

How to do critical analysis

Critical thinking goes beyond just understanding and describing. It involves assessing the evidence and/or reasons underlying what is being analysed.

There are different definitions of critical thinking. Here are a few:

- "Critical thinking examines assumptions, discerns hidden values, evaluates evidence, and assesses conclusions" (Myers, 2003, p. xv).
- "That mode of thinking - about any subject, content, or problem - in which the thinker improves the quality of his or her thinking by skilfully taking charge of the structures inherent in thinking and imposing intellectual standards upon them" (Paul & Elder, 2001, p. 1).
- "Critical thinking is, first and foremost, a variety of good thinking. As such, any adequate account of it must explain the sense in which it is good.... To characterize thinking as 'critical' is... to judge that it meets *standards* or *criteria* of acceptability" (Bailin & Siegel, 2003, p. 181).
- Critical thinking is "reasonable reflective thinking that is focused on deciding what to do and believe" (Ennis, 1987, p. 10).

Examples of description

Example of description: Description of a concept

The general environment is composed of the economic, global, and sociocultural dimensions, along with the technological and political/legal dimensions. Businesses and organisations constantly need to adapt to this environment if they are to realise a positive and economically profitable future (Robbins et al., 2013). The general and specific environments together make the external organisational environment and are composed of dimensions that have characteristics beyond the control of an organisation's policies and actions. The general environment is constantly changing with interacting forces that reflect the trends in society as a whole, which in turn are seen to infiltrate and affect the perspective and rationalities of stakeholders; namely, the people who make up the specific external environment. These forces and conditions outside the organisation's boundaries can have an impact on the business itself.

Example of description: A definition

The helping relationship may be defined with the help of Taylor, Lillis, LeMone, and Lynn (2011) as a quality-focused, professional, equal relationship between the health worker and the client, where through effective therapeutic communication and trust, the client's needs are successfully met. As Sahlsten et al. (2008) discuss, clients are increasingly active participants in their health care, reaffirming that the most important aspect of the nurse-client relationship is that it is patient-centered. To aid the involvement of the client in their health care plan, the relationship progresses through three phases (Taylor et al., 2011). The first phase is referred to as the orientation phase. This involves introductions between nurse and client, data gathering, development of roles and guidelines of the relationship, with consultation between client and nurse regarding goals, and duration of visits. The second working phase, is considered the longest phase. Within this phase the nurse and client interact to ensure goals set in the orientation phase are being met or not met with actions and goals adjusted accordingly. The last phase is termed the Termination Phase. This occurs when the patient is

discharged, becomes deceased, a change of shift occurs, or when the nurse leaves temporarily or permanently. If the goals made during orientation are met then it is acknowledged. If goals are not met, then any progress is acknowledged.

Examples of description: Descriptions of results

Oh et al. (2013) found limited evidence for the effectiveness of qigong on depression, owing to methodological problems and limited sample sizes in the ten randomised controlled trials under review they recommended more research. Four studies demonstrated a significant positive effect, four found no difference, and two showed qigong to be as effective as physical exercise. The authors note various sample sizes, co-morbidity of conditions, variations in the durations of practice and a variety of different outcome measures. Recommended methodological improvements include three-arm design, examination of dose-response relationship, measurement of qualitative and quantitative outcomes, cost-benefit analysis and measurement of biomarkers.

In this randomised controlled trial Griffith et al. (2008) found qigong practice reduced perceived stress ($p = 0.02$), increased social functioning ($p = 0.05$) and reduced pain ($p = 0.02$) in a group of hospital employees. The qigong group attended a weekly one hour lunchtime class and practiced at home for 30 minutes a day, and were matched with a waitlist group.

Wang et al.'s (2014) meta-analysis examined the effect of qigong practice on stress and anxiety in healthy adults and excluded trials involving a psychiatric diagnosis or physical co-morbidity. Seven randomised controlled trials (RCTs) were eligible. Four RCTs found a significant reduction in anxiety following qigong practice ($p < 0.001$) and three studies found a reduction in stress ($p < 0.001$). Limitations noted include the small number of trials, the potential for the placebo effect from social contact in the control group to alter the outcome, and lack of clear trial methodology within many of the studies. Future recommendations include larger well-defined sample sizes, examining the dose-response outcome when more studies are available, examining other stress markers such as sleep, quality of life, and biomarkers. The authors suggest that a positive effect is shown, but rigorous studies are needed to draw a conclusion at a high level of scientific standard.

Example of description: Explanation of factors

Assignment instructions: Explain what communication factors might facilitate or hinder the development of a nurse-client relationship.

As identified by Wellard, Lillibridge, Beanland, and Lewis (1996, as cited in Sahlsten et al., 2008) client participation is compromised when there is limited communication. It can be implied then, that it is important for the nurse to be aware of any factors that will hinder or facilitate communication in the nurse-client relationship. According to Taylor et al. (2011), factors that may facilitate or hinder communication are: developmental level, gender, sociocultural differences, roles and responsibilities, space and territoriality, physical, mental and emotional state and values. It is also pointed out in this text that it is of prime importance that nurses are aware of their own values/beliefs (self-awareness) to eliminate the possibility of communication barriers.

Shifting from description to analysis

Assignments usually require some description. For instance, concepts and/or theories

may need to be defined/explained and some background information may be needed to put the topic/issue in context. However, usually the bulk of an assignment should present analysis.

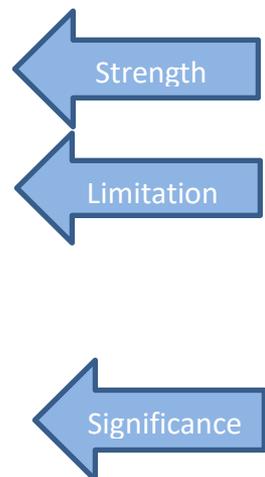
Although including description may frequently be necessary, description alone is often insufficient for academic assignments because:

- It just repeats what is in lectures/readings.
- Without critical analysis it can be unclear if the topic has been fully understood.
- It doesn't show evidence of personal synthesis.
- It doesn't provide an appraisal/evaluation.
- It doesn't show any originality.
- It doesn't indicate what conclusion should be reached.

DESCRIPTIVE WRITING	CRITICAL ANALYTICAL WRITING
<ul style="list-style-type: none"> • gives information • states what happened states what something is like gives the story so far • states the order in which things happened says how to do something • explains what a theory says explains how something works notes the method used • says when something occurred states the different components states options • lists details • states links between items 	<ul style="list-style-type: none"> • identifies the significance • evaluates the strengths and weaknesses • weighs one piece of information against another makes reasoned judgements • argues a case according to the evidence shows why something is relevant or suitable indicates why something will work (best) • identifies whether something is appropriate or suitable identifies why the timing is of importance • weighs up the importance of component parts gives reasons for selecting each option evaluates the relative significance of details shows the relevance of links between pieces of information • draws conclusions • examines assumptions, premises, and conclusions • makes reasoned judgements • evaluates evidence • evaluates theories
Adapted from: (Cottrell, 2008)	

Examples of analysis: Analysis of a study for an annotated bibliography

A strength of Oh et al.'s (2013) systemic review is that it provides a good description of quality randomised controlled trials, and makes excellent recommendations for further research, however is limited by an absence of statistical analysis of results. Given that four out of the ten trials, which represent good quality research did find a positive effect, it does appear that in some circumstances qigong practice is able to reduce depressive symptoms. The cases that report no result, suffered from methodological problems such as lack of compliance meaning that it is not possible to draw a conclusion on the efficacy of qigong practice on depression from some of them. The authors recognise that current qigong research is limited by early small pilot studies that lack power and methodological problems. **Of practical use for counsellors, is the knowledge that some trials are showing qigong to be beneficial in alleviating depression.** At this stage, given a lack of rigorous



research into the specific details of when it does work, it is probably more practical to find local teachers whose methods are demonstrating good effects, or recommend qigong as an option that may be effective.

Kerr's (2002) study is of interest to counsellors for two reasons. Firstly, it provides clear and honest descriptions of the researcher's thoughts and thinking processes as they tried to understand and work with each other. These are probably common thinking patterns and the descriptions maybe helpful for increasing self-awareness and understanding others' points of view. This type of knowledge is useful within the counselling setting and pertinent in Aotearoa New Zealand, where two belief systems work side-by-side, the indigenous world view of Māori and others, and the more separate mind-body distinction that has come from Western culture, although the categories are not dichotomous nor the people within them. Secondly, to be able to critically evaluate the expanding research into the benefits of qigong and other mindfulness practices currently underway globally, it is important for counsellors to understand the two different ways of experiencing life and how these influence the design of research trials.

Ng (1999) places qigong in a historical context, with qigong exploding back into contemporary Chinese culture, resulting in many forms, styles and a variety of self-appointed qigong masters. This context points to the occurrence of mental problems due to a lack of understanding of qigong from loss of knowledge through suppression and inexperience. The article lacks comments from high-level qigong teachers who may have a deeper understanding of the aetiology of the problem. Given the large number of practitioners, the descriptions point to occasional problematic events, although the severity of these is not clear. It appears most cases are self-limiting, however this study provides a warning, that until better understanding is in place or there is appropriate qualitative and quantitative research, choosing and recommending to clients a safe and effective qigong method with a reputable teacher would be sensible. It may be safer for clients with a serious pre-existing mental disorder to avoid qigong practice until there is more understanding.

Stenlund et al.'s (2009) study is of importance to counsellors, as confounding from additional conversational therapy was accounted for with results showing benefits for group A over group B for some variables. The authors comment that the conversational therapy could have been the effective intervention, or another possibility is that it was the qigong practice. Understanding how qigong works is important for interpreting this. In principle, qigong practice should improve the efficacy of conversational therapy, however a dosage effect is likely and whether an hour a week is enough needs additional study (Oh, 2013; Wang, 2013, 2014). Another confounding factor is that patients seeking additional therapy may be more motivated to change. A third trial arm of CBR without qigong could have begun to answer that question. However, there was still a significant reduction in stress and fatigue within the qigong group, and additional benefits with conversational therapy. In summary, this study is an early indication of positive results, and larger studies are needed to determine more specific parameters such as what type and how much qigong practice is effective, in conjunction with what type of counselling (if any in particular) and which clients will benefit the most.

In this well conducted meta-analysis, Wang et al. (2014) found positive effects and similar to Oh (2013) and Wang (2013), cautions full recommendations given limitations in the studies available, and makes good suggestions for subsequent studies. A strength of this meta-analysis is that it is conducted on patients who have no other physical or psychological co-morbidity, and suggests to counsellors that similar clients who are willing to try qigong as a method of reducing anxiety and stress, may expect to benefit.

Examples of analysis: Application to a case

Essay question: How is the general environment likely to impact a New Zealand business in the next 10-15 years?

The conditions in the economic dimension as reflected in the inflation and interest rates, the continuation of the current growth stage in the economic cycle and the economic pay disparity within New Zealand will have an impact on Fonterra in the next 10-15 years. Currently the New Zealand economy is expanding with a low official cash rate being mirrored in the inflation rate, due to the Policy Target Agreement between the Reserve Bank of New Zealand and the government requiring inflation at a 1-3% level for the next 5 years (Treasury, 2015). This has a significant impact on the interest rates at the banks and will likely continue till 2030. For Fonterra this has the potential upside of decreasing the pressure to pay farmers sufficient levels at the farm gate, with lower expenses experienced in servicing loans. The unfairness of the current low payments to farmers not reflecting the economic climate will most likely result in pressure for Fonterra to make changes in the next 10-15 years. This is supported by Rowarth (2015) who recommended requesting answers as to why the top two milk producers Danone and Nestlé have turnover per kg milk of \$US1.25 and \$US1.9, respectively, yet Fonterra achieves 70USc. Pressures could also be exerted from outside the economic dimension, for example from political and sociocultural forces, and are likely to be a factor in the reconsideration of an ethical recompense as Fonterra aligns payments with the economic climate affecting farmers.

Along with the protection of flora and fauna, clean water access is a topical and potentially influential topic in the socio-cultural dimension that is highly likely to impact Fonterra in the next 10 to 15 years. Part of the Kiwi culture is the self-belief in the clean green image. From a cultural perspective, the customs of farmers having always taken stock to the river, contradict these often verbalised and advertised values and tastes. Ridoutt, Williams, Baud, Fraval, and Marks (2010) identified a clear future mandate that freshwater consumption must be reduced. Contamination is an important aspect to add to their arguments. In the Sabto interview of Ridoutt (2014) he highlighted the upcoming societal changes that will have people regarding it as their right to information about the water footprint of products (Sabto, 2014). Unfortunately the Treasury (2015) claims New Zealand to have plentiful clean water, but current trends indicate this is going to be a sociocultural issue that needs addressing within the next 15 years. The future will most likely need to focus on food that is produced in a safe and ethically responsible environment, which will “lift the spirits and the economy” (Rowarth, 2015, p. 12).

Examples of analysis: Application to a case

Assignment instructions: Discuss how the three personal characteristics empathy, positive regard and comfortable sense of self facilitate the establishment and maintenance of a nurse-client relationship

As Levett-Jones and Bourgeois (2011) discuss, most patients could accept a nurse being nervous when executing a procedure for the first time but will expect that they are working within their limitations. They will most certainly not accept a lack of respect towards their privacy and dignity. Therefore, it is apparent that balancing knowledge and caring will help establish and maintain a successful nurse-client relationship. Three key personal characteristics that can aid with this are: a comfortable sense of self, positive regard, and empathy. In line with Horton-Deutsch and Sherwood (2008), it could be easily interpreted as a constant awareness of one's strengths,

weaknesses and limitations, leading to confidence. Farber and Doolin (2011) discuss how positive regard is suggested by Rogers (1951) to entail a positive attitude, where clients are treated warmly, with high regard and as individuals. Finally, and equally important, is the quality of presence that the client feels - empathy. In simple terms empathy is “experienced as kindness and kindness is healing” (Zausner, 2003, p. 52, as cited in Williams, 2010, p. 10). Applying knowledge of these characteristics in the nursing context, a nurse would be able to appreciate patients for their individual needs while maintaining awareness of their health needs, thus enhancing the relationship.

Evaluating an argument

Before you can evaluate an argument you need to understand what is being argued. Try asking yourself questions like:

- What are they saying?
- Why are they saying it?
- What are their reasons?

Once you understand it you will be in much better position to evaluate it. Try asking yourself questions like:

- Is there any evidence?
- Are the examples given truly representative of the whole area?
- What are we not being told (any unacknowledged assumptions/premises)?
- Are there other (better) explanations?
- Are their reasons good reasons?
- Does the conclusion follow from the premises?

Evaluating evidence

Asking (and answering!) some questions can help you evaluate evidence.

For example, if you are evaluating the results of an empirical study, you could ask about:

- The quality of the evidence?
- Whether there is any counter evidence?
- What (if any) is the underlying theory?
- Are there any weaknesses/limitations?
- Is the method flawed?
- Are there any strengths?
- Does it make a contribution?

Evaluating reasons

Asking (and answering!) some questions can help you determine whether the reasons are good reasons. For example:

- Does it make any underlying assumptions (are there any unacknowledged premises)?
- Are the premises true?
- What could be said in response to your criticisms and how could you reply to this response?
- Does the conclusion follow from the premises?
- Are there any formal or informal fallacies?
- Strengths?
- Better than alternatives?

Example of analysis: Evaluating reasons

Essay question: Explain and critically discuss Berkeley's case against objective reality

However, there is a problem with Berkeley's premise, because if all we can know by ideas is of ideas, then it seems we can no better conceive of minds than we can of matter (Harrison, 2016). Berkeley (2002) seems to have acknowledged this limitation in part, saying "[w]e may be said to have some knowledge or notion of our own minds, of spirits and active beings, whereof in a strict sense have not ideas" (p. 89). Yet this does not seem a satisfactory resolution. Beyond the ambiguity of claiming only ideas and minds, yet also claiming another means of knowledge, if ideas can tell us of nothing but of ideas, then surely notions can likewise tell us nothing but of notions. This is because to be aware of our notions they must be experienced within mental-states. However, if notions are experienced within mental-states, then by Berkeley's terms they must reside within mental-states. In the case, whichever restrictions hold for knowledge by ideas, should surely hold for notions also. It seems then that Berkeley has now granted us knowledge pertaining to both 'ideas' and 'notions', but that we still cannot know or conceive of anything beyond their contents.

Taking a position

Critical reasoning need not be wholly negative: think of it as critique rather than critic
Part of critical reasoning is being constructive: building a positive position/argument.

- When constructing your argument ask yourself:
- What are your reasons for giving the answer you are giving?
- What makes them good reasons?

How does your conclusion follow from your premises? How do your reasons support your conclusion?

- Is there any counter evidence/argument against your argument?
- What criticisms can be made of your argument?
- How can you respond to the criticisms of your argument (such that your argument still succeeds)?

When you take a position and make a statement in response to a question, there are usually three possible positions:

- Yes
- No
- It depends

Whichever position you take, say why (the because, the by, the main key ways etc.)

Example essay question: Henry (2011) argues that the game of rugby exemplifies the best of New Zealand culture, however Aitken (2012) states that netball has had a greater influence on life in New Zealand. Is rugby better than netball?

If taking the middle ground, you still need to say something!

Not like this:

Rugby has influenced NZ culture by... Netball has influenced NZ culture by....

More like this:

Rugby and netball have both made a significant contribution to culture in NZ, therefore neither game is better than the other.

Example of taking a position

Essay question: Epicurus maintained that our deaths will do us no harm. Explain and critically assess his claim.

Epicurus taught that our death can do us no harm, reasoning that “where death is, we are not, and where we are, death is not” (Epicurus, n.d.). Two arguments are seen behind this claim, the experience condition argument, and the existence condition argument (Harrison, 2016). I’ll examine the existence condition argument which is as follows:

1. For something to be harmful to subject X at time t, X must exist at time t.
2. Our deaths are the cessation of our existence and so we cease to exist at the time they occur.
3. Therefore our deaths are not harmful to us. (Harrison, 2016, p. 10)

It seems a comforting conclusion, however there are worrying implications: that suicide is preferable to enduring any discomfort, that killing someone is not to harm them, and that there can be no moral responsibility to a person after they die (Harrison, 2016). While the second premise is debatable, my focus will be on the argument’s validity, showing that the conclusion is too strong as its premises do not exclude that our deaths are harmful to us at a time other than our death. Considering an eternalist view of time, I will argue that non-existence is not synonymous with location in a different time frame. I will then argue that cause of harm can occur at a time other than received including cases of harm being caused after it is received, arguing that this is the case with death. Lastly I will comment on implications for key issues surrounding Epicurus’ claim. My conclusion being that we can still take much of the comfort offered by Epicurus’ argument, without accepting implications thought to be most worrying.

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Further reading

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