

CUA - Creative Arts and Culture Training Package
CUA20215 - Cert 2 in Creative Industries



Unit

BSBDES201

Follow a design process

*This is not to be used for training purposes.
SAMPLE ONLY*

Student/Trainee Manual



Passing Lane Pty Ltd
PO Box 975
COWES VICTORIA 3922

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SAMPLE SAMPLE

STUDENT/TRAINEE DETAILS

Student/Trainee Name

Student/Trainee Email

Teacher / Trainer Name

School / Institution / Training Organisation / Employer

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INTRODUCTION

This manual was developed to provide training content that addresses the specific 'Unit of Competency' as outlined in the following pages.

We encourage you the student / trainee to take your time when reviewing this content and seek any assistance from your teacher/trainer should you have difficulty in understanding the information.

LEARNING ACTIVITIES

Also included in this Student / Trainee manual are a series of Learning Activities.

The learning activities in the student and/or trainee manuals are 'Form Enabled' so that if the resources are delivered online, the activities can be entered in using the computer keyboard.

Each learning activity is identified with the following icon.

A blue rounded rectangular button with the text "Learning Activity" in white, bold, sans-serif font.

Learning activities come in the following forms.

- ☆ Questions
- ☆ Research
- ☆ Tasks
- ☆ Interviews

INTRODUCTION—CONT'D

Questions

Questions generally relate to the information presented on previous pages. Questions will also include multiple choice questions, 'Yes' and 'No' questions and/or 'True' and 'False' questions.

Research

This type of learning activity requires you to locate information by using research methods. The research methods could include:

- ☆ Internet searches
- ☆ Reading textbooks and other reference sources
- ☆ Location visits

Tasks

This learning activity type requires you to actually do something and some examples of tasks may include:

- ☆ Creating reports
- ☆ Visiting locations such as workplaces
- ☆ Performing an activity in a workplace

Interviews

This learning activity type would require you to interview person(s) in an actual workplace environment or a person(s) who are experienced in the industry sector which you currently are undergoing training.

You will be made aware of the type of learning activity by noting the learning activity type displayed under the learning activity icon.

INTRODUCTION—CONT'D

USING THE FORM ENABLED FEATURE

If you are using this manual online, you can fill in some of the answers using your computer keyboard.

Your teacher or trainer will provide you with the information and instructions on how to use the 'Form Enabled' feature in this manual.

SELF ASSESSMENT

At the end of each manual is a series of questions that you should review and answer either Yes or No.

The term 'Self Assessment' means you will ask yourself these questions and therefore is no need to provide the answers to the self assessment questions to your teacher or trainer, unless they require you to do so.

This self assessment is to ensure you have reviewed and understood the information that was presented in this manual.

If you answered 'No' to any of these questions or are unsure of your understanding in any of the topics reviewed, you are encouraged to go back and review the information again and/or seek the assistance of your teacher or trainer.

UNIT OF COMPETENCY OVERVIEW

The following pages are extracts from Training.gov.au website and outlines this specific 'Unit of Competency' including the 'Elements' and the 'Performance Criteria'. The content within this manual has been developed to address this unit.

BSBDES201 - FOLLOW A DESIGN PROCESS

ELEMENT	PERFORMANCE CRITERIA
1 Clarify the challenge	1.1 Confirm the nature and scope of the challenge with stakeholders 1.2 Agree on specific objectives with stakeholders 1.3 Identify constraints that may impact the design process 1.4 Identify and source relevant supporting information and assistance
2 Explore different ideas and solutions	2.1 Generate a range of ideas to respond to the challenge 2.2 Explore different options and ideas for meeting objectives 2.3 Involve others in the process of developing ideas and solutions
3 Select and present a solution	3.1 Reflect on different ideas and feedback, and select a preferred solution 3.2 Summarise the key ideas in the solution and present to stakeholders in appropriate format 3.3 Obtain any required approvals to take the solution to the next stage
4 Implement solution	4.1 Schedule key tasks and organise resources to support implementation 4.2 Carry out testing, prototyping or trialling of the proposed solution 4.3 Maintain any required documentation 4.4 Identify problems and seek advice and guidance from others
5 Evaluate solution	5.1 Check success of the solution based on original objectives 5.2 Seek feedback from appropriate stakeholders 5.3 Review both the solution and the process undertaken to develop the solution as part of an ongoing learning process

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Section One

Clarify the Challenge

FOLLOW A DESIGN PROCESS

SECTION ONE—CLARIFY THE CHALLENGE

INTRODUCTION

Design is traditionally thought of as applying to physical objects – such as houses and other buildings, furniture, ornaments and landscaping. But just about everything made and done by humans is the subject of a design process.

Design is applied to products, services and systems. It is about identifying problems, challenges or issues that need addressing, setting objectives to solve the problems, and planning to meet them through the implementation of solutions.

It is about collecting ideas, critically analysing and evaluating them and identifying the right or best solutions. It involves recognising the constraints, identifying resources that will be required and scheduling the key tasks required in order to make the right course of action happen.

The process continues through the implementation stage, and includes the testing, trialing and evaluation of solutions, as well as making any improvements or adjustments necessary.

In these training materials we look closer at the 'design process'.

SECTION LEARNING OBJECTIVES

At the completion of this section you will learn information relating to:

- ☆ Confirming the nature and scope of the challenge with stakeholders
- ☆ Agreeing on specific objectives with stakeholders
- ☆ Identifying constraints that may impact the design process
- ☆ Identifying and sourcing relevant supporting information and assistance



**CONFIRM THE NATURE AND SCOPE OF THE CHALLENGE WITH STAKEHOLDERS
AND
AGREE ON SPECIFIC OBJECTIVES WITH STAKEHOLDERS
AND
IDENTIFY CONSTRAINTS THAT MAY IMPACT THE DESIGN PROCESS**

(Over the next few pages we cover three 'Performance Criteria' points at the same time to avoid repetition)

Design can mean a lot of things. There is no universally accepted definition of design, but generally it refers to the planning and strategic approach adopted to achieve a certain outcome.

Design relates to the planning of the development of a product, service or system. This includes just about anything you can think of – including cars, clothes, computer networks, buildings, sports stadiums, websites, jewellery, cutlery, hand tools, pet accessories, advertising, games, delivery of public health or education services and the taxation system.

A design process consists of various planning stages:

- ☆ **Initial planning** – liaising with all stakeholders; preparation of a design brief or statement of specific goals to be achieved; research; sourcing information and other resources needed; identification of potential and real constraints.
- ☆ **Gathering ideas** – brainstorming; researching and reviewing a range of other products, services or systems; seeking input from all involved in the design process.
- ☆ **Identifying solutions** – processing and synthesising all feedback and ideas; choosing the best option; final specifications of the product, service or system.
- ☆ **Implementing solutions** – scheduling tasks; organising resources; developing prototypes; working collaboratively; giving and receiving feedback; developing products, services or systems.
- ☆ **Evaluating solutions** – checking outcomes against objectives; seeking and receiving feedback from stakeholders; reviewing the design process; evaluating effectiveness of solutions.



Any successful design project must be carefully planned.

The starting point is clarifying the challenge, issue or problem to be addressed. What is it that needs solving? What do we need to actually do? Clear objectives must be set – what is the purpose of a project? What is it setting out to achieve?

All stakeholders must be represented in the planning part of the design process – the nature and scope of the challenge can only be determined with their input.

Consider the example of a workplace where a significant part of the system involved in the actual delivery of products or services to a customer is restructured. Deciding the best possible means to do this can only be successfully done when all the people who will be affected are consulted. This includes all relevant staff and customers. It also includes any suppliers or consultants and government departments if necessary.

In the case of the commercial manufacture of a product or the provision of a service, the initial planning stage usually culminates in a design project brief, where the nature and scope of the project is outlined, agreed objectives stated and the manufacturing, testing, evaluation and final delivery stages all detailed.

For any type of design project, objectives should be SMART – specific, measurable, achievable, realistic and timely.

An important part of the initial planning stage is the identification of constraints that could impact on the design process. They might include financial constraints, limits on the number of people available with suitable expertise, lack of tools or equipment, the presence of competitors, government and legal requirements, resistance to change on the part of some stakeholders, just to name just a few.

Identifying constraints is critical – they establish boundaries for the design process in the case of constraints that cannot be changed and also present opportunities for a creative and lateral approach to minimising or eliminating the negative impact of those that can.



IDENTIFY AND SOURCE RELEVANT SUPPORTING INFORMATION AND ASSISTANCE

Establishing what information and assistance is needed, and where it will be sourced, is another critical part of the initial planning stage.

Information and assistance comes from many sources, including direct contact with people, governments, companies, other organisations, technical and reference manuals, published information in print or online and multimedia sources.

Once a problem or issue is identified, an important question to consider is what information from what sources is needed to help solve or improve the situation? Where might suitable ideas come from?

Factual information and ideas come from many sources. They include:

- ☆ Directly from people
- ☆ Published information online or in print
- ☆ Conventional media
- ☆ Multimedia sources
- ☆ Your own questioning and surveying (first-hand research)

People, groups, companies, other organisations and governments all make information and ideas available in different ways.

Both critical and creative thinking involves gathering information, examining ideas, critically evaluating and assessing them, applying solutions and continually improving them.

A vital part of this process is to filter information and gather only relevant and useful material.



RESEARCH METHODS

There is a skill to doing information research. There are two main methods you can use:

- 1) Direct information gathering
- 2) Indirect information gathering

Direct method—Gathering direct information is the best form of research and the most reliable form of acquired knowledge. It involves personal research and requires you to gather the information from reliable sources. Direct information should be the type of information you concentrate on. Examples of places from which you can gather direct information can include:

- ☆ Credible industry approved written materials
- ☆ Information provided by a qualified person in the subject manner
- ☆ Training sessions
- ☆ Websites of known credible organisations or persons

Indirect method—Indirect information is the next best form of research and should only be used as support information for direct information gathering. Do not base your all your research and gathered knowledge on indirect information.

Indirect information can come from other sources, for example, other colleagues, those providing information that clearly supports other commercial interests and so on. For example, friends, family and associates may have their own view on the subject matter that you are researching information for.

Always take indirect information and confirm its reliability from what you already know. Indirect information sources should not be solely relied on .

**Learning
Activity**

Task

LEARNING ACTIVITY ONE

Individually or in pairs, take each of the following and identify the main objective each one sets out to achieve together with an appropriate time frame, the range of stakeholders that might be involved during the design process and the type of human and other resources that might be required to develop the product, service or system.

The first one is done for you by way of example.

- 1) Public transport ticketing system

Objective – to enable patrons of the system to purchase and use tickets as conveniently as possible.

Range of stakeholders – public transport users, management and staff of companies that operate buses, trains, trams etc., the government, advocacy groups, tourism bodies, all personnel involved in design, implementation and review.

Human and other resources needed – IT designers and programmers, manufacturers, installers, management and operational staff, consultants, PR and marketing staff; customer relations staff; software, hardware, data security and backup systems.

- 2) An interactive museum exhibition

3) A live music venue

4) The design on the 'tails' side of a coin

5) A pair of work boots

Section Two

Explore Different Ideas and Solutions

FOLLOW A DESIGN PROCESS

SECTION TWO—EXPLORE DIFFERENT IDEAS AND SOLUTIONS

INTRODUCTION

Ideas come from many sources. When people work through a design process, many more ideas are possible than when an individual works alone. Ideas come from inspiration, from thinking, reflecting, researching – looking at how others have solved similar problems or met similar challenges, considering how ideas could be changed or improved.

Everyone should be listened to, not judged and participants should be encouraged to feed off, and add to, the ideas of others.

Gathering ideas is one thing – critically evaluating and assessing their suitability is another. Ideas must be explored, discussed, scrutinised and tested. Will they provide solutions that meet the objectives? How practical and possible are they? Are they new ideas, or are they being implemented elsewhere?

We look at these topics more closely in this section.

SECTION LEARNING OBJECTIVES

At the completion of this section you will learn information relating to:

- ☆ Generating a range of ideas to respond to the challenge
- ☆ Exploring different options and ideas for meeting objectives
- ☆ Involving others in the process of developing ideas and solutions



GENERATE A RANGE OF IDEAS TO RESPOND TO THE CHALLENGE

AND

EXPLORE DIFFERENT OPTIONS AND IDEAS FOR MEETING OBJECTIVES

AND

INVOLVE OTHERS IN THE PROCESS OF DEVELOPING IDEAS AND SOLUTIONS

(Over the next few pages we cover three 'Performance Criteria' points at the same time to avoid repetition)

People in certain jobs, especially in design work are involved in work where much of the thinking is creative. Their job is to research, initiate, develop and realise ideas and are often the type of people most of us would readily think of in relation to creative thinkers in creative industries.

But creative thinking can be applied just about anywhere – to any problem. Creative thinking is imaginative and looks at a range of possible solutions.

There are a number of methods through which creative thinking can bring about improvement. They include:

Evolution – where better ideas are developed over time.

An example is vehicle technology. Compare a vehicle built 100 years ago with one built today. Then compare those built 50 years ago, 20 and 10 years ago – with one built today. Evolutionary changes in ideas and technology mean today's vehicle is far superior to those built decades ago.

Revolution – where a completely different idea is used to solve a problem.

An example is personal insect protection. People sitting outside on a warm night attract mosquitoes and other insects. Over many years personal roll on spray on products have been available, which work with varying degrees of effectiveness, as do fume-emitting candles and oils. A revolutionary idea was the illuminated zapper, which attracted the insects to another point altogether, away from people and killing them once they land on it.

Synthesis – combining two or more existing ideas to make a new third idea.

An example is combining mobile phone technology with digital camera technology to create mobile communication devices that can take photos, record video and communicate visually with anyone across the world.



Reapplication – looking at something old in a new way.

For example, the rotary clothesline is a well-known Australian invention. As back yards became smaller in the latter decades of the 20th century, the fixed clothesline became less popular because of the space they occupied. One solution came in the form of a collapsible rotary clothesline that functions the same as a fixed one, but which can be folded and removed from the ground when not in use.

Changing direction – shifting focus from one angle of a problem to another.

Consider the example of a highway authority, which had issues with skateboarders skating in a curved concrete drainage ditch alongside a highway. The authority erected a fence, which was cut through. They erected a stronger fence, which was also cut through. They put up threatening signs, which were ignored. Finally, some creative thinking was applied – the authority identified the problem as the fact the skateboarders wanted to skate in the ditch, not that they kept breaking through the fence. The solution was to put roughly finished concrete along the ditch, which removed the skateboarders' desire to get in there, but still allowed the drainage ditch to function as it should.



GENERATING IDEAS

Here are two techniques that encourage idea generation:

1) *Brainstorming:*

Brainstorming is an effective way to generate ideas aimed at meeting specific objectives. All participants are focused on the same set of challenges or problems and should be encouraged to let go of boundaries – think creatively, laterally, even illogically. In the initial stages, no ideas should be ruled in or out.

Brainstorming is designed to generate ideas. It is usually carried out in groups numbering anywhere between two and a dozen or more. Groups of between four and eight generally work well.

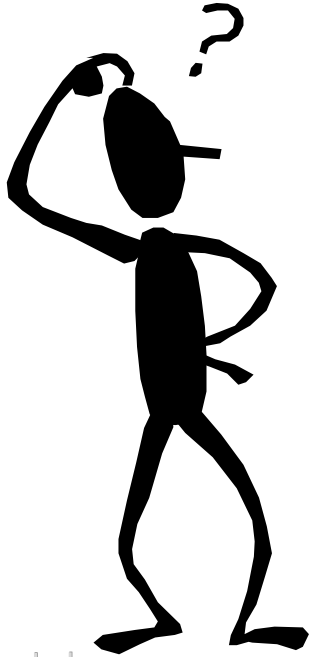
With every person in the group contributing and discussing ideas, brainstorming is particularly useful for tackling more specific problems, rather than general ones.

Brainstorming works best when people don't judge any ideas during the session – it is about listening to all the possibilities that individuals in the group can come up with.

It is also important that everyone thinks freely and lets their imagination run. Ideas can be developed very well during a brainstorming session. Group members should be encouraged to add to the ideas of others.

Recording ideas is critical – it can be done in a range of ways, such as making lists of dot points and/or diagrams, mind maps, and audio or video recording of a brainstorming session. Depending on the size of the group, a dedicated non-participating observer/recorder may be preferable.

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2) Asking the six important questions:

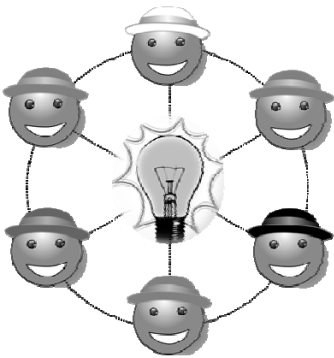
Who?
What?
Where?
When?
Why?
How?

They are good questions to ask to encourage a flow of ideas.

Take an idea and ask:

- ☆ **Who** is involved/affected; who else needs to be brought in; who won't be involved; who, if anyone, needs to take the lead; who is best to do what?
- ☆ **What** is it all about; what would happen if this idea was implemented; what are the positive and negative outcomes; what if something goes wrong?
- ☆ **When** does it need to happen; how important is the timing; what if it can't be organised in time?
- ☆ **Where** would things take place; where would they be based; is it the best place – where else, if anywhere, could be suitable?
- ☆ **Why** do it this way; what are we trying to achieve; why did we make the decisions we did; why will/did things work and why won't/didn't they?
- ☆ **How** can this be achieved; how will this idea help to achieve objectives; how can things be improved/changed; how are we safeguarding against failure?

Six Hats



THE SIX HATS

The ability to think creatively requires individuals to recognise and move outside of their own conditioning and biases as well as explore different ideas and realities. For many this is a difficult step to take. One way in which it can be made easier is by using the six thinking hats, a method developed by Dr. Edward De Bono.

The theory behind the method is that the human brain thinks in distinctly different ways. De Bono identified six states where the brain consciously processes thoughts about certain aspects of issues being considered. Each of these states is associated with a colour, which De Bono assigned to hats to represent different types of thinking. Metaphorically, or sometimes literally, individuals put on different coloured hats to think a certain way about issues or problems.

The colours and states of thinking are:

- ☆ **1) Information** – the white hat. This state is about considering what information is available – what are the facts? What information is needed and where will it come from?
- ☆ **2) Emotions** – the red hat. This state is about instinctive or emotional feelings about issues or problems. How do you feel right now? No justification or logic is applied, and feelings can change.
- ☆ **3) Negative judgment** – the black hat. This state is where logic is applied to identify negative points, faults or barriers. What are the risks? Where could failure occur?
- ☆ **4) Positive judgment** – the yellow hat. This state is where logic is applied to identify positive points, benefits and harmony. Why are these ideas useful and what good things will come from them?
- ☆ **5) Creativity** – the green hat. This state is about provoking and exploring ideas and thoughts. What are the alternatives?
- ☆ **6) Thinking** – the blue hat. This state involves thinking about thinking – what type of thinking is most effective for this situation? How does the thinking need to be organised and planned?

Applying the six thinking hats can enhance higher level thinking and assist individuals to explore different approaches and different realities when it comes to addressing issues or solving problems. Consciously breaking out of one's own mindset and 'normal' framework of thinking can provide a much great range of perspectives.

**Learning
Activity**

Task

LEARNING ACTIVITY ONE

Take each of the following ideas and write at least one objective, which follows the SMART principle. Alternatively, come up with three ideas of your own. Check with your trainer or teacher for feedback.

- ☆ A mechanism that allows wheelchair-bound individuals to access a viewing platform, which is 60 metres up a tree.
- ☆ A service to residential homes that supplies 'live music in your lounge room'.
- ☆ A new app (you decide its purpose...).

For each of the ideas you've used in this activity, make a list of potential constraints that could impact on the project.

Compile your objectives in a report form and present it to your teacher/trainer for review and discussion.

Section Three

Select and Present a Solution

FOLLOW A DESIGN PROCESS

SECTION THREE—SELECT AND PRESENT A SOLUTION

INTRODUCTION

As we have learned earlier, 'creative thinking' is defined as a way of thinking differently about things – looking at problems or situations from different and fresh perspectives, which may bring into play a range of solutions or courses of action, which can be both conventional, as well as unconventional.

At some point a solution needs to be chosen and presented to the stakeholders.

In this section we look at the steps involved in selecting and presenting solutions.

SECTION LEARNING OBJECTIVES

At the completion of this section you will learn information relating to:

- ☆ Reflecting on different ideas and feedback and selecting a preferred solution
- ☆ Summarising the key ideas in the solution and presenting to stakeholders in appropriate format
- ☆ Obtaining any required approvals to take the solution to the next stage



REFLECT ON DIFFERENT IDEAS AND FEEDBACK, AND SELECT A PREFERRED SOLUTION

There can be a number of solutions to the same problem. A vital stage in the design process is identifying the idea or ideas that best meet objectives. They must overcome or resist project constraints, clearly solve the problem, or meet the challenge and be realistically possible to implement. SMART solutions meet SMART objectives.

Sometimes clear 'best' solutions stand out. Other times, particularly when working collaboratively, the best solutions can be the result of a combination of a number of ideas.

A popular method on identifying solutions is called 'mind mapping'. A mind map is an excellent tool to both broaden and focus thinking. Start with an idea that is drawn in the middle of the page and then generate all associated terms, ideas and thoughts that can be generated radiating from the original idea in the middle.

From there, try to take it one more step. You now consider all of the 'what-ifs'.

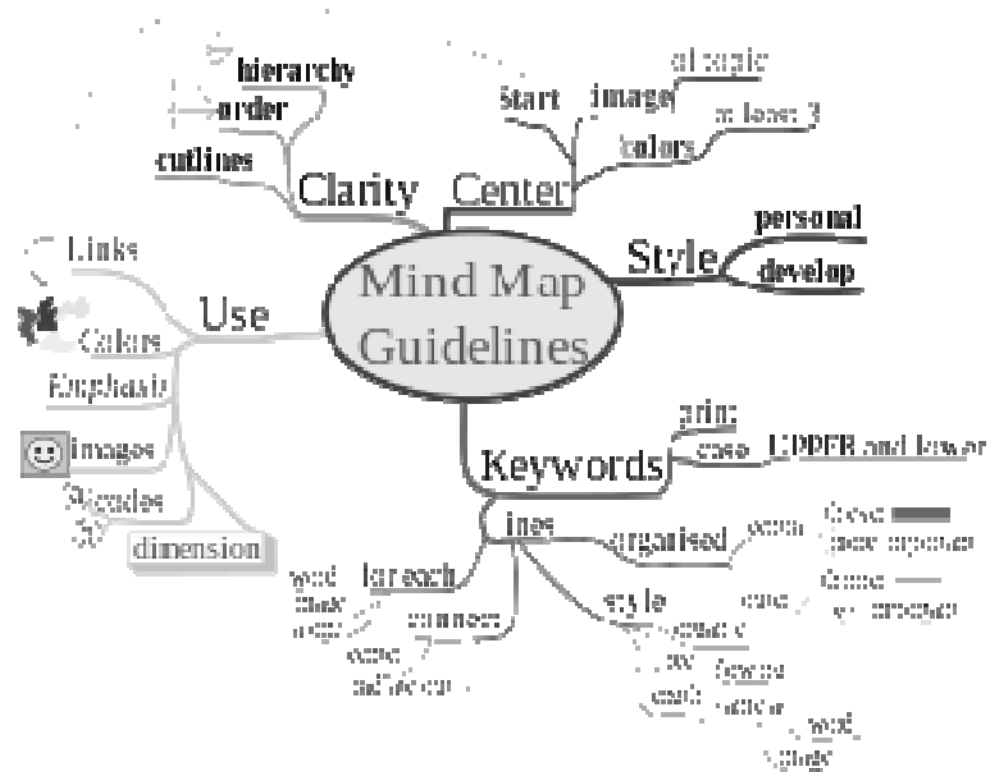
Those who use mind mapping extensively offer these tips:

- ☆ **Use colours, drawings and symbols copiously**—Be as visual as you can, and your brain will thank you. I've met many people who don't even try, with the excuse they're "not artists". Don't let that keep you from trying it out!.
- ☆ **Keep the topics labels as short as possible**—They should be kept to a single word or, better yet, to only a picture. Especially in your first mind maps, the temptation to write a complete phrase is enormous, but always look for opportunities to shorten it to a single word or figure – your mind map will be much more effective that way.
- ☆ **Vary text size, colour and alignment**—Vary the thickness and length of the lines. Provide as many visual cues as you can to emphasise important points. Every little bit helps engaging your brain.

As you can see to the left (an enlarged version is on the next page), the keywords are written on the 'branches' coming out from the centre. Some of those branches have other branches radiating from them and so on. Some of those branches end at an image or illustration.

There is no limit as to how big or how small the mind map can be. Many people start the mapping and then leave and come back to it. It is often used as a brainstorming tool where everyone has input into the mind map.

The main goal of mind mapping is to exhaust all 'what-if's, variations, associations, connections, perspectives and more that leads to a preferred solution.



**Learning
Activity**

Question

LEARNING ACTIVITY ONE

Those that use 'mind mapping' extensively often suggest three things about creating a mind map. What were those three tips?



SUMMARISE THE KEY IDEAS IN THE SOLUTION AND PRESENT TO STAKEHOLDERS IN APPROPRIATE FORMAT

AND

OBTAIN ANY REQUIRED APPROVALS TO TAKE THE SOLUTION TO THE NEXT STAGE

(Over the next few pages we cover two 'Performance Criteria' points at the same time to avoid repetition)

We all work or will work for someone and we need to communicate effectively with the management, for our own benefit, the benefit of the team and the benefit of the organisation. Sometimes we need some information. Or we might want to offer a suggestion about how to improve something. Or we might have a request, and require approval.

This is important especially when presenting new ideas to clients, or the organisation's management.

Regardless of the kind of communication, it is important to consider not only the content, but the way the content is communicated. If we communicate in a rambling, confused way, we do not put ourselves in the best light and we are less likely to get what we need from the management.

People (and managers) all differ in their preferences for different forms and styles of communication. Some want a great deal of information, while some only want the sparse essential details. Some are passive and sit quietly while you speak, while others use questions to draw the information from you.

It is important to recognise that your audience is unique, so you will want to pay attention to what they seem to prefer in terms of communication. Even though people differ, one thing is fairly consistent. Most people do not have too much time to waste in today's workplace. If you have something to communicate, it is best to say it in a way that is complete, effective, and short.

Also, as important are the tools you use in presenting an idea. Some tools that should be considered include:

- ☆ PowerPoint presentations
- ☆ Supporting printed information using illustrations, graphics or photos
- ☆ Whiteboard, flipcharts and other presentation equipment

Always remember:

"A picture speaks an thousand words."



Here are some basic pointers for those that want to present an idea to the management. Again, the idea is to put forward an organised, concise idea that will be easily heard by your audience.

You can follow the following pattern:

- ☆ Provide a brief description of the idea
- ☆ Give the reasons why you are suggesting the idea
- ☆ Explain what might be gained or lost if the idea is adopted
- ☆ Be prepared to answer questions

If you follow these simple approaches, you are more likely to get your ideas accepted, or at least heard. In addition, you will be showing that you have taken the effort to think out your ideas before approaching management or the client.

There may be times where the response to your new and creative idea is like when an immune system responds to a virus. People try to reject your idea in a number of ways. Do not be surprised and get frustrated or take it personally, it is human nature.

Depending on the corporate culture, it may take time for a new idea to be accepted and the more creative the idea, the longer it takes. Realising your creative solution may initially be rejected is half the battle. Plan on it, prepare for it and keep pushing forward.



Evaluating Key Ideas

IDEA EVALUATION STEPS

As a presenter of a new idea it is important that you understand from the management or client's point of view how any ideas or suggestions could be heard and fully evaluated. Many organisations assign a senior manager(s) as 'screeners' of ideas. They are always available to hear what employees, freelancers or contractors have as far as ideas or suggestions are concerned. The screeners then follow four simple steps in evaluating ideas.

The idea presentation—One employee or a team (the initiators) have an idea. They approach a screener (an expert in the particular area or a manager) for support. A screener must endorse an idea before sending it for evaluation. Once the screener endorses an idea, the employee/team and the screener work together to develop the idea and present it in the best light.

Screening—Screeners have multiple roles. As coaches, they work with employees or teams to strengthen, polish and present ideas. As champions once the idea is endorsed, they work with other senior managers and evaluators to ensure that it is thoroughly considered.

Evaluation—Evaluators assess the benefits and costs of an idea and recommend whether to adopt it. If necessary, they will consult with others before making the recommendation.

Approval—At this stage all the information required to make the decision should be available. Once approved, the idea would be implemented.

**Learning
Activity**

Task

LEARNING ACTIVITY ONE

This activity relates to a real design project, which is a key piece of evidence for this section.

Ideally it will involve a group of two or more people. It can be undertaken on an individual basis if that is the most appropriate option, but it is preferable that collaboration with others is possible, at least for some sections of the project.

As noted with each activity that refers to work on this project, it is important to see your teacher or trainer at each stage for ongoing feedback. Include all notes, documents and other relevant material relating to work on this project in your portfolio.

The first task is to identify a challenge, issue or problem that needs a solution. It can involve a tangible product or service; it can relate to a workplace procedure or process; it can be a project of any description undertaken for the specific purpose of achieving goals that improve, change or fix a situation.

At this stage, the requirement is to decide on a challenge, problem or issue that the design process will address. You may include some possible solutions at this stage, although it is not essential.

You must liaise with your teacher or trainer in selecting a challenge, problem or issue.

**Learning
Activity**

Task

LEARNING ACTIVITY TWO

This activity relates to your design project (see Activity One).

Identify all the stakeholders involved. Speak or otherwise communicate with them, or a representation of them, and brainstorm ideas about the problem, challenge or issue you've chosen. If necessary redefine it, or modify your original response to Activity Two.

Define the objectives for this design project. Make them SMART. Identify how these objectives reflect input from stakeholders.

Identify potential constraints on the project. Think of as many reasons as possible as to why there might be restrictions on what can be achieved.

Categorise them into those that cannot be changed or eliminated and those that can. For those that can, outline some ways in which this might be possible.

Identify the nature of further information and assistance likely to be needed in this design project. Where will it come from? How readily accessible is it, and who will be responsible for accessing it?

See your trainer or teacher for feedback on this part of the design project and present your notes to date relating to the design project for review and discussion.

**Learning
Activity**

Task

LEARNING ACTIVITY THREE

This activity relates to your design project (see Activity One).

Gather ideas about how best to solve your problem or meet your challenge. Brainstorm with others, source information and ideas from any relevant source. Record all the ideas initially put forward, and identify their sources.

Critically examine, evaluate and assess all ideas put forward. Reject any that will clearly be unworkable or do not meet specific objectives. Identify why each was rejected.

Keep those that have potential to achieve objectives. Identify why each was kept.

Comment as to whether any of the ideas presented different ways of meeting the same objective(s). What are the potential advantages and disadvantages of the different ideas?

See your trainer or teacher for feedback on this part of the design project and present your notes to date relating to the design project for review and discussion.

**Learning
Activity**

Task

LEARNING ACTIVITY FOUR

In Activity Three you filtered the ideas for your design project and recorded why each was either kept or rejected. You now need to identify your solution to the problem or challenge. Outline it and summarise all the reasons why this particular solution is deemed to be the most suitable arising from the ideas put forward.

Your summary should be presented in such a way that you can take it back to all stakeholders in this project to show them what the preferred solution is, and why. Presentation could include PowerPoints, written documents, charts, tables, checklists, etc.

See your trainer or teacher for feedback on this part of the design project and present your summary for review and discussion.

Section Four

Implement Solution

FOLLOW A DESIGN PROCESS

SECTION FOUR—COMPLETE WORK TASKS EFFECTIVELY

INTRODUCTION

There are several aspects to the successful implementation of an idea or solutions to a design project or problem.

There are scheduling the tasks in the project, testing the ideas/solutions and maintaining the documentation required throughout the project.

It is these topics we will review in this section.

SECTION LEARNING OBJECTIVES

At the completion of this section you will learn information relating to:

- ☆ Scheduling key tasks and organise resources to support implementation
- ☆ Carrying out testing, prototyping or trialling of the proposed solution
- ☆ Maintaining any required documentation
- ☆ Identifying problems and seek advice and guidance from others



SCHEDULE KEY TASKS AND ORGANISE RESOURCES TO SUPPORT IMPLEMENTATION

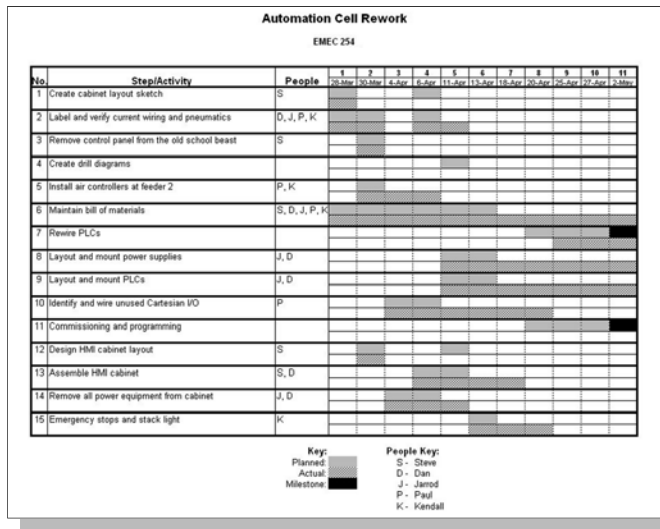
So we at this point assume that the ideas/solutions have been presented and the implementation of the idea/solution has been approved.

The next stage is to identify and ensure all required resources are available. Those resources would include, but are not limited to:

- ☆ Funding for the project or solution
- ☆ Human resources, including any freelancers or contractors
- ☆ Required technology such as computer hardware, software and other peripheral digital devices
- ☆ Office or work space including any required office furniture, equipment and amenities
- ☆ Communication requirements such as telephone and internet broadband connection
- ☆ Materials, both sundry and project specific
- ☆ Tools not considered office technology or digital devices

Once the resources have been identified and made available, the next step is to develop an implementation schedule.

The scheduling step can vary in complexity depending on the solution being implemented. If the solution involves completing many tasks, the scheduling may required careful thought as well as the use of scheduling tools.



GANTT chart

DEVELOPING IMPLEMENTATION PLANS

There are numerous software scheduling tools available. The most common one is called a 'GANTT' chart.

A GANTT chart, commonly used in project management, is one of the most popular and useful ways of showing activities (tasks or events) displayed against time required to do each.

On the left of the chart is a list of the activities and along the top is a suitable time scale. Each activity is represented by a bar; the position and length of the bar reflects the start date, duration and end date of the task. This allows you to see at a glance:

- ☆ What the various tasks are
- ☆ The order in which each task must be done
- ☆ When each task should begin and end
- ☆ How long each task is scheduled to take
- ☆ Where tasks overlap with other tasks and by how much
- ☆ The start and end date of the whole project

For simple projects, a spreadsheet application is useful.

Whatever form the plan will take, it needs to show all the potential tasks required in order to complete all the tasks involved in implementing the approved solution, the prioritised order of each task as well as an estimate of how long each task is likely to take.

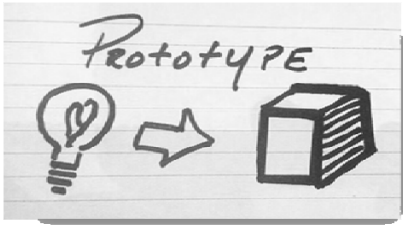
**Learning
Activity**

Research

LEARNING ACTIVITY ONE

We learned about the scheduling tool called the GANTT chart. There are two other scheduling techniques. We have listed them below. In this activity we want you to do some research and tell us how each one works.

Critical path**PERT (Program Evaluation and Review Technique)**



Prototyping Testing Key Ideas

CARRY OUT TESTING, PROTOTYPING OR TRIALLING OF THE PROPOSED SOLUTION

The effectiveness of a particular solution must be evaluated and tested early in the implementation stage. While considerable planning will have gone into identifying and implementing the solution, the only way to see if it actually works is to execute it and trial it.

In the case of a manufactured product, a prototype will allow testing and evaluation to occur before money is spent on manufacturing in bigger quantities. For products and services, testing with a small number of users is beneficial to gauge feedback and enable appropriate changes to be made in order to overcome any apparent design flaws.

It is rare that a solution is implemented, which achieves the desired objectives without a hitch – in any design project there will always be challenges or problems with implementing solutions.

- ☆ They may not work as intended
- ☆ They may prove too costly
- ☆ They may not be well received by those directly impacted
- ☆ They may not meet the expectations of stakeholders

The purpose of trialing solutions is to identify problems or potential problems. Addressing them may be relatively straightforward and uncomplicated, or it may require a major re-think.

**Learning
Activity**

Question

LEARNING ACTIVITY TWO

What might trialling, prototyping and/or testing ideas or solutions reveal?



MAINTAIN ANY REQUIRED DOCUMENTATION

Documentation and record keeping is always an important activity in any project, big or small.

In many design projects, there would have been brainstorming sessions, meetings and negotiation sessions. Notes would likely have (in fact should have) been taken. Many times these are called 'meeting minutes' and are compiled and distributed to the attendees and filed for future reference.

Also, there may be concept sketches, design drawings, working drawings and specification documents that need to be recorded, filed and made available for reference throughout the project.

In most cases bigger projects would require progress reports being sent to the stakeholders, so this would involve maintaining any information relating to the progress of the project and activities so that reports can be created.

If you are a freelancer or a contractor, you may need to provide management or clients timesheets and/or tax invoices. This means you would need to have a method of recording your daily (possibly hourly) activities.

Tasks and activities that involve a number of team members would often involve a level of communication such as memos, emails or facsimiles. Records of any communication related to the project should be kept and filed in a way that it can be retrieved if and when needed.

Any purchases or expenses incurred on behalf of the project would need to be recorded using tax invoices, any associated purchase orders and delivery documents. Most organisations have clear procedures when it comes to purchase and expense reporting.

If it is you that is producing the documentation, you need to ensure that the content is accurate, concise and easily understood.

If you are the recipient of any documentation, ensure that you understand the content and if not, clarify with the author of the document as to the areas do not understand.

**Learning
Activity**

Question

LEARNING ACTIVITY THREE

What were the seven types of documentation we mentioned in this Section?



IDENTIFY PROBLEMS AND SEEK ADVICE AND GUIDANCE FROM OTHERS

As the project progresses there may be times when unforeseen problems arise and you need to seek the advice or assistance of others in order to overcome these problems.

Often these problems are the type where external advice or guidance is what is needed.

It could be a problem you have encountered using some software, are needing to deal with some conflict in the team, cannot get through what is seemingly a simple problem... to name a few.

The issues or problems may be new to you, are frustrating you and slowing you down in accomplishing your tasks.

Some sources of advice and guidance could include:

- ☆ Technical help desks
- ☆ Your network of contacts in other businesses
- ☆ Past mentors, coaches, teachers or trainers
- ☆ Professional and industry associations
- ☆ Government agencies
- ☆ Specialised consultants

You may need to ask the advice and seek guidance from a more experienced colleague or team member or the organisation's management.

In almost all cases, if the problem is identified and analysed it can be resolved and it would often serve as a learning opportunity.

**Learning
Activity**

Task

LEARNING ACTIVITY FOUR

Tell us times when you had a problem that seemed so simple but you could not get to a solution, so you needed help. Tell us what the problem was and who you approached for assistance in resolving this problem.

Section Five

Evaluate Solution

FOLLOW A DESIGN PROCESS

SECTION FIVE—EVALUATE SOLUTION

INTRODUCTION

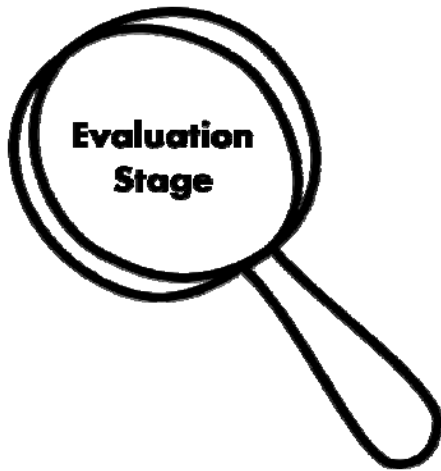
In the final stages of any design process is the evaluation stage of the implemented solutions.

In this section we look at what that involves and who is involved in the evaluation stage.

SECTION LEARNING OBJECTIVES

At the completion of this section you will learn information relating to:

- ☆ Evaluating solution
- ☆ Checking success of the solution based on original objectives
- ☆ Seeking feedback from appropriate stakeholders
- ☆ Reviewing both the solution and the process undertaken to develop the solution as part of an ongoing learning process



EVALUATE SOLUTION

AND

CHECK SUCCESS OF THE SOLUTION BASED ON ORIGINAL OBJECTIVES

AND

SEEK FEEDBACK FROM APPROPRIATE STAKEHOLDERS

(Over the next few pages we cover three 'Performance Criteria' points at the same time to avoid repetition)

The design process does not end after the idea and/or solution has been implemented.

It needs to be closely evaluated as to its success in meeting or achieving several objectives criteria.

The evaluation criteria would generally include:

- ☆ Was the solution implemented on time and within the budget?
- ☆ Has the solution successfully met all the project's original objectives?
- ☆ Are you and/or the team happy with the solution?
- ☆ Has the feedback from the stakeholders been positive?
- ☆ Is there still room for improvements or modifications?

The trialling, testing and/or prototyping stages would have revealed any major issues with the solution before the full implementation stage was completed.

The post implementation stage would generally reveal the thoughts, perceptions, opinions and further ideas from those involved in the project and those most affected by the solution, being the stakeholders.

It is at this stage that the initial project would be deemed completed and finalised. Any further changes and/or modifications to the solutions would often instigate a new design project.

**Learning
Activity**

Question

LEARNING ACTIVITY ONE

At the evaluation stage of a design project what five questions are commonly asked?

REVIEW BOTH THE SOLUTION AND THE PROCESS UNDERTAKEN TO DEVELOP THE SOLUTION AS PART OF AN ONGOING LEARNING PROCESS

At the evaluation stage of a design project, it is also time to do some personal evaluation and self-reflection.

Because following a design process is often a very creative processes, no two ideas, solutions or projects will likely be the same.

However, your creative approach and innovative ideas that were a result of the project will most likely affect how you approach other projects.

Your own performance should also be evaluated. Areas that should be reviewed could include:

- ☆ **Your relationship with others**—Do people show trust in what you say, respond positively to your requests and respond well to your ongoing encouragement? Do you feel you are a positive team player?
- ☆ **Your communication skills**—Are you able to easily and effectively communicate a wide range of messages to others and are you an active listener when others are interacting with you?
- ☆ **Ability to respond to feedback**—Do you respond positively to all feedback even if some is negative. Are you able to take advice, or guidance from others when developing ideas or solutions or interacting with others
- ☆ **Supportive and responsive nature**—Are you always finding ways to support your team's goal and objectives and are responsive when others start to experience difficulty in some aspect of the project? Do you show empathy and compassion when interacting with others?
- ☆ **Technical skills**—Is your ability to develop effective ideas and implement solutions at a level you believe they should be, or is there room for improvement?
- ☆ **Personal development**—Are you reasonably confident that you are abreast or up to date with new creative concepts, industry trends and technology equipment?

Improving your own performance will result in you being more effective and achieving the goals of every project you undertake.

There is room for everyone to improve, even those in the industry for many years have found areas that they needed to improve on.

You never stop learning!

**Learning
Activity**

Question

LEARNING ACTIVITY TWO

What six areas of self-evaluation were mentioned in this Section?

SELF ASSESSMENT

Self assessment is where you ask yourself certain questions to ensure you have understood what you have learned while reading this manual and completing the learning activities.

This unit requires you the student or trainee at the completion of your training to have a certain level of 'Required Knowledge' in which you would need to have acquired and in which you will be assessed on.

This self assessment section reviews this required knowledge by way of questions and if you are able to say YES to all of them you can be confident your assessment will be satisfactory.

- ☆ Do you understand what it means to confirm the nature and scope of the challenge with stakeholders as well as agree on specific objectives with stakeholders?
- ☆ Do you agree that it is important to identify constraints that may impact the design process?
- ☆ Would you be able to identify and source relevant supporting information and assistance if needed?
- ☆ Do you think you have the ability to generate a range of ideas to respond to the challenge, explore different options and ideas for meeting objectives and involve others in the process of developing ideas and solutions if you were part of a project?
- ☆ Is it true that people in a project should reflect on different ideas and feedback, and select a preferred solution?
- ☆ Did you understand the need to summarise the key ideas in the solution and present to stakeholders in appropriate format and then obtain any required approvals to take the solution to the next stage?
- ☆ Could you explain if asked how to schedule key tasks and organise resources to support implementation, that included testing, prototyping or trialling of the proposed solution?
- ☆ If asked can you list what required documentation would be part of a project?
- ☆ If confronted with a problems would you seek advice and guidance from others?
- ☆
- ☆ Do you now know what it means to evaluate solution, check success of the solution based on original objectives including seeking feedback from appropriate stakeholders?
- ☆ Do you understand the importance of reviewing both the solution and the process undertaken to develop the solution as part of an ongoing learning process?

If there were any questions that you were unable to confidently say YES to, we encourage you to review the information again in this manual and if needed seek the assistance of your teacher or trainer.

NOTES

