MODULE 1

Critical Thinking, Reading, and Writing: Concepts and Principles

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INTRODUCTION

This first module discusses the concepts and the principles of critical thinking, reading, and writing. These concepts and principles are discussed in three units. They are very important for your academic work in graduate program, future life as language teachers, and your daily life. This module explains these three concepts successively because they are the disposition of a graduate student and the main process of doing assignments, conducting research, and writing research reports. Critical writing depends on how you think and read because the results of your essays are mostly the reflection of the written texts you read, your thinking, your research, and experiences (Knott, 2015).

Each concept including the principles is discussed together and ended with some questions to let you try to practice the concepts and principles and to evaluate your understanding. After reading and doing the exercises provided in this module, you are expected to have some knowledge of critical thinking, critical reading, and critical writing.

When you are reading and learning this module, you will work more easily if you follow these suggestions.

1. Prepare a note book, and write every thing you are asked to in you note book.
2. Read every part of this module carefully.
3. Do what the text ask you to do.
4. Reflect yourself by asking yourself whether you have this experience or ever carried out what the text says.

5. When you have finished reading and learning one concept, find at least three other articles dealing with the concept you have learnt.
6. Discuss the concept with your friends either in a small group or using other means such as email, WhatsApp etc.

UNIT 1

The Concepts and Principles of Critical Thinking

Learning Objectives:

1. Having the knowledge of critical thinking concepts
2. Having the knowledge of critical thinking principles

For many people, creativity is something for scientists or artists. However, in our daily life, we often face countless and various problems. In fact, our creative thinking always helps us come up with solutions to these problems. We need to make use of our creativity to make our lovers happier, earn money, or help others. Thus, creativity is not only for scientists or artists. We also have to use our creativity in our daily life. Some people think that creativity is a matter of waiting for inspirations. How the inspiring ideas come about is a rather mysterious process, and some people can get creative solutions easily while the others cannot. Even sometimes we can think creatively, but in some other occasion, we cannot. But it is a mistake that creativity is a passive state of mind, it is an active state of mind. And thinking skills can be learnt and taught.

This is the reasons why educators, when teaching information and content, have become very interested in teaching 'thinking skills'. In the past, most teachers taught their students by focusing on the content such as history, physics, and geography. They also claimed that they taught students 'how to think' indirectly or implicitly. Increasingly, educators have come to doubt the effectiveness of teaching 'thinking skills' in this way, because it seems that most students simply cannot pick up these skills. Then, today many teachers have become interested in teaching these skills directly. This section tries to show you a range of transferable thinking skills *directly* and *implicitly*. You will learn these skills in a way that expressly aim to facilitate their transfer to other subjects and other contexts.

Please write down what you know about 'critical thinking'. I am sure you have heard about this in various contexts and uses. Pull together what

makes sense to you and write them down, even if you only have very little idea about this.

What does 'critical thinking' mean?

I. The concept of critical thinking

A. A Brief History

The skills of critical thinking were discovered 2000 years ago by Socrates. But John Dewey, an American philosopher, psychologist, and educator, is widely regarded as the 'father' of the modern critical thinking tradition. He called these skills 'reflective thinking', and it was defined as:

> … active, persistent, and careful consideration of a belief or supposed form of knowledge in the light of the grounds which support it and the further conclusions to which it tends.
> (Dewey, 1909, as cited in Fisher, 2008, p. 2)

Let us unpack this definition. What does 'active' process of thinking mean? This 'active' thinking process is the opposite of 'passive' thinking process, which is when you receive the ideas or the information. While 'active' thinking process is that when you receive the idea or the information. You then process the idea or information further by rising questions yourself, and find the relevant information yourself, etc.

Then, what do 'persistent' and 'careful' mean in this definition? This is the opposite of 'unreflecting' thinking. It is similar to 'jumping' directly to the conclusion when we read to a journal without thinking about it because we have to decide quickly or the issue is not important. We do 'persistent' and 'careful' when we have to consider the issue carefully, then we have to stop and think.

The focus of Dewey's definition is on the 'grounds which support' of a belief and the 'further conclusions to which it tends'. In other words, it deals with the reasons and the implications of our beliefs. Therefore, the focus of Dewey's critical thinking is on the important of reasoning, on giving the reasons and evaluating reasoning. Then the key element is the skilful reasoning.

The definition of critical thinking was then developed by Edward Glaser. His definition of critical thinking is built on Dewey's ideas. Glaser defined critical thinking as:

> (1) an attitude of being disposed to consider in a thoughtful way the problems and subjects that come within the range of one's experience; (2) knowledge of the methods of logical enquiry and reasoning; and (3) some skills in applying those methods. Critical thinking calls for a persistent effort to examine any belief or supposed form of knowledge in the light of the evidence that supports it and the further conclusions to which it tends.
> (Glaser, 1941, as cited in Fisher, 2008, p. 3)

This definition is similar to Dewey's. Glaser replaced 'ground' to 'evidence'. The first sentence talks about an 'attitude' or disposition to be thoughtful about problems and knowledge and experiences that can be applied. And further what he calls 'methods of logical enquiry and reasoning' is more or less 'skill'.

Another famous contributors to the development of critical thinking tradition is Robert Ennis. His states that:

> Critical thinking is reasonable, reflective thinking that is focused on deciding what to believe to do.
> (Norris and Ennis, 1989, as cited in Fisher, 2008, p. 4)

The emphasis of this definition is on the 'reasonable' and 'reflective', which are on the earlier definitions, but this Ennis' definition also talks about 'deciding what to do', which was not explicitly mentioned earlier.

Does your definition of critical thinking have all of these elements? If so, it is excellent. If not, it is OK, you can revise it.

However, all of those definitions are not all; there is two more definition of critical thinking. The first one is proposed by Richard Paul, who gave a bit different definition:

> Critical thinking is that mode of thinking – about any subject, content or problem – in which the thinker improves the quality of his or her thinking by skillfully taking charge of the structures inherent in thinking and imposing intellectual standards upon them.
> (Paul, Fisher and Nosick, 1993, as cited in Fisher, 2008, pp. 4-5)

This definition draws attention to the characteristics of critical thinking needed for teachers and researchers. It shows the realistic way that to develop the ability of one's critical thinking is by developing 'the thinking about one's thinking'. This is usually called 'metacognition'. Teachers and researchers are aiming to improve it by giving some models of good thinking in that domain. This is like an analogy, which is taken from Fisher (2008, pp. 9-10).

An analogy from basket ball

A basket ball coach of a high school was just starting a team for a group of girls. Of course, there are many rules, but he did not tell all to the girls with these rules to begin with. Instead, he, first, divided the girls into two teams, and explained that the idea of the game was to pass the ball to your team member until someone from your team could get into a good position to shoot at the basket and that the winner was the one who scored most baskets. Then he set them to play against each other. This initial game was fairly chaotic, all the girls chasing the ball at once and they got only few baskets, but these girls had great fun.

After a while, the coach stopped them and said, 'well done! But if you are going to be really good basketball players, you must be able to shoot well, so now we will practice shooting.' At the beginning, he then showed them some of the funny (and ineffective) ways they had been shooting. Later he drew attention to how to shoot more skillfully. He showed how he held the ball, where he looked, how he stood and so on. In short, he was providing these girls with a model for shooting well. Having shown them a good model, he then set them to practicing doing it in the same way, asking them to be self-conscious about how they held the ball, where they looked, how they stood, etc. and saying they should try to do it as much like him as possible. After they had practiced shooting for a little while, he said, 'Good Let's play basketball again, but this time when you get a chance to shoot, try to do it in the way that we have just practiced.' Again the girls played basketball, but this time they tried to shoot more skillfully. Some could do well and some found it difficult, but after all, this was only the beginning.

After a while, the coach stopped them and said, 'well done, we'll practice that more another time, but there is something else you need to learn. If you are going to be good basketball players you need to pass the ball well, so now let's practice it.' Again he showed them some of the funny ways, of

passing poorly before demonstrating how to pass the ball fast and straight, with or without a bounce. Again, having shown them a good model, he set them practicing this in pairs. After a while, he stopped them and said, 'Great. Now we'll play basketball again, but this time, when you get a chance to pass, try to do it in the way you have just practiced – and if you get a chance to shoot, don't forget what we just practiced there too.' Again the girls played, but this time they often passed well, even though not always, and they sometimes shot at the basket better than they had at first.

After a while the coach stopped them and said, 'well done, but now there is something else you need to learn to be good players. Instead of all racing round the court together you need to be good at "guarding" your opponents. So we'll practice this.' Again, he showed them what had been happening because players from opposing teams were able to keep clear of each other and then he showed them how to prevent someone from passing a ball to another member of their team. Then he set them in threes to practice this. Can you predict what the coach said after they had practiced this for a while?

Learning to improve your thinking is very similar to the analogy. Thinking about your issues involves all sorts of skills, and we could improve these skills.

A final definition of critical thinking in this subject is proposed by Michael Scriven who argued that critical thinking is 'an academic competency akin to reading and writing' and of similarly fundamental importance. He defines it as follows:

> Critical thinking is skilled and active interpretation and evaluation of observations and communications, information and argumentation. (Fisher and Scriven, 1997, as cited in Fisher, 2008, p.10)

He defines critical thinking as a 'skilled' activity. To be critical, thinking has to meet certain standards – of clarity, relevance, reasonableness, etc. One may be more skilful than the others. Scriven – defines critical thinking as an 'active' process, partly because it involves questioning and partly because of the role played by metacognition – thinking about your own thinking. He also includes 'interpretation' of the texts, speech, film, graphics, actions and even body language. This is because these texts are like explanation, so the interpretation typically involves constructing and selecting the best of several alternatives in order to draw conclusion about complex claims. He includes 'evaluation' because 'this is the process of determining the merit, quality,

worth, or value of something' and much critical thinking is concerned with evaluating the truth, probability or reliability of claims (Fisher, 2008, p. 11).

This definition also includes 'observation' and, this involves what one sees and hears. Very often, when we see and hear an event, we have to interpret and evaluate that event and this needs critical thinking. According to Fisher (2008), Scriven takes the term 'information' to refer to factual claims. Because it includes questions, commands, other linguistic utterances, signals, etc. Finally, 'argumentation' consists of language presenting reasons for conclusions.

B. Dispositions and Values of the Critical Thinker

Considering the explanation above, it is clear that you can have the relevant skills but might choose to decide not to use them in appropriate condition. For example, students might show they had the skill by raising the right credibility questions in an examination, but they might not apply this skill in their work or in everyday situations. The experts of critical thinking have thought there was something intrinsically wrong with such an attitude to good thinking. Look at Glaser's definition which says 'attitude of being disposed' to consider problems thoughtfully as part of critical thinking definition. Then it is valuable if you adopt the habit of using your critical thinking skills, or dispose to use these skills. It is hard to understand if someone develops these thinking skills and then does not want to use them. These skills are valuable skills and if you can use them as your habit, these skills can greatly improve your understanding in many contexts. Therefore, the moral es, as it is said by Fisher (2008), do not just use these critical thinking skills in the critical thinking class, but apples these skills in your other studies and in everyday life. You may be surprised that someday you discover how useful they are.

It is true that sometimes 'critical thinking' is thought to sound rather 'negative'. It seems that one only interests in adversely criticizing other people's arguments and ideas. However, it is a serious mistake because to be good at evaluating arguments and ideas one often has to be very imaginative and creative about any other possibilities, alternative considerations, and different options etc. To judge issues, it is not enough to see the faults in what other people opinions, you need to base your judgement on the best arguments you have. This requires you to think of the relevant

considerations. You have to look at the issues from different points of view, imagine alternative scenarios and find other information.

In short, critical thinking is a kind of evaluative thinking involving criticism and creative thinking. It is concerned with the quality of reasoning or argument presented to support a belief or an action. These skills are valuable and that they will help you in many ways if you get into the habit of using them whenever it is appropriate, so do not just acquire these skills but use them, and you will be successful in many ways, especially your study in this graduate program.

C. The Language of Reasoning and Conclusions

Language has important role in critical thinking. Language develops the users' critical thinking and through language, the users express their ideas and purposes either explicitly or implicitly. Therefore, the language may reflect the point of views of the speaker or writer; and critical listeners or the readers can evaluate the speakers' or writers' ideas or purposes.

Language is used for various purposes. It can be used to express ideas and persuade a point of view, for example for reporting events, describing things, telling stories, jokes and many more. It is not always easy to present reasons, but usually our familiarity with the language used in different context enables us to tell what is going on. Then, let's begin using our intuitions on these examples, and see if we can tell whether these following expressions contain reasoning. Identify these following texts taken from Fisher (2008, p. 16) which ones have reasoning and which ones do not have.

1. James burst out of customs, diamonds and expensive watches falling from his bag as he ran. As he reached the taxi stand customers were sitting in all of the waiting taxis. James ran towards the nearest taxi and leaped into it as it was beginning to move. He pointed a gun at the driver and said just 'downtown'. The taxi turned towards the motorway. (Morton, as cited in Fisher, 2008).

   Does the text have any reason? The answer is NO. It does not have any reason for a conclusion. This simply a descriptive text.
2. Recent research suggests that our understanding of how clouds interact with sunlight might be wrong: a new measurement suggests that clouds absorb four times as much as energy as previously thought. Since existing models of how the climate functions are based on the original measurements, if the new measurements are shown to be accurate,

models of how the climate works will need to be completely overhauled. Climate models are used in our attempts to measure global warming so, if these climate models are shown to be inaccurate, we will have to completely revise our understanding of global warming.

Does the text have any reason? The answer is YES. It gives reasons for thinking we may have to revise completely our understanding of global warming. Any reason for a conclusion. This simply a descriptive text.

3. Many substantial environmental problems cannot be solved by individual or local action, for example, the pollution caused by individual by automobile exhaust gases is a world-wide problem, so such problems can only be addressed by international action.

   Does the text have any reason? The answer is YES. It gives reasons for a conclusion that certain problems can only be addressed by international action.

4. 'Teachers teach to the test.' This old slogan is very true, so if examinations just require factual knowledge, this is what will be taught and rote memorisation will be all. However, if the process and quality of thinking is assessed, this is what will be taught. The only way to deliver 'thinking schools' is to assess thinking skills and dispositions directly.

   Does the text have any reason? The answer is YES. It gives reasons for a conclusion that the only way to deliver 'thinking schools' is to assess thinking skills and dispositions directly.

5. In the Monty Python 'Argument' sketch, a man enters an office and says to the receptionist: 'Good morning. I'd like to have an argument please.' She directs the man to Mr. Barnhart in room 12. When he opens the door to room 12 the following dialogue takes place:

Barnhart (angrily):	Whaddayouwant?
Man:	Well, well, I was told outside that ...
Barnhart (angrily):	Don't give me that, you snotty-faced heap of parrot droppings!
Man:	What?
Barnhart (angrily):	Shut your festering gob, you tit! Your type makes me puke! You vacuous stuffy nosed malodorous pervert!!!
Man:	Yes, but I came here for an argument!!

Does the text have any reason? The answer is NO. It does not give any reason to the conclusion. The exchange is not an argument but simply abuse.

Look at the examples above. Sometimes the language shows that it is just describing some state of affairs; sometimes it clearly states the reason to a conclusion and sometimes it is to insult. When you read a newspaper, it will be reporting events, but the editor will often give reasons to support a conclusion. Also textbooks will contain information and give reasons for the readers to believe what the writers say. A parliamentary debate often contains some reasons but very often also contains abuse. However, novels rarely contain reasons

We often encounter situations in which someone is trying to persuade us a point a view by presenting us with reasons so that we are willing to accept their point of views. Fisher (2008) calls this as 'arguing a case' or 'presenting an argument'. Very often the reasoning presented is easy to see, but very often it is difficult. Similarly, when we presenting an argument, sometimes it is easy for others to understand and guess what we are intended to say; however, very often it is difficult. Then to be critical readers, we have to identify the language used to express reasons when someone is arguing a case. And to be critical writers, we have to be able to use the language to present reasons clearly.

II. The principles of critical thinking for researchers

Before you start reading this section, please answer these questions:

1. Why do you participate in this English Education study program?
2. What are your main objectives? What are they for?

I am sure that all the readers of this module have different purposes, and these purposes are not all purely objective and rational. We usually, if not all of us, have selfish interests. However, in some certain conditions, we would like to prove whether our prior knowledge is true or wrong, so that we can keep our earlier beliefs or not. In the process of satisfying our selfishness, we

are not willing to accept the new good ideas or deny these ideas. In this case, we do not apply our critical thinking. However, to develop ourselves we should have these thinking skills which can be applied whenever needed.

Critical thinking applies a complex combination of skills. The most basic ones are: rationality, self-awareness, honesty, open-mindedness, discipline, and judgement.

1. Rationality means that you think critically when you rely on the reasons and not on your emotion. For this purposes, you ignore the ideas that do not have any reasons, you need evidences, and follow those evidences where they lead. You pay attention to those which have the best explanations.
2. Self-awareness means that you apply your critical thinking when you weigh the influences of those various motives and bias. You also recognize your point of view, your own assumptions, prejudices, and biases.
3. Honesty means you apply your critical thinking and you recognize your emotional desires, your selfish motives or any other modes within yourself.
4. Open-mindedness means that you think critically when you evaluate all the reasonable inferences, consider a variety of possible perspectives, and are open to any interpretations. You can accept the new explanation because the evidence is better, simpler and has more reasonable data. You can accept new priorities as a result of a re-evaluation of the evidence of your real interests. Finally, you do not reject unpopular views.
5. Discipline means that you think critically when you do everything in precise and comprehensive way. You do not make quick judgement and you withstand manipulation and irrational appeals.
6. Judgement means that you think critically when you recognize the relevance and the benefits of the alternative assumptions and perspectives. You also recognize the extend and weight of the evidences.

Therefore, if you are critical thinkers, especially critical readers, you will make sense of texts with suspicion. You read actively, ask questions, and analyze texts carefully. You can apply your reading tactics and strategies consciously to uncover the deep meaning of the texts. You have to be open to

new ideas and perspectives and are ready to challenge the beliefs and investigate competing evidences.

As it has been mentioned before, critical thinking is an active, persistent, and careful consideration of a belief or supposed form of knowledge in the light of the grounds which support it and the further conclusions to which it tends. It is stated by Dewey, as cited in Fisher, 2008, p. 2). It is also a mode of thinking – about any subject, content or problem – in which the thinker improves the quality of his or her thinking by skillfully taking charge of the structures inherent in thinking and imposing intellectual standards upon them. It is stated by Paul, Fisher and Nosick, 1993, as in Fisher, 2008, pp. 4-5). And as it is stated by Fisher and Scriven (1997, as cited in Fisher, 2008, p. 10), critical thinking is skilled and active interpretation and evaluation of observations and communications, information and argumentation. In other words, critical thinking is an active thinking which involves logical and reasonable reflection, interpretation and evaluation. This quality of thinking skills is required by researchers to evaluate what they hear and read, and to assess what they speak and write for other people to hear and read. There are some principles to understand and apply when you want to think creatively. To begin with, you need to apply these three basic principles:

1. New ideas are composed of old ones

Critical thinking is about correct thinking. Creativity is about alternative possibilities. That is how to come up with new and useful ideas. A new idea might be a new product, a new theory, a new solution to a problem, or a new concept.

Creativity is to come up with something new or to produce something that is distinctive and special. Then the practical implication is that in order to be creative you must be different from the ordinary and the traditional. Many people, especially Asian people, have the habit of following instructions and are afraid of exploring anything new. Therefore to be creative, you have to be curious, and have courageous exploratory attitude.

But how can you get these new ideas? The answer is simple. You just rearrange your old ones in a new way so that you can produce new trends. How do you generate new ideas from old ones? You know that ideas are the mixtures of different elements; you just look for new combination of ideas by joining different ideas together, deleting some elements, or replacing some elements by other ones. Just as you see your mobile phone, the old mobile

phone is the ones which had a big size and are only able to make a call. It was just a wireless telephone. Then it can send texts, provides a radio, and some others were able to play music. Nowadays, you can play various games, send email, and send picture and many more.

Therefore, the first principle of creativity depends on the store of ideas that are available for recombination. If you have a limited knowledge, you will have limited resources to draw from to create new ideas. This is why your intellectual curiosity and your wide knowledge base may enhance your creativity. This is the reason why you need to try to solve a problem by consulting other people who are more knowledge than yours and those who come from different expertise.

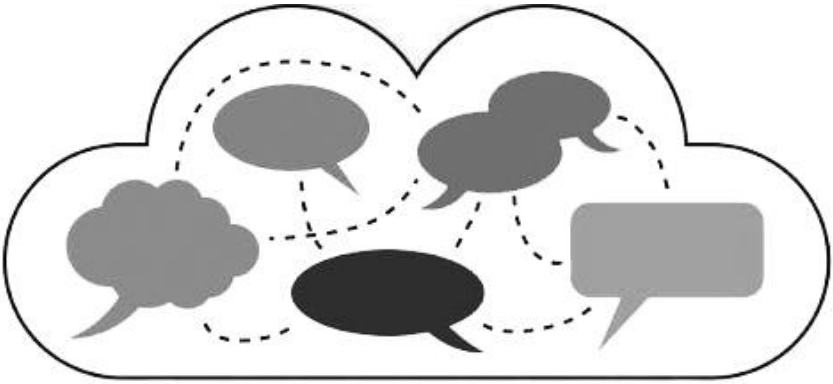
2. Not all new ideas are good

Even though you have a large knowledge, you cannot just create new ideas because, creativity is not simply a matter of coming up with new ideas. A creativity that is valued is the ability to produce new and *useful* ideas. The ideas should be able to serve an important need or creates new trends that have good impacts.

Creativity can be classified into two, i.e. *artistic*and *cognitive* creativity. Artistic creativity consists of the creation of artwork and expressing ideas and emotions through art works. While cognitive creativity is applied to produce solutions to practical or theoretical problems. This kind of creativity includes creating a new theory, or producing a new commercial product, and critical thinking is mostly concerned with cognitive creativity. Cognitive creativity has two main parts, i.e the evaluation and modification of new ideas and the generation of new ideas. When you need new ideas to solve a problem, critical thinking helps you determine the relevance and effectiveness of your new idea. The evaluation of your new ideas or your proposal to solve a problem must involve good critical thinking. If you want to fly to another star in the sky, you need to build a space craft so that you can fly there, but you must be in line with the logic or the laws of physics.

Very often people are too critical because they assume that creativity goes against the usual conventions, and as a result those new and important ideas might be lost. Good critical thinking does not mean that one must always be critical. Then it is a serious misconception to assume that critical thinking and cognitive creativity is opposing to each other.

3. Creativity is developed by the ability to connect ideas



Adopted from www.invokingthepause.com

Our store of old ideas, theories, and experiences helps us to generate new ones, but very often useful ideas can come from unexpected sources. This is as a result of our ability to connect one subject matter which we are interested in and other subjects which might be somewhat remote. As a concrete example taken from Tutorial R01, think about what is the so-called "fastskin" swimsuits introduced by the company Speedo around 1996. One of the key considerations when designing a swimsuit for athletes is to reduce the total amount of drag over the surface of the swimsuit. The company's researchers noticed that sharks are able to move very fast in water because they have the V-shaped ridges. Then the researchers designed swimwear fabric emulating sharkskin that produced less drag and turbulence. At the Sydney Olympics in 2000, 28 of 33 Olympic Gold Medal winners wore this type of swimsuit, testifying to its success.

So if you want to be creative, you must explore and connect between different areas. To do this, first, you should have rich knowledge base. To be creative people, you have to read a lot. You should have a great sense of curiosity, and are willing to explore topics which do not bring about immediate benefits. Second, you should ensure that your learning processes should aim at a deep understanding of the connections between key concepts. Studying is not only remembering bits and pieces of unrelated information but you must also make sure that you look at the information from different

angles, reformulate all the information systematically to achieve better understanding.

Now, you are studying in the graduate program, and by the end of this program you have to do research and write your research report. In other words, you will be a researcher in the near future. A researcher must be a critical thinker. There are four principles of critical thinking that researchers must require.

1. Conscious of the language

The first principle is as a researcher you must always be conscious of the language you used, especially when you are reading research materials critically and writing research papers. You have to have extra attention to the meaning, clarity of language, accuracy of language and definitions.

You must put full attention to the meanings of words. It is very crucial when examining or making statements because a word helps you and readers to understand and determine the reasoning involved in those statements. You have to use clear language because you as a researcher has the responsibility of making clear to the readers what pricicely you are referring to so that readers can understand, evaluate or in other words, they can judge what is written for themselves. In addition, you as a researcher must use the language accurately because you have the responsibility to use the correct language when you write an argument. If you use 'extreme' words or words that are out of the context, this can result in perceived bias. Finally, you have to put extra attention to the definition of a word. It is very crucial when you are examining or making statements, because the definition of a word helps you to understand what the writer is arguing.

2. Reliability of premises and conclusions

The second principle is the reliability of the premises and conclusions. The premises are the support structures that provide the evidences or reasons that you suppose to be true. These reasons and evidence are used to be the basis for developing your claims or ideas. Thus the premises should be supported with the findings resulted from valid and reliable researches or statements suggested by experts. Besides reliable premises, the conclusion, or the claim produced by a researcher, is also reliable. You, as a researcher must be able to extract the conclusion of an argument and the supporting structure that leads to the conclusion. When you have this information, you can start to

evaluate the information to determine the acceptability of each premises and the final conclusion.

3. Standardizing arguments

The third principle is standardizing arguments. Standardizing an argument can assist you to evaluate both the premises and the conclusion. An argument is a reason or reasons to support a conclusion. Then an argument must have two components, one reason or several reasons and one conclusion. To standardize an argument is to break the argument into its components and identify these components so that they show the logical relationships.

There are four ways to standardize arguments, namely logical order, clusters, implied conclusions, and missing premises. The first is to arrange the premises so that they are in logical order and coherent way. Sometimes the order from one premise to other premise and to the conclusion is not ordered logically and in a coherent way. If you find this situation, you can extract the premises and conclusion and placing them in a logical order. The second is clustering the premises. Sometimes an argument can contain multiple premises that relate to more than one conclusion. If you find this kind of situations, you can evaluate each argument by extracting the premises and conclusions and then group them into their separate arguments. The third is finding the implied conclusions. Sometimes an argument has a list of supporting structure but it does not state the conclusion. Finally, you have to find the missing premises when an argument is not accurately list its supporting structure which leads to its conclusion. You, as a researcher, have the responsibility to determine the missing premise when you evaluate the argument.

4. Evaluations of deductive and non-deductive arguments

The fourth principle is evaluating deductive and non-deductive arguments. Deductive arguments are applied when the premises are true and the conclusion following from these premises is true. To evaluate a deductive argument, you must determine whether the argument is incoherent, coherent, or good. Incoherent arguments occur when the conclusion does not follow from the premises. While the coherent arguments occur when the conclusion follows from the premises and these premises are acceptable. On the other hand, non-deductive arguments are when the premises are true but the conclusion following from these premises is not true. To evaluate a non-

deductive argument, you must determine whether the argument is created using inductive reasoning, an analogy, from cause, or from an authority. Inductive reasoning occurs when the arguments use examples, information, or statistics to support a conclusion that is a generalization of an extrapolation from them. An analogy occurs when the argument uses a significant similarity between things that are different as a premise to support a conclusion. An argument from cause occurs when they show the cause and the effect. Finally, an argument from an authority occurs when the arguments are taken from authorities or experts as the premises to support a conclusion.

In short, to be a critical thinker and researcher, you have to apply these four principles, you have to be conscious with the language, use reliable premises and conclusions, standardize the arguments, and evaluate deductive and non-deductive arguments carefully.

Enrichment

Enrich your understanding:

1. Qualia Soup. 2009. Critical Thinking, *https://www.youtube.com/watch?v=6OLPL5p0fMg***,** Uploaded on Dec 24, 2009.
2. Dewald, A. 2013. Episode 1.1: What is Critical Thinking?, *https://www.youtube.com/watch?v=J0yEAE5owWw*Published on Aug 1, 2013.
3. Shelton, C. 2015. Critical Thoughts: The 3 Most Important Words in Critical Thinking, https://www.youtube.com/watch?v=A_bk8hKG1U8 Published on Jun 11, 2015.

EXERCISES

Answer these following questions!

1) Discuss the analogy from basket-ball with your friends or family then answer the following questions:
   a) Explain in your own words the three stages of learning outlined.
   b) Does the analogy seem to you to provide a good model of teaching a new skill? Why?
2) Do the following activities involve critical thinking?
   a) You have just completed your master degree and you are now trying to decide what you are going to do, try to find a job or to study in doctoral degree.

b) You attempted to install some new software on your laptop but it is not working properly, so now you are trying to follow the instruction for 'trouble shooting'.

3) Imagine your friend, let us call him Anton, sitting in a used car and trying to decide whether to buy it or not. Anton does not have much money and he does not know much about cars, but he has just been offered a new job and the job requires him to have a car. A salesperson has told him all the advantages of the car and has offered a 'bargain' price.

Case 1:

Let up suppose that Anton has trusted the salesperson in the course of talking about the car (though they have never met before and he knows nothing of the company for which the salesperson works) and he likes the 'look' of the car so he decides to buy it.

Case 2:

Let us suppose instead that Anton comes to like the salesperson, but treats what the salesperson says with caution, gets an expert mechanic to check the vehicle over, checks prices of comparable vehicles in a used car price guide and gets a knowledgeable friend to advice on negotiating a price.

The question has three parts:

a) Look at Dewey's definition and decide whether Anton displays 'reflective thinking' according to that definition in either case. Is he 'active', 'persistent', 'careful', etc.

b) Referring to Glaser's list of skills does Anton:
   - Recognize what the problem is?
   - Find workable means for dealing with the problem?
   - Gather and marshal pertinent information?
   - Recognize unstated assumptions and values (etc.)?

c) Would you say that Anton had acted reasonably in either case?

4) Which thinking skills, if any, should be applied in the following situations?

a) Getting information from the internet.

b) Finding a telephone number in the telephone directory.

c) Deciding whether to accept a job offer.
d) Following a recipe for making a cake.

Answer:

Please see the answers of those questions in Unit 1 carefully and you will be able to answer them well. Then discuss your answers with your friends. If you are not satisfied with the results of the discussion, you can discuss them with your tutor later.

SUMMARY

Critical thinking has been discovered 2000 years ago by Dewey, and then it is revised and improved by various experts of critical thinking. Finally Michael Scriven claims that critical thinking is 'an academic competency similar in many ways to reading and writing'. He defines it as a skilled and an active interpretation and evaluation of observations and communications, information and argumentation. Critical thinkers have the attitude of being disposed; they have the habit of using their critical thinking skills. They will make use of logical and reasonable reflection to interprete what they see, read, and hear and evaluate the information from different angles. To apply this active process of thinking, critical readers and writers make use of language, because language is used for various purposes and through language arguments are developed to reach an acceptable conclusion.

Critical thinking applies a complex of skills, rationality, self-awareness, honesty, open-mindedness, discipline, and judgement. Critical readers apply various tactics and strategies to uncover the deep meaning of texts. They will create new and useful ideas by connecting the old and various ideas. As researchers, students of graduate program must be critical thinkers and conscious of the language used. They have reliable evidences or reasons to develop and support their ideas. They should apply and evaluate standard and coherent arguments.

FORMATIVE TEST 1

Applying Dewey's definition, say whether any critical thinking is being exhibited in the text below. Give reasons.

The text

Richard Dawkins, 'The more you understand evolution, the more you move towards atheism. (This is an edited version of Dr Dawkins's speech at the Eidenburgh International Science Festival on 15 April 1992. Reprinted from the Independent with the permission of Dr Dawkins.) (Taken from Fisher, 2008, pp. 193-196)

As a Darwinian, something strikes me when I look at religion. Religion shows a pattern of heredity which I think is similar to genetic heredity. The vast majority of people have an allegiance to one particular religion. There are hundreds of different religious sects, and every religious person is loyal to just one of these.

Out of all the sects in the world, we notice an uncanny coincidence: the overwhelming majorities just happen to choose the one their parents belonged to. Not the sect that has the best evidence in its favor. The best miracles, the best moral code, the best cathedral, the best stained-glass, the best music: when it comes to choosing from the smorgasbord of available religions, their potential virtues seem to count for nothing compared to the matter of heredity.

This is an unmistakeable fact; nobody could seriously deny it. Yet people with full knowledge of the arbitrary nature of this heredity, somehow manage to go on believing in their religion, often with such fanaticism that they are prepared to murder people who follow a different one.

Truths about the cosmos are true all around the universe. They do not differ in Pakistan, Afghanistan, Poland or Norway. Yet we are apparently prepared to accept that the religion we adopt is a matter of an accident of geography.

If you ask people why they are convinced of the truth of their religion, they do not appeal to heredity. Put like that it sounds too obviously stupid. Nor do they appeal to evidence. There is not any, and nowadays the better educated admit it. No, they appeal to faith. Faith is the great cop-out, the great excuse to evade the need to think and evaluate evidence. The worst

thing is that the rest of us are supposed to respect it: to treat it with kid gloves.

If slaughterman does not comply with the law in respect of cruelty to animals, he is rightly prosecuted and punished. But if he complains that his cruel practices are necessitated by religious faith, we back off apologetically and allow him to get on with it. Any other position that someone takes up can expect to be defended with reasoned argument. But faith is immune. Faith is allowed not to justify itself by argument. Faith must be respected: and if you do not respect it, you are accused of violating basic human rights.

Even those with no faith have been brainwashed into respecting the faith of others. When so-called Muslim community leaders go on the radio and advocate the killing of Salman Rushdie, they are clearly committing incitement to murder – a crime for which they would ordinarily be prosecuted and possibly imprisoned. But are they arrested? They are not, because our secular society respects their faith, and sympathize with the deep hurt and insult to it.

I will respect your views if you can justify them. But if you justify your views only by saying you have faith in them, I shall not respect them.

I want to end by returning to science. It is often said … that although there is no positive evidence for the existence of a God, nor is there evidence against His existence. So it is best to keep an open mind and be agnostic.

At first sight that seems an unassailable position, at least in the weak sense of Pascal's wager. But on second thoughts it seems a cop-out, because the same could be said the Father Christmas and tooth fairies. There may be fairies at the bottom of the garden. There is no evidence of it, but you cannot prove that there are not any, so should not we be agnostic with respect to fairies?

The trouble with the agnostic argument is that it can be applied to anything. There is an infinite number of hypothetical beliefs we could hold which we cannot positively disprove. On the whole, people do not believe in most of them, such as fairies, unicorns, dragons, Father Christmas, and so on. But on the whole they do believe in a creator God, together with whatever particular baggage goes with the religion of their parents.

I suspect the reason is that most people … nevertheless have a residue of feeling that Darwinian evolution is not quite big enough to explain everything about life. All I can say as a biologist is that the feeling disappears

progressively the more you read about and study what is known about life and evolution.

I want to add one more thing. The more you understand the significance of evolution, the more you are pushed away from the agnostic position and towards atheism. Complex, statistically improbable things are by their nature more difficult to explain than simple, statistically probable things.

The great beauty of Darwin's theory of evolution is that it explains how complex, difficult to understand things could have arisen step by plausible step, from simple, easy to understand beginnings. We start our explanation from almost infinitely simple beginnings: pure hydrogen and a huge amount of energy. Our scientific, Darwinian explanations carry us through a series of well-understood gradual steps to all the spectacular beauty and complexity of life.

The alternative hypothesis, which was all started by a supernatural creator, is not only superfluous; it is also highly improbable. It falls foul of the very argument that was originally put forward in its favor. This is because any god worthy of the name must have been a being of colossal intelligence, a supermind, an entity of enormous sophistication and complexity. In other words, an entity of extremely low statistical probability – a very improbable being.

Even if the postulation of such an entity explained anything (and we do not need it to), it still would not help because it raises a bigger mystery than it solves.

Science offers us an explanation of how complexity (the difficult) arose out of simplicity (the easy). The hypothesis of God offers no worthwhile explanation for anything, for it simply postulates the difficult to explain and leaves it at that. We cannot prove that there is not God, but we can safely conclude that He is very, very improbable indeed.

UNIT 2

The Concepts and Principles of Critical Reading

Learning Objectives:

1. Having the knowledge of critical reading concepts.
2. Having the knowledge of critical reading principles.

This unit discusses the concepts and the principles of critical reading. At the end of the study of you are expected to be able to read texts critically that will help you write your thesis proposal and conduct your mini research.

I. The concept of critical reading

What is critical reading?

To prepare yourself to read this module and experience it, please write the two reading activities in the box. Don't worry if what you write is different from what is explained here. You just write what you know (if the space is too small, you may write on your paper or log book).

Most of famous universities in the world suggest their students to read critically. This type of reading is also called academic reading or reading in a scholarly context because successful students whether they realized it or not, they read in this way.

What are non-critical readers do when they are reading? What are critical readers do when they are reading?

So what is critical reading? Before answering this question, do you know the meaning of "to be critical"? Read this part of an advertisement and think how you would respond to it.

WHY DO IT THE HARD WAY when you can be rich NOW!!!

I worked for two years to earn my first million Rupiah. Then I got my second million within six weeks. Now, I just can't stop earning money. I own four luxury pent-houses on four business areas, four expensive sport cars and a helicopter. The most important thing is the financial of my family is ensured.

I want to share my success with you. I will give you some simple instructions that make you be a millionaire within just a few weeks. I'm sure you will be successful and no fail because there is no risk. Hundreds of people have been helped and got attain their dreams.
They are so thankful to me. They are no longer worry about bills, healthcare and children's education. Even some of their grown-up children are studying abroad successfully. Their future is secured. And I'm sure your futures will be secured too.
Just call me on the number below, and I will send my introductory pack to you *free of charge*. It will explain how to reach your dream and how to guarantee your wealth and happiness. Call now and your life will change forever. (Adapted from Wallace and Wray, 2011)

The advertisement promises to make you rich and have a secured life. Are you going to make a call? Why? If not why don't you make a call? The pack is free of charge and you will be rich and your life is secured soon.

What would stop you make a call? The reason is that you do not take everything you read at the surface. Your life's experiences make you suspicious of those kinds of advertisements. You might ask: 'Are you as wealthy and happy as you say? Why would this person want to help other people that have never met? Is his/her method legal and ethical? If his/her method is so wonderful, and there have been hundreds of people successful why have you never heard about this before? What will he/she do if my personal details are given?

All of these are critical questions. You can see more deeply in the text than is presented on the surface. You are seeking for a hidden agenda. You are looking for the author's real purpose. You are relating it to your

experiences and what you know about the world. You might have a negative experience about getting something, and you perhaps know that nowadays no stranger will give you for nothing. Even you might think that people who are willing pay for an advertisement will not help you for nothing and they may try to trick us.

Critical reading is more than "skimming" of the text. If readers skim the text, they only get superficial characteristics and information. Non-critical readers read texts by assuming that texts provide facts, and readers get knowledge by memorizing the sentences from the text (Kurland, 2000). Non-critical and novice readers seldom look ahead or backward in text to monitor and avoiding thoughtful strategic reading (Paris, Wasik, and Turner, 1991). All they have to do is to understand the literal meaning of the words in the texts and their job is done. They usually focus on single words; they do not adjust their reading for different texts or purposes. They are unfamiliar with cues in text structure and evaluate problems in text according to word meaning rather than larger units of text. They read the text only once in linear fashion meaning that they concern with what the text says about the topic. They read the text from sentence to sentence, paragraph to paragraph. Their goal is to understand the sequence of thoughts, the information, ideas and opinion stated in the text. For example, when non-critical readers read a history book, they learn the facts of the situations or to find the accepted interpretation of the events. Passive, uncritical readers believe that the meaning of a text rests in the words on the page. However, when critical readers read the same book, they try to find how a particular perspective on the events and a particular selection of facts can lead to a particular understanding.

Critical reading is not simply close and careful reading. Critical readers do not passively accept everything the authors have said or believe that the meanings of texts rest in the words on the page. Let us see the reading experts define reading and see what the readers do when they are reading. Johnston in Mickulecky (1990, p. 2) defines reading as "a complex behavior that involves conscious and unconscious use of various strategies, including problem-solving strategies, to build a model of the meaning that the writer is assumed to have intended." Readers have several processes when they construct meaning and try to understand the message (Nuttall, 1989; Anderson, in Aebersold, 1998, p. 15). They have certain purposes; recollect

feelings, knowledge and experiences (Smith, 1988, p. 168). Readers' purposes control the application of certain strategies, feelings and knowledge.

When readers are reading a text, some interactions occur between authors and readers' backgrounds. The quality of the comprehension depends on the gap between the reader and the author. This gap may be close or distant depending on the similarity or differences of cultures, settings, prior knowledge, interests, and purposes (Rumelhart, in Aebersold and Field 1998. pp. 5-9). Authors exploit letters, words, associated meanings, sentence structures, typography, discourse structure, genre, and context to convey their ideas in texts. These are usually grouped into four variables namely, vocabulary, syntax, structures and text types (Barnett, 1988). Readers, on the other hand, should be able to elaborate these intertwined variables to get the message from the texts (Mikulecky, 1990).

When readers construct meaning, they apply continuously two aspects of what Mikulecky (1990) calls 'human information processing system'. First, a concept driven or 'top-down' strategy; this is applied when readers focus on their existing knowledge or schemata to comprehend a text (Aebersold, 1998; Nuttall, 1989). Second, a data driven or 'bottom-up' mode. This strategy is applied when readers rely on the textual information to comprehend it (Rumelhart, as cited in Mikulecky, 1990). These two processing strategies are employed interactively and simultaneously, but they are not used equally; it depends on the readers' knowledge of the content and the language used in the text.

During reading, readers elaborate various tactics by looking at the text forward and backward to make causal and temporal chains of events and integrating information across sentences to identify main ideas, and making inferences (Aebersold and Field, 1998; Nuttall, 1989). They identify the main ideas of texts, make judgement about the importance of information and consolidate information concisely. They make inference to help them construct meaning by applying their prior knowledge and asking inferential questions. Therefore, the qualities of constructed meanings taken from texts very much depend on the prior knowledge, purpose and willingness of the readers.

Critical readers construct meanings from texts maturely and always monitor their comprehension. They always refine and revise and evaluate their ideas as they crunch the data to find the gist (Johnston and Afflerbach,

in Paris, Wasik, and Turner, 1991, p. 612). To evaluate the passage, they combine multiple standard information.

They also actively recognize and analyse evidence written in the texts. They have to recognize the authors' purposes, to understand tone and persuasive elements, and to recognize biases. They understand the role they must play as active interpreters of the text. There is more involved, both effort and understanding. They apply certain deep process, models, questions, and theories that result in enhanced clarity and comprehension.

A critical reading gets at "deep structure", that is, logical consistency, tone, organization, and a number of other very important sounding terms. Critical readers eye towards a texts from the author's points of views, arguments, evidences, potential biases, and conclusions. As they read texts, they ask questions, annotate passages, and take notes. They look at the quality of the writing, the research, and the persuasiveness of the arguments among other things.

Therefore, critical reading is an active process by rigorously and systematically questions the texts with the goal of assessing credibility and validity. Critical reading means evaluating what they read using their knowledge as academic people.

II. The principles of critical reading

Critical readers are active readers. Then, what are active readers? The proffesors of Dayton University in Ohio, active readers are readers who are meaning-making, interactive, reflective, analytical, and oppositional.

Meaning-Making

Critical readers always have questions in their minds and interpret what they read. Critical readers realize that no language is transparent--all language is interpreted. They try hard to monitor how they are interpreting a text's meaning, actively seeking out other interpretations to better understand the text.

Interactive

Critical readers interact actively with texts they read and with other readers. They question the words on the texts, connect the texts with others texts, find

definitions, and talk with others about the texts. In short, they know the social, interactive nature of reading and knowledge.

Reflective
Critical readers think aboutand apply their own reading process. Before, as, and after they read texts, they reflect on theirprocess itself. They try to understand how their background knowledge, feelings, and beliefs may influence their reading and understanding of the texts. They try to discover the effective and ineffective reading strategies. When they find difficult texts, they try to apply their past reading experiences to find a way to understand the texts.

Analytical
Critical readers analyse the texts and their own thinking. They attempt to discover the strengths and weaknesses, the faults and limitations, the structure and intent of the texts. They carefully analyse what they read to identify the author's assumptions, biases, or logical fallacies.

Oppositional
Critical readers always play devil's advocate. They read as a believer, but also read as a doubter. They ask hard questions about texts, even when they agree with the writer's position. They know that through the critical, oppositional analysis of texts, they will come to a better understanding of both the texts and their thoughts.

Now check yourself by looking at your answer of 'what critical reading is' and 'what non-critical reading is'. And now, please evaluate yourself by writing down on the space below or write it on you notebook. If you write that, you are a critical reader what activities you usually do when you read journals or references. Write them on the space provided or on your notebook.

Evaluate yourself

Are you a critical reader?

Reflect yourself

What activities do you do when you are reading texts?

The activities of critical readers

Now let us observe the activities of critical readers when they read texts. Even though when they read have various activities, they usually have these following steps. While you are reading this, try to experience it.

1. Preparation

a. Prepare yourself to become the part of the writer's audiences
When writing texts, writers design their texts for specific audiences. When you try to become the member of their target audiences, you will be easier to get the writers' purposes. How can you be the audiences of the writers? You very often do not know the writers well. In this case, you have to learn about the writers, the histories of the writers and the texts, the writers' anticipated audiences, read the introductions and notes. Have you ever done this?

b. Prepare yourself to read with an open mind
If you are critical readers who seek knowledge, you may not "rewrite" a work to suit your own purpose and personalities. Critical readers are to read what is on the page, giving the writers fair chances to develop their ideas. Then you reflect thoughtfully, objectively, on the text. Do you have this kind of activity?

c. Consider the title
The title may indicate clues to the writers' attitude, goals, personal viewpoints, or approaches.

2. Reading

a. Read the texts slowly
It is a close reading, by reading slowly, you will have time to do intertextuality, or make connections within the text.

b. Use the dictionary and other appropriate references
When you find a new word in the text or a word which is difficult to define in context, you consult a good dictionary. Every word is important for you, and if there is a part of the text which has lots of technical terms, this part is very important to know how the author uses then.

c. Make notes
Critical readers make notes on the side of the texts or write marginal notes. They also underline and highlight the important statements. So do this and write down ideas in a notebook, do whatever works for your own personal taste. You make notes for yourself the main ideas, the thesis, the writers' main points to support the theory. Writing while reading helps your memory in many ways, especially by making a connection that is unclear in the text concrete in your own writing.

3. After reading

Besides making marginal notes, you record your responses and thought in your notebooks or more permanent places for you to consult later. This activity, connecting reading and writing, your skills of reading and writing will also improve.

If you are a critical reader, you will involve your logical and rhetorical skills. You identify the writers'arguments and try to grasp how the writers intend to support these arguments. And to grasp these is a difficult task. Writers will make a claim and support it in the body of the text. The supports for the writers' claims are in the evidences provided to suggest that the writers' intended arguments are sound, or reasonably acceptable. The connections of these two together are series of logical links that convince you

of the coherence of the writers' arguments. If the writers' premises are not supportable, by applying critical reading, you will uncover the lapses in the text that show these to be unsound. In other words, you as a critical reader, always interpret what the texts say.

Evaluate yourself

Do you have these activities when reading journals or references?

Reflect yourself

How do you interpret the journals or references?

Non-critical readers satisfy with recognizing what the texts say and they restate the key remarks. However, you, as a critical reader, goes two steps further. You have to recognize what the texts ***say*** and ***do***. You will find the remarks of offering of examples, arguments, appealing for sympathy, making contrasts to clarify some points? These remarks and your background knowledge help you to infer what the texts mean.

If you are a critical reader, you will reflect on the following points:

a. What a text says – restatement. After you read a piece of text, you will take notes, paraphrasing the key points – or write the key points in their own words.
b. What a text does – description. You will be confident that you have understood the texts well. You are able to use your own examples, compare and contrast with others subjects in hand.
c. What a text means – interpretation. Finally, you will be able to fully analyze a text and state the meaning for the text as a whole.

In other words, you, as a critical reader, should be able to reflect what the text says, what it describes and what it means by examining very carefully the style and structure of the text, the language used and the content as well.

Enrichment

Please see these following sites to enrich your understanding and critical reading skills.

a. What is critical reading? SAT Critical Reading Bootcamp #4, https://www.youtube.com/watch?v=5Hc3hmwnymw
b. Two examples, SAT Critical Reading Bootcamp #5,*https://www.youtube.com/watch?v=zuOkmMGVi0M*
c. How to practice, SAT Critical Reading Bootcamp #3, *https://www.youtube.com/watch?v=o0F-g33d8_Y*

EXERCISES

Answer these following questions!

1) Before reading, what do you usually do?
2) Read this!

   The following is the first chapter of a book entitled "The study of language: An introduction" by George Yule from Louisiana State University, and it is published by Cambridge University Press.

   Please answer these questions.

   a) Can you predict who the author of this book is?
   b) What is the book for?
   c) Who are the audience of this book?
   d) Do you belong to the author's audience?
   e) Do you need to know further about the background of the author?
   f) What are coming up from your mind about the content of the chapter? Write them down on your notebook!
   g) Do you think that what in your mind should be in the text?
   h) Will you accept any ideas which might be different from yours?

3) After answering those questions, read this following text!

	Notes
Jespersen's proposal that human language originated while humans were actually enjoying themselves is one of the more endearing speculations concerning the origins of language. It remains, however, a speculation. We simply do not know how language originated. We do know that spoken language developed well before written language. Yet, when we uncover traces of human life on earth dating back half a million years, we never find any direct evidence relating to the speech of our distant ancestors. There are no dusty cassette tape fragments among the ancient bones, for example, to tell us how language was back in the early stages. Perhaps because of this absence of physical evidence, there has been no shortage of speculation about the origins of human speech. In this chapter, we shall consider the merits of some of those speculations.	
The divine source According to one view, God created Adam and "whatsoever Adam called every living creature, that was the name thereof" (Genesis, 2, p. 19). Alternatively, following a Hindu tradition, language came from the goddess Sarasvati, wife of Brahma, creator of the universe. In most religions, there appears to be a divine source who provides humans with language.	
The study of language In an attempt to rediscover this original, divine language, a few experiments have been carried out, with rather conflicting results. The basic hypothesis seems to have been that, if infants were allowed to grow up without hearing any language, then they would spontaneously begin using the original God-given language. An Egyptian pharaoh named Psammetichus tried the experiment with two newborn infants around 600 B.C. After two years in the company of sheep and a mute shepherd, the children were reported to have spontaneously uttered, not an Egyptian word, but the Phrygian	

word *bekos*, meaning 'bread'. The children may not have picked up this 'word' from any human source, but, as several commentators have pointed out, they must have heard what the sheep were saying.	
James IV of Scotland carried out a similar experiment around A.D. 1500 and the children were reported to have started speaking Hebrew. It is unfortunate that all other cases of children who have been discovered living in isolation, without coming into contact with human speech, tend not to confirm the results of either of these 'divine-source' experiments. Children living without access to human speech in their early years grow up with no language at all. (We shall consider the case of one such child later in Chapter 14). If human language did emanate from a divine source, we have no way of reconstructing that original language, especially given the events in a city called Babel, "because the Lord did there confound the language of all the earth" (Genesis, 11, p. 9).	
The natural sounds source A quite different view of the beginnings of human speech is based on the concept of 'natural sound'. The suggestion is that primitive words could have been imitations of the natural sounds which early men and women heard around them. When an object flew by, making a CAW-CAW sound, the early human imitated the sound and used it to refer to the object associated with the sound. And when another flying object made a CUCKOO sound, that natural sound was adopted to refer to that object. The fact that all modern languages have some words with pronunciations which seem to 'echo' naturally occuring sounds could be used to support this theory. In English, in addition to *cuckoo*, we have *splash*, *bang*, *boom*, *rattle*, *buzz*, *hiss*, *screech*, and forms such *bow-wow*. In fact, this type of view has been called the "bow-wow theory" of language origin. While it is true that a number of words in any language are onomatopoeic (echoing natural sounds), it is hard to see how most of the soundless, not to mention abstract, entities in our world could have been referred to in a language that simply echoed natural sounds.	

We might also be rather skeptical about a view which seems to assume that a language is only a set of words which are used as 'names' for entities. It has also been suggested that the original sounds of language came from natural cries of emotion, such as pain, anger and joy. By this route, presumably, OUCH came to have its painful connotations. However, it has been noted that the expressive noises people make in emotional reactions contain sound which are not otherwise used in their language, and, consequently, seem to be unlikely candidates as source-sounds. One other 'natural sound' proposal has come to be known as the "yo-heave-ho theory". The sounds of a person involved in physical effort could be the source of our language, especially when that physical effort involved several people and had to be coordinated. So, a group of early humans might develop a set of grunts and groans and swear words which they used when lifting and carrying bits of trees or lifeless mammoths. The appeal of this theory is that it places the development of human language in some social context. Human sounds, however produced, may have had some principled use within the social life of the human group. This is an interesting idea, though still a speculation, which may relate to the use of humanly produced sounds. It does not, however, answer the question regarding the origins of the sounds produced. Apes and other primates have grunts and social calls, but they do not seem to have developed the capacity for speech.	
The oral-gesture source One suggestion regarding the origins of the sounds of language involves a link between physical gesture, involving the whole, could have been a means of indicating a wide range of emotional states and intentions. Indeed, many of our physical gestures, using body, hands and face, are a means of nonverbal communication still used by modern humans, even with their developed linguistic skills. The "oral-gesture theory", however, proposes an extremely specific connection between physical and oral gesture. It is	

claimed that originally a set of physical gestures was developed as a means of communication. Then a set of oral gestures, specifically involving the mouth, developed in which the movements of the tongue, lips and so on were recognized according to patterns of movement similar to physical gestures. You might think of the movement of the tongue (oral gesture) in a 'goodbye' message as representative of the waving of the hand or arm (physical gesture) for a similar message. This proposal, involving what was called "a specialized pantomime of the tongue and lips" by Sir Richard Paget (1930), does seem a bit outlandish now. We can, indeed, use mime or specific gestures for a variety of communicative purposes, but it is hard to visualize the actual 'oral' aspect which would mirror many such gestures. Moreover, there is an extremely large number of linguistic messages which would appear to defy transmission via this type of gesturing. As a simple experiment, try to communicate, using only gesture, the following message to another member of your species: *My uncle thinks he's invisible.* Be prepared for a certain amount of misunderstanding.	
Physiological adaptation One further speculative proposal about the origin of human speech concentrates on some of the physical aspects of humans which are not shared with other creatures, not even with other primates. These physical features are best thought of as partial adaptations which, by themselves, would not lead to speech production, but which are good clues that a creature possessing such features probably has the capacity for speech. Human teeth are upright, not slanting outwards like those of apes, and they are roughly even in height. Such characteristics are not needed for eating, but they are extremely helpful in making sounds such as *f*, *v*, and *th*. Human lips have much more intricate muscle interlacing than is found in other primates and their resulting flexibility certainly helps with sounds like *p*, *b*, and *w.* The human mouth is relatively small, can be opened and closed rapidly, and contains a very flexible tongue which can be used to shape a wide variety of sounds.	

The human larynx, or the 'voice box' (containing the vocal cords), differs significantly in position from that of monkeys. In the course of human physical development, the assumption of an upright posture by the human moved the head forward and the larynx lower. This created a longer cavity, called the pharynx, above the vocal cords, which can act as a resonator for any sounds produced via the larynx makes it much more possible for the human to choke on pieces of food. Monkeys may not be able to use the larynx to produce speech sounds, but they do not suffer from the problem of getting food stuck in the windpipe.

The human brain is laterized, that is, it has specialized functions in each of the two hemispheres. Those functions which are analytic, such as tool-using and language, are largely confined to the left hemisphere of the brain for most humans. It may be that there is an evolutionary connection between the tool-using and language-using abilities of humans, and that both are related to the development of the human brain. Most of the other theories of the origin of speech have humans producing single noises or gestures to indicate objects in their environment. This activity may indeed have been a crucial stage in the development of language, but what it lacks is any 'manipulative' element. All languages, including sign language, require the organizing and combining of sounds or signs in specific constructions. This does seem to require a specification of some part of the brain. (We shall return to this topic in Chapter 14).

In the analogy with tool-using, it is not enough to be able to grasp one rock (make one sound); the human must also able to bring another rock (other sound) into proper contact with the first. In terms of linguistic structure, the human may have first developed the naming ability, producing a specific noise (e.g. *bEEr*) for a specific object. The crucial additional step which was then accomplished was to bring another specific noise (e.g. *gOOd*) into combination with the first to build a complex message (*bEEr gOOd*). A few hundred thousand years of evolution later, man has honed this message-building capacity

to the point where, on Saturdays, watching a football game, he can drink a sustaining beverage and proclaim *This beer is good.* Other primates cannot do this.	
Speech and writing In developing speech, humans have obviously incorporated versions of naturally occurring sounds such as *cuckoo* and *ding-dong.* They have also incorporated cries of emotional reaction, such as *Wow*, *Ugh* and *Oops*, and accompany much of their speech with physical gestures such as pointing and raising of the outstretched forearm, bent at the elbow. All this noise-making and gestureing, however, seems to be characteristic of only one of the major functions of language use, which we maydescribe as the **interactional** function. It has to do with how humans use language to interact with each other, socially or emotionally; how they indicate friendliness, cooperation, or hostility, or annoyance, pain, or pleasure. But there is another major function of language, the **transactional** function, whereby humans use their linguistic abilities to communicate knowledge, skills and information. It is unfortunate that we tend to imagine our cave-dwelling ancestors solely as hairy, grunting, bone chewing individuals who mugged their mates, when a lot of that grunting may actually have been in the form of messages informing the junior caveboys and girls on the best way to hold the bones while chewing. The transactional function must developed, in part, for the transfer of knowledge from one generation to the next. This transfer function of language remains fairly restricted in time and space as long as it can only be realized in speech. By its nature, speech is transient. The desire for a more permanent record of what was known must have been the primary motivation for the development of markings and inscriptions and, eventually, of written language.	

Answer

1) You have to prepare a notebook, a pencil or pen, a dictionary.
2) Please see the answers of those questions in Unit 1 carefully and you will be able to answer them well. Then discuss your answers with your

friends! If you are not satisfied with the results of the discussion, you can discuss them with your tutor later.

3) Your answers.
   a) Write a note on each paragraph!
   b) Write the diffecult words and consult a dictionary (if any)!
   c) Write the main ideas, thesis!
   d) Write the author's point of view to support the theory!
   e) Identify author's arguments!
   f) Make the connection between the text and your experiences!
   g) Write your responses (can be various, and discuss your response with your friends or tutor)!

SUMMARY

Critical readers will read a text with a certain purpose; therefore, they read the texts deeply. They seek for the hidden meaning and the real purpose of the writers. While reading, they relate what they read to their background knowledge of the world. Critical readers construct meanings from texts maturely and always monitor their comprehension. They always refine, revise, and evaluate their ideas by combining multiple standard information.

Critical readers are active readers. They are always meaning-making by making questions in their mind and interpret what they read. They interact with the texts and other readers, and connect it with other texts. They always analyze texts to discover the strengths, weaknesses, limitation and structure of texts. They are aware of that their background knowledge, feelings and beliefs influence their understanding; and therefore, they always play devil's advocate to reach a better understanding of the text and their own thoughts.

FORMATIVE TEST 2

Read the following passage and then list below it any weaknesses you can find in its arguments.

Why Women Are Inferior to Men

Women are obviously inferior to men. There are hundreds of reasons for believing this fact, and we can see them every day. First, women cannot do the work that men do - for example, few women are firemen because they cannot carry the heavy equipment such as water hoses and power saws that is needed to fight fires. The same is true for policemen, farmers, doctors, and politicians. Even in jobs held by women that are comparable to jobs held by men, women are often paid less because they are less capable and less trustworthy.

Second, women are less intelligent than men. This is clearly seen in IQ test scores and academic achievement. Certainly, the reason why there are many fewer women scientists, lawyers, doctors, academics, and politicians is that men are simply more intellectually capable than women. Although it may be true those women are more caring and intuitive - that's why they are the ones who take care of young children - men are obviously more rational.

Third, women are more emotional than men. Because of their biological make-up, women are more likely to react to a difficult situation by becoming upset and irrational. This is why we see women screaming and running away when a mouse or insect appears, or crying when someone raises his voice at them. Men, on the other hand, react coolly and rationally when they have these experiences, demonstrating that they are intellectually and emotionally superior.

Finally, men are much more objective and fair-minded, and less opinionated than women. Women tend to judge someone or some group of people immediately and according to their own subjective emotional reaction to them. Men, on the other hand, never jump to quick conclusions - they always weigh several different points of views and consider all sides of the question carefully and rationally. When they have made up their mind they still remain flexible and rarely if ever express their opinion strongly.

For these reasons it is clear that women are inferior and men are superior. But because women are also part of the human race, we have to help them to do the best they can do under the circumstances.

UNIT 3

The Concepts and Principles of Critical Writing

Learning Objectives

1. Having the knowledge of critical writing concepts.
2. Having the knowledge of critical writing principles.

This unit discusses the concepts and the principles of critical writing. At the study of the end of this unit, you are expected to be able to have some knowledge of critical writing and write some simple standard arguments that will help you write your thesis proposal and report your mini research and to complete your study in graduate program.

Having learned the concepts and the principles of critical thinking and reading, I hope you have learned some knowledge of the characteristics of your readers and what they are doing when they are reading academic texts. Now, I will discuss the general concepts and the principles of critical writing. You will learn how to write critically in detail in modules 7 to 9. To prepare yourself to read this module and experience it, please write what you know about critical writing.

First of all, please answer these following questions! Don't worry if what you write is different from what is explained here. You just write what you know (if the space is too small, you may write on your paper or log book).

1. What is critical writing?
2. What do non-critical writers do when they are writing texts?
3. What do critical writers do when they are writing texts?

I. The concepts of critical writing

What is critical writing?

Writing a good academic text requires care from the very beginning until the end, otherwise you can waste a lot of words covering irrelevant issues. At the beginning, you must decide and map out the topics that you want to cover. This skill may not be learned and acquired easily. Initially, you may just write descriptively, just summarizing the works at the same order as it is presented in the original. If you write a straight summary like this, this will lead you into the concerns of the writer of the original work and you will be away from your own. In order to keep you focus, look for where the text intersects with your review questions. Then you can extract only the information that relates to these questions, and mix it together into answers. Your readers should be able to see why you have mentioned the work and what you think of it.

Before we go on to discuss what critical writing is, I will let you see the difference between descriptive and critical writing briefly, because these two types of writing are very often used for academic purposes. Descriptive writing is a type of writing that is used to describe something, and it will not go beyond what appears to be there. This type of writing is needed to write a general description of a piece of art or literature, establish the setting, describe the timing of, or a brief summary of a text, etc.

Critical writing is a particular style of writing which is very often used in the academic purposes. When writing critically, a writer puts forwards a 'reasoned argument' on a particular issue or topic, based on a 'critical' analysis of relevant information (Clanchy and Ballard, as cited in Conyers, 2010). In academic environment the words 'critical' and 'argument' refer to the process of thinking and writing in which one reviews all the available information and points of view about a particular issue and then on the basis of evidence, draws the conclusions. This combination of reviewing the existing information and expressing one's own opinion that distinguishes critical writing from the other writing, and the 'argument' is the 'line of reasoning' (Hutchinson, 2007, as cited in Conyers, 2010).

Thus, the difference between descriptive and critical writing are that when you are writing a descriptive text, you are not developing argument; you only write the background within which an argument can be developed. You are only presenting the situation as it is, without presenting any analysis

or discussion, without transforming information, and you are taking it forward or go beyond it. If you apply descriptive writing for your assignment in graduate program then you might gain few marks.

In other words, when you write for academic purposes, you must not write just to describe something, but you have to write critically or analytically from reading to writing by applying various reading and writing strategies.

1. Are your answers similar to the explanation?
2. What are the difference between your answers and the explanation?
3. Are there something missing? If they are different, you might need to revise them.

II. The principles of critical writing

When you are going to develop critical writing, be in your mind of these following principles – making thorough preparation, developing a clear line of argument, having clear writing direction, planning the essay well, asking someone to read, and showing originality.

1. Making preparation

When you are preparing your writing, in general you are expected to read various texts by applying these steps:

At the beginning you decide a topic based on the issue you think you understand well, develop questions that you have to answer to solve your issues or your assignments

When reading references or evidences, you take in the information whether you get it from reading, listening, seeing or watching, or the results of what you have done. You must understand and comprehend the key points, assumptions, arguments and evidence presented.

a. You have to analyse them all carefully by examining how these key components and parts fit together and relate to each other. By doing these you will have clear and confident refusal to accept the conclusions of the information or other writers.

b. When reading and interpreting the information, you do it with a view to understand what it means, so that you can find the balanced presentation of reasons why the conclusions of other writers can be accepted or need to be treated with caution.
c. When reading the information, you explore the similarities and differences between things and/or ideas.

2. Developing a clear line of argument

After you read abandon related texts, then you should have a clear line of argument. If your essay title is in the form of a question, you have to answer your question. If your title is not a question, make sure you have to have something you want to communicate in your essay. Do not just write in general terms about the subject area.

3. Having clear writing direction

The next stage is you have to make your writing clear where you are heading to. The reader needs to know what you are going to say and needs to know the path. So, from the beginning your essay has to show the main point of what you are going to communicate then use the rest of the essay to actually build up your argument. Remember, you have to make the point first and then use the evidence and examples to support the point.

4. Planning the essay well

When you are preparing to write, you read a lot of information, synthesize those different sources of information which can support as your arguments or ideas you are constructing. When you do this, you can compare ideas and evidences and select the ones that might support you.

a. Then, you make logical connections between those different ideas from different sources that help you shape, support your ideas, and lead you to a conclusion.
b. After selecting, analyzing, comparing and make logical connections, you still need to evaluate the worth of those ideas in terms of their relevance to your needs, the evidence on which it is based and how they relate to others pertinent ideas.
c. Then you try to apply them all by transferring your understanding you have gained from critical evaluation and use them in response to your questions or assignment that you set up at the beginning.

d. Finally, you have to justify the information you have by applying your critical thinking to develop your arguments, make inferences, identify implications and draw conclusion.

After you have done all your reading and/or your research, you need to step back from those activities and decide what you are going to say in your assignment or report. Then you have to plan your essay and develop your mainline of argument. You have to do these before you do the actual writing of the essay.

Thus, this means that you need to decide your key points and build your arguments by making the sequence of the key points logically. You have to express those key points in complete sentences; do not just write a list of subject headings.

5. Asking someone else to read

When you have finished writing your essay, you need to find someone to read it. It is really important to get a second opinion on your essay. Very often it can be really hard to adopt a fresh objective stance and look at your essay, because when you read your work then what you read is something in your own mind and not your work. When you ask someone, ask them to extract the main points. If you write based on your plan, then the reader's extract should look very similar to your key points.

6. Showing originality

Showing your originality is very important. How do you show that your work is original? Originality in an academic essay is all about the way that you put the material together. So if the examples, evidence, theories are taken from other people's writing, you have to evaluate them, do not just accept them. Then you have to put them in such a way so that they are in line with your key points to support your argument. You have to arrange your argument together so that your work is interesting and show the innovative way to answer the question.

Now evaluate you answers:
1. Do all your answers similar to those explanations in this unit?
2. Have you ever written critically? When?
3. If you have ever written critically, how did you do that?
4. Was it similar to the way you have done?
5. What are the similarities and differences?
6. Do you need some revisions? Revise your answers, before you go on reading this unit!

Now, I will discuss 5 (five) simple standard arguments in brief. They will be introduced to you with their examples. Then, I will also show the characteristics of a good argument and the three fallacies, they will help you to develop good arguments and develop critical writing. Before you go on to see several standard arguments, please answer this question!

Do you know how to write argument? Please give some examples!

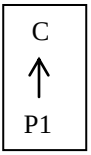
a. An argument consists of two components so that it shows the logical relationships between the parts. These two components are at least one reason and one conclusion. Look at these examples; they are taken from Critical Thinking by Example:
   A simple argument: “Robbert is over two meters tall, so he is tall.”
   The conclusion if “he is tall”, and the reason of the conclusion is “Robbert is over 2 meters tall”. This is very simple one, but very often argument can be quite complex, and you need to develop some notation to keep track of everything. In this module, I will use ‘P’ and an associated numeral as the symbol of a premise or premises; ‘C’ and an associated numeral as the symbol for a conclusion or conclusions. Thus example 1 in standard notation would be presented as follows:

A simple argument in standard notation:

P1: *Robert is over two meters tall.*

C : *Robert is tall.*

Usually the diagram of this argument is



Now, I will show you the five types of arguments.

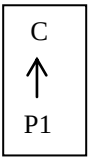
1) Simple argument: a single premise supports a single conclusion

For example:

Robert is over two meters tall, so he is tall.

'Robert is over two meters tall' is the premise, P1.

'so he is tall' is the conclusion, C.

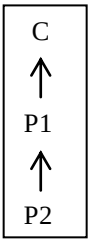


2) Serial argument: A premise set is used to support a subconclusion. The subconclusion serves as a premise for a further conclusion.

For example:

[P1] Mila is a mammal, [P2] since Mila is a dog.

[C] So, Mila is warm blooded.

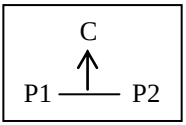


Look at P1 in the argument. It is a main premise because it supports the main conclusion, but P1 is also a conclusion, since P2 supports it. P1 is a 'subconclusion'. P2 is a subpremise, since it supports a subconclusion, not the main conclusion. In other words, any premise that does not directly support a main conclusion is a subpremise.

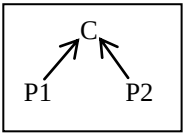
3) Linked argument: Two or more premises are logically linked and work together to support a conclusion.

For example:

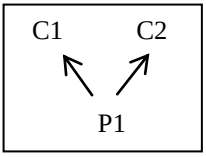
[C] Chico is a mammal, [P1] since Chico is a cat and [P2] all cats are mammals.



A linked argument has premises that must work together to support the conclusion. P2 on its own does not support the conclusion without the knowledge that Chico is a cat, and [P1] does not support the conclusion without the knowledge that cats are mammals. So, [P1] and [P2] need each other to provide any reason to believe the conclusion.

4) Convergent argument: Two or more premises are logically independent. They work independently to support the conclusion
For example:
[C] Mila is a great pet [P1] because she is smart [P2] and she scares away intruders.


Both [P1] and [P2] on their own provide some reason to believe the conclusion. The two independent reasons converge on the same conclusion.

5) Divergent argument: A premise set support two or more conclusions.
For example:
[P1] Mila is a dog [C1] so she needs regular walks and [C2] an occasional good brushing.


Premise [P1] is offered in support of two different conclusions, [C1] and [C2]

Now evaluate your answer!
1. Was your answer correct? You might write the more complicated ones.
2. If you think that your answer is incorrect, then make some revision.

b. A good argument has these three conditions: first, the premise set is relevant to the conclusion; second, the premise set is sufficient for the conclusion; and third, the premises are acceptable.
An example of a good argument:
[P1] All dogs are mortal. [P2] Mila is a dog. [C] So, Mila is mortal.
The premises [P1] and [P2] are acceptable, since they are true. The premises are relevant to the conclusion [C] and sufficient, so this is a good argument.

c. Three fallacies

Look at these examples and their explanations. These following arguments fail to meet one of the three conditions for good arguments

1) Irrelevant reason

An argument containing irrelevant reason is when the premise set is irrelevant to the conclusion.

For example:

> *[P1] Some people are worried about the fate of polar bears with the melting of the arctic ice. [C] Therefore, all polar bears are white.*

It is ridiculous. Although the premise is correct, it is not the reason to the conclusion. The premise is irrelevant to the conclusion. Most arguments have more subtle reasons than this, but the underlying pattern is the same.

2) Hasty conclusion

Hasty conclusion is an argument containing the premise set that is insufficient to warrant the acceptance of the conclusion.

For example:

> *[P1] All the polar bears we saw at the zoo today are white. [C] So, all polar bears are white*.

The conclusion is hasty because although the premise is acceptable, it does not provide sufficient support for the conclusion. To make it a good argument for this conclusion, you would include evidence about the color of polar bears wherever polar bears are found. Thus, when you develop critical writing it is not sufficient if your evidence of your argument is just based on the polar bears that you see in one zoo today.

3) Problematic premise

The argument that contain problematic premise usually has premise set that cannot be accepted without further support.

For example:

> [*P1] All the polar bears we saw at the zoo today were brown and small. [C] So, not all polar bears are white*.

The premise is relevant; it shows us the reason to believe the conclusion. To see the problem with this argument is by imagining

that your friend made this argument to you. Would you believe the premise? You need more evidence for it to be acceptable. Then it contains unacceptable premise.

Therefore, to have acceptable premise, when you develop an argument, you need to have more than one or more premises, more than one evidence and examples.

Enrichment

a. Graduate academic writing, https://www.youtube.com/watch?v=SNJAMxiOmkU, published by WVU Teaching and Learning Commons.
b. Hoffman, L. (2013). Critical Thinking and Scholarly Writing Video, https://www.youtube.com/watch?v=oHBtEb_gzjQ, published by Saybrook University.
c. Galletly, R. (2013). Academic Writing: Critical Thinking and Rhetorical Functions, https://www.youtube.com/watch?v=piLoeHJrSvs.

EXERCISES

Answer these following questions!

1) What is the difference between descriptive and critical writing?
2) When is descriptive writing applied for academic purposes?
3) When is critical writing applied for academic purposes?
4) What are the principles of critical writing?
5) What does an argument consist of?
6) Answer these questions (selected from Critical Thinking by Example)!
   A. "[1] Drinking and Philosophy are similar, [2] since they both hurt your head."
      Which of the following best describes the argument?
      a) Convergent
      b) Linked
      c) Simple
      d) Divergent

B. "[1] You should watch "House", since [2] it teaches you about medical stuff, and [3] the star, Hugh Laurie, is cute beyond belief."
Which of the following best describes the argument?
a) Convergent
b) Linked
c) Simple
d) Divergent

C. "[3] Justice requires that we provide all citizens the minimal requirements for living. [2] Healthcare is a minimal requirement for living. [1] This shows that we ought to provide universal healthcare."
Which of the following best describes the argument?
a) Convergent
b) Linked
c) Simple
d) Divergent

D. "[1] if he wants to do well in this program he should come to every session. [2] Since he wants to do well, [3] he should come to every session."
Which of the following best describes the argument?
a) Convergent
b) Linked
c) Simple
d) Divergent

E. "[1] we need a strong government. [2] It will keep us free and [3] it will keep us strong."
Which of the following best describes the argument?
a) Convergent
b) Linked
c) Simple
d) Divergent

F. "[1] I should save my money, [2] because I can help lower interest rates and [3] have something for a rainy day."
Which of the following best describes the argument?
a) Convergent
b) Linked
c) Simple
d) Divergent

G. "[1] I should save my money, [2] because I will need a vacation, [3] since my boss is such a jerk."
Which of the following best describes [3] ?
a) [3] is a main premise
b) [3] is a subpremise that is a subconclusion
c) [3] is a subpremise that is a subconclusion
d) It is a main conclusion

H. "[1] I should save my money, [2] because I will need a vacation, [3] since my boss is such a jerk."
Which of the following best describes the argument?
a) Convergent
b) Linked
c) Serial
d) Divergent

I. "[1] Students should study hard. [2] They should also come to the class. [3] College costs a lot of money."
Which of the following best describes the argument?
a) Convergent
b) Linked
c) Serial
d) Divergent

J. "[1] Brushing supports good health. [2] So, regular brushing is a great idea, [3] since you don't want bad teeth."
Which of the following best describes the argument?
a) Convergent
b) Linked

c) Serial
d) Divergent

Answer

Questions number 1 to 5 can be answered by reading Unit 3 carefully. Then discuss your answers with your friends. If you are not satisfied with the results of the discussion, you can discuss them with your tutor later.

6 A. c	6 C. b	6 E. a	6 G. c	6 I. d
6 B. a	6 D. b	6 F. a	6 H. c	6 J. b

SUMMARY

Critical writing is a style of writing often used for academic purposes. It is used to put forward an issue or topic based on a critical analysis of information. When writing critically, writers presenting analysis, transforming information, and reporting beyond an idea. Critical writing is a combination of reviewing the existing information and expressing writer's opinion.

To write critically, writers must make good preparation by having an issue or a topic and reading various references and obtaining various evidences. They have to develop a clear line of argument and writing direction by connecting related texts to solve the issue or discuss the topic to show the originality. When writing the arguments, they apply various standard arguments to reach logical conclusion. Finally, they ask someone to read and evaluate their writing.

FORMATIVE TEST 3

Read the following passage and 1) list any weaknesses you can find in its argument, then revise the passage so that it makes its argument more convincing.

The Academic Benefits of the Internet and Email

The Internet and email are two electronic resources that give enormous academic benefits to graduate research students. You can find almost any information you need on the Internet, for example, just by pushing a few keys and clicking the mouse a few times. If you need a book for your research from the library, for example, all of you would need to do is to log onto the library electronic catalogue, select the book and you are finished.

Email is also very useful for academics. I can contact any of my friends and colleagues even sitting at home in front of my personal computer. For all these reasons the Internet and email have made life much easier and better for academics.

Guideline to Formative Test

Formative Test 1
Please consider the concept of critical thinking proposed by Dewey (1909, as cited in Fisher, 2008, p. 2) as you can read in Unit 1 of this course-book to analyze the text in order to get the answer.

Formative Test 2
You can answer the test by considering the concept and principles of critical thinking that you have read in Unit 2 of this module.

Formative Test 3
After reading the whole Unit: 1, 2, and 3, you will have deep understanding to analyze weaknesses of the argument contained in the text. After reading the text and analyzing its weaknesses, then revise the passage to make the argument more convincing.

Glossary

Cognitive (adj)	:	Relating to mental process involved in knowing, learning and understanding thinking, or involving conscious mental activities.
Convergent (adj)	:	Tending to move toward one point or to approach each other.
Dispositions (n)	:	Willingness to do something, a way that a person tends to behave or feel the usual attitute or mood of a person, a tendency to act or think in a particular way.
Disposed (adj)	:	Willing to do something or likely to do something
Divergent (adj)	:	Differing from each other or from a standard.
Enquiry (n)	:	A question.
Metacognition (n)	:	Awareness or analysis of one's own learning or thinking processes.
Persistent (adj)	:	Continuing to try to do something even though it is difficult or other people want you to stop, continuing beyond the normal time and not stopping or going away.
Premise (n)	:	Something that you suppose is true and that you use as a basis for developing an idea.
Reflective (adj)	:	Deeply or seriously thoughtful, a person who is thinking deeply about something.
Schemata (n)	:	An outline of a plan, or theory, a framework, a model.

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