21/09/23

INTRODUCTION TO RESEARCH

1. **Name of the group and details of the exercise being submitted.**

Power Rangers

Avantik Zinta

Palakshi Sathe

Tanisha Dhareshwar

Sanidhya Sharma

Divya Kadav

Chapter 1 Research Gym 1 Exercise 1 Mohanan & Mohanan (2021)

QUESTION 1

Suppose a university student suffers from clinical depression. He would experience serious learning problems. If left undiagnosed, he is likely to do badly in his exams/tests, and would receive poor grades for his courses, which in turn would lower his GPA. This would negatively affect his chances of admission to a good Master's or PhD program. Clinical depression affects more than ten percent of young adults. (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4003720/) This makes the existing system of grading students unfair to a significant number of students. To solve this problem, one may think of setting up a policy that allows students to take their tests/exams again, if

they feel they deserve a higher grade. For instance, if a student gets a C on a course in one semester, she could take the exam for that course again when it is offered next. And if she scores a higher grade, the earlier grade would be replaced by the new one.

Question: Is this a feasible and ethically desirable policy? Write a one-page argument in support of your answer.

2. Write up on Chapter 1

Reading for Understanding

a) Read the whole article/book once, and summarize the gist of it in a single sentence. Someone who hasn't read the book should understand from that sentence what YOU think the book is all about (the essence - the core message - of the book.)

According to Mohanan & Mohanan (2021) research is the inquiry that seeks to make a contribution to the existing body of academic knowledge and academic knowledge is a body of collective rational knowledge with awareness of the uncertainty and fallibility of human knowledge.

b) Now, expand that sentence into a paragraph. Again, in a way that someone who hasn't read the book should get what YOU think is the essence of the book.

According to the article, research begins with a question that needs to be answered. The next step is to come up with a set of possible ways that could help find an answer. The answer further leads one to arrive at a conclusion. This answer and conclusion is needed to be accepted by the academic community for it to become academic knowledge. Academic knowledge needs to be collective, rational, coherent and rationally justified. It is taken to be tentative as further additions to prior existing academic knowledge are ought to be made, therefore academic knowledge is characterized as uncertain and fallible.

c) Formulate a set of questions such that the summary of the book would be the answers to those questions.

1. What is Research?
2. How is the process of research carried out?
3. What is academic knowledge?
4. How does Research conclusion become academic knowledge?
5. What are the features of academic knowledge?
6. Why is academic knowledge "tentative" ?

d) Drawing upon 1 (a)-(c), write a 2-3 page review that is worth publishing, summarizing what the article/book says, with comments on its strengths and weaknesses.

In this chapter , we find out answers to the questions - “What is Research?” and “What is academic knowledge?” Research is said to be a process that aims to make a contribution to the existing body of academic knowledge. The process of research begins with a question or a problem that requires an answer or a solution. Research methodology is employed to seek an answer to the question. An explanation to the problem is sought for through various observations. The explanation is called a Theory. This helps the researcher to further arrive at a conclusion which sums up the answer to the research question. Now if the academic community verifies this conclusion with no counter example(s), then the conclusion is accepted as reliable knowledge and the process has successfully contributed to academic knowledge.

The answer to the second question "What is Academic Knowledge?" is also well explained in this chapter. Knowledge is a body of statements that we "take to be true" and academic knowledge is the knowledge that has been verified by the academic community as reliable. Academic knowledge is "collective" as it is jointly regarded as true by the academic community and is distinct from personal knowledge. Academic knowledge is "rational" as it requires acceptance of both logical consequences, and logical contradictions that follow a set of statements. The conclusion must also be rationally "justified" on the basis of evidence and/or arguments. Academic knowledge should be "coherent" as the statements of knowledge need to be connected and must be free from any logical contradiction. Academic knowledge is characterized as "tentative", as what is taken to be true is acknowledged to be uncertain and failable and the truth gets modified with further research and discoveries.

One of the strengths of the chapter is that it explains the nature of research and academic knowledge and the process that leads to contributing to academic knowledge in a simple way. The chapter provides clarity and explains how the process of research needs to be conducted. The chapter efficiently describes what academic knowledge is and throws light on how it is different from any other form of knowledge through elaborate description of the characteristics of academic knowledge. The examples given in the chapter explain the topics in a practical way. Although there is a possibility that too many examples can create confusion and complicate the understanding as the readers might not be able to comprehend all the examples and their understanding of the concept may become unclear.

Reading for Deep Comprehension

a) Read the book again, this time connecting one or more (but not more than five) central ideas (concepts and statements) of the book to what ALREADY exists in YOUR mind (the memory of your experiences, your understanding of what you think you already know, ...).

Central Idea - Research is a process that contributes to academic knowledge.

Existing Knowledge - In our school days, we were introduced to various subjects each holding a world of knowledge waiting to be explored. Some of these subjects, like history and science, ignited our curiosity and made us wonder the “why” behind the facts. It was in those moments that we turned to our teachers or we would google things to quench our thirst for understanding. Take history, for instance learning about past events and the stories of people who lived long ago

naturally led to questions. We did wonder why certain events happened, how they shaped the world, and what lessons we could draw from them. So we would ask our teachers, go to the library or google things to seek answers. This process of questioning and seeking answers added layers to our existing knowledge. Similarly, science classes left us wondering about the mysteries surrounding us. We'd ask "why does it rain?" or "Why do things fall to the ground". These questions pushed us to explore and learn more. But this curiosity isn't limited to the classroom. In our daily lives, we encounter countless moments that spark questions. It could be as simple as wondering,"what is pina colada?" when you see it on a menu. So, you reach for your smartphone, type in the question, and within seconds, you have the answer. This act of searching for information, driven by curiosity, is a small yet important way we contribute to our existing knowledge.

Central Idea - Formulating research questions involves deeper understanding of concepts.
Existing Knowledge - Recently, one of our classmates asked a thought-provoking question - "why do most descriptive questions start with "wh"?" This led us on a quest for answers, as we were tasked with assignments exploring the origins and the reason behind such questions. As we delved into our research, we came across tonal patterns, types of questions and their meanings. But none of them seemed to provide a satisfying answer to the fundamental "why" of wh-questions. It was during this time, when we stumbled upon a crucial lesson in the research. We realized that the way we framed our initial question greatly influenced the direction and quality of our research. This is similar to the experiences we have in our daily online searches. Consider, for instance, the way we use google. If our query is too broad or generic, we may find ourselves through a vast sea of

irrelevant data. In contrast, if we search for a clear and focused query, we can see more specific knowledge. The same principle applies to other online platforms like blogs, quora, and reddit where we share knowledge and engage in discussions. When we ask questions, we need to frame it in such a way that we receive meaningful responses. A vague question may lead to confusion.

Central Idea - In educational institutions, academic knowledge gets compartmentalized into 'subjects'.

Existing knowledge - From the early days of school to the more advanced college days, we came across different subjects like English, math and science. These subjects were all neatly organized into textbooks. Inside those textbooks, there were many chapters and each chapter had its own topic to learn about.We learned about the basics. As we got older and moved up in grades, the subjects became more challenging. This educational journey showed our growth as everything was structured unliked Experimental learning or intuition based learning. This compartmentalisation of different subjects leads to confusion. As there inhibits cross pollination of different subjects like History and Literature - We have novels that might explore historical contexts to better understand the themes in a novel. Likewise, Art and Psychology -There is something called art therapy which combines art and psychology. Therapists use artistic expression to help individuals cope with mental health.

Central Idea - Academic Knowledge is collective.

Existing Knowledge - Academic Knowledge is indeed collective. As different people have different opinions of seeing a concept and ways of understanding things. For instance, we might watch math tutorials on Youtube, read about science in magazines, and study history in our classes. All of these sources are like different mediums and opinions that are adding to our understanding. Just like the assignments, we are working on something which requires collective efforts, where lots of people are contributing their ideas and opinions, and that's what makes it collective.

b) Ask questions of the form "What is X?" where X is one of the concepts in (2a). Your answer should shed light on the similarities and differences between these concepts and related concepts and analogous concepts are unified. (e.g. what is 'linear' such that 'lines' in your experiential knowledge, 'linear' in linear correlation, 'linear' in 'linear algebra' and 'linear' in 'non-linear dynamics', etc form a single concept?)

Questions :

1] How does Research contribute to the advancement of academic knowledge?

= Research begins with a question. For conducting research we need a specific question that enables us to explore and discover new information within various fields of study. It expands our existing knowledge and helps in generating new ideas. Through research we gather new data about the concepts we know. Thereby, contributing to the advancement of academic Knowledge.

2] What is Academic knowledge?

=Academic Knowledge refers to the body of statements/ information, or concepts which we take to be true. It is collective, it is what the academic community jointly regards as accurate and reliable.

3] What is a research question?

= Research question focuses on the area of research study which is designed to be answered through systematic analysis and must be specific rather than vague.

4] How is academic knowledge different from other forms of knowledge?

= When we talk about academic knowledge, we often refer to the information and concepts that we acquired from our formal education. It's the kind of knowledge we gain from attending classes and studying textbooks. What sets academic knowledge apart is its structured organization like textbooks, chapters, sections, topics, subtopic and so on.

Reading for Knowledge

a) Articulate the central claims of the article/book (a single primary claim, with two or three secondary claims if needed. Not more than three.)

The aim of this article is to introduce the reader to the concept of research and to define the various aspects that come within its scope. Mohanan & Mohanan (2021)'s central claim in this article is that research is a process that aims to make a contribution to current Academic

Knowledge where this process begins with a research question and the answer to that question is found through its specific research methodology. Finally a conclusion is made based on the answer. Academic Knowledge is defined as a body of statements that we take to be true and are collectively acknowledged by the academic community. They are rational, coherent, and adhere to logical consequences while also being free of logical contradictions. They must be rationally justified on the basis of evidence/arguments and most importantly, they are acknowledged to be uncertain and fallible.

A secondary claim made by this article is its proposed types of research methodology with respect to the subject of inquiry, where empirical inquiry is said to be characteristic of science, axiomatic inquiry of mathematics, and conceptual inquiry of philosophy. It also redefines the structuring of academic knowledge where the term "science" is defined as the study of the world we live in, on the basis of observations and divided into 3 branches, physical sciences like physics, chemistry etc that study the nature of the physical world, biological sciences like molecular biology, developmental biology etc that study the nature of the biological world, and human sciences that study those aspects of the human species that are not covered by human biology or the physical sciences.

b) Identify and articulate the arguments (proof / rational justification /evidence and arguments) that the author offers in support of the claims.

Mohanan & Mohanan (2021) give us a central concept of research and the process through which research is conducted. This is justified through the evidence and arguments that they provide while defining the five characteristics of academic knowledge, and outlining their classification of the types of research methodology.

According to them, knowledge is defined as a body of statements that we take to be true, where the phrase "take to be true' is argued to mean that which is accepted/believed to be true but does not mean that which is actually true. The example given in the article to support this claim is that of atoms being thought to be indivisible until JJ Thompson's evidence presented in 1897 which was contrary to that belief.. Furthermore, even the 21st Century belief that electrons are indivisible is only "taken to be true" by the current academic community and if contrary evidence is found, this belief will be rejected.

The phrase 'body of statements' is argued to be different from a collection of statements that carry isolated pieces of information, where information refers to individual statements that are not connected to the rest of the knowledge. The example provided to support this claim is that of the statement, "The tilt of the earth's axis of rotation is 23.5 degrees". On its own, this is simply a piece of information. For it to be considered as a part of a body of statements relevant to academic knowledge and research, it has to be connected to a set of other statements, and satisfy specific conditions.

Mohanan & Mohanan (2021) argue that what distinguishes Academic Knowledge from other forms of knowledge like personal knowledge, folk knowledge, religious knowledge etc can be articulated in five characteristics. Firstly, Academic Knowledge is collectively regarded as true by the

academic community. The example given to support this claim is “Mo dislikes garlic”. If Tara were to regard this statement as true, it would be a part of her personal knowledge, but since most members of the academic community have not even heard of this statement, it cannot be classified as academic knowledge.

The second and third characteristics of academic knowledge are that they must be rational in a way that adheres to logical consequences and is free of logical contradictions while being coherent and connected .The argument in support of this claim is that Statement X is a logical consequence of statement Y if X is a conclusion that logically follows from the premise Y. Therefore to accept a set of premises, we also have to accept its logical consequences. If what is asserted as true in a statement is asserted as false in another statement, they are said to be logically contradictory. The example of a logically contradictory sentence given in the article is “The earth is flat and the earth is not flat.” Another characteristic of academic knowledge is that it is rationally justified on the basis of evidence and arguments. The last characteristic of fallibility has already been discussed before.

In this article, Mohanan & Mohanan (2021), also establish the existing structuring of academic subjects and state that the use of the word “science” in this format is arbitrary and harmful to the potential intersectionality between subjects of research. They demonstrate this with the examples of the terms Mathematical sciences, Computer sciences, and social sciences being conceptually different from biological sciences, physical sciences and so on. They give us 3 statements that fail to coherently follow a logical consequence.

(i) Social sciences are sciences that study society.

(ii) Psychology, economics, and history are social sciences.

(iii) Psychology, economics, and history are branches of sociology. They argue that it is unlikely that the academic community would agree with the conclusion in (iii).

As an alternative to this structuring, the article defines the term “science” to specifically refer to the study of the world we live in, on the basis of observations and is divided into 3 branches. Physical sciences like physics, chemistry etc that study the nature of the physical world, Biological sciences like molecular biology, developmental biology etc that study the nature of the biological world, and lastly Human sciences that study those aspects of the human species that are not covered by human biology or the physical sciences. According to this restructuring, Social Sciences refer to the scientific study of social organization in human and non-human species. Therefore,cognitive science, cognitive neuroscience, psychology and theoretical linguistics are not social sciences.”Mathematical sciences”, “Theoretical computer science” pose logical contradictions to the way “science” is defined in this context and therefore will not be categorized as being under it.

c) Critically evaluate the soundness of the arguments (evaluate the validity of the reasoning and the credibility of the premises).

(I am a little unsure about how this process works)

By defining academic knowledge as “a body of statements that we take to be true”, I think Mohanan & Mohanan (2021) are establishing a foundational premise to the entirety of this article.

They offer examples to clarify what they mean by “a body of statements” and “take to be true”. Does an example count as an argument/evidence? While I think it offers more clarity in the explanation of a definition, I am confused if it qualifies as “evidence” supporting the premise. If an example is indeed an inadequate evidence for a premise, how do you provide evidence for a premise? Is evaluation of a premise always at the level of a conceptual inquiry and if so how does one begin doing it? While trying to evaluate the soundness of a premise, do we try to find examples that would nitpick and be contrary to the premise or do we understand that it exists in the realm of a “prototype/paradigm” of most suitable generalizations? In this definition, I think there is a little ambiguity about who the “we” refers to. I think it is unclear whether the reader is to understand that it is referring to the academic community at large or specifically the authors of this article.

The first characteristic of academic knowledge that is given in the article is that it is collectively regarded as true by the community. What exactly does it mean for the academic “community” to “collectively” accept a theory? What is the overall criteria for this process to occur? Is it when an article is officially published in an academic journal? When someone questions the validity of a premise/argument, does it automatically get disproved or just controversial/more complicated? Do unpublished students also come under this academic community or is it only made up of published scholars? Does a lot of interaction/referencing of an article make it “accepted” or is just publishing it officially enough to consider it a part of academic knowledge? As for the final claim on the restructuring of academic subjects, I found Mohanan & Mohanan’s definition of science and the subsequent division of academic subjects sound and logical.

d) On the basis of (2), think of additional arguments in support of or against (3a).

(No additional arguments as of now)

e) On the basis of 3 (a-d), decide whether you should accept or reject (or keep on hold) the claims in (3a).

Despite my confusion about whether examples count as evidence for a premise, I think the definitions of research, academic knowledge and research methodology are sufficiently coherent to accept. I think the alternative structuring of academic knowledge was also adequately argued and therefore acceptable. I would like to keep the concepts of the characteristics of academic knowledge on hold until the specifics of what exactly is meant by "community"and "accepted" is expanded and clarified.

3. Write Up Research Gym 1 Exercise 1

QUESTION 1 Mohanan & Mohanan (2021)

Suppose a university student suffers from clinical depression. He would experience serious learning problems. If left undiagnosed, he is likely to do badly in his exams/tests, and would receive poor grades for his courses, which in turn would lower his GPA. This would negatively affect his chances of admission to a good Master's or PhD program. Clinical depression affects more than ten percent of young adults.

(https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4003720/) This makes the existing system of grading students unfair to a significant number of students. To solve this problem, one may think of setting up a policy that allows students to take their tests/exams again, if they feel they deserve a higher grade. For instance, if a student gets a C on a course in one semester, she could take the exam for that course again when it is offered next. And if she scores a higher grade, the earlier grade would be replaced by the new one.

Question: Is this a feasible and ethically desirable policy? Write a one-page argument in support of your answer.

Suppose, a university student is struggling with depression and was not able to perform well in the exams; therefore, lowering their grade and hindering their ability to join a good institution for further studies. How do we make it so that they may fix their grade and join a good institution?

We professionally diagnose them with clinical depression by a psychologist/psychiatrist. Then they may be able to re-appear for their exam and fix their grade. Now, what about other students like them who may face the same situation, as more than 10% of University students suffer from Clinical Depression. A Policy that allows students who are clinically depressed to re-appear for their examinations so that they may achieve a grade that is not hindered by their mental condition.

Details of the policy (step-by-step feasibility):

1. · The policy is introduced by the central body governing universities, i.e., UGC – University Grants Commission
2. · Mandatory for IIT's, IIM's and Central Universities and institutions ranked above #100 in the nation according to the NIRF (National Institutional Ranking Framework) as they are some of the most prestigious institutions in India and also the hardest to get into and compete in. It also narrows our pool as there are n-number of colleges and universities all over the nation.
3. · State and deemed universities may choose to implement the policy.

· Guidelines for the Mental Health Policy:

1. Institutions would be required to conduct mental health awareness drives for the students for sensitization as well as awareness with regard to the policy.
2. There would be a mandatory requirement for University authorities and teaching staff to undergo mental health sensitization as well for smoother implementation of the policy.
3. An on-campus Mental Health Unit including professional clinical psychologists, therapists and psychiatrists (Mental Health Professionals: MHP) aided by the Master's students of Psychology as trainee therapists. Basically, two birds with one stone because there are so many students enrolled every year and the Mental Health Unit would require a good workforce in quality and quantity as well. If a University does not have a Psychology

department, they may offer internships to MA Psychology students from elsewhere/other Universities.

4. Students who are not doing mentally well or have suffered a traumatic event (as assessed case wise by the appointed MHP of the University) and believe they deserve a chance to improve their grade may consult the Mental health professionals. This is to provide a cheaper and more feasible alternative to students while ensuring that the professional consulted by the student is trusted by the university as well. Consulting professionals outside the university may lead to students paying, forging or lying about their consultant and diagnosis.
5. However, if a student believes that they do not want the consultation/diagnosis of the University's mental health unit or if they already have a personal Psychologist/Therapist they may go forward with their own mental health aid. They would, in that case, need a written report from their psychologist/therapist. They would also require the personal psychologist/therapist to be in touch with the University's mental health unit.
6. Diagnosing the mental health issue as well as assessing the severity may be charted by the appointed MHP's with a combination of interview sessions and psychometric tests (Beck Depression Inventory, Depression Anxiety Stress Scales, etc).
7. Once the student is certified, they are required to present their diagnosis and their parent/guardian's consent to be eligible to reappear. This removes some students who may try to wrongfully take advantage and achieve better scores.

8. For those students whose parent's/guardian's may not be conducive to issues related to mental health the student would, in that case require consent from the relevant University authority (Dean, Professor, Principal, or Warden in case the student is residing in the hostel)
9. There will also be a 'small fee' to be paid if one wishes to re-appear for the exam. This may also narrow down the students who are wrongfully taking advantage of the policy(If a student cannot afford this fee they may fill a form detailing their financial situation/EWS Certification which will exempt them from it.)
10. If a student is found guilty of lying or cheating the policy, they will face the appropriate disciplinary action from the university.
11. This policy only works for Final Examinations and not for Mid-Semester/Internal Examinations.

· There will also be general mental well-being sessions for all students regularly (frequency can be weekly, bimonthly or monthly) carried out by the MHPs to work on preventive measures and wellbeing instead of just working on curative measures.

· The details of the students who will be reappearing would be kept confidential and absolute discretion will be followed.

· Criteria(Vaidya Shriya, personal communication, September 20, 2023)

1. Clinical Depression/ any other type of depression

2. Anxiety spectrum disorders
3. Trauma related distress due to any circumstances, can be further assessed by the MHPs.

- Challenges to Ethical Desirability:

1. Students may get negatively impacted by the labeling effect as defined by Wright et al (2011)wherein the labels of specific mental disorders may give rise to negative connotations and stigma when attached to a person. In seeking a diagnosis or feeling the need for one which can be kept in check with regular follow ups.
2. Stigma from their professors/students if they're aware of their situation which can be addressed by sensitization campaigns, but as far as possible utmost discretion will be observed.
3. Possibility of unfair use of the provisions despite strict guidelines leading to dilution of the cause and desensitization towards mental health issues; and increased stigma towards students who might rightfully try to benefit from the policy.
4. Due to the wide spectrum of mental health issues and academic requirements, provision of individual accommodation (for ex. extra time for written exams, extension in deadlines, alternative mediums for credits, etc.) would be required, which might be difficult to implement in a fair manner.

- Challenges regarding feasibility:

    1. Logistical implementation- Increased administrative work, scheduling additional dates, increased uptake of university resources in arranging for the same.
    2. Ensuring fairness in difficulty levels of the question papers for the re-examinations.
    3. So many students retaking their exams may cause an imbalance or unfairness in grades. This may possibly dismantle the merit system. One way to bypass this is to not let the students retake the exam but give alternative assignments or coursework to give fairness to their credits. This alternative does not allow them to retake their exam and replace their grade but showcase their understanding of the subject through a different medium and only add to their existing credit.

4. A list of questions that you wish to raise during class. Each question should contain a short description of the nature of the problem encountered.

Tanisha's questions:

1. Mohanan, K.P. & Tara Mohanan. 2021.Chapter 1 What is Research? *Introduction to Research* 1-12. http://thinq-website.s3-ap-southeast-1.amazonaws.com/other/Courses/ITR+2021/1++What+is+Research.pdf

What is the process of citing an online textbook? In place of where I've written *Introduction to Research*(the course name), should the website name come instead or should it be added separately after it or is this citation okay as it is?

2. Formatting query: While doing these chapter wise write ups, do we present each subtopic within the subtopics individually or as a whole? (write up on chapter 1 as a whole or to be divided into understanding, deep comprehension, knowledge and subsequently their a) b) c)? parts with the questions/parameters as their headings?)
3. In "Reading for Deep Comprehension", do we draw from our own personal experiences or do we draw inspiration from the personal memory/experience of reading the article specifically? We weren't able to come up with a consensus on how to interpret the prompt.

5. A detailed description of how you all went about doing your job, especially details of who did what

As a group, we divided up our work based on the sub headings given in the article How to Read Non-Fiction, by K.P. Mohanan. In the chronological order of this document, Avantik attempted the sub heading "Reading for Understanding", Divya attempted the sub heading

"Reading for Deep Comprehension", and Tanisha attempted the sub heading of "Reading for Knowledge". Palakshi and Sanidhya worked on the formulation and write up of the Research Gym Exercise. As a group, we all contributed to the editing, formatting and content of the final document.

Bibliography

Mohanan, K.P. & Tara Mohanan. 2021.Chapter 1 What is Research? *Introduction to Research* 1-12. http://thinq-website.s3-ap-southeast-1.amazonaws.com/other/Courses/ITR+2021/1++What+is+Research.pdf

Wright A, AF Jorm, AJ Mackinnon. 2011 Labeling of mental disorders and stigma in young people. *Soc Sci Med,* 73(4) https://pubmed.ncbi.nlm.nih.gov/21794967/