

Tomorrow's Classroom

EXPLORING DESIGN IN YOUR COMMUNITY

This tool kit encourages students to think about their (life-long) learning as a product of inspiring interactions with people and the environments around them, and that their potential role in contributing to both delightful and functional design solutions requires a deep understanding of the user experience.

AUTHOR

BENCHMARKS

CURRICULUM AREAS

CROSS CURRICULUM PRIORITIES

TEACHING LEVEL

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National Curriculum

English, Art, Technology, Graphics, SOSE

Sustainability

11-12

EXPECTED DURATION



Depending on the intensity of the focus, the unit of work could be developed over a 2-5 week program (approximately 4-10x 60 minute lessons/workshops), or as smaller workshops treated as discrete learning experiences. Teachers and students are also encouraged to explore further inquiry (background research) to enhance the ideation exercises.

EXERCISES

1. Thinking about Learning
2. Today's Classroom
3. Tomorrow's Classroom
4. Pitch to the Principal

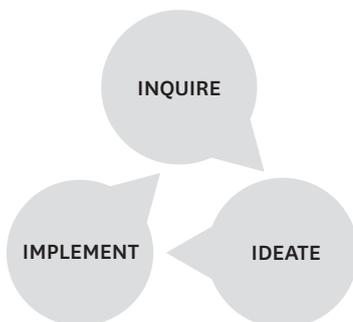
RESOURCES FOR COMPLETION

- Computer/Internet access + Access to Adobe CS
- Pencils and black marker pens (thin 0.2/0.4 and medium 0.6) + highlighter pens
- Scale ruler (1:1, 1:5, 1:10, 1:20, 1:50, 1:100, 1:200)
- Post-it notes
- Copy of plan of classroom to be redesigned at 1:50 showing a north point and existing table locations – two copies for each student
- Various presentation materials (such as watercolour or 'prismacolor' coloured pencils, pantone markers or felt tip markers)
- A3 cartridge paper for group work
- A3 tracer paper sheets 110 115 gsm
- 2 x A2 sheets of corrugated cardboard or foam core as presentation boards
- A6 size blank postcard for each student
- Teacher to make a 'Suggestion Box' with removable lid with slot for postcards
- Scissors, steel rule 30mm & Stanley knife with retractable blade (No snap-off blades)
- Model-making materials - foam core board & stiff white card, coloured card and recycled materials
- Cutting board/mat
- Fixing materials for model making - glue (hot glue gun), double sided tape, masking tape and cello tape
- Used magazines, newspapers for cutting up to make image/colour boards

RESOURCES FOR DOCUMENTATION

- A4/A3 Cartridge Paper Pad for Process Workbook/Journal to document student design process - reflections, notes, sketches and other documentation
- Digital camera/scanner/video camera to document and respond to design challenges
- Adobe Photoshop or other photo editing
- Video software if required + Digital camera/scanner/video camera to document.

DESIGN AND CAPABILITIES



Capabilities for creating successful learners, confident and creative individuals, and active and informed citizens.

Intercultural Understanding



Ethical Behaviour



Personal & Social Capability



Critical & Creative Thinking



ICT Capability



Numeracy



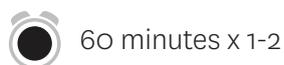
Literacy



Visit [Design Minds](#) for more info on design phases.

Visit [the Australian Curriculum website](#) for more info on general capabilities.

Thinking about Learning



60 minutes x 1-2



Inquire/ Ideate

METHOD

Whole class (approx. 25) working in six groups/teams of 4 (plus 1 designer + parent/teacher + illustrator per team - optional)

ACTIVITY

In the 1940's Italian teacher and psychologist Loris Malaguzzi founded the Reggio Emilia approach to learning in preschools and kindergartens on the premise that children naturally develop through interactions with their parents (the first teacher), their classroom teacher (the second teacher) and ultimately with the environment around them (the third teacher). In this unit we will investigate some of the principles of this approach and how they might apply to your own learning at school, to allow us to investigate opportunities to enhance your school experience through the design process.

The main principles of the Reggio Emilia philosophy of learning are:

1. Children are active participants in learning and have some control over the direction of their learning and school experiences
2. The teacher is considered a co-learner and collaborator, and not just an instructor, and engages in activities alongside the children
3. Long-term real life problem solving among peers with numerous opportunities for creative thinking, exploration and evaluation
4. Children must have endless ways and opportunities to express themselves and must be able to learn through experiences of all the senses
5. Making learning visible
6. The organisation and quality of the physical environment is crucial to facilitating interactions and learning
7. Community support and parental involvement are essential resources for learning

In this, and following exercises, we will practice the first five (5) principles, giving you the power to analyse and synthesise ideas for six (6) & (7).

- Introduce above discussion about the Reggio Emilia approach to learning. Whole class discussion about your thoughts on this approach and whether it applies to you as senior students? What are your thoughts on each principle and the concept of 'the Third Teacher'?
- Will this approach provide a good framework for investigating 'Tomorrow's Classroom'?
- **Task (Learning experiences)** - Each individual in the class brainstorm as many different learning experiences/activities that you can think of that you have at school, where you do them and beside each nominate which senses that you use for these learning experiences. (5 minutes)
- Use of a table and coloured legend using highlighters would help here. Next group these learning experiences into positive and negative - the ones you enjoy and the ones you don't. (5 minutes)
- What are your favourite learning experiences, where do you do them, and what senses do they employ?
- Students form teams (ideally to include a good team leader, a team member with drawing or making skills, and a team member with writing skills). Team members share and compare each others' positive and negative learning experiences and discuss. Are there any learning experiences that you would like to have but are missing? Brainstorm a combined list of the ultimate learning experiences that your team would like to have as a group and where you would like to have them. These can be completely wacky and can be outdoors or outside the school, but each must be a learning experience or project of some kind (eg. a science project at the beach to study waves, doing a 'Masterchef' challenge to learn how to cook pasta, growing a sustainable vegetable garden). Each group to present your ideas back to the whole class.

Thinking about Learning

CONT.

ACTIVITY

- **Task (Suggestion Box)** - Each individual in group to choose your ultimate learning experience and think about what qualities of the experience contribute to making it a great experience. Using the most suitable design elements and principles to visually represent this experience, quickly produce an A6 postcard to record this idea. This will be put into a school 'Suggestion Box'. On the front, the postcard will have an image that represents your ultimate learning experience to sell your idea to the principal and your teacher, and on the back of the postcard you will write what the experience is. Your image might be quite abstract, or like a diagram, it might be very moody or very technical. You can use whatever presentation method you like, including collage, but use a technique that helps to express the idea you are representing. Once you have completed your postcard put it into the suggestion box.
- The teacher will pull out all of the postcard suggestions and the whole class will try to guess what the learning experience might be based on the visual representation. As a larger class discuss some of the more interesting learning experiences and how these might affect the design of your classroom and the role of your teacher.



Have you considered?

- Disruption – Students to brainstorm what school might look like in 2030 and represent the ultimate learning experience in 2030 on their suggestion box postcard.
- Invite a past student back to your school to talk about what their favourite learning experiences were at school and how these influenced what they do today. How did their learning experiences help them make a choice for a career and influence their passions?

REFLECTION

Prompts for reflection:

Students are encouraged to be creative & futuristic with their ideas.

- If we consider future technology, how might this change our learning experiences in schools in the future?
- Which were the best postcards in communicating the idea and why? What design elements and principles were used in the postcard?

DOCUMENTATION

- In keeping with the Reggio Emilia philosophy of 'making learning visible', students to scan reflections, brainstorming and postcards, and record design process with video or photography to include in an online wiki for the project
- Postcards could be exhibited in the classroom for future lessons to provide inspiration.
- The open suggestion box could be displayed publicly in the school for other students to see the suggestions. Students from other classes could be encouraged to participate also to get as many ideas as possible for future reference.

Today's Classroom



METHOD

Whole class (approx. 25) working in six groups/teams of 4

ACTIVITY

'The mission of design thinking is to translate observations into insights and insights into products and services that will improve our lives.' (Tim Brown, *Change By Design*) We build an understanding of insight through empathy. This is **seeing** the world through the eyes of others, **understanding** the world through their experiences and **feeling** the world through their emotions. In this exercise we will observe your current classroom and analyse how it works as a learning environment. There are three levels to our insight research: firstly to understand the environment itself (the physical), secondly to observe how people use the space and the experience (the cognitive), and thirdly to understand how the space affects them on an emotional level (the emotional). These exercise(s) will help you interpret the space in order for you to be able to redesign your classroom in Exercise 3. i.e. you will be creating the **design brief**.

Task (Physical mapping)

In your design teams you will work together to prepare a set of diagrammatic overlay drawings on A3 tracing paper to give you a quick understanding of important information about your existing classroom. On the left side of the sheet you will trace the plan in black and add coloured linework/symbols to represent information and on the right a legend. Add notes as required. These are meant to be quick recordings of the information. Use a separate sheet of tracing paper for each of the following:

- location of plumbing, lighting, electrical and air conditioning, note all fixtures/equipment that require water, power or phone/data connection
- natural light, glare & sun penetration
- views from inside/outside and from outside/inside
- natural ventilation and thermal comfort
- wall, floor and ceiling materials
- public and private zones
- furniture and equipment
- clean and messy areas

One person in the group will record all of this information with a digital camera and construct an image board of all of photos and words on an A3 poster.

As a team have a look at each sheet and record in a table on another A3 sheet the 'problems' and the 'opportunities' for improvement of each of these existing conditions. Each group to share their findings with the whole class.

Task (Experience mapping)

In your design teams prepare another set of diagrammatic overlay drawings observing how people use the space:

- Activity analysis for students – Write down all of the different activities performed in the space and show where these occur on the plan. If the layout of the room changes, record the different configurations also. You could also record primary and secondary activities, individual and group activities. How many people does the space accommodate?
- Activity analysis for teachers – Write down all of the different activities performed in the space and show where these occur on the plan. If the layout of the room changes, record the different configurations also. You could also record primary and secondary activities.
- Activity analysis for specific users eg. a person in a wheelchair
- Active and passive, noisy and quiet activities – observe how people interact within the space
- Circulation diagram of how students move around the space including where they enter and leave the space

Today's Classroom

CONT.

ACTIVITY

- Circulation diagram of how teachers move around the space including where they enter and leave the space
- Favourite or preferred places, equipment, furniture
- Activity analysis in adjacent rooms or outside

One person in the group will observe people using the space with a digital camera and construct an image board with photos and key words on an A3 poster.

As a team have a look at each sheet and record in a table on another A3 sheet the 'problems' and the 'opportunities' for improvement of the user experience based on your observations. Each group to share their findings with the whole class.

If it is possible to rearrange furniture layouts in the classroom, each group is to reorganise the layout of the classroom with existing furniture and then get the feedback from a whole class discussion about how this changes the user experience. Each group to record the layout and the findings in their journals.

Task (Emotional mapping)

Each design team to get together with another design team. Pair up one person from each design team and conduct an interview with each other about how you feel in the space, asking some questions like:

- Do you feel motivated to learn in this space? If not why not? How could this be improved?
- Do you feel comfortable to learn in this space? If not why not? How could this be improved?
- Give me three words that describe how you feel when you are in this space?
- What about the space is contributing to this feeling?
- Give me three words that describe how you want to feel in this space?
- How do you think this could be achieved?
- In what emotional state do you think you learn the most effectively? Provide 3 key words.
- Think of another space that has those qualities. This could be anywhere – at the beach, in a forest, etc.

Assemble back into your design teams and discuss the answers you received to your questions. As a team record in a table on an A3 sheet a summary of the 'problems' and the 'opportunities' for improvement of the feel of the space. Provide 3 key adjectives about the 'problem' qualities and 3 key words about the 'opportunity' qualities. Each group to share their findings with the whole class.

Task (Design Brief for Tomorrow's Classroom)

In your teams revisit your ultimate learning experiences from Exercise 1 and decide on one that could be performed in your classroom, if it is redesigned. Based on this learning experience, you will write a design brief for the design of 'Tomorrow's Classroom'.

Your brief will need to include 3 parts – Functional requirements, User requirements and Desirable Qualities and you will need to include the type of information that you gathered in the last 3 exercises. Perhaps break up your team to work on different areas of the brief.

Each team to present their design briefs back to the whole class in Pecha Kucha format.



Have you considered?

- Teams can choose a different site for 'Tomorrow's Classroom' if the existing classroom does not suit the proposed learning experience.
- Students could do a walkthrough of the school identifying potential opportunities for the site for 'Tomorrow's Classroom' and identify reasons for suitability.
- Students could do a site visit to various workplace environments and analyse the user experience and how that experience could be applied to the design for 'Tomorrow's Classroom'.

Today's Classroom

CONT.

REFLECTION

Students are asked to document reflections, notes and sketches in a student journal.

Prompts for reflection:

Task (Physical mapping)

- If we consider future technology, how might this affect the physical environment?
- Are there any environmental problems/concerns with the space/site?
- Observe your classroom at different times of day. Eg. sun penetration in the morning and afternoon to get an understanding of the classroom needs all day

Task (Experience mapping)

- If we consider future technology, how might this affect the activities and user experience of the classroom?
- Is the physical space having a detrimental effect on the how the users interact? How could this be improved to improve the learning experiences?
- Ask a hypothetical question. What if..... the classroom of the future was more like a business workplace? or a library? How would this affect the user experience?

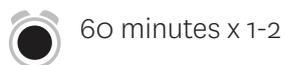
Task (Emotional mapping)

- If we consider future technology, how might this affect the feel of the classroom?
- In what emotional state do you learn the most effectively? Provide 3 key words.
- Interview your teacher or a person who does not use the space very often.
- What 3 key adjectives represent your aspirational qualities for the space?

DOCUMENTATION

- In keeping with the Reggio Emilia philosophy of 'making learning visible', students to scan reflections, brainstorming, notes, sketches and image boards, and record design process with video or photography to include in an online wiki for the project
- Posters and Analysis Diagrams can be pinned up in the classroom for future reference.

Tomorrow's Classroom



METHOD

Whole class (approx. 25) working in six groups/teams of 4

ACTIVITY

Thinking back to principles 6 and 7 of the Reggio Emilia Philosophy we mentioned earlier, in the following exercises you will develop your ideas for 'Tomorrow's Classroom'. Of course, as designers, we need to be constantly thinking responsibly and sustainably, with regard to conserving our environment for future generations.

In your design teams, each person brainstorm a 'prototype' idea for 'Tomorrow's Classroom' and then share your ideas. Select the idea or a combination of ideas that the group feels has the most potential to be effective. Review this idea against the objectives in your design brief.

Develop this idea more fully so it can be presented as a 'working design'. Development can include sketching, diagramming, model making, image/colour board (colours/textures/descriptive words) or whatever experimentation you need to think the idea through.

Each design team to meet with another team and discuss your design brief and idea for 'Tomorrow's Classroom, mentioning the functional aspects, how it will be used, and the desired qualities of the space. Record the feedback and suggestions from the other team. Consider asking the following questions:

- How will this solution positively affect the interactions between students, teachers, community and parents?
- Will this be an improvement on your current classroom experience?
- Is the design solution sustainable? How will it affect the environment?
- Does this solution take into account different cultures and age groups?
- How will your design impact on student learning?
- How does your design reflect the main principles of the Reggio Emilia philosophy?

Regroup as a team and discuss how some of the feedback might improve your design solution. Refine your ideas so that you are ready to implement your design solution in the next exercise for presentation to the final group.



Have you considered?

- To commence this exercise, consider inviting an architect or interior designer specialising in education design to visit the class to talk about their work, their thoughts on the future of learning environments and what it means to be a designer, to set the scene and inspire the students about possibilities. They might talk about the design thinking process and its role in innovation.
- Consider inviting a guest designer/s or other teachers to critique the design ideas also and give feedback on ideas for improvement and direction prior to finalising the designs

REFLECTION

Prompts for reflection:

- How does your design reflect the main principles of the Reggio Emilia philosophy?
- How does your design fulfil the Functional requirements, User requirements and Desirable
- Qualities that you outlined in your design brief?

Students are asked to document reflections, notes, ideas and sketches in a team journal.

DOCUMENTATION

In keeping with the Reggio Emilia philosophy of 'making learning visible', students to scan reflections, brainstorming, notes, sketches and image boards, and record design process with video or photography to include in an online wiki for the project.

Pitch to the Principal

CONT.



60 minutes x 1-3



Implement

METHOD

Whole class (approx. 25) working in six groups/teams of 4

ACTIVITY

In this activity you will utilise the strengths of your team to collaborate in preparing a visual and verbal design presentation of your idea for 'Tomorrow's Classroom', to be delivered to the Principal or one of the Heads of Department in your school.

In your design team construct a model of your classroom design and an accompanying presentation for your client. As this is a group effort, divide up the tasks between members of your group. One team member could be thinking about how the design and model will be presented to the larger group.

Prepare a verbal presentation of no more than five minutes that explains the project – from the development of the design brief, to the prototype phase, to the final 'working design' solution. Talk about your ideas and not just about what you did. Refer back to your brief and talk about how your solution fulfils the aspirations for your design brief and how it relates to the Reggio Emilia Philosophy of learning. Will your 'Tomorrow's Classroom be 'The Third Teacher'?

Present your design idea and model to the rest of the class and the judging panel.

After the presentation, discuss as a team how well you fulfilled your client brief and how you could improve on your design, taking into consideration some of the feedback you received. Document these reflections in your journal.



Have you considered?

In keeping with the Reggio Emilia Philosophy of involving community and parents in learning, consider inviting a guest designer or representative from local industry, and parents to form a judging panel to critique the group presentations alongside the school representative and give constructive feedback on ideas for improvement and future development of the designs.

REFLECTION

Prompts for reflection:

- Think about materials and the emotive and experiential qualities that they will bring to your design. How will you recreate them in your model?
- Can you use photographs of your model in the exercise for marketing of your idea? If so, how might this influence how you build your model?
- What might be the implications of your classroom design on student learning?
- What are your thoughts on the Reggio Emilia concept of the role of environment as the 'Third Teacher'?
- How important is the design of our learning spaces?
- What are some of the tools you have learned during this project that have helped you think about your learning experiences at school?
- How do you think school environments of the future might look?

Pitch to the Principal

DOCUMENTATION

- In keeping with the Reggio Emilia philosophy of 'making learning visible', students to scan reflections, brainstorming, notes, sketches, image boards, and record design process with video or photography to include in an online wiki for the project.
- Teachers archive whole group outcomes, record design process and final presentations.
Photograph and video (in an appropriate video studio environment) the final verbal presentations.
- Display finished presentations (with videos of the verbal presentations) in a public exhibition involving the students, community, parents, teachers and principal. Students from other year levels and subject areas could also view this. The suggestion box from Exercise 1 could be used to record feedback about the ideas for later reflection and discussion as a class group.

