**INTRODUCTION**

Critical thinking is thinking that is aimed at deciding what to believe or what to do.

Deciding what to believe is a matter of deciding what the facts are, figuring out what the

world is like, or at least what some little corner of it is like. We make these kinds of

decisions when we decide whether it is raining out or sunny, whether the movie was as

good as its billing, whether the restaurant has gotten better over the years, or whether we

should trust what our teachers tell us. In deciding what to believe on some matter we take

a stand on it. If it is a decision on a factual matter, like the decision about the weather

then we take a stand on what the facts are. If it is a decision on an evaluative matter, like

the one about the movie or the restaurant, then in deciding what to believe we are taking a

stand on what is good or better. In either kind of case, critical thinking is aimed at helping

us to make those kinds of decisions about what to believe.

**LEARNING OUTCOMES**

After completing this unit you will be able to:

1. use the tools and techniques of critical thinking

2. practice reflective writing effectively

3. utilize the techniques learned in their own and fellow teachers’ professional

development

**8.1 MIND MAPPING**

Mind Map is a powerful graphic technique which provides a universal key to unlock the

potential of the brain. It harnesses the full range of cortical skills – word, image, number,

logic, rhythm, colour and spatial awareness – in a single, uniquely powerful manner.

Mind mapping is one of the very best methods to optimize ones learning capacities and

understanding of how the elements of complex structures are connected. In so doing, it

gives you the freedom to roam the infinite expanses of your brain. Originated in the late

1960s by Tony Buzan, “Mind Mapping is a graphical technique for visualizing

connections between several ideas or pieces of information.” Each idea or fact is written

down and then linked by lines or curves to its major or minor (or following or previous)

idea or fact, thus creating a web of relationships.

Mind Maps are now used by millions of people around the world – from the very young

to the very old and are applied to every aspect of life where improved learning and

clearer thinking will enhance human performance. You are born with special “brain-

programs” to be able to learn and memorize everything you experience during your

lifetime. You have one “brain-program” to remember special occasions, one program that

remembers pictures, one that remembers structures, etc, etc. The fantastic thing about

mind mapping is that it uses these existing “brain-programs” and refines them! So Mind

mapping simply optimizes the power that you already have in your mind.

Mind Mapping is the easiest way to put information into your brain and to take

information out of your brain - it's a creative and effective means of note-taking that

literally 'maps out' your thoughts. And it is so simple.

According to Michael Michalko, in “Cracking Creativity”, a Mind Map:

. activates your whole brain

. clears your mind of mental clutter

. allows you to focus on the subject

. helps demonstrate connections between isolated pieces of information

. gives a clear picture of both the details and the big picture

. allows you to group and regroup concepts, encouraging comparisons between them

. requires you to concentrate on your subject, which helps get the information about

it transferred from your short-term memory to your long-term memory

**8.1.1 Importance of Mind Mapping:**

Mind Mapping help you to learn, organize, and store as much information as you want, and to

classify it in natural ways that give you easy and instant access (perfect memory) to whatever

you want. Mind mapping is one of the very best methods to optimize ones learning capacities

and understanding of how the elements of complex structures are connected. Mind Maps

have an additional strength: you would think that the more information you put into your

head, the more stuffed your head would become and the more difficult it would be to get any

information out. Mind Maps turn this thought on its head!

**8.1.2 Principles of Mind Mapping:**

The brain works in different ways. Different people think in different ways. However,

while your thinking and reasoning follow a structure that is personal to you, you still use

a number of techniques that apply to most people. There are certain “programs” loaded in

your consciousness. These programs are your “natural thinking software”. You get them

included with your mind when you enter this world. The brain works according to

certain basic principles, and you can use mind maps to take advantage of them to improve

your creativity and memory. There are several fundamental principles for mind-mapping:

**Pictures:** What you see, you will remember! You have an enormous capacity to

remember pictures and images. The brain constantly takes “photos” of your life and

stores these in a gigantic photo album inside your head, and you can actually retrieve

them at any given moment. This is very critical for mind mapping, since it is much easier

to remember a picture than it is to remember long lines of pure text.

**Headlines:** It is far easier to remember single words, short phrases and striking headlines,

than to remember pure text. This is quite self explanatory - you could try to quote this

entire chapter through hundreds of hours of studying – and surely fail anyway. Or you

could simply write down a headline for each important point, and still remember 95% of

the important information… it’s up to you.

**Connection:** Your consciousness always analyzes how things are connected to each

other. And when that is done, the mind creates an image to symbolize the structure. A lot

of the brain’s work is based on association and it automatically links different subjects

together to create a system. It is important to let your brain work the way it wants and

help it, instead of forcing it to take a certain direction. Your brain will be much happier,

and when it appreciates your help it rewards you with knowledge and the power to

remember.

**8.1.3 Techniques of Mind Mapping:**

**Brain Storming:** The map itself is quite similar to what is going on in your head. It’s all

one big mish-mash of information and nothing seems to be structured. But it really

doesn’t matter, because the only purpose of this technique is to get all those ideas into

print - to create a picture of everything you want to include. And I do mean everything

you can think of! After that, it will be easy to select the best ideas to include in your

project. More or less, the flow of creating this kind of mind map is as follows:

1. begin with the main topic

2. write some of the major, important sub-headlines

3. link these two additional sub-sub-headlines

4. repeat step 2 and 3 until your outline is completed

If you compare use of mind mapping with other forms of idea development, the

conclusion is clear - brainstorming is a superior technique to get your project started.

**The Flow:** This is a somewhat different type of mind map, extremely useful when you

need to see the continuity in a system, the step-by-step plan. It’s easy to get an overview

of the chain of events that you have to follow, the so called step by-step plan, when you

use a mind map The critical thing to remember is to write the chain of actions vertically,

and let every little sub-topic flow to the desired action horizontally. Just like in the mind

map above. Everything becomes so easy when using mind maps. You can get a full and

detailed overview of the entire structure, and free up your time to focus on performance

instead of planning. Just let your mind generate the ideas, write them down in a

chronological order, and remember to make plenty of space for new ideas and

suggestions.

**The Big Picture:** This is a very interesting and effective mind mapping technique, which

also happens to be my personal favorite. Actually, this technique is very personal. The

Big Picture is all about – to be able to combine all the techniques for best effect.

**8.1.4 Steps in Mind Mapping:**

1. start in the CENTRE of a blank page turned sideways. Because starting in the

centre gives your Brain freedom to spread out in all directions and to express itself

more freely and naturally.

2. use an IMAGE or PICTURE for your central idea. Because an image is worth a

thousand words and helps you use your Imagination. A central image is more

interesting, keeps you focused, helps you concentrate, and gives your Brain more

of a buzz!

3. use COLOURS throughout. Because colors are as exciting to your Brain as are

images. Colour adds extra vibrancy and life to your Mind Map, adds tremendous

energy to your Creative Thinking, and is fun!

4. connect your MAIN BRANCHES to the central image and connect your second-

and third-level branches to the first and second levels, etc Because your Brain

works by association. It likes to link two (or three, or four) things together. If you

connect the branches, you will understand and remember a lot more easily.

5. make your branches CURVED rather than straight-lined. Because having nothing

but straight lines is boring to your Brain.

6. use ONE KEY WORD PER LINE. Because single key words give your Mind Map

more power and flexibility.

7. use IMAGES throughout because each image, like the central image, is also worth

a thousand words. So if you have only 10 images in your Mind Map, it’s already

the equal of 10,000 words of notes!

Creativity is the key to your mental success, both in terms of coming up with startling

and original ideas, and in terms of memorizing whatever you want. Your brain is

naturally creative and you need only to provide it with the right environment to unlock its

full creative potential. Nurture every opportunity you have to be creative, always try to

be flexible and to get away from the norm - believe that your ideas, like our brain, are

truly exceptional - and remember that Mind Maps are your greatest ally when it comes to

releasing your genius within. Mind Maps are an excellent tool for helping you write well-

structured and focused writings. They are particularly helpful as they enable you to see

the whole picture of your argument and objectively assess if your argument and the

structure of your writing are logical. Not only can Mind Maps help you to plan what you

intend to write, but they are also a useful tool when it comes to writing

out in detail: you can keep referring back to it to check you are on track.

**8.2 PORTFOLIO DEVELOPMENT**

Changing practice in the field of assessment has focused attention throughout the world

on alternative forms of assessment of students and simultaneously of professionals.

Portfolio-based assessment is one of the approaches that have shown considerable

promise in the teacher education programs. A professional portfolio is a representative

group of documents that provides evidence of one's knowledge, attitudes, beliefs and

skills. It is a work in progress that reflects the evolution and refinement of professional

and personal development. In the portfolio development based assessment, each student

creates a portfolio that is individualized based upon talents of the student. The student

receives faculty and peer input at each stage of the process resulting in a collaborative

journey of collegial sharing between the student, the faculty and other students. Broadly

defined, a portfolio is a systematic collection of artifacts and reflections that demonstrates

evidence of student achievement of specified competencies or standards, according to a

defined set of principles (AERA, 1999; NPBEA, 2002). Portfolios are gaining attention

because proponents believe that portfolios are better predictors of student 2 performance

in "real life" situations as well as capable of improving students' higher order thinking

skills and learning experiences.

**8.2.1- Purpose of Portfolio Development**

. The portfolio is intended to encourage the student to become actively involved in

monitoring and reflecting on his/her development as professional.

. The contents of the portfolio reflect both academic and field experiences that

demonstrate the student’s application of knowledge and skills.

. The portfolio allows students to demonstrate mastery of the competencies of the

program.

. It provides a more complete picture of the student’s interests, abilities and

accomplishments in tangible evidences.

. The portfolio is intended to be used as an ongoing tool to encourage and guide

future professional development.

. It encourages the student’s organizational skills, self-assessment of growth, and

awareness of continuing educational needs.

. It is expected that students will continue to develop their portfolios and as they

reflect on their profession and their learning.

**8.2.2 Types of Portfolios**

There are several types of portfolios.

For classroom purposes, the main types include the working portfolio, the developmental

portfolio (sometimes referred to in textbooks as the assessment portfolio), and the

showcase portfolio (sometimes referred to as the display portfolio).

**The Working Portfolio**

The working portfolio is a purposeful collection of student work in progress. The

collection is assembled based on clear objectives and guidelines given by the teacher. All

portfolios begin as working collections, since it is from these collections that final

selections are made for presentation. The advantage of the working collection is that it

allows students to take a second look at what they do, and to think about how they could

improve future work. It is a departure from the traditional practice where a first draft of

an assignment was considered as a final product.

**The Development Portfolio**

The developmental portfolio represents a completed selection of student work. It contains

work that shows the student’s progress towards mastery of set objectives for a topic,

theme, or course of work, and provides evidence of his/her achievement over a period of

time. This type of portfolio enhances learning through the process of reviewing, revising,

and evaluating the final product. Diagnosis may be one use for these portfolios since the

feedback obtained at intervals can shape further instruction and learning for the student.

This type of portfolio clearly demonstrates the integration among instruction, learning,

and assessment.

**The Showcase Portfolio**

The showcase portfolio shows the student’s best work and is used to support and

document accomplishment in a course/subject area or any learning activity. This requires

the student to be able to make a selection from a range of work (working portfolio) using

specific criteria. These criteria may be determined by an external examining body, by the

teacher, or may be developed by the student in collaboration with the teacher.

**8.2.3- Stages of Portfolio Development**

Portfolio development begins at the beginning of the student's program and is integrated

in coursework throughout the program. Through the process, students evaluate and

reflect on what they need and want to learn. Their perceptions may change as they

progress through the program. In the initial phase, the student begins collecting and

selecting information that will represent him/her as a developing professional. The

student will develop his/her professional philosophy statement and identify the purpose

of the portfolio. Students will receive input from their faculty mentor and their peers.

The final phase of portfolio development occurs when students develop a professional resume

and select evidence or artifacts that reflect and document their growth during the program.

Students work with their faculty mentor individually and in collaborative groups as they

integrate their graduate coursework, field experiences and related employment into a

professional document. Many students subsequently use their portfolio when

interviewing for a job. There are a number of stages to the development of a portfolio.

These stages may include but are not limited to:

**Goal Identification**

Identifying a vision that will guide the portfolio development.

**Collecting**

Gathering artifacts that demonstrate the student's professional

development. Some of these artifacts will ultimately become the

portfolio entries.

**Selecting**

Reflecting and identifying artifacts that are most relevant and

meaningful to the student's purpose, beliefs and philosophy. These

become the portfolio entries. The student also determines the final

design of the portfolio, such as a notebook or specifically designed

box.

**Categorizing**

Identifying the developing themes of the portfolio.

**Connecting**

Making a linkage between the items selected and the goal of the

portfolio. This is the thinking -through stage that formulates the

reflections.

**Reflecting**

Making each entry relevant and meaningful by writing about why

the entry is included in the portfolio. This reflection ties the

individual entry to the overall portfolio document

**Sharing**

Presenting and discussing the portfolio to program faculty

**8.2.4- Components of Portfolio**

There are three components of the portfolio. These are: The physical format, the

philosophical basis and the supportive evidence.

**a) Physical format**

1. Method of presentation

The physical format is the structural representation of the portfolio. The

portfolio is individualized by students based upon the materials or artifacts

presented. Examples of physical format include the use of notebooks, folders

plastic presentation pages, and three ring binders.

2. Table of contents

The Table of Contents provides organization of the materials presented and

structures the physical format of the portfolio. As information is gathered and

categorized into meaningful sections or themes the Table of Contents

emerges.

**b) Philosophical basis**

1. Statement of purpose

The Statement of Purpose introduces the reader to the portfolio. It includes a

statement that highlights the student’s efforts, progress and achievements.

The Statement of Purpose delineates the sections of the portfolio with a brief

explanation of each section.

2. Professional philosophy

The Professional Philosophy presents the core values that guide the student’s

work with infants and young children and their families. The Professional

Philosophy should be evident throughout the portfolio. The student’s

reflections throughout the portfolio should relate to the professional

philosophy and should indicate areas for continued professional growth. The

following question may help to shape the philosophy: Drawing upon

theoretical knowledge, research and personal experiences, what are my

professional beliefs and attitudes in working with children and families?

**c) Supportive evidence/documentation**

1. Entries

The specific information that documents the student's experiences is referred

to as an entry. There are three types of entries used for documentation:

a) Artifacts: Materials that provide evidence of the beliefs, knowledge, skills

and attitudes the student wishes to present. Examples of artifacts include

observations, videotapes, journal entries, photographs, computer disks,

annotated bibliographies, lesson plans, assessment reports, case studies and

research papers.

b) Reproductions: Summaries of discussions with mentors or supervisors

and/or audiotapes of relevant meetings (with the permission of all involved

parties).

c) Attestations: Documentation of the student's work prepared by someone

else. Examples include letters of recommendation, parent letters, and

evaluations.

When selecting material for documentation, the following guidelines should be used:

. Select entries that provide the most compelling evidence for the purpose of

the portfolio.

. Select entries that reflect the Professional Philosophy statement, which

introduces the portfolio.

. Select entries that address each competency strand (minimum of 3-

. 4 pieces per strand)

. Select entries that reflect the full range of acquired knowledge, attitudes,

beliefs and skills.

2. Reflection

Reflections are interpretation, commentary, analysis and explanation that

make the individual entries and the composite portfolio meaningful and

relevant to the individual student's purpose and philosophy. Reflections may

be attached to entries or precede them.

3. Captions

Captions give explanations about an entry and are used to focus the reader on

selected content of the entry.

4. Annotations

Annotations are materials such as annotated bibliographies, brief descriptions

of courses and/or abstracts of the student's own research papers.

5. Boxed Entries

"Boxed" entries highlight or bring attention to sections of journals, papers or

other entries. Boxed entries may be delineated by highlighting, boxing or

bolding a portion of an entry.

**d) Required items for portfolio:**

The student must include a:

. resume

. table of Contents

. statement of Purpose

. professional Philosophy of early intervention

**8.2.4- Evaluation of Portfolio**

The development of this professional portfolio is mandatory and is part of the university

requirement for graduation. Portfolios will be evaluated using the following criteria:

. Overall quality of the student’s work

. Organization of the portfolio defense

. Quality of the integrating activities represented throughout the program

Portfolios are gaining attention because proponents believe that portfolios are better

predictors of student 2 performance in "real life" situations as well as capable of

improving students' higher order thinking skills and learning experiences. Largely, goals

of such reforms have included student-centered learning, teaching with technology,

teacher empowerment establishing systems for quality assurance and accountability.

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