Critical Thinking Skills for your Nursing Degree

CRITICAL STUDY SKILLS

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First published in 2018 by Critical Publishing Ltd

British Library Cataloguing in Publication Data
A CIP record for this book is available from the British Library

ISBN: 978-1-912096-69-5

This book is also available in the following e-book formats:

MOBI: 978-1-912096-68-8
EPUB: 978-1-912096-67-1
Adobe e-book reader: 978-1-912096-66-4

Text and cover design by Out of House Limited
Project Management by Out of House Publishing Solutions
Printed and bound in Great Britain by Bell & Bain, Glasgow

Critical Publishing
3 Connaught Road
St Albans
AL3 5RX

www.criticalpublishing.com

Chapter 1
The foundations of critical thinking

Learning outcomes

After reading this chapter you will:

- understand what is meant by 'critical thinking';
- understand the relevance and importance of critical thinking in the theory and practice of nursing;
- have begun to learn how to apply critical thinking to your studies and to your nursing practice.

There are many books and courses in schools, colleges and universities entitled 'Critical Thinking' (like this book!), a fact which reflects its importance in education, particularly in universities. However, critical thinking is not a discrete study topic like those in other books and modules you may encounter (for example, 'The human body in childbearing' or 'Supporting end-of-life care'); critical thinking is actually threaded through every aspect of your studies and your practice.

This chapter helps you begin to trace and understand this thread. It explores important aspects of critical thinking in academic study and in nursing practice, in particular, the importance of objectively questioning the information and ideas you encounter. Chapter 2 explores reflective practice, which is closely related to critical thinking and is a key aspect of nursing. Chapters 3 and 4 cover how to *apply* critical thinking skills in your academic reading and writing.

Of course, it is not possible to think critically about a nursing topic if you are not grounded in the *knowledge* of your discipline, and all the guidance and tasks in this book will be rooted in your developing knowledge of nursing theory and practice.

CROSS REFERENCE
Chapter 2, Reflective practice

CROSS REFERENCE
Chapter 3, Critical reading

CROSS REFERENCE
Chapter 4, Critical writing

Reflection

1) What do you understand by the term 'critical thinking'?
2) Why do you think critical thinking, as you understand it, is so important across education and professional practice?
3) Which parts of the Nursing and Midwifery Council (NMC) Code (2015) make reference to critical thinking?
4) Have you ever received feedback from a teacher or lecturer which said you had not been critical enough? Did you understand what you had done wrong?

5) Have you felt that something you recently read or heard was lacking in critical thinking? Why?

6) In what ways do you think you can demonstrate criticality in your studies and your nursing practice?

Asking the right questions

A good place to start with critical thinking is with the idea of asking questions in order to get to the truth. This idea can be traced back to the ancient Greek philosopher Socrates, who is said to have laid down the roots of western philosophy by questioning everything around him, and by demonstrating time and again that seemingly knowledgeable people, himself included, often didn't really know what they thought they knew!

> An example [of Socrates's questioning approach] was his conversation with Euthydemus. Socrates asked him whether being deceitful counted as being immoral. Of course it does, Euthydemus replied. He thought that was obvious. But what, Socrates asked, if your friend is feeling very low and might kill himself, and you steal his knife? Isn't that a deceitful act? Of course it is. But isn't it moral rather than immoral to do that? It's a good thing, not a bad one – despite being a deceitful act.
>
> (Warburton, 2012, p 2)

Socrates' thinking may seem like common sense: most of us can think of examples of 'deceit' – the telling of 'white lies', for instance – which are intended to help rather than harm people. But the important point is that Socrates was questioning received wisdom and relying solely on reasoned argument to arrive at the truth. The use of questioning and reasoned argument is central to academic and professional practice. This means, in essence, *not believing things merely because someone important says they are true*, and making sure your own beliefs are constructed around sound reasoning and credible evidence.

Knowledge and understanding in science and healthcare are developing all the time. This inevitably means that sometimes there are instances of received wisdom which turn out to be wrong. This may be because not enough was known about a particular thing at a given time, or it may be that people did not ask enough questions – or at least the *right* questions.

Task

Exploring changes in thinking 1

Look at the case studies below and answer these questions:

1) What was the current knowledge or 'received wisdom' in each case?

2) How was this challenged?

3) What, if anything, do you think should happen now?

Case studies

The Nappy Science Gang

When shopping for washing powder in any UK supermarket, we are faced with the choice of biological or non-biological detergents. Many of us may not be sure of the difference between them, but the information generally available to consumers suggests that biological detergents are more powerful and better at removing dirt and stains because they contain enzymes (substances that speed up chemical reactions, in relation to cleaning in this case). Ideal for very dirty items like nappies, you might think. However, NHS advice, as reported through the *NHS Choices* website, has long been to wash babies' nappies in *non-biological* detergent, which seems to reflect the general belief among the UK population that biological detergents irritate the skin. Nappy manufacturers and other organisations traditionally aligned themselves with NHS advice. However, in 2015, *The Guardian* reported that the *Nappy Science Gang*, a citizens' science project supported by the *Wellcome Trust* and the *Royal Society of Chemistry*, had been questioning the NHS advice on detergent use. This group of parents cited studies which appeared to show that biological detergents were no more likely to cause skin irritation than non-biological detergents, with no connection being found between enzymes and skin complaints. They also pointed to the fact that this 'myth' of enzyme irritation appeared not to exist in other countries, where, in fact, it can be pretty difficult to find non-biological detergents. The *Nappy Science Gang* asked *NHS Choices* to investigate the evidence base for the advice they were issuing on their website. After consulting the literature and experts in the field, the NHS reported that they would be changing the advice given on their website. So, as reported in *The Guardian*, thanks to 'a bunch of volunteer mums who wouldn't stop asking questions' (Collins, 2015), and the readiness of the NHS to listen, advice on the *NHS Choices* website now reads: 'There's no evidence that using washing powders with enzymes (bio powders) or fabric conditioners will irritate your baby's skin.'

Take your medicine?

Most people are used to being told by their GPs to be sure to *finish* a course of antibiotics, even if they start to feel better. Many people are also aware that this is connected to the issue of growing antibiotic resistance. However, in 2017, an article in the renowned *British Medical Journal* argued that there was insufficient evidence to support the idea that stopping antibiotic use early encourages antibiotic resistance, and that, in fact, taking antibiotics for longer than necessary may actually increase the risk of resistance (Llewelyn et al, 2017). So should patients now throw away their antibiotics when they start feeling better? Well no. GPs warn against relying on the evidence from a single study (Mundasad, 2017), and the

authors of the study themselves merely call for more research to be done to see if there is scope for cutting antibiotic use in the future (Llewelyn et al, 2017). What's more, in terms of individual health, experts such as Professor Helen Stokes-Lampard, leader of the Royal College of General Practitioners, warn people against trusting their feelings completely: just because symptoms clear up, it doesn't mean the underlying infection has been eradicated (Mundasad, 2017).

The two case studies you have analysed are good examples of how experts question or change their thinking when confronted with new evidence. There are many other areas of healthcare where similar developments have occurred, some of them widely publicised in the media, and some of them leading to significant changes in policy by governments or healthcare organisations. Some of these cases cause great controversy and even end up in court! As a nurse, it is important that you not only follow academic thinking on health issues as reported in textbooks and journals, but that you also keep an eye on how these issues are reported in the media. This may enable you, for example, to put yourself in a patient's shoes and understand how their perception of an issue or treatment may have been influenced. It links to sections 2 and 6 of the NMC Code: 'listen to people and respond to their preferences and concerns'.

Task

Exploring changes in thinking 2

1) How, to your knowledge, has general thinking developed on the following topics over time?

   - Vaping
   - Handwashing in clinical practice
   - Natural remedies
   - Drinking coffee
   - Child birth practices
   - Breast feeding
   - Immunisation

2) Can you identify any important academic studies in these areas?

3) How have these topics been reported on in the news media?

4) What, if anything, do you think needs to happen now in each case?

Advanced skills

Hegel's dialectic

A philosophical process called Hegel's dialectic quite nicely describes the advancement of knowledge in an academic environment. (Hegel was a nineteenth-century German philosopher; 'dialectic' is a formal word that essentially means 'discussion'.)

As illustrated in Figure 1.1, the dialectic basically states that for every **thesis** (ie idea) there will be an antithesis or antitheses (alternative idea[s]). Following a period of debate (which can last years, decades or centuries), a **synthesis** (a merging or fusing) of these ideas emerges. However, this new synthesis becomes a thesis in its own right and the process starts all over again!

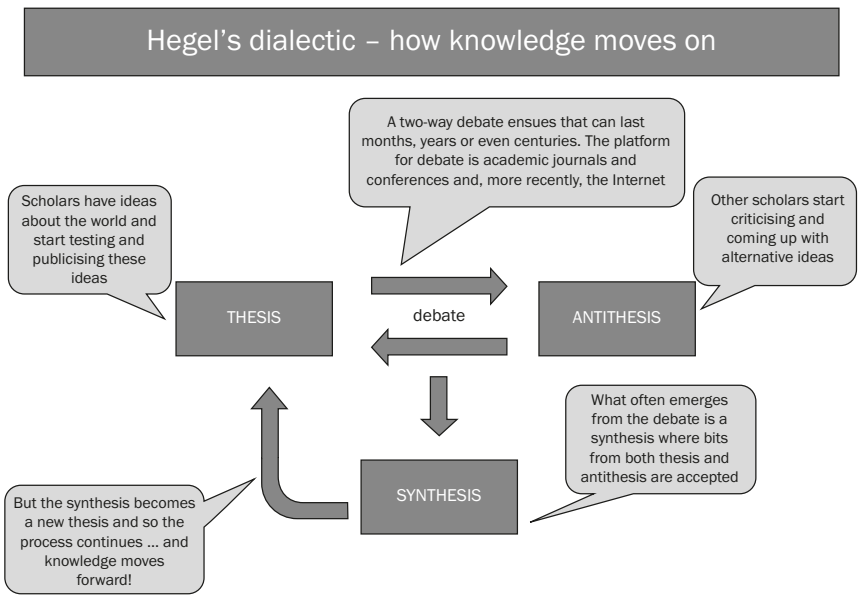

Figure 1.1: Hegel's dialectic

Students at Level 4 (first-year undergraduate students) should be able to demonstrate understanding of one side of the debate. Most students grasp this relatively easily and soon realise that they will get good marks at this academic level if they can convince the person reading (or marking) their work that they understand the concepts, ideas and theories they are writing about.

CROSS REFERENCE

Appendix 1, Academic levels at university

Level 5 (second-year) students are expected to be aware of the debate between ideas (thesis vs antithesis). Tied in with awareness of this debate is an understanding that there are alternative viewpoints, that there is always another side to the coin, and that if you are going to argue your corner, you must have evidence.

Being able to see how a compromise (synthesis) might be arrived at is a skill that Level 6 (third-year) students need to work towards and it is certainly a skill expected of postgraduate students. This skill is one that few beginners at university have – it's something most acquire as they climb the academic ladder.

At postgraduate level, synthesis is expected to a large extent in that most postgraduate work needs to be underpinned by original thought. This doesn't mean that you spontaneously make up your own theories; it usually means that you've appraised the viewpoints on a specific issue or topic and come up with your ideas about that issue or topic based on what you've read, digested and been convinced by.

Fake news!

The case studies previously discussed in the section on nappies and antibiotics are important in that they show how knowledge and understanding change, and how academics, students and practitioners have a duty to avoid complacency and to keep asking questions. In the case of antibiotics, new evidence has emerged which changes the picture somewhat; in the case of detergents, the evidence was there, but had been overlooked. 'Wrong turns' are part of academic life, and mistakes are made, but in both cases discussed, the parties involved were ostensibly constrained by the rules of academic enquiry, primarily that claims should be *based on evidence*. There was also responsible reporting of the issues in the media outlets concerned. However, this is not always the case! The concept of 'fake news' has come to the fore in recent years. This concept comprises stories that have no basis in fact, but are nevertheless presented as factually accurate – often in order to benefit a particular person or organisation, but sometimes merely to cause mischief and controversy. They can appear in any medium but are particularly common on social media. Fake news stories often focus on politics and celebrity, but they sometimes involve health issues. The influence of this concept was recently highlighted when the *Collins Dictionary* named 'fake news' as the 2017 'word of the year' (Flood, 2017).

Task

Scrutinising the media

Look at the headlines below, taken from news media. Do you know the background behind these headlines? Do you think the stories could be classed as 'fake news'? Why? What questions need to be answered to get to the bottom of the story in each case?

Tumeric helped a dying woman beat cancer

(*Daily Mail*, 24 July 2017)

Drinking three cups of coffee a day can add years to your life
(*Metro*, 11 July 2017)

Light drinking 'does no harm in pregnancy'
(*The Times*, 12 September 2017)

Discussion of task

As with most newspaper headlines of this nature, there is actually a grain of truth in the ones cited above. Asking the right questions, however, means doing some detective work to determine if the underlying study or research may have been misinterpreted, or even distorted, by journalists. You might even question whether the journalist or newspaper has a particular political reason (most newspapers have a political stance) or financial reason (controversy breeds publicity!) for running the headline.

One way of probing headlines (or any other statement or claim) is to look for authoritative information on the subject. You might do this by checking out positions from legitimate scientific or professional organisations, or even consulting the original research that led to the headline. Indeed, as you progress through your nursing course, you will find more and more that this is what you are expected to do.

Tumeric helped a dying woman beat cancer

This headline puts two demands on a critically thinking nurse. Firstly, they should be aware of the common bias in human thinking (connected to anecdotal thinking – see case study on page 8: Scientific versus anecdotal thinking) of assuming that an outcome for one specific event will apply more generally. Secondly, evidence from reputable sources should be tracked down. In this case, Cancer Research UK has some useful information that is more balanced: 'There is currently no research evidence to show that turmeric can prevent or treat cancer but early trials have shown some promising results.'

It is notable that Macmillan Cancer Support, the cancer charity, has recently employed a 'digital nurse' to help combat online fake news related to cancer (Silver, 2017).

Drinking three cups of coffee a day can add years to your life

The article relating to this headline refers to an international study looking at half-a-million people across Europe (Gunter et al, 2017). The study concludes that 'coffee drinking was associated with reduced risk for death from various causes' (p 236). The headline is more specific ('three cups'; 'add years to life') than the study conclusion ('associated with reduced risk of death'), but the conclusions are similar. However, a critically thinking nurse would weigh up the pros (very large study, conducted by reputable scientists across many countries) and cons ('risk' and 'associations' are not the same as proof) of this study, and question whether other studies that support or challenge this finding exist before drawing any firm conclusions.

Light drinking 'does no harm in pregnancy'

This headline hit *The Times* newspaper in September 2017, with a report that scientists at the University of Bristol had conducted a study (a systematic literature review) which concluded that there was 'surprisingly limited' proof that a little alcohol harms an unborn baby. The article also quotes David Spiegelhalter, a professor and risk expert at the University of Cambridge, who remarked that any guilt and anxiety felt by women who had an occasional glass of wine should be dispelled by this study.

Broadsheet newspapers like *The Times* tend to have a better reputation for reporting than the tabloid newspapers, but this article created some strong feelings. David Spiegelhalter posted on the social media site Twitter that *The Times* had not included him saying 'precaution is reasonable', which would have markedly changed the tone of the article. Also, the actual conclusions of the University of Bristol study (Mamluk et al, 2017) state that since there is some evidence that light alcohol consumption is associated with smaller babies and premature delivery, abstention as a precautionary principle should remain in any guidance, but that guidance should also say the evidence for the effects of light alcohol consumption is sparse. In other words, *The Times* has confused *no evidence of effect* with *evidence of no effect*. Compare the more inconclusive statement 'the evidence that light alcohol consumption in pregnancy harms unborn babies is limited' with the more definitive statement 'light alcohol consumption does not harm unborn babies'. The headline is thus very misleading. Indeed, the following day, *The Times* published a correction saying the headline had wrongly suggested that light drinking in pregnancy did no harm.

Case study

Scientific versus anecdotal thinking

Shermer (2008) sees the public debate around vaccination and autism as symptomatic of the power of what he calls 'anecdotal thinking', and he suggests quite a compelling reason for this phenomenon:

The recent medical controversy over whether vaccinations cause autism reveals a habit of human cognition – thinking anecdotally comes naturally, whereas thinking scientifically does not. On the one side are scientists who have been unable to find any causal link between the symptoms of autism and the vaccine preservative thimerosal, which in the body breaks down into ethylmercury, the culprit du jour for autism's cause. On the other side are parents who noticed that shortly after having their children vaccinated autistic symptoms began to appear. These anecdotal associations are so powerful that they cause people to ignore contrary evidence: ethylmercury is expelled from the body quickly (unlike its chemical cousin methylmercury) and therefore cannot accumulate in the brain long enough to cause damage. And in any case, autism continues to be diagnosed in children born after thimerosal was removed from most vaccines in 1999; today trace amounts exist in only a few. The reason for this cognitive disconnect is that we have evolved brains

> that pay attention to anecdotes because false positives (believing there is a connection between A and B when there is not) are usually harmless, whereas false negatives (believing there is no connection between A and B when there is) may take you out of the gene pool.
>
> (Shermer, 2008)

Developing and applying your critical thinking skills

Critical thinking is not peculiar to academia or nursing practice: people are required to use their critical faculties every day in order to make assessments, judgements and decisions. However, in academic and clinical settings, your critical thinking skills will be under particular scrutiny. You will need to consciously develop your critical thinking skills throughout your study and practice, and you will need to draw on these skills in order to complete academic tasks successfully and develop as a nurse. This will involve a range of skills and abilities which you will have to draw on at different stages of your studies and work:

- problem solving, including discussion of ethical issues;
- decision making;
- applying objective criteria to particular situations;
- reflecting on your nursing practice and on your study skills;
- analysing and evaluating sources of information and ideas in terms of suitability, quality and relevance;
- analysing and evaluating information in order to understand a topic;
- identifying, interpreting and assessing the position of other people;
- identifying, interpreting and assessing the arguments put forward by other people to determine if
  - they are well thought through
  - they are reasoned and balanced
  - they are supported with sound, relevant evidence
  - they lead to logical conclusions;
- identifying, interpreting and assessing contrasting points of view;
- evaluating the strength and relevance of the evidence put forward to support different points of view;
- using academic sources to develop your own position (or 'stance') in relation to the topics you will investigate, and presenting (or 'voicing') this stance in a way that will convince a critical reader;
- developing arguments to support your stance which are well thought through, reasoned and balanced;
- finding sound, relevant evidence to support your arguments.

CROSS REFERENCE

Chapter 3, Critical reading

CROSS REFERENCE

Chapter 4, Critical writing

All of the above are explored in later chapters in this book.

Critical thinking in nursing practice

Critical thinking is inherent in the NMC Code (2015) and you should be guided by the Code in your day-to-day practice. You should also bear the Code in mind, and make reference to it, when discussing nursing practice in academic work. The following sections of the Code are particularly explicit as regards the importance of critical thinking.

1.3 Avoid making assumptions and recognise diversity and individual choice.

6.1 Make sure that any information or advice given is evidence based.

8.4 Work with colleagues to evaluate the quality of your work and that of your team.

9.2 Gather and reflect on feedback from a variety of sources, using it to improve practice and performance.

13.1 Accurately assess signs of normal or worsening physical health in the person receiving care.

19.2 Take account of current evidence, knowledge and developments in reducing mistakes and the effect of them.

20.6 Stay objective and have clear professional boundaries at all times with people in your care (including those who have been in your care in the past) and their families and carers.

Task

Applying the NMC Code to critical thinking

1) Compare a nurse saying 'Aromatherapy is great for nausea; I use it myself' with 'We know from some of the research carried out that inhaling ginger or peppermint oil vapour can help with nausea; it seems to work well for a lot of patients though some people don't benefit'. Which statement is more in line with the Code? Why?

2) Many people who have a psychosis (eg schizophrenia) put on weight because a common side-effect of the anti-psychotic medications they take is an increase in appetite. How would you respond if a service user said to their nurse: 'Why should I carry on taking these when they make me fat?'

3) The benefits of 'mindfulness' have been much discussed in the media in recent years. Would you recommend this practice to patients?

Discussion of task

The numbers in brackets are cross references to the sections of the Code mentioned earlier.

1) The second statement is more in line with the Code; the first is a personal anecdote while the second is a more accurate reflection of the evidence base