and provide students with a future-ready academic environment, the institution launched the Nirvana Digital Classroom initiative. EYTE Technologies Pvt. Ltd. was entrusted with executing this transformation, bringing in advanced digital and audiovisual technologies.

The upgrade addressed several challenges, including outdated classroom infrastructure, the need for seamless technology integration, faculty training and budget constraints. EYTE Technologies delivered a comprehensive solution, deploying high-definition projectors, interactive displays, advanced switchers,

extenders and state-of-the-art cameras to create an intuitive and dynamic learning experience.

The installation process was meticulously managed—from assessment and planning to integration and final calibration—ensuring optimal system performance. Faculty praised the ease of use, while students responded positively to the immersive, interactive environment. Administration acknowledged the efficiency and professionalism throughout the project.

The successful implementation of the Nirvana Digital Classroom has established a new benchmark in digital learning at WeSchool, reinforcing its commitment to academic excellence and educational innovation.

DUMO / humly

# HUMLY BOOKING DEVICE

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Can the device be securely mounted on various surfaces, including walls and glass?

YES

Is the device equipped with Power over Ethernet (PoE) for streamlined connectivity?

YES

Does the device seamlessly integrate with Microsoft 365 and Google Workspace?

YES

Can meetings be scheduled directly through the Microsoft Teams app?

YES

Is the HBD available for both on-premises and cloud-based deployments?

YES

Does the device provide real-time visibility into meeting room and desk availability?

YES

More FAQs can be found on <https://dumo.in/faqs>



# Smarter AV for Smarter Campuses

Elevate the learning experience with Q-SYS, a fully integrated, software-based audio, video, and control platform built for a wide range of campus applications. From small classrooms to hybrid spaces and large lecture halls, Q-SYS delivers intuitive control and a consistent experience for students, faculty, and staff. Powered by Intel, the platform removes the need for outdated, single-purpose AV hardware by delivering advanced features at the software level. With centralized monitoring, remote support, and free award-winning training, Q-SYS makes it easy to design, deploy, and manage your entire AV ecosystem.



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