

Study Strategies (1/2)

Information Literacy for Academic Studies

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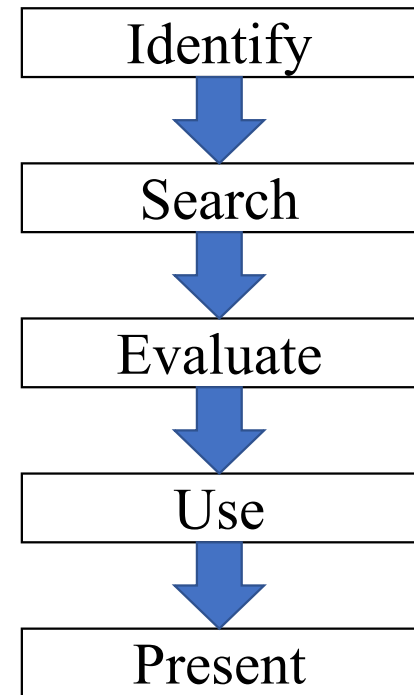
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Course Description

- This course is designed to train you to be able to
effectively **identify**
search
evaluate the information for **decision making**
problem solving in your academic studies.
use
present
- This course focuses on the abilities of **autonomous** and **life-long learning** which is essential in today's society.

Information Literacy (IL)

- Identify the problem and the information needs, and determine the extent.
- Develop a search strategy which can access the needed information effectively and efficiently.
- Evaluate the information obtained and its sources critically.
- Extract, summarize and analyze the information into your knowledge base, and effectively accomplish the task.
- Write a paper and give a presentation. Do use information ethically and legally (citation).



Evaluation of this Course

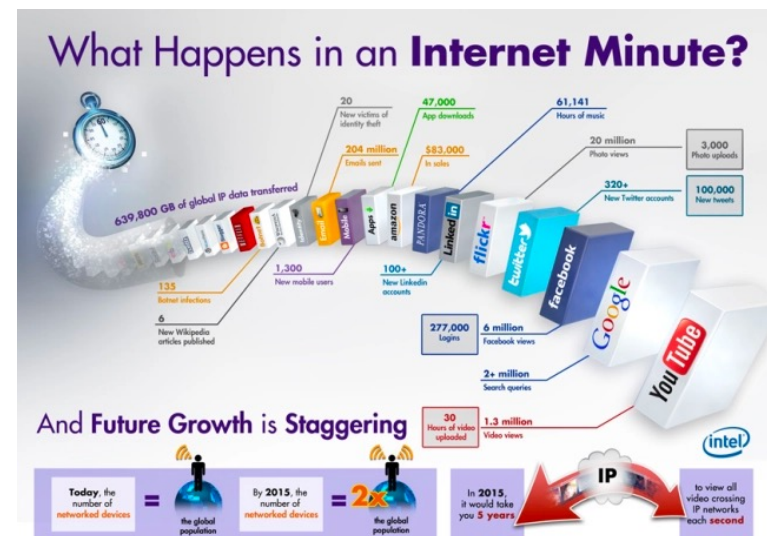
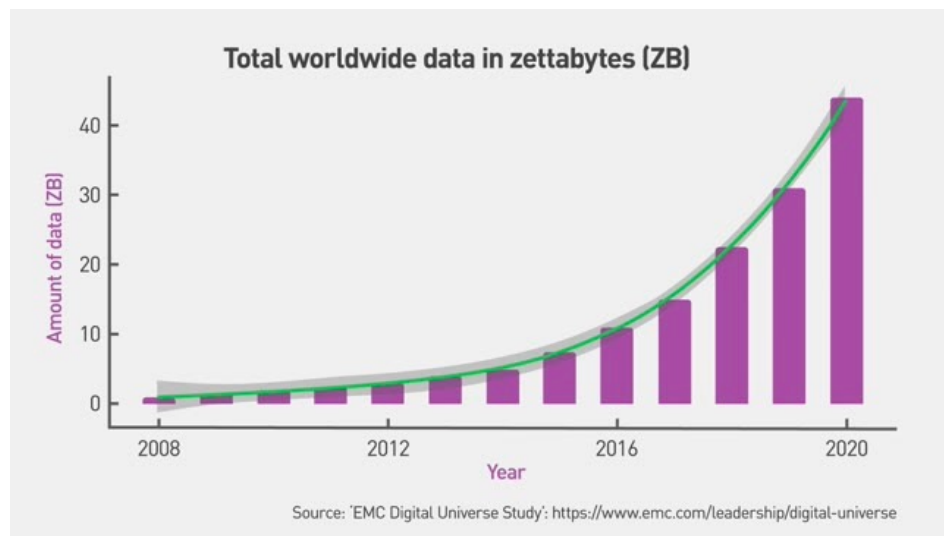
- Class attendance (15%)
 - Classroom: KULASIS出席登録システムを利用
 - 毎回IC カードリーダーに学生証を飾ってください
 - Zoom attendance history
 - For KUINEP students: write down your student ID and name in the class
- Reports (65%)
 - 13 mini-reports
- Final report (20%)

Outline of this Course

- Basic concepts of information literacy
- Study strategies (1/2)
- Searching in library
- Searching databases
- Searching internet
- Evaluating sources
- Referring sources and academic integrity
- Presenting information

Age of Information

- We are living in an information society with proliferating information resources and drastic changes in our environments.

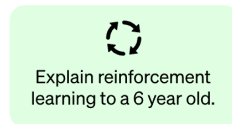


AI: ChatGPT

Step 1

Collect demonstration data and train a supervised policy.

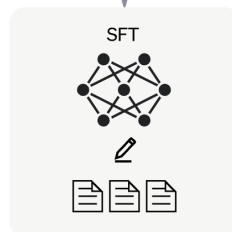
A prompt is sampled from our prompt dataset.



A labeler demonstrates the desired output behavior.



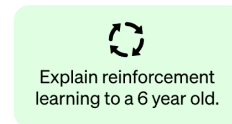
This data is used to fine-tune GPT-3.5 with supervised learning.



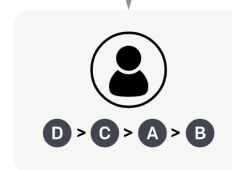
Step 2

Collect comparison data and train a reward model.

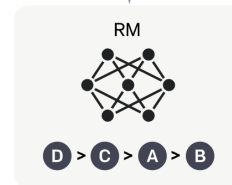
A prompt and several model outputs are sampled.



A labeler ranks the outputs from best to worst.



This data is used to train our reward model.



Step 3

Optimize a policy against the reward model using the PPO reinforcement learning algorithm.

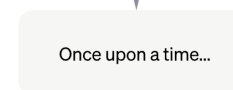
A new prompt is sampled from the dataset.



The PPO model is initialized from the supervised policy.



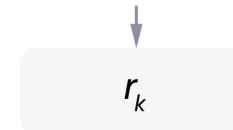
The policy generates an output.



The reward model calculates a reward for the output.



The reward is used to update the policy using PPO.



Challenges in Age of Information/AI

- We are facing new challenges, viz., new hardware, new software, and new applications with synergy of hardware and software, etc.
- Thus, people are expecting to upgrade and add values to themselves.



Difficulties in Finding Information

- There's a whole lot more information out there, but in many cases it makes finding exactly what you're looking for more difficult.
- It also makes it harder to know if you've found a reliable source.



Problem Solving Models: Big6 Model (1/2)

1. Task Definition

- Define the problem.
- Define the information requirements of the problem.

2. Information Seeking Strategies

- Determine the range of possible resources.
- Evaluate the different possible resources to determine priorities.

3. Location and Access

- Locate sources.
- Find information within resources.



Problem Solving Models: Big6 Model (2/2)

4. Use of information

- Engage.
- Extract information within resources

5. Synthesis

- Organize information from multiple sources.
- Present information.

6. Evaluation

- Judge the product.
- Judge the information problem-solving process.



Task 1

- Develop an app for smartphone which helps you to locate the best lectures for your study.

1. Identify the topics in task 1. Hints:

- What are the requirements for the target?
- What do you do if you do / don't know the topics?
- How to make the topics clearer?

2. Determine the information you need to complete task 1.

- Hints: What is your target, a prototype or a perfect product?

Can you share your design of task 1?

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The First Issue You Face in Study

- When your instructor assigns a research task, what you will do?
 - Put it aside, and process it later.



- Read it very carefully as soon as you get it. Notice the due date, work out a schedule that gives you enough time to complete it.



How Can You Complete it in Time?

You need a study strategy!



Steps of Doing Research

1. Identify and develop a topic
2. Determine the information you need
3. Develop a search strategy
4. Find, gather, and evaluate the information
5. Write and revise
6. Document sources used

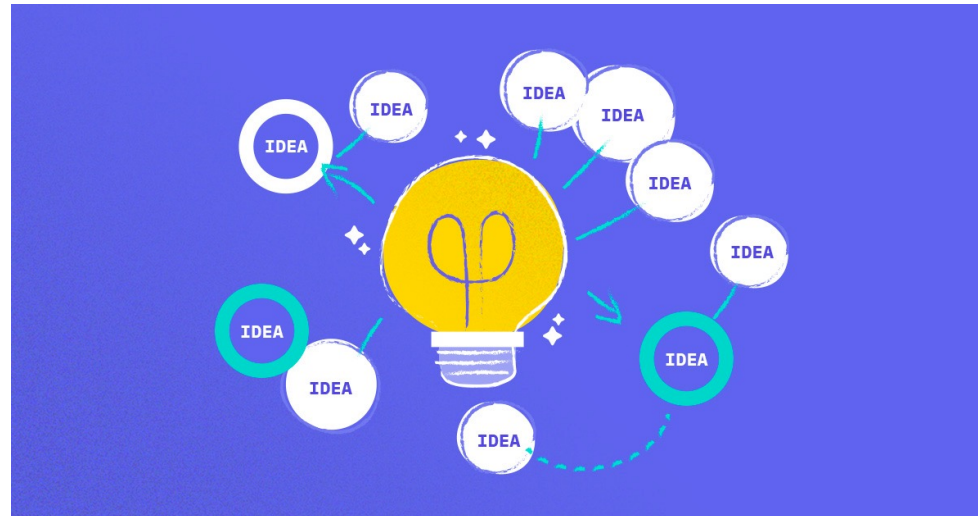
Identify and Develop a Topic

- Understand what the task entails before you begin. The correct understanding is key for your study strategy development.
 - Consult with your instructor.
 - Know what is the target.
 - Understand the implementation requirement.
 - etc.
- Selecting a topic is the first step you have to do in your research process.
- With the information provided by your instructor,
 - you may have some idea of the topic to work with,
 - or you may not have any idea at all.

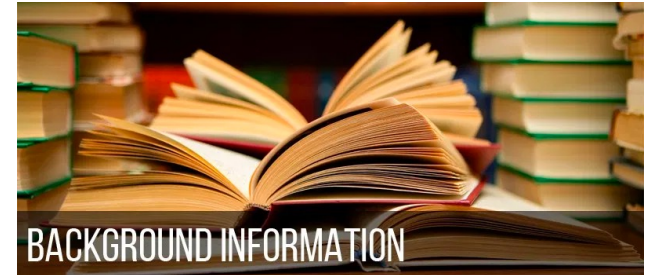


Select a Topic (1/2)

- If you have some idea
 - Select a topic that interests you and your group members.
 - Check up possible topics in a general encyclopedia or in a subject encyclopedia.
 - Brainstorm all possible ideas with your group members or classmates.



Select a Topic (2/2)



- If having no idea, you need **background information**.
 - It gives important **names, dates, terms, and facts** that can help your search for more information.
 - It helps you **recognize more quickly** if a source can help or not. This will save lots of time.
- Where to find background information? (Reference section)
 1. Look up the syllabus to see what topics are covered in the course.
 2. Look up the teaching materials reserved for the course in the library.
 3. Browse scholarly journals or books in the common areas of interest. In many instances, you may find helpful when looking up other sources such as newspapers, magazines, or Web resources and so forth.

Refine the Topic (1/4)

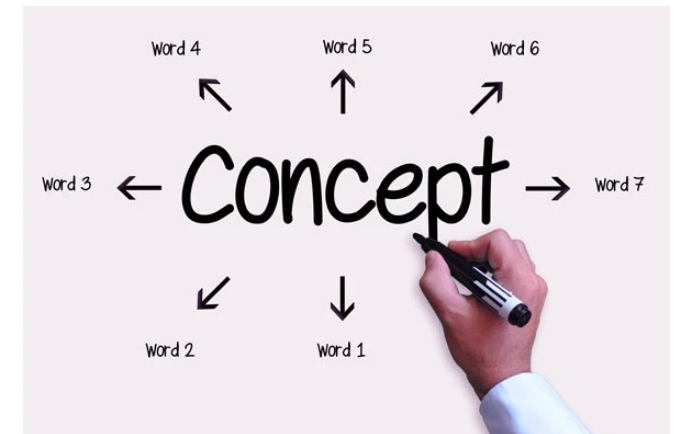
- Refining the topic is a continuing process requiring critical thinking and analysis.
1. State your topic as a question.
 - At beginning, you may have some general idea of research task. You need to further clarify your thoughts and focus by stating it as one or more questions.
 - Instead of saying “I am developing a class searching app”, think of three questions
 - What information can be used for searching classes?
 - How to use these information?
 - What program will be used for development?



Refine the Topic (2/4)

2. Identify a concept.

- Once having questions, you need to identify the main concepts in the questions by making a list of important keywords (including the synonyms or the related terms) that describe your topic.
- The list will be very useful as it provides you added terms to use when you are required for more information.
- For searching classes, you may have some keywords: “words matching”, “database organization”, “language association”, etc.
- After searching, these keywords may lead you additional keywords: “parsing”, “NLP”, “LDA”



Refine the Topic (3/4)

3. Narrow down your topic.

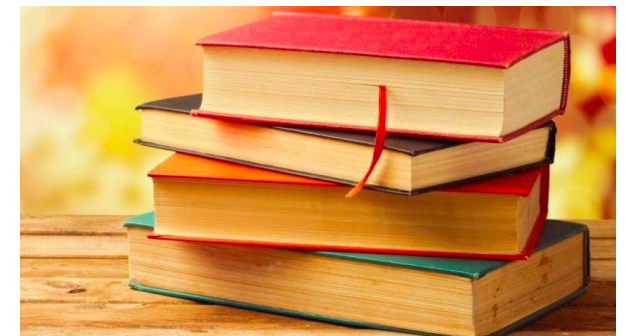
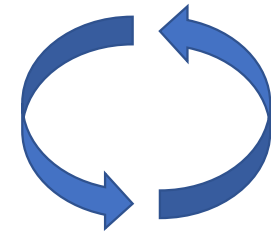
- It helps to choose your topic by narrowing it down from a broad subject by adding specific terms to your questions.
- Often we work from the general to the more specific. Once you know what subject you're working on, you can consult your textbook, an encyclopedia, current periodicals, or browse the shelves in the library to get an idea of what topic you would like to focus on.
- Subject vs. topic

Subject	Research topic
Education	What method is best for teaching undergraduate students about informatics?
Informatics	What method is best for information retrieval?
Psychology	How does human cognize the sentence?

Refine the Topic (4/4)

3. Narrow down your topic. (continue)

- You also need to think about if the processed topic is **too broad, too narrow, or just right**?
- You may need to broaden your topic by including more general terms to your questions.
- Narrowing or broadening the topic is cyclic in nature; you may keep revising the questions, continuing to locate more information, modifying the topic until a workable topic is defined.



Determine Your Information Need (1/4)

- Once a topic is defined, you have to determine the information need that involves figuring out how much, and what types of information you will need to finish the task.

1. Types of the task (How will the information be presented?)

- A short presentation (10 minutes), a speech (1 hour), an essay, a term paper, scientific papers.



Determine Your Information Need (2/4)

2. The quantity of information for the task (How long does the paper have to be?).

- A short essay (1 page) / presentation may only require one source. A long term paper (20 pages) / speech may require dozens of sources.

3. The purpose of the task (What is the aim of the study?).

- To inform? To analyze? To persuade? Do you need to give an particular point of view? Do you need to present opposing points of view as well?

Determine Your Information Need (3/4)

4. The requires of the information resources (What specification does the information require?).

- Currency: Do you need the latest information, historical information, or information over a period of time?
- Types: Do you need information from scholarly or professional journals, or from popular magazines, trade magazines, or government publications, etc.?

Determine Your Information Need (4/4)

4. The requires of the information resources (What specification does the information require?).

- Formats: Do you need printed sources, or numeric sources (statistical data, survey data), visual/graphic sources (e.g. slides, maps, chart, graph, table, image, video, etc.), audio sources (audio), or electronic sources (Internet Web sites, computer sources, etc.)?
- Sources: Do you need **secondary sources** (e.g. books and articles, reference materials, magazines, newspapers, encyclopedia, etc) , or **primary sources** such as interviews, diaries, letters, e-mail, discussion, debate or raw data collected from survey, etc.?

Things to Consider After Having a Topic

- Once you have a topic, there are two things to consider:
- Where will you search?
 - For general social information; academic information; non-public information, etc.
 - Consider an appropriate information source, because each has different strengths and weaknesses and serves a different purpose.
 - Printed (books, magazines, ...), Non-printed (multimedia), Online, ...
- How will you search?
 - How many search methods you have?
 - What is the search difference between in library and online?

Develop a Search Strategy

- Once you have a topic, there are two things to consider: Where will I search and what terms will I use?
- Where will I search?
 - There are many different information sources.
 - You must consider the most appropriate information source for the topic.
 - Each type of information has different strengths and weaknesses, and serves a different purpose.
- Search terms
 - Different search strategy needs different words
 - The words you use to search can make all the difference.

Information Resources (Public Resource)

- Government provides a wealth of information for your searching and study.
- Government is a major producer of information in a society.
- The information generated may be used by government officials to make economic, social, and political policy decisions.



Information Resources (Academic Resource)

- Universities and colleges are major producers of information in a society too.
- Universities conduct numerous researches in sciences, humanities, and social sciences; and a great deal of knowledge is generated from the findings.
- The research and the findings are generally published in the form of **books and scholarly journals**.
- University libraries contain lots of books, journals, magazines, newspapers, and plenty of e-resources, such as journal databases, Newswise, etc.



Information Resources (Private Resource)

- The private sector also is a major producer of information in a society.
- Commercial newspapers, book and magazine publishers, film and television industry, business research firms, and corporate laboratories are private sector producers.
- Business research firms and corporate laboratories carry out research and publish their findings.

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Task 2

- Once you have a topic, discuss:
 - Where will you search?
 - How will you search?
- Submit your discussion report in pdf named as **[student id_name]** via Panda **by next lecture**