*NOTES ABOUT THE USE OF THIS FORM:*

1. *This form is designed to be completed on a computer. Cells in the table below will expand to accommodate any amount of text … but we suggest that you keep the narrative as succinct as possible!*
2. *Please keep the use of formatting to a minimum. Importing formatted text onto a virtual learning platform presents challenges!*
3. *This form assumes that the “unit of learning” is a module. The module, in turn, would be included in a “course” (which is not referred to here). Each module will have a series of components which have been called “units” – they may be called something different in your design (like “weeks”, or “sections”) and you are free to change the terminology.*
4. *In the section about the authors of and contributors to the course, we have provided space for 5 co-authors (or co-contributors). If there were more than six people on the team, please add additional rows to the table.*
5. *Please ensure that you use student-friendly language. So the intended learning outcomes will be framed using the word “you”, and not “the student”. (This may be at odds with what you understand to be “academic” language. The aim, in online and blended learning, is to use language that includes the student to the greatest extent possible.)*
6. *Please note that module-level outcomes should be “overarching” outcomes onto which the unit-level outcomes map. You should have a few (maybe 4) module-level outcomes, and a very few (two or three at the most) unit-level outcomes for each unit.*
7. *The unit-level template should be copied so that there is a copy of the template for EACH unit/week/section. Thus, if there are 15 units/weeks/sections in a module, you will copy the template 14 times and complete each copy for one unit/week/section.*
8. *In the unit-level template, there is a space for a detailed description of student and teacher engagement with the unit. Here we would expect to see a “blow-by-blow” account of how the unit “hangs together”. What happens first? And then? What resources would students need to access for each part of the unit’s work? Where would they find these? Where is collaboration expected to happen? How is it scaffolded? And so on? What happens in class? What happens online? How do these elements build on each other? How long should students spend on each part of the unit?*

*This is NOT a list of things that students (or teachers) do. It is a* ***detailed description*** *of the* ***process****.*

*We have used a generic set of headings in the template. You are free to change the headings to suit the particular unit, but you are* ***not*** *free to ignore any of the required information.*

*Be sure, when completing the unit-level template to contextualise the content … by which we mean that content needs to be grounded in real life – even mathematical equations need to be demonstrably linked to real life! A student needs to know* ***why*** *they are engaging with the content.*

There are 2 templates on the following pages. The **Module-level template**should be completed once, and the **Unit-level template** should be completed in respect of each of the Units (or Sections, or Weeks) in the Module

MODULE-LEVEL TEMPLATE

|  |  |
| --- | --- |
| **Details of institution that has developed the module** | |
| Name of University | Ashesi University |
| Name of institutional contact | Prof. Angela Owusu-Ansah |
| Email address of institutional contact | [aowusuansah@ashesi.edu.gh](mailto:aowusuansah@ashesi.edu.gh) |

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| **Details of Creative Commons licence** (<https://creativecommons.org/licenses/>) | |
| Licence type | CC BY SA 4.0 |

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| **Details of the authors of/contributors to the course and their role** *(You can delete any sections that don’t apply.)* | |
| Original author (if applicable) |  |
| Lead author (+ email address) | **Prof. Angela Owusu-Ansah (**[**aowusuansah@ashesi.edu.gh**](mailto:aowusuansah@ashesi.edu.gh) **)** |
| *Responsible for:* | As a faculty member of research methods, Angela is responsible for ideation, pedagogy/andragogy choices, content sequence, and cohesiveness. She will ensure that the science of learning underpins the research methods course design, flow, content, and method of delivery for a blended learning environment. She will check for alignment of student learning objectives, assessments, and activities in using the backwards design frame. She will also check for relevancy and currency of content, skills, and dispositions. In collaboration with the course co-contributor, she will expand on the week-by-week unit descriptions, aims, and student activities, and chronicle evidence of student learning. |
| Co-author/co-contributor | **Mr. William Ohene Annoh** |
| *Responsible for:* | As assistant director of research and a non-faculty member, William will pose constructive questions and logically critique the development of the course to heighten the robustness, relevance, and rigor for a more meaningful structured course. |
| Co-author/co-contributor |  |
| *Responsible for:* |  |
| Co-author/co-contributor |  |
| *Responsible for:* |  |
| Co-author/co-contributor |  |
| *Responsible for:* |  |
| Co-author/co-contributor |  |
| *Responsible for:* |  |

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| **Information regarding format of material to upload onto the OER Africa repository** | |
| Primary resource (Not PDF) |  |
| Will a Moodle common cartridge be uploaded as well? |  |

*(A Moodle common cartridge is a .ZIP file of your module – if it is created in Moodle – that can be imported into another university’s Moodle platform.)*

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| **Course details** | | | |
| Module title: | Research Methods | | |
| Under- or Post-graduate? | Undergraduate | Year of study: | Third (Junior)year |
| Class contact time (hours): | 4 hours/week  (3 classroom hours of instruction and 1 hour discussion per week) | Number of credits: | 4 credits |
| Private/online study hours: | 8 private hours of study outside of the class per week (reading, assignments, studying, projects, online resource internet searches, etc.) | Number of weeks of study: | 14 |
| Total student learning hours: | 12 X 14 = 168 hrs | Number of units of study: | 12 |

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| Programme(s) which might include this Module: | Business Administration, Management Information Systems, Computer Science, and all Social Science programs with a research component |
| Pre-requisite student abilities and knowledge: | Knowledge of the scientific process, writing skills, critical reading skills, and critical thinking skills. |
| Pre-requisite (or co-requisite) modules: | Statistics, Written & Oral Communication, Text & Meaning, Quantitative and Qualitative approaches to research |

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| Aim of the module: | The aim of the module is to enable undergraduate students to practice the scientific process and to write it up as a thesis proposal the semester before they actually embark on thesis writing in their final year. It aims to reduce mediocre student theses due to lack of prior knowledge and skill in scientific research experience. |  |
| Brief description of module: | The module is a guided experience in how to develop and understand the components of research and a research proposal. The course is a sequence of progressive steps of theory to practice on how to conduct research using rigorous scientific processes. The undergraduate students gain the content knowledge, skills and dispositions that are foundational to crafting a research study and the standard components of a written research thesis. The course is offered in the junior year and students get to practice and gain an appreciation of research concepts and processes from start to finish in a non-high stakes’ environment.  The course prevents the conflated situation of senior - level students concurrently learning how to conduct research and thesis writing while they are in the process of crafting a capstone thesis. The student learning outcome is research experience and a model research prospectus in their junior year that may or may not serve as a blueprint for their senior – year capstone thesis. |  |

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| Intended learning outcomes: | *At the end of this* ***module****, you will be able to:*   1. formulate a researchable question 2. determine the appropriate philosophical underpinnings of your question to guide your subsequent research choices 3. develop a research method and ethical design appropriate for your research question 4. develop (or identify) research instruments and choose a suitable data analysis tool for the type of data you plan to collect for your research question, 5. conduct a review of related literature to provide context of your question 6. write a cohesive research thesis prospectus (a crafted blueprint or a model of a capstone research thesis proposal) |
| Indicative content: | * Research Question Formation * Research Question Type, Research paradigms, Deduction or Induction, Hypothesis or Exploration * Literature review, Conceptual Framework (making a written case), Problem Statement   Limitations and Delimitations, Reliability and Validity  Research designs, Deductive  Research designs, Inductive  Population, Sampling, Power,  Procedures, ethics associated with human participants or affiliates  Instrumentation (including Survey Design)  Projected Data Analysis Tool, statistical analysis, |
| Form of final/summative assessment: | A research study prospectus  The form of the final summative assessment is a research thesis prospectus, which could serve as a blueprint or a first draft of a subsequent final year research proposal (Students would have undergone continuous formative assessment in phases for the entire semester to create the research thesis prospectus) |

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| **Assessment of module-level learning outcomes** | |
| Module-level learning outcome | Module assessment task |
| 1. formulate a researchable question | Assessment of a crafted research question |
| 1. determine the appropriate philosophical underpinnings of your question to guide your design choices | Adequacy of problem statement  Deduction and induction  Crafting of a conceptual framework of the problem  Appropriateness of hypothesis or exploration plan  Alignment of the research question to the research design choice |
| 1. develop a research method and ethical design appropriate for your research question | Appropriateness of choice of population, sampling, procedures, ethics of practice, delimitations, limitations, validity, and reliability measures (credibility and trustworthiness) |
| 1. conduct a review of related literature to provide context of your question | A review of literature related to the context of the research question (conceptual framework and problem) |
| 1. develop (or identify) your research instruments | Development or identification of a suitable instrument  Capability of instrument choice to collect the appropriate data to use to answer the research question |
| 1. write a cohesive research thesis prospectus (a crafted blueprint or a model of a capstone research thesis proposal) | The cohesive assembling of the numerous parts into a logical case or argument on the relevance and structure of the study in a deliverable form, i.e., a blueprint or a model research prospectus which may serve as the first research proposal draft for a final year student capstone. |

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| **Significant features or elements of module** |
| It starts with a student’s personal experience, a process reflective of the Kolb theory of learning.  It ensures the students understand the concept before they are introduced to the vocabulary, definitions, principles, etc. reducing the tendency for rote learning.  Students construct their knowledge (Constructivism learning theory)  Students are introduced to scientific thinking as a natural and logical progression of thought  Students deem it relevant because it is useful in crafting their final year capstone |

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| **Student profile in the context of this module:** | |
| What is the target group of students who would do this module? | The target group of students would be undergraduate students who are required to conduct a study to write a thesis in their final year. Most of the students would be implementing scientific research in its entirety for the first time. The students would be in the semester immediately preceding their final year. |
| What **skills** should a *student* have **already** mastered before starting this Module? | Academic writing skills  Critical thinking and reading skills  Problem development skills |
| What **prior knowledge** of the subject matter should a *student* have? | N/A |

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| **Non-expert support:** | |
| What **skills** and **prior knowledge** of the subject matter  should *facilitators* have **already** mastered before starting to deliver this Module? | Facilitators should have mastered the knowledge, skills, and dispositions of either the qualitative or quantitative approach to research or both preferred or there should be co-facilitators. |
| What **skills** do *support staff* need in order to support the delivery of this module? | Support staff with skill in research software such as R, AtlasTI, SPSS, etc. would be valuable.  They should also have skill in writing; use of APA or other standard writing styles; and ability to search for credible literature resources. |

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| **Quality assurance matters** | | |
| How will feedback on module be obtained from students? | Feedback from students will be obtained through:   * Mid and end of semester course evaluations * In-class feedback and reflections * Faculty implementing the Science of Learning * (Optional) Faculty conducted SoTL research | |
| How will student feedback be used to improve module? | Aggregated scores and prevalent comments of the course evaluations will serve as one form of professional development for the instructors of the course and will inform modifications to the course.  Outcomes of faculty conducting SoTL research will also inform modifications to aspects of the course.  In-class feedback and reflections will inform and improve ongoing teaching during the semester | |
| A certificate, signed by the university’s Head of Quality Assurance, confirming that the module meets the requirements of the PEBL QA rubric is attached. | | Yes  No |

**WEEK ONE**

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| **Unit-level overview** | | **Unit** |  |
| Topic name: | Begin from an interest | | |
| Aim of the topic: | The aim of the topic is to ensure commitment and engagement with research and the research methods class. It is also an appropriate first and seemingly low stakes topic for introducing the technology students will use throughout the course. | | |
| This topic covers: | * Areas to find topics * Movement from broad to a focused topic * How to navigate the technology tools for learning the course | | |
| Intended learning outcomes: | *At the end of this* ***topic****, you will be able to:*   1. Find a topic of research interest 2. Convert a broad topic to a focused topic 3. Navigate the technology learning tools of the course | | |

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| Overview of student activity: | **Learning Activity 1 (Day1): Identifying class interests**  Students will explore their interests and reasons for interests; learn about interests of others in (and outside) the class (forums); and explore the research potential of the potential topics in the library, on the internet, journals, etc. Each student will arrive at final list of topics of interest. Students will be introduced to 24/7 hotline and IT team supports available.  **Learning Activity 2 (Day 2): Finding a research project**  Students will choose one or two from the list that interests them the most and will probe and critique each other in small groups (breakout rooms). Students will narrow broad topics appropriately to a focused topic.  **Learning Activity 3 (Day 3): Discussion Class**  During this one-hour session, students will finalize topic formation by discussing with peers and instructor, topic relevance to others apart from the researcher, the narrowness of the topic, etc. Students will use the discussion feature online to learn from whole class and write about their learning gains in their reflective diaries. |  |

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| **Constructive alignment of unit level outcomes with module level outcomes, learning activities and assessment** *(Pressing <Tab> at the end of the table will provide additional rows in the table, if required.)* | | | |
| Intended unit learning outcomes: | No of module-level outcome | Activity where students engage with this outcome | Where and how is this outcome assessed? |
| ***At the end of this unit, you will be able to:*** | | | |
| 1. Search appropriate channels to find a topic of research interest | 1 | Creation of topic list using the library, the internet, friends, etc. | Reflective diary (self-assessment); peers in class; Instructor feedback |
| 1. Use appropriate processes to convert a broad topic to a focused one | 1 | Use of word counts, nouns, and verbs, to narrow broad topics | Reflective diary (self-assessment); peers in class; Instructor feedback |
| 1. Navigate the technology learning tools of the course | 1 | All activities have virtual component inherently integrated | Student frequency of using hotline and IT support, and participation level in forum, discussion groups, breakout rooms, |
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| Detailed explanation of ALL student and teacher engagement with the unit:  ***(This should be presented in the order that the activities take place. So if students do work* online *before* *coming to the lecture, that should be shown ahead of what happens in class.***  ***If there is more than one opportunity for face-to-face contact, or more than one online task, there should be a separate section for each instance, and they should be presented in the template in the same order that students encounter them.)***  ***Content*** *– such as lecture material – can EITHER be shown here OR added as* ***clearly identifiable*** *addenda to the document. If you plan to use addenda, you should ensure that these are cross-referenced in this section.)* | | | |
| Module-level outcomes addressed: | | | |
| (Topic identification the starting place) to **formulate a researchable question** | | | |
| Purpose of the unit: | | | |
| To get accustomed to navigating the online learning tools  To ideate a topic and follow up with a systematic process to finding a topic or starting place for your research question | | | |
| Over to you: *(a description of the process of the section)* | | | |
| **Learning Activity 1 (Day1): Identifying potential interests**  Students have asked themselves in the pre-activity “what interests me? and “what would interest others outside my class?” Students are poised to explore their interests and reasons for interests, “what interests me about these topics?”; learn about interests of others in the class (forums); and probe and critique each other in small groups (breakout rooms). Each student will arrive at final list of topics of interest. Students will be introduced to the 24/7 hotline and IT team.  Time progression (in minutes) for a 90-minute class  0:00 to 0:10  The E-moderator (instructor) introduces herself (or himself) and talks about her interests and what interests her about those topics and allude to how it is important she uses certain steps to reduce her long list to 2-3.  0:10 to 0:30  Students volunteer to introduce themselves, mention an interest list of a classmate they read in the pre-activity forum that intrigued them and how it relates (or not) to the topics they are considering.  0:30 to 0:45  Students are put in small groups to probe and critique each other’s choice of interests to question “what interests me about that topic? Would others be interested in such a topic.  0:45 to 0:85  Students do the following (Adapted from “The Craft of Research” 4th ed., section 3)   1. Use the library online or in person to look up their topics in general guides, e.g., CQ Researcher to skim subheadings, and specialized guides, e.g., Women’s Studies International 2. Use an online database, e.g., Academic Search Premier 3. Use the internet surfing discriminately, e.g., topic related, encyclopaedias. Read the entries and copy the list of references to probe the topic further. Even Wikipedia is a great source for ideas but never cite it as a reliable resource. 4. Use blogs which often discuss contentious issues   0:85 to 0:90  The E-moderator (instructor) brings the class to a close and asks students to complete the exercise as an assignment. She (or he) also starts a discussion online where students can pose questions or make comments as they work on completing the assignment. Student peers are encouraged to log on occasionally to see if they can be of some assistance to someone in heir class. The E-moderator shows students how to access the 24/7 hotline and IT team should they need technical or other assistance after hours and also participates in guiding students. Students are to come to class the next session closer to identifying the 1-2 topics.  **Learning Activity 2 (Day 2): Finding a research project**  Students will choose one or two potential that interest them the most after exploring their research potential in the library, on the internet, journals, etc. Students will narrow broad topics appropriately using narrowing strategies  Time progression (in minutes) for a 90-minute class  0:00 to 0:20  The E-moderator (instructor) will reiterate how she uses the library and the internet to reduces her long list to 2-3. She will also review some of her (or his) contributions on the research potential of certain interests students shared on the discussion board. She will use some of those examples to illustrate broad and narrow topics and topics that are focused. She will illustrate again, using explicit strategies of word count, verbs and noun usage, how to narrow broad topics.  0:20 to 0:45  Students will work individually in groups and then together as small groups to narrow broad topics and receive constructive feedback from the group, respectively. According to Booth et al, “A topic is probably too broad if you can state it in four or five words, e.g., “The history of commercial aviation”. This is too broad a topic. To narrow the topic, “add words and phrases, but of a special kind: conflict, description, contribution, and developing. Those nouns are derived from verbs expressing actions or relationships: to conflict, to describe, to contribute, and to develop. Lacking such “action” words, your topic is a static thing.” Section 3.2, para. 3.  A better phrased topic in place of the static “The history of commercial aviation” could be “The contribution of the military in developing the DC-3 in the early years of commercial aviation” (topic)  0:45 to 0:65  Students post their focused topics on a forum and members of the larger class are to comment on at least 2 that are not written by members of their group. The process is to refine, re-define and affirm topics and to give each class member an opportunity to practice the process of narrowing a broad topic to a focused one, many times and with different topics  0:65 to 0:90  Students share what surprised them and why, what was clear from the start, and when they knew they had understood the process of finding a topic and narrowing a broad topic, etc. Students post one of these or other thoughts on a forum as a resource for future learning and review. The E-moderator (instructor) brings the class to a close and asks students to come to class the next with an identified topic. Again, a discussion group is open for those who would like to continue to work on their topic with peers and instructors.  **Learning Activity 3 (Day 3): Discussion Class on topic selection as beginning of research question formulation**  Time progression (in minutes) for a 90-minute class  0:00 to 0:10  During this one-hour session, students will finalize topic  0:10 to 0:40  Students will spend some time asking a variety of questions about the topic individually and in a group. According to Booth et al.,  So, the best way to begin working on your focused topic is not to find all the information you can on it, but to formulate questions that direct you to just that information you need to answer them. Start with the standard journalistic questions: who, what, when, and where, but focus on how and why. To engage your best critical thinking, systematically ask questions about your topic’s history, composition, and categories. Then ask any other question you can think of or find in your sources. Record all the questions, but don’t stop to answer them even when one or two grab your attention. This inventory of possible questions will help to direct your search activities and enable you to make sense of information you find. (Section 3.3)  “The history of commercial aviation” could be “The contribution of the military in developing the DC-3 in the early years of commercial aviation  Example of questions include:  History: How does it fit into a larger developmental context? Why did the military developing the DC-3 come into being? What came before the DC-3? How were DC-3s invented? Why? What might come after DC-3s? What is its own internal history? How and why has the DC-3 itself changed through time?  Structure and Composition: How does your topic fit into the context of a larger structure or function as part of a larger system? How do DC-3s as part of commercial aviation reflect the values of different societies and cultures?  Categorization: How can your topic be grouped into kinds? What are the different kinds of DC-3s or commercial aviation? How are they categorized by appearance? By use? By geography or society? What are the different qualities of commercial aviation? How does your topic compare to and contrast with others like it?  Negatives: Why have DC-3s not become a part of …? How do … not differ from those in …? What parts of … are typically not significant in …?  Speculative: How would things be different if your topic never existed, disappeared, or were put into a new context? What if no one ever used them except for…? What if everyone …? What if it were customary to …?  0:40 to 0:60  Students will be asked the purpose of the creation of questions around the topic and how this exercise helps avoid the gathering of endless information. Students will also be asked how they feel this exercise prepares them for formulating a researchable research question, the topic for next week. They are to continue on the discussion forum to learn from each other and the whole class. (Pre activity for next week). Students write about their learning gains in their reflective diaries and share entries with the E-moderator who uses the information to help shape the class. | | | |
| Pre-topic activity: | | Number of hours | 3 |
| **Pre-Topic activity for Learning Activity 1 (Day1): Identifying potential interests**    Students will be sent a survey via Canvas to introduce themselves using Etta Hollins’ “Student Data Gathering Instrument, Parts I and II” and they will also be asked to think of topics that interest them, their friends outside of the class, and family. Students will be asked to place the list of topics on a forum. Each student is required to comment on two other submissions (one of free choice and the other, a classmate with relatively few responses, at the time of writing their responses on the forum).  Etta R. Hollins Survey  What I want most from school (Part I)  1. What I want most from school this year is…  2. It would be helpful to me in getting what I want most from school if…  3. The biggest problem I expect to have in getting what I want most from  school is…  4. I might be able to overcome this problem if…  5. Some places I might go for help include…  6. I really believe I can get what I want from school if I…  When I am not in School (Part II)  1. When I am not at school what I enjoy the most is… because…  2. When I am not in school, I spend most of my time with…  because…  3. Of all the people I know, the one person I admire the most is…  because…  4. If I could have just one wish granted, I would wish for…  because…  5. If I could live any place in the world, I would choose… because…  Etta R. Hollins  **Pre-Topic activity for Learning Activity 2 (Day 2): Finding a research project**  Students are to continue the activity of the class via discussion board to find a list of topics by engaging with the following and more. It serves as a pre-activity for Day 3.   1. Use the library online or in person to look up their topics in general guides, e.g., CQ Researcher to skim subheadings, and specialized guides, e.g., Women’s Studies International 2. Use an online database, e.g., Academic Search Premier 3. Use the internet surfing discriminately, e.g., topic related, encyclopaedias. Read the entries and copy the list of references to probe the topic further. Even Wikipedia is a great source for ideas but never cite it as a reliable resource. 4. Use blogs which often discuss contentious issues, etc.   **Pre-Topic activity for Learning Activity 3 (Day 3): Discussion Class on topic selection as beginning of research question formulation**  Students will be asked the purpose of the creation of questions around the topic and how this exercise helps avoid the gathering of endless information. Students will also be asked how they feel this exercise prepares them for formulating a researchable research question, the topic for next week. They are to continue on the discussion forum to learn from each other and the whole class. | | | |
| Face to face time: *(if applicable)* | | Number of hours | 6 |
| All three days were face-to-face with interspersing of online activity in the classroom | | | |
| Online activity: | | Number of hours | 1 |
| What should students do? | Students were engaged in forum and discussion board activities | | |
| Where do they do it? | They did it intermittently during the face-to-face class as well as out of class | | |
| By when should they do it? | They should do it during class as well as out of class | | |
| E-moderator/tutor role | | | |
| Welcoming and encouraging student engagement and sense of belonging. She (or he) will facilitate learning using Socratic questioning and will also summarize to indicate the learning objectives for each session. | | | |
| How are the learning outcomes in this unit assessed? | | Number of hours | 2(Part of the 6) |
| They are assessed by the E-moderator, the student peers and the students using formative assessment. | | | |
| How does this section link to other sections of the module? | | | |
| The section on topic -finding is part of module level one objective and it also prepares the space for the building of the module level one objective | | | |

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| = Total number of hours | 10 |

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| **Some important questions** | |
| Which learning resources/ references will scaffold the students’ learning? | Written Resources  Booth, W. C., Colomb, G. G., Williams, J. M., Bizup, J.; FitzGerald, W. T.(2016). The Craft of Research, Fourth Edition (Chicago Guides to Writing, Editing, and Publishing) . University of Chicago Press.  Gobo, G. (2018). Upside down – reinventing research design. In *The sage handbook of qualitative data collection* (pp. 65-83). SAGE (PDF Available on MS Teams; a good overview of constructivist topic development).  McCombes, S. (2020, January 13). Choosing a dissertation topic in 8 steps. *Scribbr.* <https://www.scribbr.com/research-process/dissertation-topics/>  Vinz, S. (2021, March 2).Relevance of your dissertation topic*. Scribbr.* <https://www.scribbr.com/research-process/relevance-dissertation-topic/>  **Videos Resources**  Scribber. (2019, November 15*). Quantitative vs. qualitative research: The differences explained* [Video]*.* YouTube. <https://www.youtube.com/watch?v=a-XtVF7Bofg&t=70s>  **Research Scope: Narrowing or Broadening**   * + 1. My Topic is Too Small? My Topic is Too Broad?        - [MIT Libraries: Selecting a Research Topic: Refine your topic](https://libguides.mit.edu/c.php?g=175961&p=1160160)   McCombes, S. (2020, January 8). How to define a research problem | Ideas and examples. *Scribbr.* <https://www.scribbr.com/research-process/research-problem/> |
| How are students enabled to access the resources? | All resources are stored in the course Canvas page accessible to all students |
| Where in this unit are students expected to work collaboratively? | Students work collaboratively each day of the week that they meet. |
| How has an inclusive approach been incorporated in this unit? | The collaborative nature of the course unit allows for students with ADHD, dyslexia, and other learning disabilities to have support. |
| How will feedback on unit be obtained from students? | The reflective journal component allows for students to provide feedback on the week’s work. |
| How will student feedback be used to improve unit? | Student feedback at this stage will serve as formative feedback to the instructor and will inform subsequent instruction |
| At which point(s) will students receive formative feedback on the work they have done in the unit? | Students will receive formative feedback during each activity from peers and the instructor. |

WEEK *TWO*

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| **Unit-level overview** | | **Unit** | **2** |
| Topic name: | Formulating a Researchable Question | | |
| Aim of the topic: | To build on the exercises used to find the topic topic  To demonstrate that typically research is founded on a question that is of interest to you.  To delineate factors of a good research question as including inquiry about a phenomenon, or an issue, or problem, or a puzzle; and as an inquiry that has significance to a broader community and is researchable (not having an obvious answer), not too broad and not too narrow, not been answered definitively, etc.  To establish the research question as a fundamental and pivotal component of a research study, seeking the answer to a phenomenon or understanding a phenomenon. | | |
| This topic covers: | * A topic or phenomenon you are interested in * Questions or a question about the phenomenon you are interested in * Good existing research questions * Good existing research questions on your topic * A good research question will enable you to gain knowledge or a truth and there are principles of what knowledge or truth is (ontology) * There are different pathways on how we know a truth or content knowledge. The topic sessions will enable students to explore ways of how we know (epistemology) * Two approaches to how we know (quantitative and qualitative) will be emphasized and analysed | | |
| Intended learning outcomes: | *At the end of this* ***topic****, you will be able to:*   1. Formulate a researchable question 2. Identify the features of a good researchable question 3. Using research questions, distinguish between two main paradigms and their affiliated approaches to find answers to the research questions | | |

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| Overview of student activity: | **Learning Activity 1 (Day1): Identifying a researchable question**  Building on the topic exercises, the students will be introduced to good research questions in reputable journals. Students will also be provided a structured approach to developing a researchable question, and will gauge researchable-ness by posing the “so what?” question to their question.  **Learning Activity 2 (Day 2): Understanding the Research Question Paradigms**  To have a deeper understanding of the assumptions associated with research questions, students will reflect the philosophical paradigm types \_ Positivism/Post positivism and Constructivism/interpretivism] and major types or approaches to research, quantitative and qualitative.  **Learning Activity 3 (Day 3): Discussion Class**  Students will finalize their individual research question and submit it for grading along with a reflective journal entry on two concepts: how they understand the features of a researchable question and the major philosophical underpinnings of research questions. |

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| **Constructive alignment of unit level outcomes with module level outcomes, learning activities and assessment** *(Pressing <Tab> at the end of the table will provide additional rows in the table, if required.)* | | | |
| Intended unit learning outcomes: | No of module-level outcome | Activity where students engage with this outcome | Where and how is this outcome assessed? |
| ***At the end of this unit, you will be able to:*** | | | |
| 1. Formulate a researchable question | 1 | All three activities of week 2 | Face-to-face  Formative assessments by peers and instructors conducted during activities 1 , 2 and 3.  Summative assessment after activity 3. |
| 1. Identify the features of a good researchable question | 1 | Activity 1 | Face-to-face  Formative assessments by peers and instructors conducted during activity 1 & 3.  Summative assessment during activity 3. |
| 1. Distinguish between the two main research question paradigms | 2 | Activity 2 | Face-to-face  Formative assessments by peers and instructors conducted during activity 2 & 3.  Summative assessment during activity 3. |
| 1. recognize the continuum that exists between qualitative and quantitative approaches to research; and compare and contrast to distinguish between the two | 2 | A mapping activity | Formative assessment using vignettes of different approaches to research conducted during activity |
| 1. explain the philosophical paradigms associated with the different approaches to research | 2 | Pre -reading and debate | Formative assessment  Debate notes to determine any misconceptions |

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| Detailed explanation of ALL student and teacher engagement with the unit:  ***(This should be presented in the order that the activities take place. So, if students do work* online *before* *coming to the lecture, that should be shown ahead of what happens in class.***  ***If there is more than one opportunity for face-to-face contact, or more than one online task, there should be a separate section for each instance, and they should be presented in the template in the same order that students encounter them.)***  ***Content*** *– such as lecture material – can EITHER be shown here OR added as* ***clearly identifiable*** *addenda to the document. If you plan to use addenda, you should ensure that these are cross-referenced in this section.)* | | | |
| Module-level outcomes addressed: | | | |
| Formulation of a Researchable Question  Distinction between qualitative and quantitative approaches to research questions | | | |
| Purpose of the unit/week/section: | | | |
| To delineate factors of a good research question as inquiry about a phenomenon, or an issue, or problem, or a puzzle; and as an inquiry that has significance to a broader community and is researchable (not having an obvious answer), not too broad and not too narrow, not been answered definitively, etc.  To establish the research question as a fundamental and pivotal component of a research study, seeking the answer to or understanding of a phenomenon. | | | |
| Over to you: *(a description of the process of the section)* | | | |
| The processes of the section are both face-to-face and online. Designed to encourage students to take ownership and charge of their learning. Students are given choice and are provided opportunities to experience the concept before they define it (Kolb). They construct their understandings and meanings of researchable questions and research question’s two major paradigms. They also develop questions (Deep and Constructivist learning). Socratic questioning is used to assess learning. The section is built on students’ curiosity and engages them. | | | |
| Pre-topic activity: | | Number of hours | .5 |
| Students will have to pre - read information on the philosophical underpinnings of research in preparation for the debate and depth of understanding research question formulation | | | |
| Face to face time: *(if applicable)* | | Number of hours | 3 |
| **Learning Activity 1 (Day1): Identifying a researchable question**  Time progression (in minutes) for a 90-minute class  0:00 to 0:30  The E-moderator (instructor) will ask that each student write a question that is of interest to him or her. A question they are keen to explore. We will refer to this question as the “original research question” throughout the course. She (or he) will invite students to volunteer to share their first attempt at writing an original research question.  Students will be asked to compare their original research question to the bank of questions they posed for their topic of interest. Do the students see any synergies or contrasts between their original research question (ORQ) and any of the questions in the topic question bank?  She will show examples of good researchable questions from published articles of reputable journals. Journals will represent the different disciplines represented in the class   1. She will demonstrate to the students how to search for research journal articles in reputable journals using the data systems available to the university, looking for related journal articles on her topic of interest (librarian could also be invited to demonstrate search process) 2. Together with the students in her course she will model how to scan each research article for research questions and list the questions. (She will note that some research articles state a hypothesis, and some do not).   0:30 to 0:60  She will ask the students to do the same using their original question and topic to search for related articles in the database system and scan each related research article looking for research questions to list.  She will ask for volunteers to share questions they found related to their topic and question of choice.  As a whole class exercise, the instructor will display her list of questions, and add some of the questions the students found.  Together they will arrive at the following characteristics of research questions in the journal article questions (a) inquiry about a phenomenon, or an issue, or problem, or a puzzle (b) a quest for truth or reality about something puzzling (c) inquiry that has significance to a broader community, (d) not too broad and not too narrow, not having an obvious answer, not been answered definitively, etc.  Students work individually to compare their original question with the questions they found in their independent journal review and their topic-based questions; based on the format of the good research questions in the journal articles and the ideas gleaned from them, the students have an idea of how to rewrite their original research question. The beginnings of a good question are imminent.  0:60 to 0:90  Students are ready for thinking about whether their question will be of interest to others and are ready to answer the dreaded “so what?” research question.  Booth et al suggest a three-step process (section 3.4.1):  Start by naming your project: **I am trying to learn about/working on/studying** \_\_\_\_\_\_\_\_\_\_\_\_. Fill in the blank with your topic, using some of those nouns derived from verbs:  **I am studying the causes of the disappearance of large North American mammals . . .**  Add an indirect question that indicates what you do not know or understand about your topic:  **I am studying the causes of the disappearance of large North American mammals . . .**  **because I want to find out who/what/when/where/whether/why/how \_\_\_\_\_\_\_\_\_\_\_\_.**  **1. I am studying the causes of the disappearance of large North American mammals**  **2. because I want to find out whether they were hunted to extinction**  Next answer the So What? This step tells you whether your question might interest not just you but others. To do that, add a second indirect question that explains why you asked your first question. Introduce this second implied question with “in order to help my reader understand how, why, or whether”:  **1. I am studying the causes of the disappearance of large North American mammals**  **2. because I want to find out whether the earliest peoples hunted them to extinction,**  **3. in order to help my reader understand whether native peoples lived in harmony with nature or helped destroy it.**  **Possible good researchable question…** ***Why did the giant sloth and woolly mammoth disappear from North America?***  Students armed with the take aways from the topic-questions exercise, examples of the research questions in reputable journals, and this structured approach can come up with up to 3 forms of their original question or chosen question to discuss and rationalize in their groups. Team members then critique and help each other further refine the researchable questions.  As a whole class exercise, the class arrives at consensus, facilitated by the instructor on what constitutes a researchable question  Each team lead shares the outcome of the team’s work with the whole class for additional discussion and improvement, facilitated by the instructor.  The instructor will collect the questions the students found individually.  All questions students found in reputable journals together with the lecturer’s will be posted on the LMS, in preparation for Learning Activity 2 (Day 2).  For their assignment the students should search for ways to determine whether a question is researchable or not and share on a discussion thread. All must contribute before next session.  **Learning Activity 2 (Day 2): Understanding the Research Question Paradigms**  Time progression (in minutes) for a 90-minute class  0:00 to 0:45  Revisiting the instructor’s list of questions used to find the common traits of researchable questions, the instructor will share with the students the same list extended to include some of the questions the students had found individually prior.  The instructor will lead the students in a whole class exercise where the students will categorize the research questions into two broad methodology and philosophical groups. The outcome will be questions with at least two variables seeking a relationship or difference (quantitative method) or one variable seeking understanding (qualitative method). The two question types will reflect the philosophical paradigm types \_ Positivism/Post positivism and Constructivism/interpretivism]   1. The instructor will give a lecturette on the two broad methodology and philosophical groups. 2. Students, in groups, will be asked to classify the remaining research questions on the extended list into the two paradigms and/or methods.   0:00 to 0:45   1. As part of the team’s work, each team will summarize principles that guide and define the qualitative and quantitative research questions, using the journal articles provided as one of their many resources. 2. As a whole group, each team will present their outcomes, and come up with a class consensus on the defining features of a qualitative and a quantitative researchable question, with instructor facilitation. 3. The students will be given material to read about the research approaches, namely qualitative and quantitative, to refine the classification definitions they crafted. 4. The instructor will conclude by discussing the two main approaches to knowing, qualitative and quantitative and clarifying distinctions of theory, philosophical underpinnings, etc. | | | |
| Online activity: | | Number of hours | 4 |
| What should students do? | **Learning Activity 3 (Day 3): Discussion Class**  During this one-hour session, students will finalize (if necessary) their research question and submit it for grading along with a reflective journal entry on how they understand the features of a researchable question and the major philosophical underpinnings of research questions. They will debate the value the philosophical underpinnings bring to research question formulation.  For their assignment students will be given vignettes to classify into the two main research approaches, \_ qualitative and quantitative research. They are to place their responses in a discussion board and justify their choices. They are to critique responses and offer their alternative ones. The discussion will be used by the instructor and tutors to correct any misconceptions and affirm students’ learning and understanding of:   * Researchable questions * Types of researchable questions categorized by approaches and how to know (philosophical paradigms) | | |
| Where do they do it? | In class and out of class | | |
| By when should they do it? | For the assignment the students should reach class consensus or not more than four groups of responses to submit by 11:59 pm that night. | | |
| E-moderator/tutor role | | | |
| The role of the e-moderator would be to integrate the new knowledge into the emerging students’ constructs of the concepts individually and whole class. | | | |
| How are the learning outcomes in this unit assessed? | | Number of hours | 4 |
| Face-to-face  Formative assessments by peers and instructors conducted during activity 1, 2, & 3.  Summative assessment during activity 3. | | | |
| How does this section link to other sections of the module? | | | |
| This section is foundational to the entire module and so links to every section. | | | |

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| = Total number of hours | 12 |

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| **Some important questions** | |
| Which learning resources/ references will scaffold the students’ learning? | **Written Resources**   * SAGE Project Planner: Developing a Researchable Question * “Types of Research Questions: Why? When? Who? How? Where?” * NMBU. (n.d.) Creating research questions. <https://nmbu.instructure.com/courses/2280/pages/creating-research-questions> * McCombes, S. (2021, March 22). Developing strong research questions | criteria and examples. *Scribbr*. <https://www.scribbr.com/research-process/research-questions/> * McCombs, S. (2020, June 5). 10 research question examples to guide your research project. *Scribbr*. <https://www.scribbr.com/research-process/research-question-examples/> * Research Rundowns. (n.d.) *Writing research questions.* <https://researchrundowns.com/intro/writing-research-questions/> * Center for Innovation in Research and Teaching. (n.d.) *Writing a good research question*. <https://cirt.gcu.edu/research/develop/tutorials/question> * Nova Southeastern. Developing your research question. <https://app.nova.edu/toolbox/Dissertation/Handouts/Developing%20Your%20Research%20Questions.pdf> * Alvesson,M. & Sandberg, J. (2013). Gap-Spotting: The Prevalent Way of Constructing Research Questions in Social Science In: Constructing Research Questions: Doing Interesting Research * Alvesson,M. & Sandberg, J. (2013). The Context of Constructing and Formulating Research Questions In: Constructing Research Questions: Doing Interesting Research * Frederiksen, L. & Phelps, S.F. Literature Reviews for Education And Nursing Graduate Students * Eriksson, P. & Kovalainen, A. (2008). Research design and process. In *Qualitative methods in business research* (pp. 25-36). SAGE. (“Researchability”) * Bradford, A., & Hamer A. (2022). Science and the scientific method: Definitions and examples. *LiveScience*. [Resource Link](https://www.livescience.com/20896-science-scientific-method.html#:~:text=When%20conducting%20research%2C%20scientists%20use,or%20contradict%20a%20scientific%20theory) * McCombes, S. (2020, January 8). How to define a research problem | Ideas and examples. *Scribbr.* <https://www.scribbr.com/research-process/research-problem/> * Hein, E. (2017, February 9). *The interpretive turn: From sociological positivism to constructivism* [Webpage]. <http://www.ethanhein.com/wp/2017/the-interpretive-turn-from-sociological-positivism-to-constructivism/> * Booth, W. C., Colomb, G. G., Williams, J. M., Bizup, J., & Fitzgerald, W. T. (2016). *The craft of research.* University of Chicago Press. (Part II - PDF available on MS Teams Week 2 Readings as “Optional”) * Hammersley, M. (2012) Methodological paradigms in educational research, *British Educational Research Association*. <https://martynhammersley.files.wordpress.com/2013/11/methodological-paradigms-4.pdf> * Crabtree, C. D. (2006, July). Common paradigms. *Qualitative Research Guidelines Project*. <http://www.qualres.org/HomePhil-3514.html> * Scribber. *A beginner’s guide to starting the research process*. <https://www.scribbr.com/category/research-process/>   **Video Resources**   * Academic Skills, The University of Melbourne. (2018, February 14). *Developing a research question* [Video]. YouTube. <https://www.youtube.com/watch?v=mrWeLJZydUU> * Laurier Library. (2017, December 20). *Developing a research question* [Video]. YouTube. <https://www.youtube.com/watch?v=1oJNO6PYZe4&t=7s> * CrashCourse. (2017, March 20). *Major sociological paradigms: Crash course sociology #2* [Video]. YouTube. <https://www.youtube.com/watch?v=DbTt_ySTjaY> * CrashCourse. (2017, March 27). *Sociology & the scientific method: Crash course sociology #3* [Video]. YouTube. <https://youtu.be/ZIwyNIdgJBE> * CrashCourse. (2017, April 3). *Sociology research methods: Crash course sociology #4* [Video]. YouTube. <https://www.youtube.com/watch?v=QwhK-iEyXYA> |
| How are students enabled to access the resources? | All resources are stored in the course Canvas page accessible to all students |
| Where in this unit are students expected to work collaboratively? | Students work collaboratively each day of the week that they meet. |
| How has an inclusive approach been incorporated in this unit? | The collaborative nature of the course unit allows for students with ADHD, dyslexia, and other learning disabilities to have support. |
| How will feedback on unit be obtained from students? | The reflective journal component allows for students to provide feedback on the week’s work. |
| How will student feedback be used to improve unit? | Student feedback at this stage will serve as formative feedback to the instructor and will inform subsequent instruction |
| At which point(s) will students receive formative feedback on the work they have done in the unit? | Students will receive formative feedback during each activity from peers and the instructor. |

UNIT *for* ***WEEK 3***

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| **Unit-level overview** | | **Unit/week/section** | **3** |
| Topic name: | Deduction or Induction, Hypothesis or Exploration | | |
| Aim of the topic: | To define your research question using assertions of deduction and induction | | |
| This topic covers: | * Deduction and Induction * Deduction and induction as they relate to qualitative and quantitative approaches to research and philosophical underpinnings * The role of deduction and induction in hypothesis or exploration | | |
| Intended learning outcomes: | *At the end of this* ***topic****, you will be able to:*   1. Determine the reasoning approach associated with your research question 2. Distinguish between deduction and induction 3. Distinguish between deduction and induction as they relate to qualitative and quantitative approaches to research and philosophical underpinnings 4. Use the reasoning associated with your research question to determine whether you need to hypothesize or simply explore | | |

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| Overview of student activity: | The active learning will occur over a three-day period during the week. On day 1 students will build on the quantitative and qualitative type questions they identified in week 1, to gain an understanding of deduction and induction. During the second 90-minute session on day 2 the students will clearly define deduction and induction and explore its relationship with the philosophical paradigms that distinguish the research approaches. They will also learn when and how to hypothesize and when not to. On day three during the 1-hour discussion sessions students will help those who must hypothesize craft suitable hypotheses and further refine their research questions, if necessary. |

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| **Constructive alignment of unit level outcomes with module level outcomes, learning activities and assessment** *(Pressing <Tab> at the end of the table will provide additional rows in the table, if required.)* | | | |
| Intended unit learning outcomes: | No of module-level outcome | Activity where students engage with this outcome | Where and how is this outcome assessed? |
| ***At the end of this unit, you will be able to:*** | | | |
| 1. Determine the reasoning approach associated with your research question | 1 | A mapping activity | Formative assessment using vignettes of different approaches to research conducted during activity |
| 1. Distinguish between deduction and induction | 2 | Pre -reading and debate | Formative assessment  Debate notes to determine any misconceptions |
| 1. Distinguish between deduction and induction as they relate to qualitative and quantitative approaches to research and philosophical underpinnings | 2 | Discussion, critical thinking, and brainstorming | Observation of visual thinking (extension of mapping) |
| 1. Use the reasoning associated with your research question to determine whether you need to hypothesize or simply explore | 2 |  |  |

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| Detailed explanation of ALL student and teacher engagement with the unit:  ***(This should be presented in the order that the activities take place. So if students do work* online *before* *coming to the lecture, that should be shown ahead of what happens in class.***  ***If there is more than one opportunity for face-to-face contact, or more than one online task, there should be a separate section for each instance, and they should be presented in the template in the same order that students encounter them.)***  ***Content*** *– such as lecture material – can EITHER be shown here OR added as* ***clearly identifiable*** *addenda to the document. If you plan to use addenda, you should ensure that these are cross-referenced in this section.)* | | | |
| Module-level outcomes addressed: | | | |
| 1. Determine the reasoning approach associated with your research question\_ deductive or inductive | | | |
| 1. Distinguish between deduction and induction as they relate to qualitative and quantitative approaches to research and philosophical underpinnings | | | |
| 1. Use the reasoning associated with your research question to determine whether you need to hypothesize or simply explore | | | |
| Purpose of the unit/week/section: | | | |
| The purpose of introducing the two major reasoning assertions is to deepen the students’ understanding of the two main approaches, philosophical paradigms, and underpinnings to enable students in research to logically determine a research type when encountering a novel research challenge. With a deeper understanding of the reasoning assertions and common research approaches, the students will be able to compare and contrast and analyze distinct traits to translate the research type appropriately and effectively. | | | |
| Over to you: *(a description of the process of the section)* | | | |
| **Learning Activity 1 (Day1): Understanding reasoning in research**  Students will build on the vignettes and the quantitative and qualitative type questions they identified in the prior week, to gain an understanding of deduction and induction. The students will establish that research \_ deductive or inductive\_ is a way of knowing or understanding our world and adding knowledge to the existing body of knowledge. It will also show that the two major assertions of reasoning \_ deduction and induction \_ are associated with ways of knowing or understanding our world and adding knowledge to the existing body of knowledge. Most of students’ learning will be focused on observable pattern differences and similarities. It will help students learn how to distinguish between qualitative and quantitative approaches to research using  Time progression (in minutes) for a 90-minute class  0:00 to 0:30  Students will be given the same vignettes they worked on last week to explore deductive and inductive reasoning as major processes of knowing. A cheat sheet explaining deduction and induction with examples will be provided as a guide for practicing identification of the two types of reasoning  In small groups the students will determine which vignettes are deductive or inductive. Student groups will share their responses.  0:30 to 0:60  Students will also determine whether their research question is grounded in deductive or inductive reasoning, by working in small groups and sharing.  .  0:60 to 0:90  The students will clearly define deduction and induction again and explore its relationship with the philosophical paradigms that distinguish the research approaches, affirming their new understandings.  Students will work in small groups and post to a forum for opinions | | | |
| **Learning Activity 2 (Day 2): To hypothesize or not**  Time progression (in minutes) for a 90-minute class  0:00 to 0:45  Students will use Youtube videos and any other material of their choice to define a scientific hypothesis. Students will work in pairs and share their findings to the whole class. They will come up with a set of principles for when to hypothesize  0:45 to 0:90  In Triads, they will then justify why hypotheses are associated with deduction or induction. They will revisit the reputable articles that either had or did not have hypotheses to see if their principles of when to hypothesize holds true in the journal  The instructor will guide students on the types of hypotheses and how to use them. | | | |
| **Learning Activity 3 (Day 3): Developing hypotheses**  On day three during the 1-hour discussion sessions students will help those who must hypothesize craft suitable hypotheses, e.g., pairs of students who had to craft a hypothesis and those that did not. Students will submit their work in pairs and be graded as a pair. | | | |
| Pre-topic activity: | | Number of hours | 4 |
| Read textbook chapter, articles provided, and watch my lecture on a research approaches. | | | |
| Face to face time: *(if applicable)* | | Number of hours | 4 |
| Classes were face-to-face | | | |
| Online activity: | | Number of hours | (4) same as pre activity |
| What should students do? | Prepare in the pre-activity for the concepts to be taught | | |
| Where do they do it? | Discussion rooms | | |
| By when should they do it? | Before the next week | | |
| E-moderator/tutor role | | | |
| To facilitate, summarize and introduce new concepts | | | |
| How are the learning outcomes in this unit assessed? | | Number of hours | 2(Part of 4 in class |
| Formatively and summative by student peers, | | | |
| How does this section link to other sections of the module? | | | |
| It links to module 2 primarily and module 2 | | | |

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| = Total number of hours | 8 |

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| **Some important questions** | |
| Which learning resources/ references will scaffold the students’ learning? | **Written Resources**   * Nova Southeastern University. (n.d.). Developing your research questions. <https://app.nova.edu/toolbox/Dissertation/Handouts/Developing%20Your%20Research%20Questions.pdf> * Laerd Dissertion. (2012). Should you use quantitative research questions or hypotheses? <https://dissertation.laerd.com/quantitative-research-questions-what-do-I-have-to-think-about.php#four> * Laerd Dissertation. (2012). Research question and hypotheses. <https://dissertation.laerd.com/research-questions-and-hypotheses.php> * Laerd Dissertation. (2012). Quantitative research questions: What do I have to think about? <https://dissertation.laerd.com/quantitative-research-questions-what-do-I-have-to-think-about.php> * DeCarlo, M. (n.d.) *Scientific inquiry in social work*. Pressbooks. (Section 8.4 Qualitative research questions. <https://scientificinquiryinsocialwork.pressbooks.com/chapter/8-4-qualitative-research-questions/>) * McCombes, S. (2022, January 5). How to write a strong hypothesis | steps and examples. *Scribbr*. <https://www.scribbr.com/methodology/hypotheses/> * Deduction In: The SAGE Encyclopedia of Social Science Research Methods * Induction In: The SAGE Encyclopedia of Social Science Research Methods * Crabtree, C. D. (2006, July). Common paradigms. *Qualitative Research Guidelines Project*. <http://www.qualres.org/HomePhil-3514.html> * Eisenhardt, M. A. (1991). *Conceptual frameworks for research*. <https://physicscourses.colorado.edu/phys4810/phys4810_fa06/4810_readings/Eisenhart_conceptual_framework.pdf> * Hammersley, M. (2012) Methodological paradigms in educational research, *British Educational Research Association*. <https://martynhammersley.files.wordpress.com/2013/11/methodological-paradigms-4.pdf> * Hein, E. (2017, February 9). *The interpretive turn: From sociological positivism to constructivism* [Webpage]. <http://www.ethanhein.com/wp/2017/the-interpretive-turn-from-sociological-positivism-to-constructivism/> * Scientific realism. Chakravartty, A. (2017, Summer). Scientific realism, In Zalta, E. N. (Ed.) *The Stanford encyclopedia of philosophy.* <https://plato.stanford.edu/archives/sum2017/entries/scientific-realism>. * Creswell, J. W. (2017). Chapter 1: The selection of a research approach. In *Research design: Qualitative, quantitative, and mixed methods approaches* (pp. 3–23; 4th ed). SAGE. <https://us.sagepub.com/sites/default/files/upm-binaries/55588_Chapter_1_Sample_Creswell_Research_Design_4e.pdf> * Niglas, K. (2007). Introducing the quantitative–qualitative continuum: An alternative view on teaching research methods. <http://www.cs.tlu.ee/~katrin/wp/wp-content/uploads/2013/11/Introducing-the-quan-qual-continuum.pdf> * Topping, A. (2006). *The quantitative–qualitative continuum.*   **Videos Resources**   * Office of Research & Doctoral Services. (2015, August 13). Overview of quantitative research methods [Videos]. YouTube. <https://www.youtube.com/watch?v=cwU8as9ZNlA> * Tine Wade. (2017). *Qualitative & quantitative research - An introduction* [Video]. YouTube. <https://www.youtube.com/watch?v=RYmLE8UqCXU> * YaleUniversity. (2015, Jun 23). Fundamentals of qualitative research methods: What is qualitative research (module 1) [Video]. YouTube. https://www.youtube.com/watch?v=wbdN\_sLWl88 * NCRMUK. (2015, March 27). *What is qualitative inquiry by Martyn Hammersley* [Video]. YouTube. <https://www.youtube.com/watch?v=kW5nCIaHSsQ> * CrashCourse. (2017, March 20). *Major sociological paradigms: Crash course sociology #2* [Video]. YouTube. <https://www.youtube.com/watch?v=DbTt_ySTjaY> * CrashCourse. (2017, March 27). *Sociology & the scientific method: Crash course sociology #3* [Video]. YouTube. <https://youtu.be/ZIwyNIdgJBE> * CrashCourse. (2017, April 3). *Sociology research methods: Crash course sociology #4* [Video]. YouTube. <https://www.youtube.com/watch?v=QwhK-iEyXYA> |
| How are students enabled to access the resources? | All resources are stored in the course Canvas page accessible to all students |
| Where in this unit are students expected to work collaboratively? | Students work collaboratively each day of the week that they meet. |
| How has an inclusive approach been incorporated in this unit? | The collaborative nature of the course unit allows for students with ADHD, dyslexia, and other learning disabilities to have support. |
| How will feedback on unit be obtained from students? | The reflective journal component allows for students to provide feedback on the week’s work. |
| How will student feedback be used to improve unit? | Student feedback at this stage will serve as formative feedback to the instructor and will inform subsequent instruction |
| At which point(s) will students receive formative feedback on the work they have done in the unit? | Students will receive formative feedback during each activity from peers and the instructor. |

END OF UNIT/WEEK/SECTION-LEVEL TEMPLATE

**WEEK Four and Five**

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| **Unit-level overview** | | **week** | **4** |
| Topic name: | Existing Context for Exploration or Hypothesizing | | |
| Aim of the topic: | The aim of the topic is to situate the emerging hypothesis or exploration in existing contexts which include defining the problem using the variables associated with the research question, the concepts which frame the topic and question, and the related literature.  It is important to clearly define a problem before you attempt to solve it to increase the accuracy of the proposed solution. To do this the variables in the question must be delineated and the relationship between the variables made clear.  With a clearly defined problem statement, you are now set to determine and extend reasoning about the problem statement to the research question, specifically to theories and models associated with the research question. These models and theories help deconstruct the problem for a deeper understanding of the question and provide possible explanations and relationships between the variables of the research question.  The literature review provides a wealth of context through existing literature on the variables, the variable relationships, and the problem. Also, in reading and writing the literature, the student is exposed to the kinds of research designs, paradigms, and approaches used for variables and variable relationships like theirs and this informs their design, sampling, and data analysis choice. | | |
| This topic covers: | * Problem formation * The concept of variables and variables of the research question * Relationship(s) among the variables of the research question * Theories and models associated with the variables or relationships * Literature associated with the conceptual framework | | |
| Intended learning outcomes: | *At the end of this* ***topic****, you will be able to:*   1. Identify variables of the research question and their inter and external relationship(s) 2. Form hypotheses if relevant 3. Craft a conceptual framework for the research question 4. Begin literature search and a literature matrix | | |

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| Overview of student activity: | The students are defining the problem being investigated and grounding their research interest and question in existing literature. They are making the case for the study by framing the concept in theory and literature sequentially and logically. |

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| **Constructive alignment of unit level outcomes with module level outcomes, learning activities and assessment** *(Pressing <Tab> at the end of the table will provide additional rows in the table, if required.)* | | | |
| Intended unit learning outcomes: | No of module-level outcome | Activity where students engage with this outcome | Where and how is this outcome assessed? |
| ***At the end of this unit, you will be able to:*** | | | |
| 1. Identify variables of the research question and their inter and external relationship(s) | 2 | Activity 1: What is a variable? | Formative assessment using vignettes and students’ research questions to identify variables and their interconnectedness |
| 2. Identify theories, models, and concepts which may explain or resolve the phenomenon (problem) you are investigating to craft a conceptual framework for the research question | 3 | Activity 2: From purpose to problem statement | Formative assessment  Relevance of conceptual framework to problem (written) |
| 3. Analyse the literature associated with the theories, models, and concepts you find related and relevant to the research question in a literature matrix clearly defining the key concepts/variables, variable relationships, concepts, framework and critique | 3 | Activity 3: What theories and models can explain the relationships between the variables of your problem? | The Matrix will be formatively assessed for relevance and range of entries for the different variables of the literature matrix |

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| Detailed explanation of ALL student and teacher engagement with the unit:  ***(This should be presented in the order that the activities take place. So if students do work* online *before* *coming to the lecture, that should be shown ahead of what happens in class.***  ***If there is more than one opportunity for face-to-face contact, or more than one online task, there should be a separate section for each instance, and they should be presented in the template in the same order that students encounter them.)***  ***Content*** *– such as lecture material – can EITHER be shown here OR added as* ***clearly identifiable*** *addenda to the document. If you plan to use addenda, you should ensure that these are cross-referenced in this section.)* | | | |
| Module-level outcomes addressed: | | | |
| 1 and 5 | | | |
| Purpose of the unit/week/section: | | | |
| To make the case for the study using existing theories, literature and defining the problem | | | |
| Over to you: *(a description of the process of the section)* | | | |
| **Learning Activity 1 (Day 1): What is a Variable?**  Time progression (in minutes) for a 90-minute class  0:00 to 0:60  The E-Moderator will use practical examples to explain variables as well as a few of the research questions generated earlier to help students see the connection of variables to research questions. They will also be introduced to types of variables such as independent and dependent, variables that can be measured using nominal, ordinal, interval and ratio scales, discrete or continuous, etc.  Students will be given the same vignettes they worked on last week and their research questions to identify variables and their interconnectedness and metrics possibilities. Students will work in groups and will post on a forum for peer feedback and discussion.  0:60 to 0:90  The students will clearly define and reflect on variables based on the various discussions and submit for grading. The discussion Forum will remain open for any additional questions, comments, etc.  **Learning Activity 2 (Day 2): Conceptualizing the research underpinnings**  Time progression (in minutes) for a 90-minute class  0:00 to 0:45  The E-Moderator will give a lecturette on how a conceptual framework contrasts with a theoretical framework to help students understand the comprehensiveness and complexity a conceptual framework is able to capture. This helps the student researcher determine parameters, desired outcome, literature to read, etc. and focuses the reader on the researcher’s intent.  0:45 to 0:90  Students will be given the reputable journals again and this time they will be reviewing the conceptual frameworks in the publications to develop their skill in creating their own. Through this exercise they will be introduced to many theories associated with their topic and to their discipline theorists. Students will use additional resources such as Youtube video, academic databases, Coursera, etc. to guide their efforts to craft their conceptual framework. Students will be given the current week and the next to draft their conceptual framework, their roadmap.  **Learning Activity 3 (Day 3): Introduction to the Literature Matrix**  Creating the conceptual framework will require students reading several journal publications related to their study, consequently during the discussion session, students will be introduced to developing a literature matrix. Students will use this period to prepare for and accumulate literature for their literature review. | | | |
| Pre-topic activity: | | Number of hours | 4 |
| Students will explore variables, conceptual framework, problem statements and include these topics in the forum discussion. | | | |
| Face to face time: *(if applicable)* | | Number of hours | 8 |
| The classes are face-to face with online blending where appropriate | | | |
| Online activity: | | Number of hours | (4) in the pre-activity and 16 outside the class for 2 weeks |
| What should students do? | Debate and refine their understanding of conceptual framework, problem statements, variable metric scales | | |
| Where do they do it? | In and outside the classroom | | |
| By when should they do it? | Two weeks | | |
| E-moderator/tutor role | | | |
| Summaries, explanations, clarifications of misconceptions, and motivation | | | |
| How are the learning outcomes in this unit assessed? | | Number of hours | captured |
| Formatively, formally and informally. The draft of the Conceptual framework and the emerging literature matrix will be assessed formatively, informally by peers, and formally by the instructor | | | |
| How does this section link to other sections of the module? | | | |
| It builds on the interest, research question, and deduction -induction to determine the appropriate theories. | | | |

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| = Total number of hours | 28 |

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| **Some important questions** | |
| Which learning resources/ references will scaffold the students’ learning? | **Written Resources**  Eisenhart, M. A. (1991, January 1). Conceptual frameworks for research circa 1991: Ideas from a cultural anthropologist; Implications for mathematics of education researchers. In R. G. Underhill (Ed.), *Proceedings of the thirteenth annual meeting: North American chapter of the international group for the psychology of mathematics education* (pp. 202–220).  Blacksburg, VA: Christiansburg Printing Company, Inc. Retrieved from [http://nepc.colorado.edu/files/ Eisenhart\_ConceptualFrameworksforResearch.pdf](http://nepc.colorado.edu/files/%20Eisenhart_ConceptualFrameworksforResearch.pdf)  Ravitch, S. M., & Riggan, M. (2012). *Reason & rigor: How conceptual frameworks guide research*. SAGE.  Indiana University Library. (2021). Literature review – A self-guided tutorial.  <https://iupui.libguides.com/literaturereview>  The University of Tennessee - Chattanooga (2021). Skimming and scanning.  <https://www.utc.edu/enrollment-management-and-student-affairs/center-for-academic-support-and-advisement/tips-for-academic-success/skimming>  Cronin, P., Ryan, F., & Couglan, M. (2008). Undertaking a literature review: A step-by-step approach. *British Journal of Nursing*, *17*(1), 38–43. <https://www.cin.ufpe.br/~in1002/leituras/2008-undertaking-a-literature-review-a-step-by-step-approach.pdf>  McCombes, S. (2020, March 28). How to synthesize written information from multiple sources. *Simply Psychology.* <https://www.simplypsychology.org/synthesising.html#:~:text=When%20you%20write%20a%20literature,Synthesizing%20simply%20means%20combining>  Booth, W. C., Colomb, G. G., Williams, J. M., Bizup, J., & Fitzgerald, W. T. (2016). The craft of research. University of Chicago Press. (  McCombes, S. (2021, May 3). Write a problem statement for your research in 3 steps. *Scribbr.* <https://www.scribbr.com/research-process/problem-statement/>  Swaen. B. (2019). Problem statement example. *Scribbr*. <https://www.scribbr.com/research-process/problem-statement-example/>  Wentz, E. (2014). Problem statement. *In How to design, write, and present a successful dissertation proposal* (pp. 129–148). SAGE. (PDF available on MS Teams Week 2).  **Videos Resources**  The University of Sydney. (n.d.) *A guide to the problem statement* [Video]. <https://www.coursera.org/lecture/academic-skills-project/1-4-writing-a-problem-statement-f7TZL>  Academic Education Materials. (2016, October 20). *The purpose of the literature review* [Video].  YouTube. <https://www.youtube.com/watch?v=1nqzcfw1wDE&t=12s>  NC State University Libraires. (n.d.). *Literature reviews: An overview for graduate students* [Video].  <https://www.lib.ncsu.edu/videos/literature-reviews-overview-graduate-students>    literaturereviewhq. (2011, June 16). *3 ways to structure your Literature Review.mp4* [Video]. YouTube.  <https://www.youtube.com/watch?v=PU2uqFY-l4s&t=11s>  Andrew Davis. (2016, June 27). *Synthesis matrix tutorial* [Video]. YouTube.  <https://www.youtube.com/watch?v=_13GGEhi99g>  Frances Chumney. (2016, October 21). *Writing a literature synthesis* [Video].  <https://www.youtube.com/watch?v=JYqz8yv82po>  Scribbr. (2020, March 25). *What is a literature review? Explained with REAL example* [Video].  YouTube. <https://www.youtub>  **Mendeley**: <https://www.mendeley.com/>  **Zotero**: <https://www.zotero.org/>  **Bibme**: <https://www.bibme.org/ieee-software>      e.com/watch?v=KkAnKGuX7fs  Scribbr. (2020, April 3). *How to write a literature review: 3 minute step-by-step guide | Scribbr* [Video].  YouTube. <https://www.youtube.com/watch?v=zIYC6zG265E> |
| How are students enabled to access the resources? | All resources are stored in the course Canvas page accessible to all students |
| Where in this unit are students expected to work collaboratively? | Students work collaboratively each day of the week that they meet. |
| How has an inclusive approach been incorporated in this unit? | The collaborative nature of the course unit allows for students with ADHD, dyslexia, and other learning disabilities to have support. |
| How will feedback on unit be obtained from students? | The reflective journal component allows for students to provide feedback on the week’s work. |
| How will student feedback be used to improve unit? | Student feedback at this stage will serve as formative feedback to the instructor and will inform subsequent instruction |
| At which point(s) will students receive formative feedback on the work they have done in the unit? | Students will receive formative feedback during each activity from peers and the instructor. |

END OF UNIT/WEEK/SECTION-LEVEL TEMPLATE

WEEK Six, Seven, Eight , & Nine

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| **Unit-level overview** | | **Unit/week/section** | **5** |
| Topic name: | Related and Relevant Literature | | |
| Aim of the topic: | To provide detailed context and meaning to the research question using existing peer reviewed literature | | |
| This topic covers: | * Literature associated with the problem statement * Literature associated with the variables and relationship(s) among the variables of the research question * Research methods (design, sampling, procedures, etc.) used in the literature associated with the research study * Completion of the literature matrix | | |
| Intended learning outcomes: | *At the end of this* ***topic****, you will be able to:*   * 1. Assemble existing literature associated with the research question   2. Using the literature, write logically and sequentially, an argument for why the problem exists   3. Indicate, using the literature, probable solutions and counter solutions to the problem   4. Assemble from the existing literature different and similar research methods used | | |

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| Overview of student activity: | Students will read existing literature on their research question and write a cohesive logical argument for the study. |

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| **Constructive alignment of unit level outcomes with module level outcomes, learning activities and assessment** *(Pressing <Tab> at the end of the table will provide additional rows in the table, if required.)* | | | |
| Intended unit learning outcomes: | No of module-level outcome | Activity where students engage with this outcome | Where and how is this outcome assessed? |
| ***At the end of this unit, you will be able to:*** | | | |
| 1. Assemble existing literature associated with the research question | 1, 2, 5 | Library and writing center to instruct on library use and literature matrix construction | Summative Mid-semester exam of work done to date, with students using their reflections to justify their choices |
| 1. Using the literature, write logically and sequentially, an argument for why the problem exists | 1, 2, 5 | writing center to instruct on writing skills, text, and meaning | Ongoing informal formative assessment |
| 1. Indicate, using the literature, probable solutions and counter solutions to the problem | 1, 2, 5 | writing center to instruct on writing skills, text, and meaning | Ongoing informal formative assessment |
| 1. Assemble from the existing literature different and similar research methods used | 3 & 4 | E-moderator guides on types of research methods |  |

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| Detailed explanation of ALL student and teacher engagement with the unit:  ***(This should be presented in the order that the activities take place. So if students do work* online *before* *coming to the lecture, that should be shown ahead of what happens in class.***  ***If there is more than one opportunity for face-to-face contact, or more than one online task, there should be a separate section for each instance, and they should be presented in the template in the same order that students encounter them.)***  ***Content*** *– such as lecture material – can EITHER be shown here OR added as* ***clearly identifiable*** *addenda to the document. If you plan to use addenda, you should ensure that these are cross-referenced in this section.)* | | | |
| Module-level outcomes addressed: | | | |
| 1, 2, 3, 4, & 5 | | | |
| Purpose of the unit/week/section: | | | |
| To craft existing related literature to provide logical context to guide the research move towards understanding or a solution to the challenge | | | |
| Over to you: *(a description of the process of the section)* | | | |
| **Learning Activity 1 to 3 each week for four weeks: Literature Review**  Students will  Week 1: Assemble existing literature associated with the research question, including the conceptual framework, to complete the literature matrix as much as they can within the time frame. Students will use the reputable journals as models on flow, cohesiveness, discipline related, etc. They will do so in class, in groups in and out of the classroom and individually. The library team supports this activity.  Week 2: Outline flow using the conceptual framework as a guide to expand on in the literature review. Using the literature from the matrix, the students will write logically and sequentially, to make an argument for why the problem exists. Optional students may share all or sections on the discussion board for feedback from peers and instructor during this period. The Writing Centre is a main resource.  Week 3: Allude to, aspects of the literature, as probable solutions, and counter solutions to the problem, demonstrating the students’ objectivity and credibility  Week 4: Continue to read and to fill gaps in the flow of the literature, all the while the discussion forum is open and accessible  Throughout the 4 weeks, students identify and note in the literature matrix the different methods used to collect the data \_ population, sampling, procedures, design, instruments, analysis of data, etc. to use next week.  The literature review of 20 to 30 pages is due midnight of the fourth Friday for submission and grading. | | | |
| Pre-topic activity: | | Number of hours | 16 |
| Students began to build the literature matrix (while developing the conceptual framework) | | | |
| Face to face time: *(if applicable)* | | Number of hours | 16 |
| Students attend class for clarification, peer input, guidance from the library, Writing Center and the E-moderator | | | |
| Online activity: | | Number of hours |  |
| What should students do? | Constant discussion with peers and mentors via a forum or discussion board | | |
| Where do they do it? | In and out of class | | |
| By when should they do it? | By the end of week 9 | | |
| E-moderator/tutor role | | | |
| Facilitator, lectures, mentor, access, Socratic questioning, and constant checking and contribution to forum discussion | | | |
| How are the learning outcomes in this unit assessed? | | Number of hours | 24 |
| Formatively | | | |
| How does this section link to other sections of the module? | | | |
| Literature reflects every aspect of all the other sections. | | | |

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| = Total number of hours | 56 |

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| **Some important questions** | |
| Which learning resources/ references will scaffold the students’ learning? | Written Resources  Eisenhart, M. A. (1991, January 1). Conceptual frameworks for research circa 1991: Ideas from a cultural anthropologist; Implications for mathematics of education researchers. In R. G. Underhill (Ed.), *Proceedings of the thirteenth annual meeting: North American chapter of the international group for the psychology of mathematics education* (pp. 202–220).  Blacksburg, VA: Christiansburg Printing Company, Inc.  Retrieved from [http://nepc.colorado.edu/files/ Eisenhart\_ConceptualFrameworksforResearch.pdf](http://nepc.colorado.edu/files/%20Eisenhart_ConceptualFrameworksforResearch.pdf)  <https://nepc.colorado.edu/sites/default/files/Eisenhart_ConceptualFrameworksforResearch.pdf>  Coughian, M., Cronin,P. & Ryan, F. (2007). Step by-step guide to critiquing  research. Part 1: quantitative research. British Journal of Nursing. Vol 16, No II  <https://www.unm.edu/~unmvclib/cascade/handouts/critiquingresearchpart1.pdf>  Ryan, F., Coughlan, M., & Cronin, P. (2007).Step-by-step guide to critiquing research. Part 2: qualitative research. *British Journal of Nursing*, *16*(12). 738–744. <http://medical.coe.uh.edu/download/Step_by_step_guide_to_critic_qual_research.pdf>   Blaxter, L., Hughes, C. & Tight, M. (2010) Reading for research. In *How to research* (pp. 99–133). McGraw-Hill.  Matthews, S. (n.d.) Analyzing research articles: A guide for readers and writers. <https://ils.unc.edu/courses/2016_spring/inls151_002/Analyzing_Research_Articles.pdf>  Quinton, S. & Smallbone, T. (2006). How to read critically. In Postgraduate research in business (pp. 81-96). SAGE  Ravitch, S. M., & Riggan, M. (2012). *Reason & rigor: How conceptual frameworks guide research*. SAGE.  Pautasso, M. (2013). Ten simple rules for writing a literature review. *PLoS Computational Biology*, *9*(7), e1003149. doi: 1371/journal.pcbi.1003149 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3715443/>    Department of Psychology. Writing a literature review. *UC San Diego*. <https://psychology.ucsd.edu/undergraduate-program/undergraduate-resources/academic-writing-resources/writing-research-papers/writing-lit-review.html>    Frederiksen, L., & Phelps, S. F. (2020). Chapter 8: Writing the literature review. In *Literature reviews for education and nursing graduate students*. <https://press.rebus.community/literaturereviewsedunursing/chapter/chapter-8-writing-the-literature-review/>  **Video Resources**  Research Gallery. (2020, April 20). *Literature review preparation creating a summary table* [Video]. <https://www.youtube.com/watch?v=TxQf2or3Ujo&t=53s>  USU Libraries. (2017, December 20). *Synthesis for literature reviews* [Video]. <https://www.youtube.com/watch?v=eVt2mMG_gwE&t=10s> |
| How are students enabled to access the resources? | All resources are stored in the course Canvas page accessible to all students |
| Where in this unit are students expected to work collaboratively? | Students work collaboratively each day of the week that they meet. |
| How has an inclusive approach been incorporated in this unit? | The collaborative nature of the course unit allows for students with ADHD, dyslexia, and other learning disabilities to have support. |
| How will feedback on unit be obtained from students? | The reflective journal component allows for students to provide feedback on the week’s work. |
| How will student feedback be used to improve unit? | Student feedback at this stage will serve as formative feedback to the instructor and will inform subsequent instruction |
| At which point(s) will students receive formative feedback on the work they have done in the unit? | Students will receive formative feedback during each activity from peers and the instructor. |

END OF UNIT/WEEK/SECTION-LEVEL TEMPLATE

WEEK Ten & Eleven

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| **Unit-level overview** | | **Unit/week/section** |  |
| Topic name: | Theory to Practice I: Designs (Deductive and Inductive), Population (Sampling, and Power), Procedures (Ethics, and Human Participants), and Data type | | |
| Aim of the topic: | To analyze the assembly of research designs gathered during the literature review To determine the most appropriate and applicable research design for your study  To identify the population relevant to the research and the most rigorous and feasible sampling technique  To gain awareness of different ethical procedures to use with research participants  To determine data available and metric type | | |
| This topic covers: | * Deductive research designs * Inductive research designs * Rationalizing and describing a selected population * Different types of sampling (deductive and inductive frames) * Determining sample size * Recognize appropriate/acceptable interactions with research participants based on research design selected * Apply appropriately to an Institutional Review Board * The role of Institutional Review Boards * Acceptable procedures concerning participants | | |
| Intended learning outcomes: | *At the end of this* ***topic****, you will be able to:*   * 1. Identify numerous research designs from the ones assembled during the readings for the literature review   2. Select the most appropriate and applicable research design for a study using the concepts of limitations, delimitations, reliability, validity   3. Select appropriate population and sampling   4. Determine data availability of variables and metric type   5. Revision of research question phrasing based on the nature of these outcomes, if necessary   6. Recognize Belmont Principles in research | | |

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| Overview of student activity: | To move theory of the study towards valid implementation |

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| **Constructive alignment of unit level outcomes with module level outcomes, learning activities and assessment** *(Pressing <Tab> at the end of the table will provide additional rows in the table, if required.)* | | | |
| Intended unit learning outcomes: | No of module-level outcome | Activity where students engage with this outcome | Where and how is this outcome assessed? |
| ***At the end of this unit, you will be able to:*** | | | |
| 1. Apply appropriate research designs to a study | 1, 2, & 3 | Students will read about and teach deductive and inductive research designs to the class | In-class presentations  Formative assessment |
| 1. Attend to data type as key to sampling | 3 & 4 | Students will map sample, to data type and possible sampling | Peer evaluation and discourse  Formative assessment |
| 1. Implement recognized procedures according to the Belmont principles | 3 & 4 | Explain the Belmont principles to the university community through posters or art or any other medium | Peer evaluation  Community responsiveness  Formative Assessment |

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| Detailed explanation of ALL student and teacher engagement with the unit:  ***(This should be presented in the order that the activities take place. So if students do work* online *before* *coming to the lecture, that should be shown ahead of what happens in class.***  ***If there is more than one opportunity for face-to-face contact, or more than one online task, there should be a separate section for each instance, and they should be presented in the template in the same order that students encounter them.)***  ***Content*** *– such as lecture material – can EITHER be shown here OR added as* ***clearly identifiable*** *addenda to the document. If you plan to use addenda, you should ensure that these are cross-referenced in this section.)* | | | |
| Module-level outcomes addressed: | | | |
| 1, 2, 3, & 4 | | | |
| Purpose of the unit/week/section: | | | |
| To start to implement the study for data collection | | | |
| Over to you: *(a description of the process of the section)* | | | |
| **Learning Activity 1 to 3 each week for two weeks: Theory to Practice I**  Week 1: The E-moderator will provide students note summaries in addition to the reading list of at least 4 deductive and 4 inductive designs. Students are to form groups with the intent to teach in groups of 3-5 to classmates face-to-face either a deductive or inductive research design e.g., Narrative, Case study, phenomenology, ethnography, causal comparative, quasi experimental, survey design, etc. Students (presenting as teachers) would ask , “How can, and why would, you apply the characteristics of ethnographic /narrative etc. research to your future research? “ Which design would be best attribute the research outcome to the implementation of the study and not some other factor outside of the study?  Week 2: The focus would be on procedures. e.g., How do you select your sample? What exactly are you measuring from the sample? Word meanings or measurable traits? Would that be a good measure of what you are interested in? Which metric would be best? Which sampling type would be most suited to your population of interest? Students would be lectured on the different types of sampling by the E-moderator. Students would answer these questions with respect to their research question, conceptual framework etc. and try to map sample, to data type and possible sampling. Note strengths of each of the many possibilities mapped to determine the most appropriate for each student’s research. This will be done in small groups, individuals, etc  Not only what is done in research, but how it’s done is equally important. Students will watch a video which explains the Belmont principles and will come up with an idea or artifact or process to explain the Belmont principles of research to a sector the university student community through posters or art or any other medium. Procedures from seeking permission to use a particular entity, collecting data from that entity to how to exit ,etc. Will be brainstormed by the students and role -played. | | | |
| Pre-topic activity: | | Number of hours | 4 |
| Students will read about the deductive and inductive type designs | | | |
| Face to face time: *(if applicable)* | | Number of hours | 8 |
|  | | | |
| Online activity: | | Number of hours | 10 (Inclusive of 4) |
| What should students do? | Students will have discourse on all concepts consistently via the forum or discussion board | | |
| Where do they do it? | In and outside of class | | |
| By when should they do it? | By midnight the second Friday of this two -week period | | |
| E-moderator/tutor role | | | |
| Facilitator, mentor, lecturer | | | |
| How are the learning outcomes in this unit assessed? | | Number of hours | 6 |
| Formatively | | | |
| How does this section link to other sections of the module? | | | |
| It links to all other sections by putting them into action | | | |

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| = Total number of hours | 24 |

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| **Some important questions** | |
| Which learning resources/ references will scaffold the students’ learning? | **Written Resources**  Creswell, J. W. (2009). Chapter Three: The use of theory. In *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.; pp. 49–71). SAGE  Thody, A. (2006). Literature and methodology. In *Writing and presenting research* (pp. 89–106). SAGE   * RMIT University. (2022). *Finding literature on research methodologies*. <https://rmit.libguides.com/c.php?g=922844&p=6662571>   (cf. Bradbury-Jones, C., Sambrook, S., & Irvine, F. (2009, March) The phenomenological focus group: an oxymoron? *Journal of Advanced Nursing*, *65*(3), 663–671. <https://doi.org/10.1111/j.1365-2648.2008.04922.x> )  Reading Lists. In *SAGE Research Methods*. <http://methods.sagepub.com.elibraryashesi.remotexs.co/Help#ReadingLists>  *International compilation of research standards 2021 edition | Africa*. <https://www.hhs.gov/sites/default/files/ohrp-international-compilation-2021-africa.pdf>  Kass, N. E., et al. (2007). The structure and function of research ethics committees in Africa: A case study. *Public Library of Science*. <https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.0040003>  Boghuma Kamiesen Titanji. (2012, June 13). *Exploitation and ethics in clinical trials | Boghuma Kabisen Titanji | TEDxGoodenoughCollege* [Video]. TedX Talks. <https://www.youtube.com/watch?v=HOBlWaH-Owo>  Aellah, G., Chantler, T., & Geissler, P. W. (2016). Global Health Research in an Unequal World. CABI CAB International. <https://library.oapen.org/handle/20.500.12657/28429>  [Case 50. Informed Consent With Vulnerable Populations](https://www.asanet.org/teaching-learning/faculty/teaching-ethics-throughout-curriculum/case-50-informed-consent-vulnerable-populations)  Schriffert, D. (2018, September 4). *Teaching computer ethics*. <https://rcvest.southernct.edu/teaching-computer-ethics/#a-capstone>  Princeton University Dialogues on AI and Ethics | Case Study PDFs <https://aiethics.princeton.edu/case-studies/case-study-pdfs/>  Schriffert, D. (2018, September 4). *Teaching computer ethics*. <https://rcvest.southernct.edu/teaching-computer-ethics/#a-capstone>  Bouloucher-Passet, V. (n.d.). *Shifting the challenge to students in an International Marketing class: The value of having students write teaching cases*. <https://cris.brighton.ac.uk/ws/portalfiles/portal/391436/V+BOULOCHER-PASSET+-+The+value+of+having+students+write+teaching+cases.pdf>  **Video Resources**   * SAGE Publishing. (2017, January 31). *SAGER Research methods overview* [Video]. YouTube. <https://youtu.be/rppKj7xHA-I> [The video goes over the “Methods Map” tool.   Methods Map. In *SAGE Research Methods*. <http://methods.sagepub.com.elibraryashesi.remotexs.co/Help#MethodsMap> |
| How are students enabled to access the resources? | All resources are stored in the course Canvas page accessible to all students |
| Where in this unit are students expected to work collaboratively? | Students work collaboratively each day of the week that they meet. |
| How has an inclusive approach been incorporated in this unit? | The collaborative nature of the course unit allows for students with ADHD, dyslexia, and other learning disabilities to have support. |
| How will feedback on unit be obtained from students? | The reflective journal component allows for students to provide feedback on the week’s work. |
| How will student feedback be used to improve unit? | Student feedback at this stage will serve as formative feedback to the instructor and will inform subsequent instruction |
| At which point(s) will students receive formative feedback on the work they have done in the unit? | Students will receive formative feedback during each activity from peers and the instructor. |

WEEK *Twelve*

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| **Unit-level overview** | | **Unit/week/section** | **9** |
| Topic name: | From Theory to Practice II | | |
| Aim of the topic: | To develop data collection tools  To project possible analyses for data collected | | |
| This topic covers: | * Instrumentation Development (including Survey Design) * Interview and Focal Group Protocol Development * Reliability and Validity * Quantitative Analysis of data * Qualitative Analysis of Data | | |
| Intended learning outcomes: | *At the end of this* ***topic****, you will be able to:*   1. Develop a reliable and valid instrument for data collection 2. Anticipate the kind of quantitative and qualitative data analysis needed | | |

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| Overview of student activity: | Students will gain skill on how to measure the research outcome through practice. Students will also create tools for their research question. A mapping of data type, research question type, and scale of data measurement onto different statistical analyses will be reviewed with the students. Students will also be given the opportunity to practice analysing and interpreting transcribed interviews or focus groups. |

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| **Constructive alignment of unit level outcomes with module level outcomes, learning activities and assessment** *(Pressing <Tab> at the end of the table will provide additional rows in the table, if required.)* | | | |
| Intended unit learning outcomes: | No of module-level outcome | Activity where students engage with this outcome | Where and how is this outcome assessed? |
| ***At the end of this unit, you will be able to:*** | | | |
| 1. Develop a reliable and valid instrument for data collection | 1,4 | Survey development (quantitative tool mainly)  Interview protocol (qualitative tool, mainly) | Alignment of tool with conceptual framework and research question(s) |
| 1. Anticipate the kind of quantitative and qualitative data analysis needed | 1,4 | Exposure and understanding of the basic premise of statistical analysis and coding of text | Practice exercise in class |

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| Detailed explanation of ALL student and teacher engagement with the unit:  ***(This should be presented in the order that the activities take place. So if students do work* online *before* *coming to the lecture, that should be shown ahead of what happens in class.***  ***If there is more than one opportunity for face-to-face contact, or more than one online task, there should be a separate section for each instance, and they should be presented in the template in the same order that students encounter them.)***  ***Content*** *– such as lecture material – can EITHER be shown here OR added as* ***clearly identifiable*** *addenda to the document. If you plan to use addenda, you should ensure that these are cross-referenced in this section.)* | | | |
| Module-level outcomes addressed: | | | |
| 1 and 4 | | | |
| Purpose of the unit/week/section: | | | |
| Students will gain skill in how to measure the research outcome from data they collect. | | | |
| Over to you: *(a description of the process of the section)* | | | |
| **Learning Activity 1 (Day1): Developing tools**  Students have learned to sample a population with beneficence, ethics, and justice (Belmont Report; IRB) and with some sense of the metrics to use. The next step in the research process is to learn how to collect data from the population sample participants. Students will discuss data collection methods they are aware of via the discussion board as a whole class pre-activity  Time progression (in minutes) for a 90-minute class  0:00 to 0:15  Students will share in class data collection methods they are aware of that they shared with their peers on the discussion board, pre class. The E-moderator will summarize the discussion and focus on survey and interview protocol development.  0:15 to 0:75  The E-moderator will use Socratic questioning to elicit responses about good and bad surveys. Using examples of faulty and well-constructed surveys, as well poor and strong interview skills for students to critique and rationalize. The E-moderator will guide students on how to develop a reliable and valid instrument for data collection, i.e., a survey (quantitative tool mainly) and an interview protocol (qualitative tool, mainly).  0:75 to 0:90  Students in small groups will begin to work on developing a survey and an interview protocol for their research questions. They will review for surveys and interview protocol examples, the journal publications in the reputable journals that they have been using throughout semester. The group work will continue after class with students using the discussion boards, YouTube videos, academic databases, etc. intent on completing the task  **Learning Activity 1 & 2 (Day 2): Developing tools (continued) and mapping to possible data analysis**  Time progression (in minutes) for a 90-minute class  0:00 to 0:30  Students share per group their perceived successes and challenges on survey and protocol development per their individual research studies. They receive feedback from each other and the E-moderator who will proceed with a lecturette to debunk any misconceptions.  0:30 to 0:60  Students continue to work in groups, while seeking assistance from the E-moderator when necessary. The students will continue after class using the discussion boards, YouTube videos, academic databases, etc. intent to complete the task.  0:60 to 0:90  The E-moderator will pause the class to introduce two main approaches to analyzing the data they will collect with the tools they are developing, i.e., measurements of scale for the potential data, statistical tools and coding techniques. Anticipating the kind of quantitative and qualitative data analysis needed, will guide their final development of the data collection tools.  **Learning Activity 31 & 2 (Day 3): Refining Data Collection Tools**  Depending on how far along a student is, he or she will either be finalizing their tools or identifying and practising the data analysis method most likely to be used when the data is collected, e.g., dependent t test, ANOVA or content analysis. | | | |
| Pre-topic activity: | | Number of hours | 3 |
| Students discuss data collection methods they are aware of through the discussion board as a whole class pre-activity | | | |
| Face to face time: *(if applicable)* | | Number of hours | 4 |
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| Online activity: | | Number of hours | 9 |
| What should students do? | Students should discuss their understandings of the tool development process and continue to create a valid and reliable tool | | |
| Where do they do it? | In and out of class | | |
| By when should they do it? | By week 13-14, when the complete project is due | | |
| E-moderator/tutor role | | | |
| Summaries, lecturettes, questioning, motivating, etc. | | | |
| How are the learning outcomes in this unit assessed? | | Number of hours | 3 (inclusive) |
| Formatively through feedback from peers, self and E-moderator | | | |
| How does this section link to other sections of the module? | | | |
| It is linked with module level objectives 1, 3, 4, 5 and 6 | | | |

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| = Total number of hours | 16 |

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| **Some important questions** | |
| Which learning resources/ references will scaffold the students’ learning? | Written Resources  Rutgers University. Developing a survey. <https://njaes.rutgers.edu/evaluation/resources/survey-instrument.php>  Harvard University program on Survey research. <https://psr.iq.harvard.edu/files/psr/files/PSRQuestionnaireTipSheet_0.pdf>  Pew Research. <https://www.pewresearch.org/our-methods/u-s-surveys/writing-survey-questions/>  University of British Columbia. <https://isotl.sites.olt.ubc.ca/files/2020/03/SURVEY-WORKSHOP.pdf>  Washington State University. WSU surveys <https://surveys.wsu.edu/surveys/best-practices/>  IES REL Survey methods for Educator. <https://ies.ed.gov/ncee/rel/Products/Publication/3752>  Interview Protocol . Imperial College London. <https://www.imperial.ac.uk/education-research/evaluation/tools-and-resources-for-evaluation/interviews/interview-protocol-design/>  Sample Stanford Interview form. <https://web.stanford.edu/group/ncpi/unspecified/student_assess_toolkit/sampleInterviewProtocol.html>  And tools. <https://web.stanford.edu/group/ncpi/unspecified/student_assess_toolkit/interviews.html>  Harvard Strategies for deveoloping an interview form. <https://web.stanford.edu/group/ncpi/unspecified/student_assess_toolkit/interviews.html>  Qualitative interview guide. <https://oer.pressbooks.pub/howdyorhello/back-matter/appendix-qualitative-interview-design/> |
| How are students enabled to access the resources? | All resources are stored in the course Canvas page accessible to all students |
| Where in this unit are students expected to work collaboratively? | Students work collaboratively each day of the week that they meet. |
| How has an inclusive approach been incorporated in this unit? | The collaborative nature of the course unit allows for students with ADHD, dyslexia, and other learning disabilities to have support. |
| How will feedback on unit be obtained from students? | The reflective journal component allows for students to provide feedback on the week’s work. |
| How will student feedback be used to improve unit? | Student feedback at this stage will serve as formative feedback to the instructor and will inform subsequent instruction |
| At which point(s) will students receive formative feedback on the work they have done in the unit? | Students will receive formative feedback during each activity from peers and the instructor. |

WEEK THIRTEEN& FOURTEEN

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| **Unit-level overview** | | **Unit/week/section** |  |
| Topic name: | Assembling your Research Prospectus | | |
| Aim of the topic: | To craft a research prospectus | | |
| This topic covers: | * Components of a research prospectus * Sequence and logic of a research prospectus for both an inductive and deductive research study | | |
| Intended learning outcomes: | *At the end of this* ***topic****, you will be able to:*   1. Logically and sequentially assemble the components of your research study 2. Include corollary sections such as a title page, appendices, references, etc. 3. Submit a research prospectus which can serve as blueprint for your capstone thesis proposal | | |

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| Overview of student activity: | The students will assemble all the components of the quest to answer a research question into a cohesive prospectus, complete with the major components of a research proposal |

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| **Constructive alignment of unit level outcomes with module level outcomes, learning activities and assessment** *(Pressing <Tab> at the end of the table will provide additional rows in the table, if required.)* | | | |
| Intended unit learning outcomes: | No of module-level outcome | Activity where students engage with this outcome | Where and how is this outcome assessed? |
| ***At the end of this unit, you will be able to:*** | | | |
| 1. Write a good draft of a research proposal | 1-6 | Writing the research prospectus | The prospectus will be assessed as a written document poised to serve as the context for finding the answer to the research question |
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| Detailed explanation of ALL student and teacher engagement with the unit:  ***(This should be presented in the order that the activities take place. So if students do work* online *before* *coming to the lecture, that should be shown ahead of what happens in class.***  ***If there is more than one opportunity for face-to-face contact, or more than one online task, there should be a separate section for each instance, and they should be presented in the template in the same order that students encounter them.)***  ***Content*** *– such as lecture material – can EITHER be shown here OR added as* ***clearly identifiable*** *addenda to the document. If you plan to use addenda, you should ensure that these are cross-referenced in this section.)* | | | |
| Module-level outcomes addressed: | | | |
| 1 through 6 | | | |
| Purpose of the unit/week/section: | | | |
| To assess the ability of the student to write a research proposal | | | |
| Over to you: *(a description of the process of the section)* | | | |
| Students work independently and with peer and e-moderator input to complete their research prospectus which could serve as a blueprint for their capstone proposal. The E-moderator will hold off | | | |
| Pre-topic activity: | | Number of hours |  |
| All of the above were pre-activities to the prospectus development | | | |
| Face to face time: *(if applicable)* | | Number of hours |  |
| Both online and face-to-face | | | |
| Online activity: | | Number of hours |  |
| What should students do? | Write a prospectus | | |
| Where do they do it? | Both online and face-to-face | | |
| By when should they do it? | The Friday midnight of week 14 | | |
| E-moderator/tutor role | | | |
| Available to answer questions, reteach concepts, etc. | | | |
| How are the learning outcomes in this unit assessed? | | Number of hours |  |
| In the sequence, flow and logic of the assemblage into a prospectus | | | |
| How does this section link to other sections of the module? | | | |
| This section is the cumulation of all the prior pieces | | | |

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| = Total number of hours | 30 plus hours |

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| **Some important questions** | |
| Which learning resources/ references will scaffold the students’ learning? | **Written Resources**  Creswell, J. W. (2009). Chapter Three: The use of theory. In *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.; pp. 49–71). SAGE  Wentz, E. (2014). Problem statement. *In How to design, write, and present a successful dissertation proposal* (pp. 129–148). SAGE. (PDF available on MS Teams Week 5).  Thody, A. (2006). Literature and methodology. In *Writing and presenting research* (pp. 89–106). SAGE  RMIT University. (2022). *Finding literature on research methodologies*. <https://rmit.libguides.com/c.php?g=922844&p=6662571>  Blaxter, L., Hughes, C. & Tight, M. (2010) Reading for research. In *How to research* (pp. 99–133). McGraw-Hill.  Matthews, S. (n.d.) Analyzing research articles: A guide for readers and writers. <https://ils.unc.edu/courses/2016_spring/inls151_002/Analyzing_Research_Articles.pdf>  Quinton, S. & Smallbone, T. (2006). How to read critically. In Postgraduate research in business (pp. 81-96). SAGE  Coughlin, M., Cronin, P., Ryan, F. (2007). Step-by-step guide to critiquing research. Part 1: quantitative research. *British Journal of Nursing*, *16*(11). 658–663. <https://www.unm.edu/~unmvclib/cascade/handouts/critiquingresearchpart1.pdf>  Ryan, F., Coughlan, M., & Cronin, P. (2007).Step-by-step guide to critiquing research. Part 2: qualitative research. *British Journal of Nursing*, *16*(12). 738–744. <http://medical.coe.uh.edu/download/Step_by_step_guide_to_critic_qual_research.pdf>  Hammersley, M. (2012) Methodological paradigms in educational research, *British Educational Research Association*. <https://martynhammersley.files.wordpress.com/2013/11/methodological-paradigms-4.pdf>  Creswell, J. W. (2017). Chapter 1: The selection of a research approach. In *Research design: Qualitative, quantitative, and mixed methods approaches* (pp. 3–23; 4th ed). SAGE. <https://us.sagepub.com/sites/default/files/upm-binaries/55588_Chapter_1_Sample_Creswell_Research_Design_4e.pdf>  Niglas, K. (2007). Introducing the quantitative–qualitative continuum: An alternative view on teaching research methods. <http://www.cs.tlu.ee/~katrin/wp/wp-content/uploads/2013/11/Introducing-the-quan-qual-continuum.pdf>  Topping, A. (2006). *The quantitative–qualitative continuum*  **Video Resources**  SAGE Publishing. (2017, January 31). *SAGER Research methods overview* [Video]. YouTube. <https://youtu.be/rppKj7xHA-I> [The video goes over the “Methods Map” tool.  Methods Map. In *SAGE Research Methods*. <http://methods.sagepub.com.elibraryashesi.remotexs.co/Help#MethodsMap>Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed). SAGE.  Office of Research & Doctoral Services. (2015, August 13). Overview of quantitative research methods [Videos]. YouTube. <https://www.youtube.com/watch?v=cwU8as9ZNlA>  Tine Wade. (2017). *Qualitative & quantitative research - An introduction* [Video]. YouTube. <https://www.youtube.com/watch?v=RYmLE8UqCXU>  Yale University. (2015, Jun 23). Fundamentals of qualitative research methods: What is qualitative research (module 1) [Video]. YouTube. <https://www.youtube.com/watch?v=wbdN_sLWl88> |
| How are students enabled to access the resources? | All resources are stored in the course Canvas page accessible to all students |
| Where in this unit are students expected to work collaboratively? | Students work collaboratively each day of the week that they meet. |
| How has an inclusive approach been incorporated in this unit? | The collaborative nature of the course unit allows for students with ADHD, dyslexia, and other learning disabilities to have support. |
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| How will student feedback be used to improve unit? | Student feedback at this stage will serve as formative feedback to the instructor and will inform subsequent instruction |
| At which point(s) will students receive formative feedback on the work they have done in the unit? | Students will receive formative feedback during each activity from peers and the instructor. |