Novel Learning and Teaching Methods and School Design

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Valerie Bragg - Director

How I became involved in education

- Director, Head of Education at Faber Maunsell
- Chair of the Schools Forum of the Royal Institute of British Architects (RIBA)
- Adviser to the Prime Minister’s Office on School Regeneration
- Specialist Adviser to the House of Commons Select Committee on Education and Skills
- Fellow Specialist Schools and Academies Trust

Previous roles

- Principal of The City Technology College, Kingshurst 1987 – 2001
Teaching and Learning

What used to be required?

- A Teacher
- A Classroom with desks and chairs in rows
- Access to Information
- Discipline

And that was it…
What are the Drivers for Change?

- Why do we teach in boxes with inadequate corridors?
- Why do we move our learners every hour?
- Why do we have to teach the same way we were taught?

And Also

- Modern technology including wireless IT and handheld devices
- A shortage of outstanding teachers
- An improved understanding of learning

But mainly

- Today’s Student
Today’s Student…

– has grown up in a digital age.
– learns completely differently to you or I.
– can access information on any subject in an instant.
– will have many careers during their lifetime.
– will constantly need to learn new skills
– will find that knowing how to learn is more important than what they learn.
Teaching and Learning Methods

Some of the latest thinking

- **Personalised Learning**, teaching and support that is geared to the students’ ability at the particular skill being studied

- **Master Classes**, large groups with a top quality teacher that split out into discussion groups

- **Triarchic Instruction**, focuses on children's creative and practical strengths, rather than their academic skills

- **Thematic learning**, students take on a theme each term that the various curriculum subjects then feed into. Also known as **Inter-disciplinary enquiry**

- **Special Needs Education**, one to one attention, specialist facilities and a safe and comforting environment.
Teaching and Learning Methods
Some of the latest thinking

- Tutoring
- Peer Support also known as Collaborative Learning
- Assessment on-line
- Learning through Enquiry, a problem is posed that requires the student to undertake research and discussion to answer (also known as Classrooms as a research environment)
- Network enquiry
- Buddy System
- Paired Reading
- Shift from Education to Life Long Learning
Teaching and Learning

What is required now?

- A Teacher
- A Learning Space
- Light & Air
- Space
- Flexibility
- An Individual Approach
- Specialist Facilities (up to and including professional standard)
- The ability to tailor the access to information appropriately
- IT
- And More!
A Typical “New” Lesson

Research based learning

- Get organised
- Hold a discussion on the lesson topic
- Log on to computers
- Research, including music and voice
- Huddle
- Perhaps go to the Information Centre for more research
- Create a presentation
- Hold the main event
Another “New” Lesson

A Masterclass

– Introductory lecture in a large space using all the latest technology.
– Break out into smaller groups for discussion.
– Come back together to feedback or work together to form a response.
A recent survey by the British Council for School Environments

Teachers’ opinions on their school environment

- A third of teachers said that their school's design prevents them from teaching effectively.

- Nearly nine out of 10 teachers said classroom lay-out was the most important aspect of school design.

- Just 12% said they considered the design of their school buildings to be effective.

- "If the impression given to students is that this room doesn't matter then the impression is that it doesn't matter what they do in this room."
A recent survey by the British Council for School Environments

More from the teachers

- 87% said school environments influenced pupils' behaviour.
- Narrow corridors contributed to "aggressive behaviour and arguments among students".
- Others said the lack of a "proper desk and chair" inhibited a teacher's ability to do their job.
- An inability to control temperature in classrooms and its impact
- "My classroom is either too hot or too cold. The windows are too high and I have to climb on cupboards to open them. The children get tired in the heat."
- 59% said they were not able to adjust their physical environment to accommodate the different ways they taught classes.
So how to address these issues?

And accommodate new teaching and learning methods at the same time

- The Teaching Environment
- Teaching the Teacher
- The Importance of Consultation
- The School in Operation
- Keep It Simple!
The Ideal Teaching Environments

Location and format

- Indoors or outdoors.
- Large or small depending on the need.
- Relaxed or formal.
The Ideal Teaching Environments

What they need

- Light and Air
- Space
- Flexibility
- Availability of IT
- Acoustics that support group discussions
- Able to use every resource available
The Ideal Teaching Environment

What could they look like?
A Cafe?
A Social Space?
Outside?
What is MY Ideal Teaching Environment?

- Adaptability (flexibility)
- Technology
- Informality
- Intimacy
- Openness (transparency)
- Movement
- Flow
- The right acoustics
The Teaching Environment
How IT can help (and hinder)

The Good…
- Personalised Learning Environments
- On-line curriculum
- Teacher tablets, the textbook of the future
- Visualisers and Interactive Whiteboards
- Teacher, student and parent access to school information and their work, 24 hours a day.

And the Bad…
- Floorboxes
- Power points
- Lack of understanding - FEAR
The Teaching Environment

Teaching the Teacher

- Many teachers have a traditional approach to teaching, based on “that’s how it’s always been done”.

- Having strong IT skills is not a pre-requisite to be a teacher!

- Teachers are not trained Facilities Managers.

- Teachers want to teach, not spend time managing a space.

- You may think your systems are fantastic but will a teacher who has to use them every day agree?

As designers you can help to develop and re-form teachers’ expectations, by showing them what is possible
The Importance of Consultation

The Concept of Ownership

- A School is not just a building, it’s not an office and it’s not a factory.

- The best Schools have a tangible shared ownership. This comes from the staff and students working together for a common goal.

- Unless the entire school staff and the students are involved in the development of the building, they will feel divorced from it.

- A school that is imposed on its staff and students will never be owned.

- As designers, you are used to consultation. Your consultees are not but you can show them the way.
The Teaching Environment
The school as part of the curriculum

- Langley Academy - Teaching sustainability using the building
  - Water usage
  - Energy monitoring
The Teaching Environment
The school as part of the curriculum - Langley Academy, Slough

- Solar Collectors: Integrated into south facing facades, used to heat and cool atrium slabs.
- Heat Pump: Linked to pipes under ecology gardens, used to heat & cool atrium slab.
- Reed Bed: Infrastructure installed, reduces need for main water supply.
- Grey Water Collection: Separates greywater to collect and use in ornamental water features and plant beds.
- Grey Water Filter: Filters water to a standard that can be used for flushing WCs, watering gardens, washing windows.
- Timber Cladding: Renewable resource.
- Optimised depth of classrooms for natural daylight and natural ventilation.
- Rain Water Harvesting: Collects & stores rainwater in a tank, forming a "living wall" in ecology garden.

Ideal massing for heat loss and infiltration. Good internal wall to external volume ratio to minimise infiltration and slow harvesting of beneficial solar gain.

Ideal for control of Solar Gain: Solar gain and natural ventilation. All teaching spaces to have automatic control blinds, but risk of deep plan spaces at the ends of the wings.

Mechanically extract one naturally mixed mode spaces, vented spaces.

Single sided natural ventilation to all teaching spaces, easy shading possibilities, land-locked areas to house mechanically-vented spaces.

- Building orientation to reduce solar gain.
- Maximised natural ventilation for internal spaces.
- Maximised natural ventilation for all teaching spaces.
- Maximised daylight to internal spaces.
- Maximised daylight to classrooms.
The Teaching Environment
The school as part of the curriculum – Merchants’ Academy, Bristol

- Public art project involved students in the development of artworks for the front and inside the building
- Two prominent artists were commissioned
- Students asked for the “Wow” factor
- Students were also supported to make a photographic record of their old school and to produce images for display inside the new building.
The Teaching Environment

Problems that can arise even with new designs

- A beautiful building that no one can find their way around.
- Materials chosen for their attractiveness rather than suitability. (Flooring that can be scuffed, playground covering with sharp corners)
- Furniture that is robust but too heavy to move easily.
- Floor-boxes and static tables due to IT constraints.
- Staff areas, corridors and offices as after-thoughts.
- Overcomplicated environmental systems that teachers can’t adjust easily.
- Changes during construction due to time and / or cost having a detrimental effect.
- A building that has been designed for adults not children

All of this has a detrimental effect on teaching and learning
The Teaching Environment
Even small changes can help teaching and learning

- Using the right colours
  - Teenagers view primary colours as immature.
  - Subtle colours work well, light sage greens and refreshing blues, with brighter, trendy and more saturated hues used as accent colours.
  - The use of school colours also works to promote school spirit.
  - It costs no more to paint a wall a colour than white
The School in Operation

What happens after you leave?

- Have you fully trained school staff in the operation of school systems? Have you explained how the floors are cleaned and the lights work?
- Don’t expect a caretaker to be qualified to operate a biomass boiler.
- People will leave lights on.
- People will not switch electrical items off.
- A school has a small operational budget – the new buildings will not increase this by much.
- School staff are only human, *if it is difficult or expensive they won’t do it*
Keep It Simple!

Making life easier for the school and its teachers

- Make the school easy to navigate
- Make the environment adjustable
- Make the learning environment flexible
- Don’t introduce a sophisticated system that the teachers will end up not using.
- Help the school staff to truly own the building they’re in.
- Remember the day-to-day operation of school you’re designing.

AND

You’ll be helping schools create novel teaching and learning for tomorrow.
Thank You

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