How to prepare for research

Making a clear, specific plan

Research Question Checklist

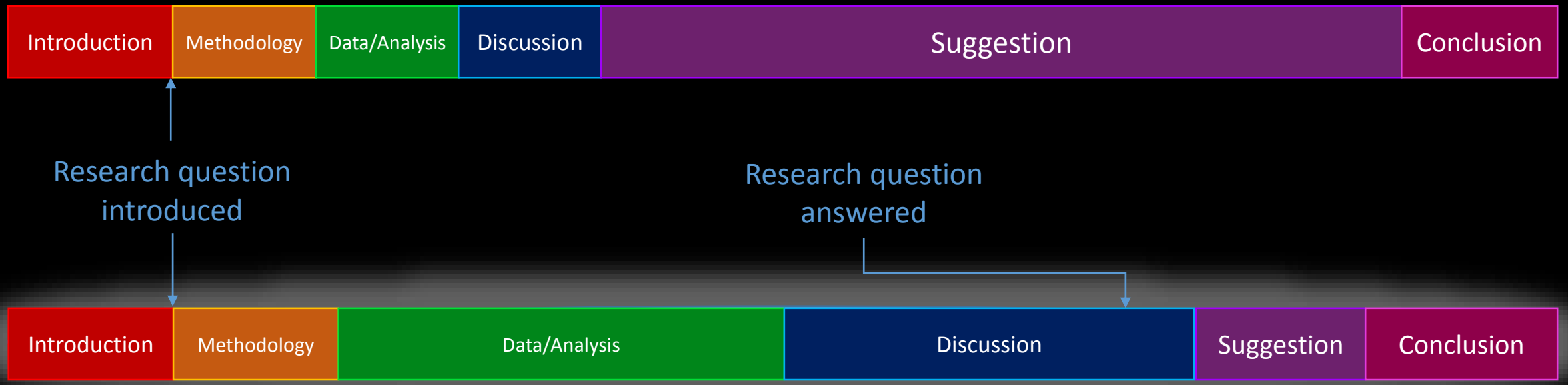
- ✓ What is the problem?
- ✓ Why is the problem is significant, or, how significant is it?
- ✓ What are the parts?
- ✓ Which part are you focusing on?
- ✓ Has anyone else addressed the problem, and was it effective? (Why [not]?) ← *This is background info!*

!! CAUTION !!

If your research question begins with something like:

- “How do we reduce…”
- “How do high school students fix…”
- “How can we improve…”

…Then you are writing about *solutions*, not a problem or what causes it.



Let’s do some examples!

1. How can we improve students’ studying with music?
2. What can SHS* students do to reduce bullying?
3. How can more people decide to adopt abandoned dogs?
4. How do students fix gender discrimination?

2) What are the causes of bullying in SHS?

2) Who can be a target of bullying?

3) What reasons do dog owners abandon their dogs?

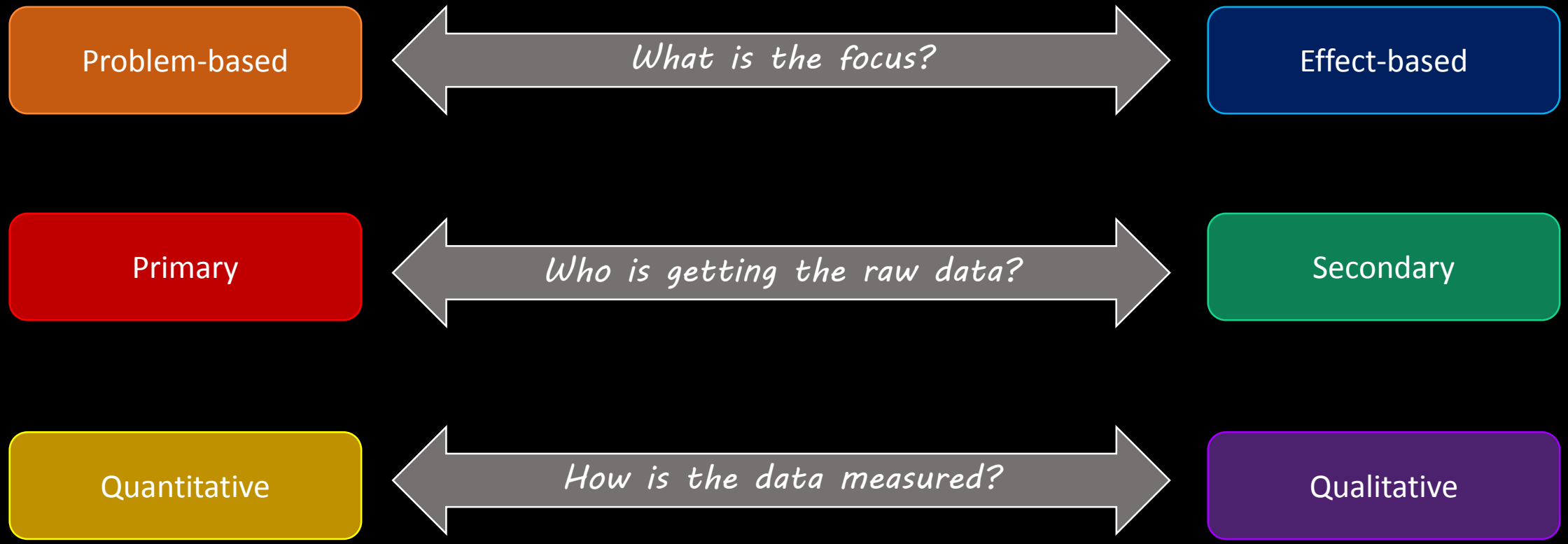
3) What prevents people from adopting abandoned dogs?

4) How do students have a bias towards gender?

1. How does music affect students’ concentration and memory?
2. What are the most common forms of bullying SHS students experience?
3. What factors discourage families from adopting rescue animals?
4. In what ways are binary gender roles reinforced in SHS?

*SHS → Senior High School

Ways to categorize research



To Do

1. Look at your research question, and refine it based on what you learned today (if you need to).

2. Fill in as much of the research plan as you can. When you finish:

3. Open the student drive, COPY the Research Proposal template to your USB, and use it as a template for your own proposal.

4. When you are collecting data, copy and paste URLs of useful information into a list. Save that list to your USB *and your school drive (U:)*.

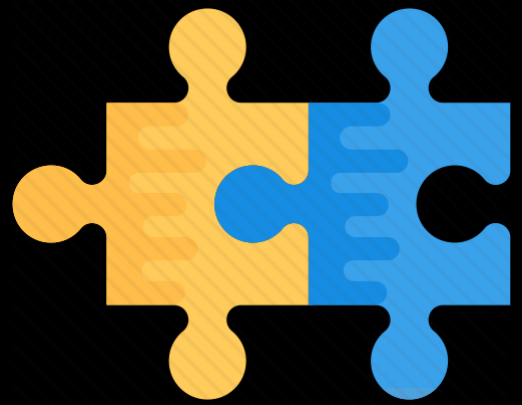
5. You will present your research plan **Tues. June 11th**.

What is the focus?

Back

Problem-based

- To better understand how/why a natural or man-made phenomenon happens
- To find commonalities between problems
- To find root causes

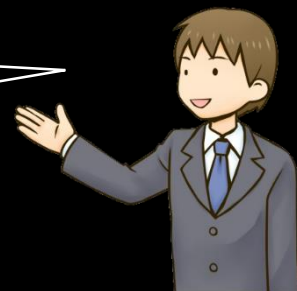


Effect-based

- To better understand how severe/widespread/long-term a phenomenon is
- To find common / effective responses
- To learn what a phenomenon influences

Neither is promoting a solution!

We're helping people better understand a topic and its *impact*!



Who is getting the raw data?

Back

Primary

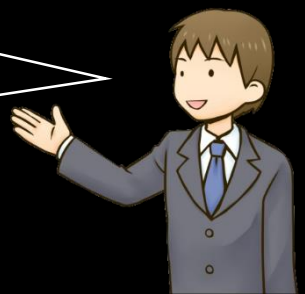
- Interviews
- Surveys
- Experiments
- Observations

Secondary

- Reading papers / articles
- Watching presentations/ documentaries

*The most important point here is **ethics**!*

*The most important point here is **reliability**!*



How is the data measured?

Back

Quantitative

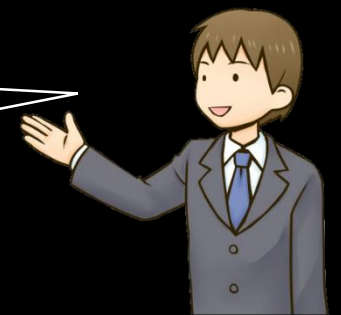
- How many __?
- What percentage?
- Yes/no questions
- How different…?
- Scale (agree---disagree)

Qualitative

- Describe __.
- What was your experience?
- What do you think about __?
- Free-answer / Written answer

This information **can be graphed**!

This information is **different for each person**!



Research Proposal

YOUR NAME

SUPERVISOR: [NAME]

Identified problem

- The problem and some details about it
- Use some data. Talk about how significant it is.
- Here's the background info you have so far.
- Include the other questions that can be asked about this data (the *parts*)

Research Question

- That's it. Just put it here.

Data Collection

- The sources of data you will use (generally)
  - This means online articles, library books, whether you intend to do some kind of primary research, etc.
- Will you be looking for / gathering qualitative or quantitative data (explain)
- If you are doing primary research, when you intend to do it

Next Steps

- Check in with [supervisor]
- Collect online articles
- Looking for organizations to contact

….et cetera.

Lesson 3 – Refining your research question

2019/05/25

Learning Goal:

- Students will be able to make a specific, clear, and meaningful research question
- Students will be able to categorize their research along three dichotomies: focus, type of data, and information source

Curriculum Expectations:

- Students have narrowed their research interests down to one topic or issue
- Students have some background information about the topic and are looking for knowledge gaps

Materials:

- Refining your research question worksheet (40 copies)
- Refining your research question slideshow lesson
- Research proposal template → drop this in the student folder
- Research question plan (3 copies; for each teacher)

Action:

- Priming activity: have students take out their research question and go through the checklist on the second slide. They should see if there are any questions they can't answer.
- Identifying solution-based questions: Show the caution slide. Show students the first and second rainbow "structure of a research paper" and ask questions, such as "when is the research question written?" and "When is the research question supposed to be answered?" Show example [bad] research questions, ask about what would be needed to find an answer, and ask where in the research paper that information might be. With a little guidance, they should be able to realize that solution-focused papers do not answer the research question. Finally, ask them which model we are using in the course, and highlight it.
- Revising questions: Work through the examples on slide 4, doing the first one together as a class, and the rest in pairs. Give students about 10 min.; work the room and help them. After 10 minutes, take some of their answers and write them in the slideshow. After taking their answers, show some model answers as well.
- Introducing dichotomies: Show the grey arrow, then give two example research questions ¥ data sources / types of data, on the same topic. Ask students the difference (e.g. "in these two questions, is the focus of the research the same? What is different?"). As you work out each dichotomy, click on the grey arrow to go to the slide and get more information. Use the 'Back' button to return to slide 5. Use guiding questions if there is time (should be 25-30 min. into the lesson now), else explain the differences, and simply provide them with examples. Once you have moved through each dichotomy, have students categorize the short research descriptions on the bottom of their worksheet, using those three dichotomies. They can work in pairs.
- When there is 10-15 min. left, show the homework slide (#6), ask them to flip their worksheet over, and begin planning their research with these guiding questions. They have the rest of the period to work on it.

Consolidation:

- When they present their research proposals, they will be asked to hand in that worksheet as well. Teachers will evaluate the front page, and if there is a problem in their proposal, they will use the back side as reference for where the problem may come from.

Refining your research question

PART A

How would you make the question below research-focused instead of solution-focused? Write revised questions below.

How can we improve students' studying with music?

_____

_____

What can SHS students do to reduce bullying?

_____

_____

How can more people decide to adopt abandoned dogs?

_____

_____

How do students fix gender discrimination?

_____

_____

PART B

Read the research prompts below. For each one, discuss with your partner and write where they would fit in each of the dichotomies (二分法) *we learned, and why you think so.*

1. Basia wants to research the effect worksheet design has on student learning. She is making two copies of a worksheet: one is organized, uniform, and neat, and the other has many different fonts, pictures in the corners, and every space is filled. She'll give one version to class 1 and the other to class 2, and next week, she'll collect them, and give the students a multiple choice test about the information on the worksheet.

_____

_____

_____

2. Isaac wonders if having a pet makes people more responsible. He's found a lot of information describing pets as a big responsibility. Next week, he's going to his friend's house. His friend has a rescued dog, and Isaac will interview him about his daily routine, before and after he got his dog. If there *is* a connection between pets and people's sense of responsibility, Isaac thinks his research might convince more people to adopt rescue pets.

_____

_____

_____

3. Sarah sometimes finds dinner sizes in Japan are too big, and often wishes she could take the food she hasn't finished eating with her as take-out. She intends to research how much food is thrown away in Japanese restaurants, using the internet and library books.

_____

_____

_____

Class: _____ No.: _____ Name: _____ Date: _____

Research Plan

If you have answered the questions below, you are ready to make your research plan proposal.

1. What is the problem or phenomenon?

2. Why is it significant? How significant is it? *(Use some data here)*

3. What questions can be asked about it? *(What are the parts)*

4. Which is your research question? *(Which part are you focusing on)*

5. Have any solutions been tried? If so, how effective were they? *(Use some facts here)*

6. Where will your data come from?

7. Are you looking for quantitative or qualitative data? *(Explain)*

8. Please add any more details you have about your research (do you want to do a survey / interview / observation / experiment, to whom, what background info have you already found, when do you intend to do your research, do you have any concerns about information availability or conducting first-hand research, etc.)?

Class: _____ No.: _____ Name: _____ Date: _____

GS2B Section Checklist

1. Discussion

   - ☐ I talked about the sections I organized my data into.
   - ☐ I said what was learned from the data (the conclusions I drew that relate to my research question)
   - ☐ **I answered my research question in detail, and highlighted what the actual current problem is.**

2. Suggestion

   - ☐ I suggested something that should be done about the answer I found.
   - ☐ I identified the target audience, and the people involved, in my suggestion.
   - ☐ There are incentives / benefits for the people involved that will convince them to try my suggestion.
   - ☐ I have a rough idea of how much time my suggestion should take, and/or when it can be implemented.
   - ☐ I wrote about the cost, both labour and resources, of my suggestion.
   - ☐ I have a clear idea of how progress or achievement can be measured. (Even if it doesn't solve the problem, here is how it helps work towards a solution)
   - ☐ I clearly stated the end goal or purpose of my suggestion.
   - ☐ If there are any other steps or details, I mentioned them.

3. Conclusion

   - ☐ I identified the knowledge gap (my research question).
   - ☐ I briefly summarized the answer to my research question with key points, and my suggestion on how to react to it.
   - ☐ **I wrote about the limitations of my research (availability of current information, generalizability, problems with the methodology if I did first-hand research), and the limitations of my suggestion (potential things that could make it unsuccessful or the details that are still unclear).**
   - ☐ I mentioned potential further research that needs to be done to make the topic better understood.
   - ☐ I restated the topic, and its significance, again.

GS2B 2019 Data & Analysis Evaluation

Name :		
Data1:		Total /10
English: clear, few mistakes		/2
Citation: correct citation of data, correct in-text citations		/2
Data: Title, x and y axis labels, graph clear,		/2
Analysis: ● Concrete, not subjective	● Sufficiently explained ● Relevant to the topic	/4

Data2:		Total /10
English: clear, few mistakes		/2
Citation: correct citation of data, correct in-text citations		/2
Data: Title, x and y axis labels, graph clear,		/2
Analysis: ● Concrete, not subjective	● Sufficiently explained ● Relevant to the topic	/4

Data3:		Total /10
English: clear, few mistakes		/2
Citation: correct citation of data, correct in-text citations		/2
Data: Title, x and y axis labels, graph clear,		/2
Analysis: ● Concrete, not subjective	● Sufficiently explained ● Relevant to the topic	/4

Comments:

Total /30

GS2B 2019 PowerPoint Marking Rubric

Student Name(s):	
Topic:	

	1	2	3	4	Score
Content	Does not cover all appropriate topics.	Covers some of the appropriate topics.	Covers all of the appropriate topics	All topics covered. Also interesting facts.	/4
Pictures and graphics	Not related much	related to the content	related to the content and used effectively		/3
English	Many grammatical or vocab errors	A few errors / some strange vocab	Grammar and spelling are good. Vocab is appropriate		/3
<u>Content</u> *Introduction *Research Question *Methods *Discussion / Summary / Next Step	Comment: Total				/10

GS2B 2019 Term 1 Introduction Evaluation Criteria

English (6 points)

Formal Word Usage (2 points)	
The student has consistently used formal vocabulary	2
The student has sometimes used formal vocabulary	1
The student has failed to use formal vocabulary	0
Style of Language (no "I", "we", etc, no speech style expressions) (2 points)	
The student has consistently used a formal writing style	2
The student has sometimes used a formal writing style	1
The student has failed to use a formal writing style	0
Spelling/Grammar (2 points)	
Few grammar mistakes and the writing is generally easy to understand.	2
A fair amount of grammar mistakes, but the writing can be understood	1
A significant amount of mistakes, and the writing is difficult to understand	0

Content (9 points)

Background Information (3 points)	
Background information is written with 2 or more resources, and the relevance to the topic is sufficiently explained.	3
Background information is written with 1 resource, or 2 resources but irrelevant or poorly explained	2
Background information is written but no resources or data are provided	1
Nothing is written	0

Research Importance (3 points)	
The importance of the research is well explained, using data from the background information or other sources	3
The importance of the research is somewhat explained, with some data or supporting information	2
Something is written about why the research is important	1
Nothing is written	0

Research Question (3 points)	
The scope of the question is acceptable and is ready to be used	3
The question requires some refinement before the students can continue	2
A question is written but is unclear or otherwise requires a significant alternation	1
Nothing is written	0

Total: 15 Points