DESIGNING A SPACE TO EMPOWER LEARNERS TO ENGAGE THEIR ASPIRATIONS

Thom Conaty outlines his work as part of a collaborative project with Planning Learning Spaces in Practice and Gesher School to design an integrated learning environment that acts as a hub for maker-centred learning for the school and community.

Gesher School, situated in northwest London, is an Ofsted "Outstanding" primary school currently expanding into an all-through school for learners from four to 16 years of age. The school caters for students with a range of mild to moderate special educational needs (SEN), including autism, ADHD, dyslexia and Down's Syndrome.

A reimagined ecosystem

Gesher is reimagining the way young people with SEN are educated. Its approach is focused on a learner-centred curriculum that encourages engagement and empowerment and is designed to develop the whole person and balances "head, heart and hand". As an all-through school there is recognition of the importance of developing a maker culture as part of the learners' experience, and every curriculum and project-based activity promotes multidisciplinary approaches that are integral to learning.

A maker hub for school and community.

The design of the new makerspace at Gesher has been a collaborative activity and it will act as a "hub" for the school and community. It fosters innovation, creation and curiosity and the integrated design ensures its leading-edge facilities can support all aspects of the life and work of the school. It will promote the sharing of ideas, projects and activities across the school with parents, local projects and the business community. The makerspace has been zoned to support the process of design thinking within the primary curriculum and provide the specialist facilities needed to ensure progression for secondary learners.

The zoning ensures that specialist areas requiring safety and support for learners can be established with good visual connections. It recognises the importance of a quiet and calm reflective space to meet personal needs and to ensure sensory and emotional regulation. Sliding screens allow zones to adapt to changing activities and use of space.

DESIGN THINKING ZONE
LEARNERS AND MENTORS COLLABORATE
ON A COMMUNITY PROJECT

The four zones of the makerspace

The makerspace is structured into four dynamic, functionally complementary and visually interconnected zones. Sliding, floor-to-ceiling acoustic glass panels enable the spatial and sensory properties of the space to be easily and quickly adjusted. Although adaptability is a key function of the entire hub, each of the four zones has been designed to meet the sensory needs of students and to accommodate each of the distinct stages and processes required for design, making, creative innovation and project development.

1 The Node: communication, construction and creative collaboration.
2 The Factory: manufacturing.
3 The Design Thinking Zone: ideation, prototyping, testing and documenting.
4 Reimagine Zone: research, reflection and personal engagement.

The choice of furnishing, and equipment has been made to enable the adaptable functionality of the zones and encourage multiple modes of working and to promote creative idea-sharing and collaboration.

Sensory challenges play a significant role in the learning experience of students with SEN, so lighting and acoustics have been designed to complement the zones and create sympathetic sensory conditions.

The Design Thinking Zone (3) enables the makerspace to act as a hub to promote engagement across the school and community. Whiteboard surfaces throughout, smart projector, tablets and access to dozens of prototyping and construction kits, support learners to freely explore the design thinking process.

The available flat wall space allows the zone to double as a media lab with green screen for streaming and creating audio-visual presentations. Digital technologies will be a critical enabler for maker activities within the school and community.

The zone will enhance the richness and depth of the Gesher curriculum through developing more

THE FACTORY
A LEARNER SEES THEIR DIGITAL CREATION COME TO LIFE VIA 3D PRINTING.

STEAM-focused approaches and act as a catalyst to encourage relevant and real-life projects.

Open access to the Reimagining Zone (4) and the Node (1) enables learners to naturally navigate and be supported between all design and making processes.

Putting "make" in the makerspace

This zone is where learners can bring their ideas and digital designs into a physical reality. With tools and materials at arm's reach, and on visual display throughout, this zone greatly increases opportunities for learners to achieve a direct hands-on approach. Natural wood panelling, acoustic glass and industrial flooring indicates this is a place where learners can explore, create and test out their design products.

All the materials, tools and modern fabrication equipment for rapid prototyping and manufacturing are available:

- 3D printers, laser cutter, CNC and fabric cutter
- Traditional hand tools for measuring, cutting, securing and finishing
- Electronics, interactive technologies and test equipment.

This zone is visible to others working in the makerspace. Its design recognises that learners of all ages working in the Factory Zone (2) will need to be supported and managed while using this equipment. The duty of care in working with learners is paramount and the design makes the needed specialist equipment accessible in a safe and secure zone. Students at Gesher are differently able and their learning experiences need to be supported in different ways. The design of the Factory zone within the space will allow individual learners to experience practical design realisation throughout the four–16 age range of the school curriculum and demonstrate personalised approaches to design thinking. The Factory zone provides an environment that ensures students can develop the skills for the future workplace and the realisation of their own personal projects. It will play a major role within the hub in developing social enterprise activity and creating real-life solutions to local challenges.

The Factory zone is designed to be visible and to have a comfortable working environment with good air quality and ventilation to deal with the range of practical activities taking place. A large digital screen with a webcam connects the Factory to the rest of the maker hub and the wider school and community environment.

THE NODE

The Node

Adjacent to the Design Thinking Zone, with sliding door access to the Factory on one side, the Node is the entry point to the makerspace. A sliding glass panel enables the zone to be acoustically isolated from the rest of the hub.

The Node acts as a launchpad for school-wide communications and interaction within all the zones of the hub and its resources. It promotes the sharing of ideas and collaborative activities across all aspects of the school curriculum.

A suite of tablets and 2-in-1 laptops, as well as an interactive whiteboard with conferencing technologies, allow for engaging real-time learning and audio-visual communications. Agile and varied seating and mobile folding desks enable quick and easy transitions between collaborative, small group and individual activity. Extensive storage and mobile storage solutions have been developed to ensure ease of access to the wide range of resources and equipment that will be available in the hub.

Reimagine Zone

The Reimagine Zone is designed as a mindful space with warm, adjustable lighting, a vertical garden and comfortable floor space where learners can quietly focus, reflect and engage in personal learning. Two high-spec computers enable digital research, design and media editing.

The furnishings in this zone (including access to industrial noise-cancelling headphones) encourage learners to find a comfortable space and time for themselves. It provides space to be supported, to read, conduct digital research, take time to reflect, practice mindfulness or just take time out. A variety of seating options have been provided within the space. Warm lighting, wood flooring and a large rug promote a calm, welcoming atmosphere.

A vertical garden and hanging plants in this space (and throughout the hub) support the ambience, make for a healthier working environment and offer the learners a physical and mental connection with the natural environment.

The makerspace as a hub connecting learning.

The makerspace has been designed to be a resource for the school and community. It is intended to locate it in a position adjacent to a studio space that will support learning across the full school age of learners. Establishing a maker culture as part of all learners' experiences at every stage of their development is critical to children and young people at Gesher, so

REIMAGINE ZONE

that learners are qualified for the next stage of their development with a deep knowledge in academic and vocational disciplines, through designing, experimenting, building and inventing in science, computing and engineering through real-life project activities. In addition to this, the makerspace provides an opportunity to liberate and affirm students' areas of aptitude and passion.

Effective integration is critical to ensure a makerspace culture is deeply embedded across the whole school and that it extends beyond the campus, connecting the school with the local community. Project management equipment and technology, as well as practical resources such as Rover trolleys, will support connectivity of the space and distribution of its resources within the wider school by enabling tools, materials and projects in development to be easily transported from the makerspace to wherever they are needed.

As Gesher continues to build upon its practice and develop its offering as a community hub and Centre of Excellence, it is hoped that the makerspace and its associated resources and spaces will act as a focus to achieve these aims within the school and its learning community. ■

"THE VALUE OF EXPERIENTIAL, HANDS-ON LEARNING IS PRIZED AT GESHER, WHERE WHAT CHILDREN CAN DO AND MAKE, INDIVIDUALLY AND COLLABORATIVELY, IS AS ESTEEMED AS WHAT THEY KNOW."

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