ENGG7811 Tutorial 1

Learning how to avoid plagiarism in research

Read this handout before the tutorial session. Activities that you need to do before the class are indicated in bold blue. You will not be given time to do these activities during the session.

Tutorials are evaluated for each student; therefore, all students are required to participate. Every student should be actively involved in discussions among your groups and participate when your tutor discusses the answers. The marking rubric for tutorials is on Blackboard.

Notes for this tutorial:
Plagiarism is the act of taking the ideas, interpretations, words, or creative works of another person and passing them off as your own. This is a dishonest practice, and it is poor scholarship. Unintentional plagiarism is still plagiarism.

In research, it is essential to reference the work of prior scholars adequately and appropriately. Students should already know that plagiarism is cheating and UQ will investigate suspected cases and take disciplinary action against students if plagiarism is found. The question for ENGG7811 students who are transitioning to research is to learn how to avoid plagiarism in research. Here are some examples that should convey the principles for avoiding plagiarism.

You avoid plagiarism by expressing other people's ideas *in your own words*, and then attributing the idea by saying *where the ideas came from*.

The correct way of attributing ideas by others is determined by the *referencing style* you are using. These are sets of rules that determine what, where, and how specific information needs to be included when attributing an idea to another author. Referencing styles are often discipline specific, and we will learn more about different styles and their correct usage with referencing software during the course. For this tutorial, we will use the American Psychological Association 7th Edition Referencing Style (APA 7th), one of the most widely used referencing styles in the world. **Check out the UQ Library's APA 7th referencing style guide before your tutorial (https://guides.library.uq.edu.au/referencing/apa7).** You can use this guide during the tutorial to help you with the following activities.

Activity 1

Imagine you are a tutor marking student assignments. The students have been given an article written by John Shih and published in 2019. They need to use the following information on p. 7: *"It seems that two years is the doubling time for machine learning".* This idea is relevant to the students' assignment, but how should they use the idea?

Below are 7 possible sentences they might write to include this idea in their assignment. Review the sentences and decide if they are plagiarised or not. Give one reason as a justification for your answer. If the sentences are plagiarised, then write in your journals explaining how these can be fixed (take no more than 15 minutes and one sentence per answer).

a) It seems that two years is the doubling time for machine learning.

b) Two years is the doubling time for machine learning.

c) Machine learning applications will double every two years.

d) Machine learning applications will double every two years (Shih, 2019).

e) Shih (2019) claims that machine learning applications will double every two years.

f) According to Shih (2019), machine learning applications will double every two years.

g) Shih (2019, p. 7) has claimed that "two years is the doubling time for machine learning".

Activity 2

On the following pages you will find copies of two published articles titled *Interruptions and distractions in healthcare: review and reappraisal* and *Interruptions during nurses' work: A state-of-the-science review*. Below, you will also find a write up written by an imaginary student which uses these two articles as references.

a) **Read the passages from published articles by the authors named before your tutorial.**
b) **Read the write-up written by the imaginary student before your tutorial.**
c) Discuss in your groups where there are problems of plagiarism in the write-up below, and how the student could have avoided the plagiarism (take no more than 20 mins)
d) Write up your discussion in your journals using the following format for each of the plagiarised sections you identified (take no more than 10 mins):

   Plagiarised Section:

   Reason (1 sentence):

   Solution (1 sentence):

e) Your tutor will then verbally discuss the problems you have identified and suggestions for avoiding them in your group. Every student in the class is required to present their thoughts on at least one paragraph (take no more than 2 min per student).

Student write-up for you to examine for plagiarism:

> Overall, it is clear that more work needs to be done to understand the impact of interruptions on nurses' work. Trying to eliminate all interruptions is not a good idea, because it may not be possible or may be unsafe. Alternatively, there may be situations, such as during high-risk procedures, when limiting interruptions is appropriate.
>
> We also need better theory. Hopkinson argued that we need theory ''to avoid simplistic solutions to the complex problem of insuring safe and high-quality patient care.'' The lack of theory leaves us uncertain about how and why interruptions concepts are related, so the findings are not strong enough to support changes to nursing practice. This offers researchers an opportunity to design studies using theoretical frameworks to guide statistical analysis and qualitative analysis.

We also need better standardisation of the concept of interruptions. Just about every study has its own definition of what an interruption is, which makes it very difficult to compare results across studies. Many definitions originate in the work of Brixey or Jett and George which provides some standardisation.

As Rivera-Rodriguez and Karsh (2010) note, “it can be difficult to study associations between interruptions and outcomes in healthcare field studies” (p. 311). Determining the effects of interruptions on the interrupter, interruptee and the patient is especially difficult because some of what happens is not observable, but rather manifests as short-term cognitive effects. Rivera-Rodriguez and Karsh also say that observations can be used to identify performance improvements or decrements and can be complemented with other cognitive field research techniques to gain deeper insights into interruptions.

References

Hopkinson, S. G., & Jennings, B. M. (2013). Interruptions during nurses' work: A state-of-the-science review. *Research in Nursing & Health*, *36*(1), 38-53.

Rivera-Rodriguez, A. J., & Karsh, B. T. (2010). Interruptions.

Interruptions and distractions in healthcare: review and reappraisal

A J Rivera-Rodriguez, B-T Karsh

Qual Saf Health Care 2010;**19**:304—312. doi:10.1136/qshc.2009.033282

sociotechnical systems framing of interruptions also has implications for interpreting the results of the reviewed studies.

Reappraisal

The results of this review indicate that interruptions are common occurrences in a variety of healthcare environments. However, the high frequency of interruptions is not unique to healthcare; the same is true in aviation and driving.[43—45] Also, the interruptions studied (see tables 2 and 3) were frequently information-sharing events involving interruptions by other healthcare professionals or patients, whether mediated by technology, such as pagers, or not. At least one study demonstrated that these interruptions could improve performance by correcting medication orders.[9] Together, the high frequency of interruptions coupled with information content may simply be indicative of the high need for constant communication and coordination in healthcare. This should be expected; healthcare delivery, like all complex sociotechnical systems, relies on communication and coordination to maintain system performance. As such, the high frequency of interruptions need not necessarily be worrisome.

To that end, it is also not clear that interventions to eliminate interruptions are a good idea. Trying to eliminate all interruptions is unwise, because it may be either unfeasible or unsafe. On the other hand, there may be situations, such as during high-risk procedures, when limiting interruptions may be warranted. This similarly calls into question what outcomes to measure with regard to interruptions. We agree with Tucker[19 41] that non-purposeful interruptions, or operational failures that interrupt, are appropriate to measure as costs. We also agree that errors are appropriate outcomes.[21 24 25] However, goal-driven interruptions need to be studied as having potential performance benefits that may result in improved situation awareness,[46—49] appropriately refocused attention, problem identification, collaboration, communication and forecasting/planning.

Admittedly, it can be difficult to study associations between interruptions and outcomes in healthcare field studies. Determining the effects of interruptions on the interrupter, interruptee and the patient is especially difficult because some of what happens is not observable, but rather manifests as short-term cognitive effects (eg, break in attention, increase in stress or cognitive workload, obtaining wrong information, etc). However, some have used observations to examine interruptions in healthcare,[8 9 11—15] and we believe this approach deserves further attention. Observations can be used to identify performance improvements or decrements and can be complemented with other cognitive field research techniques[50 51] to gain deeper insights into interruptions.

CONCLUSION

Future research must go into more depth to understand interruptions in light of the complexity of healthcare. Many interruptions may be necessary for safe, high-quality care. However, there may be times, especially during tasks requiring undivided attention, that interruptions should be proactively limited to only those that are clearly needed. Taking a complex sociotechnical systems approach will help researchers view interruptions more holistically and will result in more comprehensive studies that take into account the complexity of interruptions and the many variables in healthcare settings. This should lead to a deeper understanding of interruptions and improved design of systems to support healthcare professionals as they deal with interruptions in the course of their normal, that is to say, hectic, work.

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REFERENCES

1. **Potter P,** Boxerman S, Wolf L, *et al*. Mapping the nursing process: a new approach for understanding the work of nursing. *J Nurs Adm* 2004;**34**:101—9.
2. **Potter P,** Wolf L, Boxerman S, *et al*. Understanding the cognitive work of nursing in the acute care environment. *J Nurs Adm* 2005;**35**:327—35.
3. **Institute of Medicine.** *To err is human: building a safer health system*. Washington, DC: National Academy Press, 2000

Interruptions During Nurses' Work: A State-of-the-Science Review

Susan G. Hopkinson,[1]* Bonnie Mowinski Jennings[2]**

Research in Nursing and Health, 36(1), 38-53.

the interruptions (Tucker & Spear, 2006). Findings from this review offer a hint of the system effects on nurses' work. The physical set up of medication systems on the units, for instance, affected the number and type of interruptions nurses experienced. Rather than focusing on the frequency of interruptions, an approach with more practical utility would be to identify particular obstacles or failures within the work systems that produce interruptions and follow these through to identify the full complement of events involved with these interruptions. Tucker and Spear (2006) referred to these system problems as operational failures. Instead of a momentary break in attention or task, operational failures expose a full break in the continuity of the care system. For example, if a medication is not available at the time it is to be given, not only is the nurse interrupted by switching his or her focus to other work, but the patient's care also is disrupted until the medication can be obtained. Interruptions precipitated by operational failures have different implications than those in which there is a momentary break in attention.

We believe the absence of guiding frameworks contributes to our muddled understanding of interruptions. Mark, Hughes, and Jones (2004, p. 11) argued that we need theory "to avoid simplistic solutions to the complex problem of insuring safe and high quality patient care." Using examples related to nurse staffing, they demonstrated that in the absence of theory, results may be contradictory, effects may be masked, knowledge development may lack coherence, and interventions to enhance quality and patient safety will be difficult to design. This same set of circumstances can be extrapolated to studies of interruptions. The paucity of studies guided by theory leaves us uncertain about how and why constructs are related, yielding findings that lack strength to support changes in practice, thereby creating a state of stagnation in the state of the science about interruptions. This exposes an important opportunity for investigators to design studies using existing theoretical frameworks to guide quantitative analysis and to conduct theoretically driven analyses of qualitative data to yield better explanations of interruptions within the context of acute care settings.

The research agenda would also benefit from efforts to develop an improved, standardized definition of interruptions. In reports in which investigators specified a definition of interruptions, the source of many definitions was traceable to a conceptual analysis conducted by Brixey et al. (2007) or a typology of four types of interruptions proposed by Jett and George (2003). Both of these definitions were derived from existing literature and offer beginning ways to identify attributes and types of interruptions. Neither is sufficient, however, to be used as an operational definition. A careful empirical analysis of interruptions may be an appropriate prelude to moving toward an operational definition. Ideally, this analysis would be conducted without using a priori frameworks and instruments for data collection, analysis, and interpretation. In addition, this analysis would be conducted in the clinical setting where characteristics of interruptions in the health care environment may differ from attributes of interruptions in other workplaces.

Without a guiding theoretical framework or standardized definitions, the use of instruments with pre-established attributes does little to expand our understanding of interruptions within the clinical setting. The structured nature of existing classification instruments is based on preconceived notions about the effects and characteristics of interruptions that have not yet been empirically supported in the literature. These constrain opportunities to explore interruptions as they occur naturally, thereby inhibiting a fuller understanding of the merits and detractors of interruptions in the acute care setting.

Last, examining the data about interruptions using existing evidence hierarchies yielded important insights. First, studies of interruptions remain at the descriptive, exploratory level. There is a compelling need to consider the feasibility of studies of interruptions in clinical settings using controlled trials or experiments. Second, the analysis of findings from qualitative studies remains at a very basic level. There is a compelling need for future qualitative research to examine interruptions from appropriate theoretical perspectives and report more interpreted renderings of the results. Overall, the level of evidence has plateaued without significant advancement over the past 10 years, suggesting the need to exercise caution when applying findings from existing studies.

Limitations

The time span of articles in this review encompassed the last 10 years. Findings from articles published prior to 2001 could possibly offer