DESIGNER
PINBOARDS
AUSTRALIA

Colour in Learning

*A Guide for Designing the
Ultimate Learning Space*

7 Main Colour Groups in Education Spaces

Neutrals

Calming
Stability

Small additions of Neutrals is encouraged to balance out colour schemes of brighter, intense colours

Blues

Calming

On walls of reading areas and study rooms, Blue promotes focus and creates a calm space

Reds

Attention
Stimulating

Used for drawing attention, small additions of Red are good in early & primary learning spaces, to promote attention where learning is at a most vital stage

Yellows

Creativity
Alertness
Stimulating

For arts and creativity areas, where playfulness & cognitive stimulation need to meet, Yellow is perfect

Greens

Concentration
Nurture
Thought Provoking

On walls of teaching areas, Green promotes learning and provokes thinking, allowing more information to be absorbed

Oranges

Alertness
Critical Thinking
Mood

Orange is similar to red in its effects on attention, however used more to affect mood in a positive way - a colour that 'wakes up' the space and the learner

Magentas

Thoughtfulness
Self-analysis

Much alike to Blue, Magenta should be used on walls of reading areas and study rooms, allowing thoughtfulness and deep contemplation

Effects On Memory & Attention

Colour in learning spaces has shown to have a significant effect on memory cues and efficiency. The foundational parts of memory includes sensory, short-term and long-term.

Attention is required when learners process information and select those parts that require further retention.

Information Received
↓
Sensor Memory to Identify
↓
Short term Memory to Analyse
↓
Long term Memory

When we pay attention to certain information, we are selecting and focusing a certain amount of information to be processed in our cognitive system. Colours help learners increase their attention levels on certain information, which help such information be transferred to short-term and long-term memories, thus increasing their chance of memorising such information.

For example, warm colors such as **red, orange,** and **yellow** have been recognized as the ideal colours to increase attention and stimulate active participations in activities. Studies stated that the state of being alert physically and internally can enhance short-term and long-term memories.

Colour can help learners improve their learning efficiency, since they are able to process color automatically without requiring conscious process.

It is reported that colour as a graphical device is used to enhance the organisation and presentation of information, decrease search times, and enable the identification and organisation of information.

Compared with the monochromatic information, application of color-coded information can better support knowledge retention. Changing the hue can affect recall. For example, using a **blue** background increases the likelihood that the information delivered will be remembered. Students exposed to a blue background had some reason other than their affective reaction to the color for having a higher recall of information than respondents exposed to a **yellow** background.

Some studies have indicated that different colours can affect performances on different types of cognitive tasks. Specifically, **red**, associated to danger, can activate a prevention focus to remind students to prevent negative outcomes, thus enhancing performance on memory tasks, proof-reading, and tasks requiring attention to detail. Red enhances persuasion. **Blue**, associated to openness and freedom, can activate a focus for students to achieve positive outcomes.
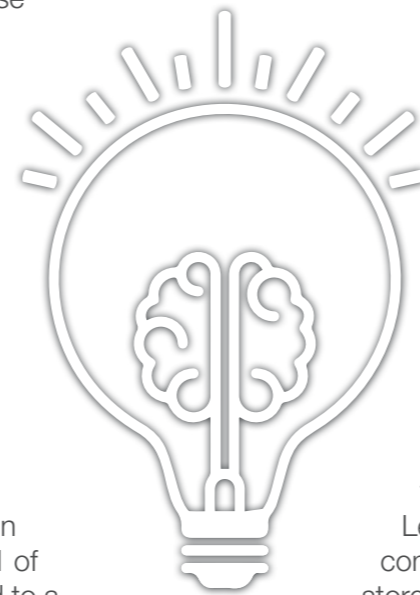
Emotion & Cognition

Colour affects behavior as well as cognitive abilities, performance, and intentions. Some scholars regard that colors help learners increase their cognitive stimulation.

Studies indicate that among 10 different hues, **yellow** hues show higher stimulation and evaluation results than other colors, even though there is not much difference in terms of which colors influence learner attention, or lack there of.

A study conducted by Plass, Heidig, Hayward, Homer, and Um (2014) indicates that warm colours such as yellow and **orange** rather than cold colours such as gray used in materials can enhance students' learning.

Positive emotions/moods help learners recall more possible functions for an object from long-term memory. Learners recognize incoming information by comparing such information to the information stored in memory. Positive emotions help learners retrieve the other positive information saved in their memory. Certain studies state that a positive event may cue other positive material in memory, and this may establish both the cognitive loop that we have proposed as the mediator and the experienced emotional state of feeling *'good'*.

For example, instructors use different colours to highlight students' texts to differentiate the various levels of the knowledge produced by learners. Such highlights may increase learners' attentions since they cue instructors' views of their work, thus emotionally motivate learners' learning.

Plass, Heidig, Hayward, Homer, and Um (2014) found that: 4 learners using the positive emotional design variant perceived these materials as less difficult, invested more mental effort in processing of the content, and reported higher levels of motivation, satisfaction, and perception toward the learning materials than learners receiving a 'neutral design variant.'

Colour "can produce an emotional effect. But the degree or range of this varies depending on the emotional element that is attached with a specific type of colour" (Dzulkifli, & Mustafar, 2013.

Learners may have different interpretations of colours due to their prior experiences or their assumptions of colours associated with events in their lives. For example, **Green** is associated with calmness, and black is associated with sadness (Dzulkifli, & Mustafar, 2013). Red and violet, falling on the fringes of the colour spectrum, often occur in association with potential danger. This study stated that red was variously described as more stimulating, exciting, awakening, attention-drawing, overpowering, and lively.

To summarise, colour has a critical role in aspects of learning efficiency. There has been found great significance in the effects of colour and function on the mind, which can be cross-examined when selecting colour palettes for learning environments.

Colour & Age Groups

Preschool / Early Learning

Young children gravitate towards bright, playful colours. Warm and bright hues, such as yellow, orange and reds complement the nature of children. However, these bright colours are best used as accents, rather than in full. Too man bright colours can overwhelm the cognitive function of young children, causing distraction. Addition of bright colour accents, complemented with neutrals creates just enough stimulation and attention in an efficient learning space.

Kindergarten - Primary School

Similar to Early Learners, Primary Students prefer bright colours. In Primary level years, there is a heavier focus on separating privacy and collaborative learning styles. More private learning spaces need to encourage thoughtful and critical thinking; incorporating cool hues of Blue, Green and Beige. While open, collaborative areas need to incorporate warm hues such as Yellow, Magenta and Oranges, to encourage activity, creativity and movement.

Late Primary - High School

As students move into late Primary learning into High school, and further onto advanced education, there becomes a growing appreciation for more sophisticated and calming spaces to encourage contemplation, concentration and cognitive nurturing. Large uses of subdued Blues and Greens, with accents of deep Magentas is helpful in promoting this. These hues should be complemented by Neutrals, such as Grey and beige, to create a balanced learning space.

Whilst considering age and the affects of colour, placement also plays a crucial role in different learning spaces.

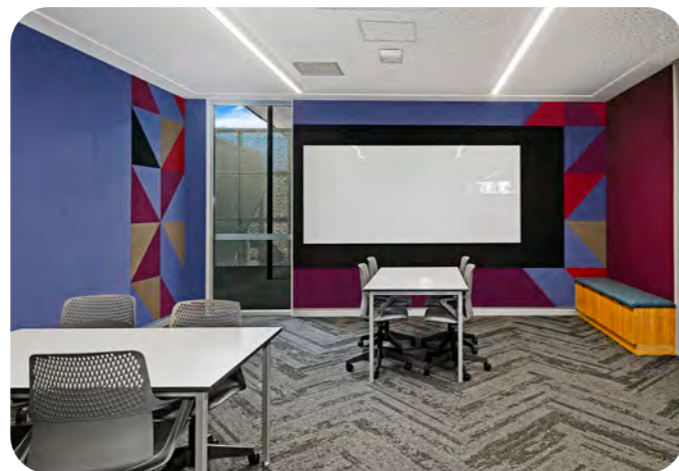Designer Pinboards Australia does not own the sourced information. Source reference page 12.

Placement Has Purpose

Every colour should have purpose for its intended space. Colorus can make a major impact in every room. The following suggests colour placement for common areas in a school environment.
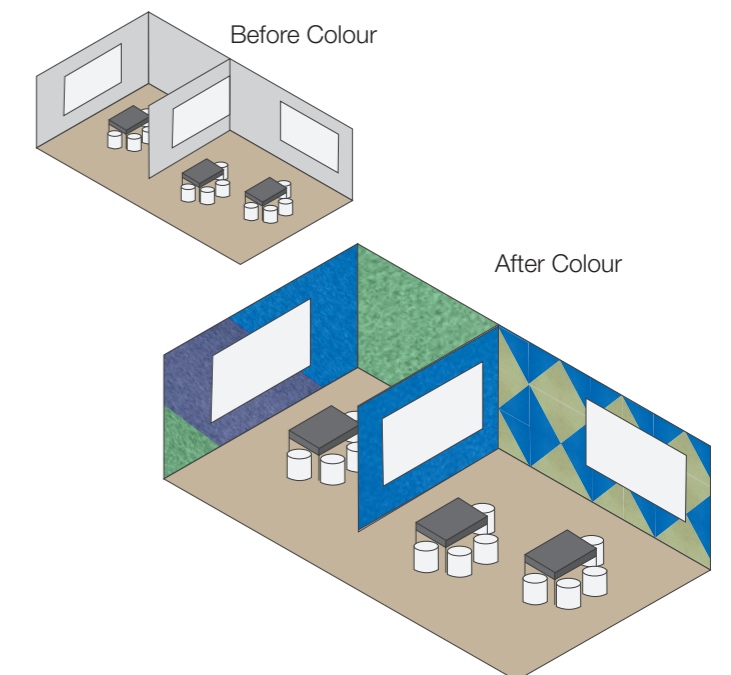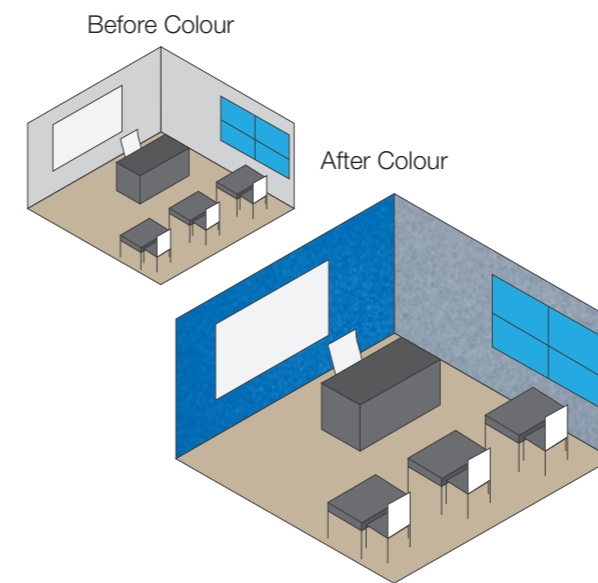
School Office	Green, Blue, Beige & Patterns	Creates welcoming & nurturing space, encourages social interaction & connection
Hallways	Bright Colours & Contrast	Creates interest and life in a confined space, adding accents ever few metres can create a 'journey' while walking through a hall or corridor
Library/ Study Hall	Earth Tones & Deeper Colours	Study areas engender equilibrium, balance, and stillness and should be quiet in design and allow for concentration. Cool & Natural colors encourage concentration by lowering heart and respiration rates
Art/Music	Green, Magenta, Yellow	Encourages creativity
Gymnasium	Bright Colours & Contrast	Atmosphere of vitality, will help children feel welcome and encourage activity
Counselor/Nurse Office	Subdued Greens, Blues & Beige Neutrals	Convey harmony and a feeling of warmth and confidence, the best choices are quiet, comfortable colors

Traditional Classroom Setting

- Focus colour towards the forward-facing direction to draw attention to the teacher
- Work with simple block colours in small spaces to reduce distraction & create focus

Modern Classroom Setting

- Open layout requires design diversity for different learning stles; collaborative & isolated
- Work with simple block colours in spaces of concentrated, individual learning to reduce distraction
- Work with a mixture of block colour and complex design to create stimulation in collaborative spaces

Before Colour

After Colour

Before Colour

After Colour

Composition Smooth & Velour Wall Lining, Peel 'n' Stick & Wrapped Pinboards

SARGAZO	VINTAGE	CHILLI	BLAZING RED	SIMBA	BEEHIVE	SENADO	PARTHENON	SAVOYE
ELECTRIC BLUE	OCTANE	MURALLA	INK	CALYPSO	STONEWASH	ATLANTIS	FALLING WATER	CAVALIER
PINNACLE	PORCELAIN	MYST	HERALD	FLATIRON	EMPIRE	KOALA	PETRONAS	BARK
TREE HOUSE	GHERKIN	SAGE	SPEARMINT	JADE	GRANNY SMITH	LIME	ACROS	OPERA
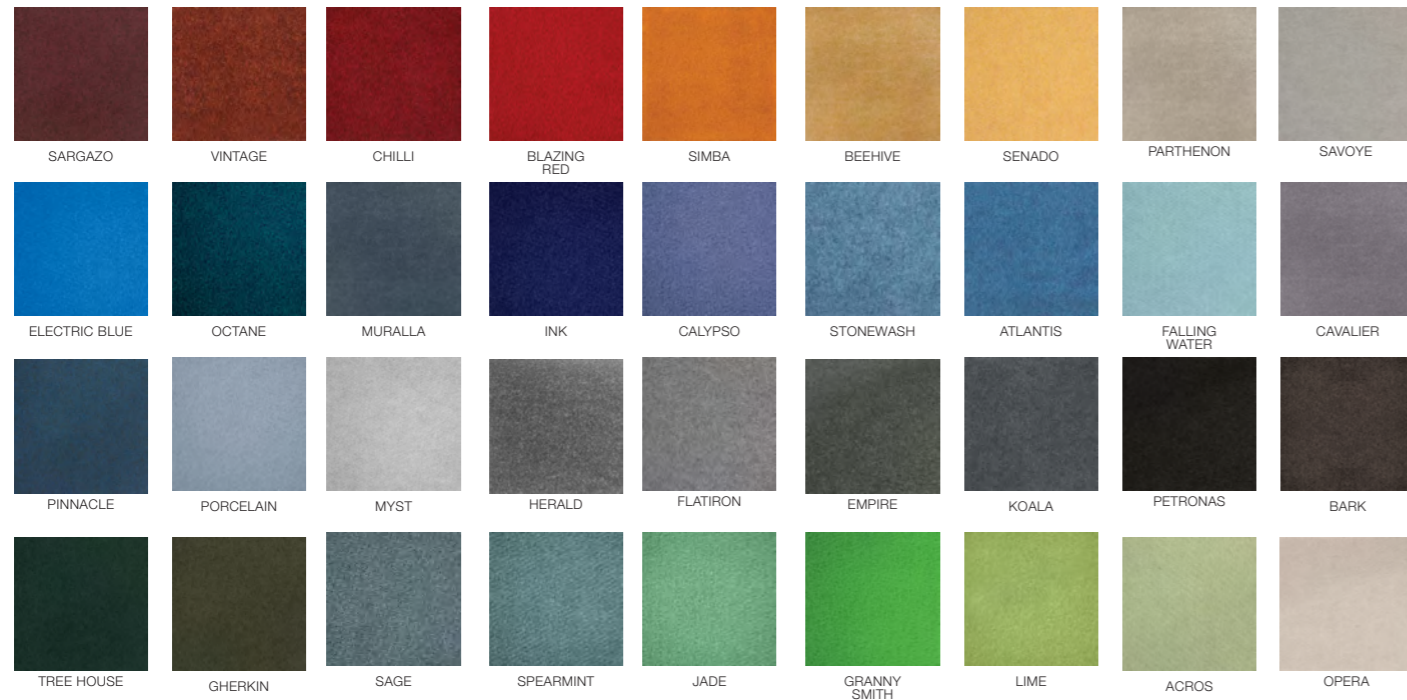
Suzette Wrapped Pinboards

MULBERRY	ROSSO	GALA	RUSSET	VIBRANT	PIZZAZZ	LIMONE	SPLICE	ICE CREAM
CONQUEST	OLYMPIA	LUXURY	MAINSAIL	CYAN	HEAVEN	TIFFANY	TWIST	IVORY
OCTANE	NIMBLE	PERIWINKLE	SPIRE	SHADOW	HUMBUG	MINT	PISTACHIO	NEUTRAL
AERO	JOKER	CELERY	DECOR	LUCERNE	HULA	OPAL	CITRUS	EGGSHELL
STALLION	POPEYE	STORMCLOUD	SINKER	DOLPHIN	IRIS	TEQUILA	PAVEMENT	WHITE
CAFE	ORGANIC	BLIZZARD						

How To Apply Colour Theory To Your Classroom

Composition Wall Lining

Composition® is an acoustic wall covering available in a range of colours. Typically applied in vertical drops like wallpaper, create a surface that is pin and Velcro® receptive. Composition® is a durable and flexible polyester wall covering that replaces the need to paint, and is easily maintained to look amazing for a long time. Because not all spaces are the same we've given you creative freedom. We can cut to any shape, creating something as unique as each one of us.

- Acoustic, colourful wall covering
- Lineal metres 1220mmW, and is 10mm in thickness

Composition Peel 'n' Stick Tiles

The innovative adhesive backed tiles provide a colourful and practical solution to drab and boring walls, offering you complete design choice whether you're wanting a pinboard or a complete acoustic wall solution. "Hook and loop" friendly, and pin and staple receptive, which helps in eliminating unsightly pin holes in the wall. Create a checkerboard effect by choosing just one colour and laying in alternate directions, or mix and match the colours to create almost limitless design options.

- Each tile is 600x600mm
- Easy peel and stick application
- Available in packs of 6, covering 2.16m
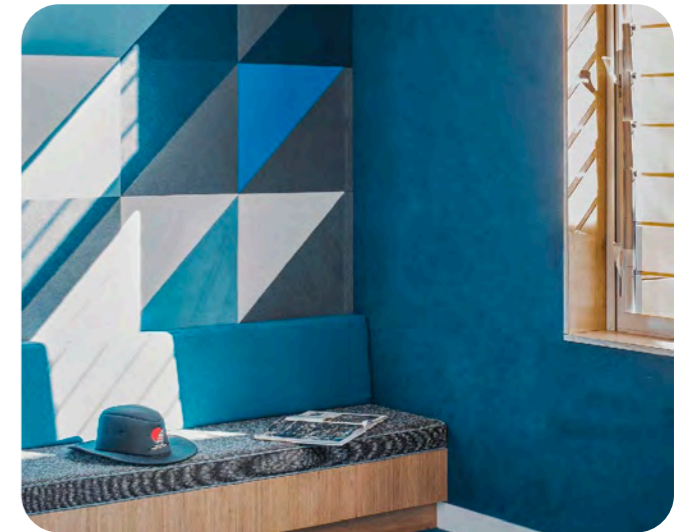
Wrapped Pinboards

These colourful Pinboards offer a choice of Fabric or Velour Wrapped finish, in a vast range of Smooth Velour and Suzette colours. Each panel is wrapped over the edge so you can join as many panels as needed to cover a wall or room. Perfect for fitting around a whiteboard, glassboard or planner board to make a complete communication solution. Each panel will accept both pins and/or hook and loop.

- Sizes start from 900x600mm, up to 2400x1200mm
- Available in large range of colours
- Stainless Steel screw cap fixing kit included

Book A Free Quote & Design Consult Today

Colour in *Learning*

Pick the right colours for your classroom

Creativity

Critical Thinking

Alertness

Mood

Nurturing

Movement

Concentration

Attention

Calming

Thought Provoking

Thoughtfulness

Self-analysis

The use of colours in learning can enhance cognitive function through visual stimulation, creating vital connections in the brain while promoting critical thinking, analysis, and creativity

Book A Free Quote & Design Consult Today

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References

Designer Pinboards Australia has directly referenced and/or paraphrased the following sources, and does not own the sourced information.

Source: Kansas State University Libraries - New Prairie Press - Adult Education Research Conference 2018 Conference Proceedings (Victoria, BC Canada) - Chang, Bo; Xu, Renmei; and Watt, Tiffany (2018). "The Impact of Colors on Learning," Adult Education Research Conference.
https://newprairiepress.org/aerc/2018/papers/30 - The Impact of Colors on Learning

Source: "Functional Color and Design in Education Environments." Architectural Record, August 2014, continuingeducation.bnpmedia.com/article_print.php?C=1107&L=5

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