Welcome to Technical Writing: Writing for Publication Purposes EP5602

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KENTECH
Korea Institute of Energy Technology

Week 1 Objectives: Introduction, genres, and paragraphs

- Attendance (manual and smart)
- Syllabus review
- Introduction activities
- Introduction to science genres
- Preview of science language we will learn this term
- English paragraphs

About me

- Please call me Paul 교수님 . Thanks =]
- Born and raised in New York City, USA
- Italian and Polish ancestry
- Ph.D. in anthropology인류학, M.A. in Asian studies, B.A. in linguistics 언어학
- 6 years living in Japan (Fukuoka and Sapporo), 1 year in Hong Kong
- Hobbies/interests: Jogging, exercising, reading, cooking, traveling, economics, languages

Attendance

Let’s try smart attendance

And then manual attendance

Note about this class

- The focus is to help you develop writing for academic purposes
- I want everyone to have a solid foundation after this class!
- Do NOT try to be perfect
- Just try to learn the concepts of the class as best as you can
- Pay attention, do the work, and try

Question

Has anyone taken an academic writing class before?

Class description (from syllabus)

This course uses a **genre-based approach** to technical writing to help students develop their writing skills at the **graduate and professional** levels. After completing this course, students will be familiar with the structure of academic English as well as various writing genres that are relevant to scientists and engineers professionally. **This class will primarily focus on writing structure and form.** Particularly, the class will help students develop and present English arguments and information logically and in ways that are appropriate for different audiences. It will also focus on developing grammatical accuracy and general writing fluency. The class includes several genre-specific assessments, and the main assessment is a final academic research article.

Important points

- Genre-approach = learn differences about science/engineering genres
- Graduate and professional purposes = focus on PROFESSIONAL development (your career, your life, your research)
- Focus on structure and form

Learning objectives (from syllabus)

- Learn to write strong academic research papers
- Learn to write strong non-academic technical articles for diverse audiences
- Develop writing preparation and organizational techniques that facilitate strong writing
- Develop competence in professional correspondence and communication
- Develop competence in designing PowerPoint content presentations for specialists and non-specialists
- Develop confidence and competence to communicate in different academic and professional settings

Learning activities (from syllabus)

- Learn to understand the nature of English arguments and structure of English academic writing
- Learn to write clearly, accurately, and persuasively using appropriate language
- Learn to use prose and structure that are relevant to different genres and audiences
- Provide contexts for students to engage with specialists, non-specialists, and the wider community
- Use technical writing to identify personal and professional value in socially meaningful ways
- Develop critical reasoning skills and the ability to construct logical English arguments
- Develop unique voice and style in writing across different genres

Textbook and readings

- There is NO textbook for this class
- Some recommended books are used in the class (see excerpts on Canvass and syllabus)
- I can recommend others
- BUT all required readings will be posted online
- So you don’t really need to buy anything unless you really want

Note about online classes

- If there is a COVID outbreak, we will do classes online COVID
- Format and continent will be largely same
- BUT we will use online writing instead of handwriting more
- Discussions will go to breakout rooms
- Not fun but we may have to do it

Note about speaking in this class

- You will be expected to speak (in English) and participate actively
- This is a graduate class, you are expected to be engaged
- Please do not sit back and watch
- Challenge me, challenge your classmates, think critically

Week by week content summary

View syllabus together to see what we are going to go over. So you know what to expect

Class assessments

- Homework 10%
- Attendance and participation 10%
- Outline 10%
- Grant proposal 10%
- Academic CV 10%
- Professional email 10%
- Annotated bibliography 10%
- Final research paper 30%
- Total 100%

Homework 10%

Students will be given homework regularly. Homework will mostly be readings and reflections of the readings. Students are expected to complete these readings and reflections and submit them before the specified deadline.

Attendance and participation 10%

Students are expected to attend class and actively participate. Students will lose participation points if they fail to participate in class activities or if it is clear that they have not done the homework accordingly. Attendance and participation points will be reduced if students do not pay attention in class, use their phones excessively, or engage in other activities.

Outline 10%

Students will prepare a 1-2 page outline for their final research paper. The purpose of this activity is to ensure that students know how to use the principles of outlining that we discuss in class and to help them develop an appropriate structure for their final research paper. The outline should use the outline techniques discussed in class.

Annotated bibliography

Students will prepare an annotated bibliography with at least 15 academic references. The purpose of this is to ensure that students understand how to properly create annotated bibliographies for academic papers and to help students identify relevant research articles so that they may start their final research projects.

NOTE: If you do not know what an annotated bibliography is, do not worry. You will learn!

Grant proposal 10%

Students will be asked to prepare an academic grant proposal in their field. The proposal should be about 1500-2000 words and should use the writing techniques and writing structures discussed in class. Particular attention should be given to the differences between a grant proposal and academic research paper.

Academic CV 10%

Students will prepare an academic CV according to their speciality. Focus will be on teaching students how to write proper academic CVs and to understand the principles and practices of writing effective CVs to obtain jobs and grants.

Professional email 10%

Students will write a professional email of around 1000 words to a potential postdoctoral supervisor or to an angel investor that describes their research and expresses their interest in studying with the advisor or working with the investor. The purpose of this assessment is to ensure that students can write English emails using appropriate language and clearly articulate their ideas in a concise digital form.

Final research paper 30%

This is the major assessment of the course. This paper should be at least 3500 words in length and address a relevant issue in students' major area of research. The purpose of this assessment is determine whether students understand the principles of academic writing that were discussed in class. Students will be expected to make use of all of the topics discussed in class. Students will be expected to demonstrate good academic paper structure, use appropriate academic prose, and properly format the paper according to academic standards.

How to succeed in this class

- Come to the class
- Pay attention
- Understand the most important ideas
- Try your best
- Ask questions
- Have a good attitude

My personal hope in this class

- Improve academic writing (and non-academic writing)
- Writing across genres (especially research writing)
- Communication skills
- Intercultural communication skills
- Communicating your ideas clearly and effectively TO EVERYBODY (not just other researchers in your area)

Note

- Most important: The class is useful to you
- If you feel something is particularly important but is not in the syllabus, please tell me
- We can incorporate it somewhere
- Remember: This class is for YOU
- I will do as much as possible to make it relevant and useful for YOU

1:1 Tutoring

- 1:1 tutoring will be offered with me and the other ESP teacher
- Our hours will be posted online
- Tutoring will be held via Zoom for the spring semester at least
- You can reserve an appointment with us to practice something
- Please specify WHY you are coming to the session and what you need help with

Questions so far?

Let’s meet each other

Introduction activities

(Do you all know each other already?)

Introductory activity 1: Small group introductions (4/group) - I will give random numbers

- Who are you? Where are you from etc.?
- What is your major research area?
- What are your hobbies?
- Why are you interested in this class?
- Why are you at KENTECH?
- Goal after graduating from KENTECH?
- Something embarrassing that happened to you
- Somewhere that you really want to travel to, and why

AGAIN

Reshuffle groups and do the same

WARM UP 2: Student evaluation and goal-setting: Discuss in groups [NEW GROUPS]

- What do you want to SPECIFICALLY be able to do after completing this class? Discuss as many as possible! (At least three)
- What is your current assessment of your writing and speaking skills in English?
- What areas do you need the most improvement in?
    - Speaking
    - Writing
    - Listening
    - Reading
- Have you ever written an academic research paper before?
    - What was the experience like?

Note

You will have a homework assignment based on this later

Regroup and learn about genres

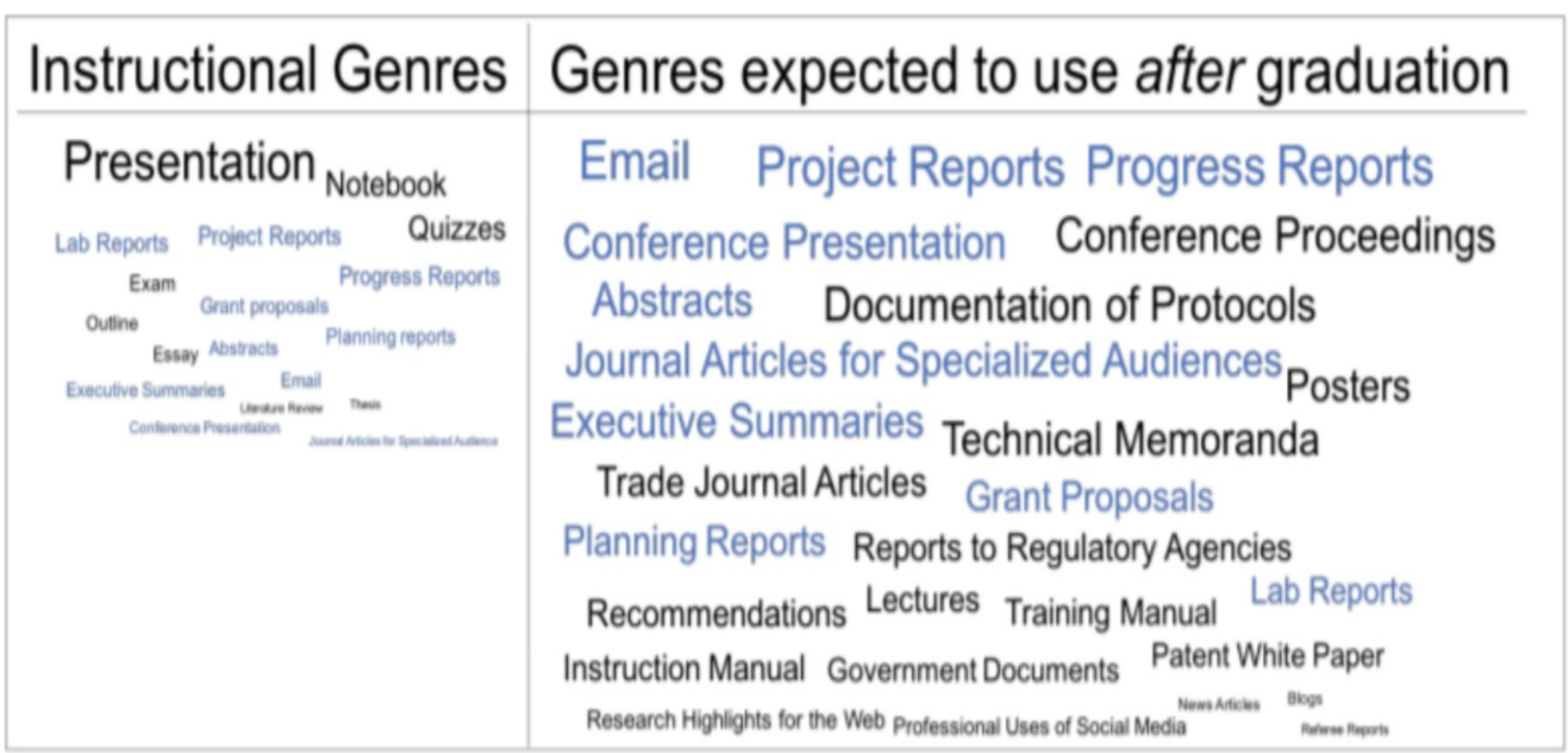
Question/Discussion

- Talk to your partner: What is a GENRE? What is a SCIENCE GENRE? Why do GENRES matter?
- If you don’t know, say whatever you think

Introduction to science genres

- What is a genre?
- Basically it means a type of writing
- Examples: research article, research report, CV, grant proposal, procedural recount, case studies,
- Why do we classify these different genres?
- Because the language used will be different
    - Content, structure, style

Source: genre.web.unc.edu


Instructional Genres
Presentation
Notebook
Lab Reports
Project Reports
Quizzes
Exam
Progress Reports
Grant proposals
Outline
Planning reports
Essay
Abstracts
Executive Summaries
Email
Literature Review
Thesis
Conference Presentation
Journal Articles for Specialized Audience
Genres expected to use *after* graduation
Email
Project Reports
Progress Reports
Conference Presentation
Conference Proceedings
Abstracts
Documentation of Protocols
Journal Articles for Specialized Audiences
Posters
Executive Summaries
Technical Memoranda
Trade Journal Articles
Grant Proposals
Planning Reports
Reports to Regulatory Agencies
Lab Reports
Recommendations
Lectures
Training Manual
Patent White Paper
Instruction Manual
Government Documents
News Articles
Blogs
Research Highlights for the Web
Professional Uses of Social Media
Referee Reports

Genres in this class

- We use a ‘genre-based approach’
- Teach different genres through demonstration and examples
- Highlight unique linguistic and writing features of different genres
    - CV vs. academic article vs. lab report vs. proposal email
- Practice producing these genres
- Comparing their differences to identify them appropriately

How we approach genres in this class

- Look at genre differences
- Look at their unique language features
- Look at their unique organization and formatting
- Practice the language features that to successfully write these genres
- Let’s look at some examples of genres together

WHY YOU SHOULD KNOW ABOUT DIFFERENT GENRES

- Different language is used in each one
  - Vocabulary
  - Sentence structures
  - Language patterns
- Different structure is used in each one
  - Organization
- Different purpose of each one
- Different audiences for each one with different expectations accordingly

- NOTE: These are important to know about because you cannot just write the same way for everything that you do

LET’S LOOK AT SOME GENRES TOGETHER

- We will look at examples of different genres
- There are some important differences between these
- However, there is also flexibility with them
- There are not strict rules for these, so there is a lot of flexibility with these

Academic articles

- Used to present research findings to academic audiences (professors, researchers, graduate students)
- Usually very formal and straightforward
- Follow a specific format depending on journal
- However, most journals follow a typical structure
    - Abstract, Introduction, Methods, Results, Discussion, Conclusions, Limitations, References

Example: Academic article

Review

Opportunities and Challenges of Solar and Wind Energy in South Korea: A Review

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Abstract: South Korea is the ninth biggest energy consumer and the seventh biggest carbon dioxide emitter in global energy consumption since 2016. Accordingly, the Korean government currently faces a two-fold significant challenge to improve energy security and reduce greenhouse gas emissions. One of the most promising solutions to achieve the goals of sustainable development, energy security, and environmental protection is intensifying the role of renewable energy in electricity production. To this end, the Korean government plans to increase investments in the green energy field, where solar and wind energy will soon play a decisive role toward meeting energy demands and achieving a climate-friendly environment. In this context, this study discusses the future of solar and wind energy in South Korea in four key aspects: (i) opportunities and potential achievement of the vision of government; (ii) potential daily energy output across different geographical areas; (iii) current status and prospects; and (iv) challenges and potential solutions.

Keywords: South Korea; renewable energy; sustainability; solar energy; wind energy; green energy

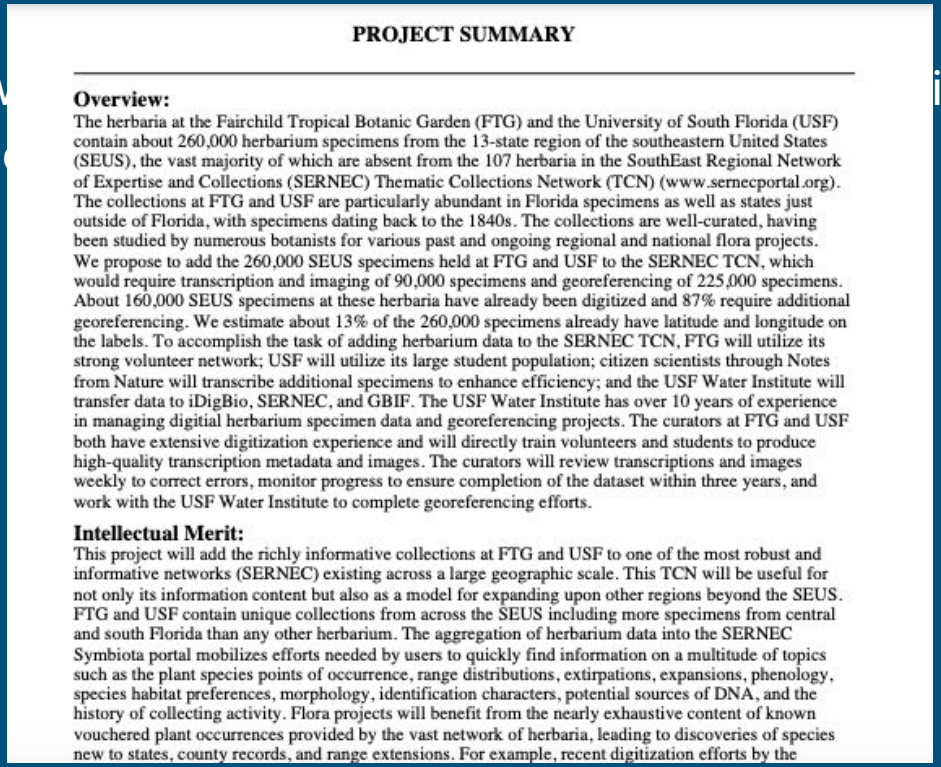
https://www.mdpi.com/2071-1050/10/6/1822

Grant Proposal

- Used to apply for money to conduct research
- Written in very formal tone
- Format varies by field and specific grant but generally includes some components not explicit in academic articles
  - Need statement
  - Significance of research
  - Expected outcomes

Example: Grant Proposal

https://www ip/proposal-tools/alan-franck-nsf-bi



PROJECT SUMMARY

Overview:

The herbaria at the Fairchild Tropical Botanic Garden (FTG) and the University of South Florida (USF) contain about 260,000 herbarium specimens from the 13-state region of the southeastern United States (SEUS), the vast majority of which are absent from the 107 herbaria in the SouthEast Regional Network of Expertise and Collections (SERNEC) Thematic Collections Network (TCN) (www.sernecportal.org). The collections at FTG and USF are particularly abundant in Florida specimens as well as states just outside of Florida, with specimens dating back to the 1840s. The collections are well-curated, having been studied by numerous botanists for various past and ongoing regional and national flora projects. We propose to add the 260,000 SEUS specimens held at FTG and USF to the SERNEC TCN, which would require transcription and imaging of 90,000 specimens and georeferencing of 225,000 specimens. About 160,000 SEUS specimens at these herbaria have already been digitized and 87% require additional georeferencing. We estimate about 13% of the 260,000 specimens already have latitude and longitude on the labels. To accomplish the task of adding herbarium data to the SERNEC TCN, FTG will utilize its strong volunteer network; USF will utilize its large student population; citizen scientists through Notes from Nature will transcribe additional specimens to enhance efficiency; and the USF Water Institute will transfer data to iDigBio, SERNEC, and GBIF. The USF Water Institute has over 10 years of experience in managing digitial herbarium specimen data and georeferencing projects. The curators at FTG and USF both have extensive digitization experience and will directly train volunteers and students to produce high-quality transcription metadata and images. The curators will review transcriptions and images weekly to correct errors, monitor progress to ensure completion of the dataset within three years, and work with the USF Water Institute to complete georeferencing efforts.

Intellectual Merit:

This project will add the richly informative collections at FTG and USF to one of the most robust and informative networks (SERNEC) existing across a large geographic scale. This TCN will be useful for not only its information content but also as a model for expanding upon other regions beyond the SEUS. FTG and USF contain unique collections from across the SEUS including more specimens from central and south Florida than any other herbarium. The aggregation of herbarium data into the SERNEC Symbiota portal mobilizes efforts needed by users to quickly find information on a multitude of topics such as the plant species points of occurrence, range distributions, extirpations, expansions, phenology, species habitat preferences, morphology, identification characters, potential sources of DNA, and the history of collecting activity. Flora projects will benefit from the nearly exhaustive content of known vouchered plant occurrences provided by the vast network of herbaria, leading to discoveries of species new to states, county records, and range extensions. For example, recent digitization efforts by the

Procedural Recount

- A summary of the steps taken to complete a science experiment
- Typically involves an overview/introduction to the experiment
- Then includes steps to complete the experiment
- Should be written in very clear and accessible language
- Focus should be on REPRODUCIBILITY
    - I.e. the ability to REPRODUCE the experiment

Procedural Recount

- Note the short declarative sentences

Genre	Text Sample
Procedure	**Activity** **Making a simple circuit** You need • a screwdriver • 2 short lengths of insulated copper wire • 2 crocodile terminal clips • a bulb in a bulb holder • a dry-cell battery in a battery holder 1. Check that the ends of the copper wires are uncovered. 2. Connect one crocodile clip to one end of a length of wire. 3. Connect the other end to one side of the bulb holder. 4. Fasten the crocodile clip to one battery terminal. 5. Notice that the bulb does not light up, as there is no circuit (pathway) for the electrons. 6. Now connect another clip to the second wire, and the free wire's end to the other side of the bulb holder. 7. Fasten this crocodile clip to the other battery terminal. 8. What happens? If the electrons can flow around the circuit from the zinc to the carbon the bulb should light. 9. Disconnect one crocodile clip from the battery terminal. 10. What happens to the other bulb? Why? 11. Swap the terminals. Does the battery still work? 12. Draw your complete circuit showing the bulb lit.[9]

Lab Report

- Purpose is to report the findings from an experiment conducted in a research lab setting
- Somewhat is a mixture between an academic article, procedural recount, and grant proposal
- Written with different levels of formality and specificity depending on the context and situation
- Often written for specialists in a specific field or subfield

Example: Lab Report

https://libguides.manchestercc.edu/c.php?g=273840&p=1827936

[view in class]

Note

- These are just SOME of the genres we will discuss in class
- You will learn about more of these during your time at KENTECH
- You will also learn how to write these different genres appropriately

Why genres are important/useful?

KENTECH has 5 tracks

1. Energy AI
2. Energy materials and devices
3. Grid modernization track
4. Hydrogen energy track
5. Environmental and climate technology track

KENTECH TRACKS

- Each ‘track’ has distinct features of writing
- Some of these are useful for writing according to discipline conventions
- However, some of these are more important than others
- We will review some of these in this class

EXAMPLE RELATIVE CLAUSES

- Relative clause definition: a relative pronoun to substitute for a NOUN
  - “I like the person. The person was nice to me.” -> “I like the person WHO was nice to me.”
  - WHO stands in place for saying “person” again
  - (Which person do you like? The one that was nice to me.)
  - (In English we like to avoid this repetition)
- Restrictive relative clauses: give information to define NOUNS
  - “The paintings hang in the lobby.” -> “I like the paintings THAT hang in the lobby”
  - (Referring to a specific set of paintings; which paintings? The ones that hang in the lobby?)
  - (Saying “I like the paintings” is too ambiguous and does not define those specific ones in the lobby. So you are using the relative clause to refer to those specific paintings without repeating the word “the paintings”).

NONRESTRICTIVE RELATIVE CLAUSES

- Non-restrictive relative clauses: provides information about a specific noun but NOT needed for exact definition of a noun
- **These are especially common in science writing**
  - “My mother, who is an excellent cook, is thinking of opening a restaurant.
  - (Note here that “who is an excellent cook” does NOT change the fact that “my mother” wants to open the restaurant. The literal meaning is NOT dependent on her being a good cook. But here it is used to provide background information).

MORE EXAMPLES SIMPLE

“I am moving to Seoul, **which** is the capital of South Korea.” [you need comma before “‘which”]

“I hate the dog **that** bit me.”

“I like the bike **that** my father gave me.”

“I bought a new car **that** is very fast.”

“I like the woman **who** lives next door.”

EXAMPLES FROM SCIENCE ARTICLES

“Energy security is one of the key issues in industrial countries such as South Korea, **which has been ranked as the ninth biggest energy consumer worldwide since 2016**.” NONRESTRICTIVE RC

“Unfortunately, 84% of South Korea’s energy supply relies on non-renewable sources (coal, oil, and gas), **which** represent the bulk of the country’s total imports because South Korea lacks these resources.”NONRESTRICTIVE RC

“We also need to engage with those theories **that** deconstruct the distinction between the “individual” and the “social”.

“Unlike Article 35, **which deals with clean energy policies and capital investments**, Article 36 separates the two.” NONRESTRICTIVE RC

“The rock sediments **that** were distributed along the coast line showed unique physical features **that** were absent from those found inland.”

NOTES AND HOW TO STUDY

- We will have another lesson on these clauses in week 14
- To study these grammar patterns, I suggest finding a GOOD Korean textbook with clear examples and explanations
- Do practice problems
- Write out sentences using these patterns
- Ask your friends or me to check them
- Write out the correct ones AGAIN
- Study them again

QUESTIONS?

QUICK CANVAS TUTORIAL

Introduction to English paragraphs (very important!)

- Who knows the structure of an typical English paragraph?
- Hint: There are usually three parts

Parts of a paragraph (hopefully just a review for you?)

- Introductory sentence (first sentence): communicates main idea
- Supporting sentences: middle of the paragraph
  - Supports main idea with examples, evidence, data, arguments, etc.
- Concluding sentence: summarizes main idea and transitions to the next one

Paragraphs and English structure

NOTE: This is a general structure.

NOT a specific rule.

There is a lot of flexibility in English writing!

There is also a lot of POOR English writing.

So use this class portion as a guideline rather than a strict rule that must absolutely always be followed.

The best place to visit in Korea is Busan. I went to Busan in February, and I had a great time. There, I met my friend from elementary school and we ate seafood and drank a lot of soju. The next day, I went to Gwangalli and took pictures during the afternoon and night time so I could upload them to my Instagram. On the last day of the trip, me and my friend went to Jagalchi Market and act octopus. I never had such amazing food in my life! If you are ever in Korea, be sure to visit Busan.

Discuss with your partner:

1/ What is this the topic of this para?

2/ What is the topic sentence?

3/ What is the supporting sentence(s)?

4/What is the concluding sentence?

5/ Does the writer use evidence to support their claim? How?

The best place to visit in Korea is Busan. I went to Busan in February, and I had a great time. There, I met my friend from elementary school and we ate seafood and drank a lot of soju. The next day, I went to Gwangalli and took pictures during the afternoon and night time so I could upload them to my Instagram. On the last day of the trip, me and my friend went to Jagalchi Market and act octopus. I never had such amazing food in my life! If you are ever in Korea, be sure to visit Busan.

Topic sentence(s)

- First one or two sentences of the paragraph
- Introduces the main idea of that paragraph
- Should be very clear after reading the sentence(s) what will be in the paragraph

Supporting sentences

- Middle sentences within the paragraph
- Range from 1-∞
- Support main idea
  - Data
  - Evidence
  - Examples
  - Research (lit review, primary studies, secondary sources)
  - Conjecture
  - Logic
  - Opinions
  - Etc.
- NEW information that supports the main idea [i.e topic sentence]

Concluding sentence

- Usually last 1-2 sentences in the paragraph
- Usually summarizes the main idea AND/OR
- Uses language tot transition to the next paragraph
- Little to NO NEW information is introduced

Example 2: Is this a good para? Why or why not? Discuss in pairs.

The most important thing for students to study at university is philosophy. Technical skills, like math and engineering, are very important also. Many famous businesspeople like Peter Thiel, Jack Ma, and Susan Wojcicki did not study business, but they still became famous in tech. All of these famous people became very successful in very technical fields. They also founded or enhanced amazing and innovative technologies that changed the world. Therefore, I instead of studying engineering or math, students will benefit most from studying philosophy. That being said, math and engineering should not be neglected.

BAD paragraph!

- Why?

BAD paragraph! Why?

- Lack of focus - what exactly is this about?
  - Philosophy majors instead of STEM?
  - The achievements of Thiel, Ma, and Wojcicki?
- Poor structure
  - Jumps between these two ideas
- Poor language
  - Never explicitly states the main idea itself OR even takes a clear stance

Better paragraph

There is a debate concerning whether students should study hard sciences (such as math and engineering) or soft sciences or humanities (such as English or philosophy). While I see merits to both, I believe that it is better to study philosophy compared to STEM fields. Studying a soft science does not necessarily mean that students must neglect hard sciences and engineering. Many students who study humanities subjects can still study engineering and math outside of class to high levels. Additionally, many famous tech leaders were not STEM majors. For example, Peter Thiel of Paypal studied philosophy and law, while Jack Ma of Alibaba studied English. CEO of YouTube, Susan Wojcicki studied economics and business. So to succeed in technical fields does not require an engineering degree. I also think that the humanities and soft sciences teach crucial skills that will leave students disadvantaged if they do not have them. For these reasons I think students should major in a soft science or humanity field and study engineering and math as hobbies.

Better paragraph

There is a debate concerning whether students should study hard sciences (such as math and engineering) or soft sciences or humanities (such as English or philosophy). While I see merits to both**, I believe that it is better to study philosophy compared to STEM fields**. Studying a soft science does not necessarily mean that students must neglect hard sciences and engineering. Many students who study humanities subjects can still study engineering and math outside of class to high levels. Additionally, many famous tech leaders were not STEM majors. For example, Peter Thiel of Paypal studied philosophy and law, while Jack Ma of Alibaba studied English. CEO of YouTube, Susan Wojcicki studied economics and business. So to succeed in technical fields does not require an engineering degree. I also think that the humanities and soft sciences teach crucial skills that will leave students disadvantaged if they do not have them. For these reasons I think students should major in a soft science or humanity field and study engineering and math as hobbies.

Topic sentence, Supporting idea 1, Supporting idea 2, Supporting idea 3, Concluding sentence

Ideal outline of paragraph

- Topic/Main Idea: I argue that it is better to study philosophy compared to STEM fields.
- Supporting sentences/ideas:
  - # 1 Majoring in philosophy does not mean you have to neglect STEM
  - #2 Many famous tech people did not major in a STEM field
    - Thiel, Ma, Wojcicki
  - #3 Soft sciences/humanities teach important skills students can't learn in sciences
- Concluding sentence: For these reasons I think students should major in a soft science or humanity field and study engineering and math as hobbies.

But remember...

- This is just a structure NOT a rule
- You will see all different kinds of variations of this in English writing

Questions?

Next

- Identify the topic sentence(s), main idea, supporting sentence, and concluding sentence in the following paragraph

The greenhouse effect itself is simple enough to understand and is not in any real dispute. What is in dispute is its magnitude over the coming century, its translation into changes in climates around the globe, and the impacts of those climate changes on human welfare and the natural environment. These are beyond the professional understanding of any single person. The sciences involved are too numerous and diverse. Demography, economics, biology, and the technology sciences are needed to project emissions; atmospheric chemistry, oceanography, biology, and meteorology are needed to translate emissions into climates; biology, agronomy, health sciences, economics, sociology, and glaciology are needed to identify and assess impacts on human societies and natural ecosystems. And those are not all. There are expert judgments on large pieces of the subject, but no single person clothed in this panoply of disciplines has shown up or is likely to. So, I venture to offer my judgment.

Schilling, TC. 1992. “Some economics of global warming.”

The greenhouse effect itself is simple enough to understand and is not in any real dispute. **What is in dispute is its magnitude over the coming century, its translation into changes in climates around the globe, and the impacts of those climate changes on human welfare and the natural environment.** These are beyond the professional understanding of any single person. The sciences involved are too numerous and diverse. Demography, economics, biology, and the technology sciences are needed to project emissions; atmospheric chemistry, oceanography, biology, and meteorology are needed to translate emissions into climates; biology, agronomy, health sciences, eco- nomics, sociology, and glaciology are needed to identify and assess impacts on human societies and natural ecosystems. And those are not all. There are expert judgments on large pieces of the subject, but no single person clothed in this panoply of disciplines has shown up or is likely to. So, I venture to offer my judgment.

Paragraph analysis by ideas

Topic sentence(s): The greenhouse gas effect is simple and not disputed. The dispute what challenges it poses and the impact it will have

What is in dispute is its magnitude over the coming century, its translation into changes in climates around the globe, and the impacts of those climate changes on human welfare and the natural environment.

Supporting sentences(s): To understand the changes that will come from global warming will require experts in many different fields

These are beyond the professional understanding of any single person. The sciences involved are too numerous and diverse…And those are not all.

- **FYI, Paul's note: Do NOT begin sentences with 'And' like this**

Concluding sentence: Many experts have given their opinions on this, so here in mine

In class activity

Write a response to the previous paragraph arguing that it is better to study a STEM field instead of a soft science or humanities. Limit yourself to 6 sentences MAXIMUM!

Type these and upload them onto Canvas space titled “In-class activity Week 1” [ ]

Share answers together

- Read your paragraphs to other students
- Consider:
  - Is the topic sentence clear and strong?
  - Do the supporting sentences make sense?
  - Is the concluding sentence good?

Video on academic writing (if time)

https://www.youtube.com/watch?v=ga25t_JhckA

Important from video

NOTE the use of REFERENCES in the paragraphs

Think about: which sentences do they usually go in? (Topic, supporting, concluding?)

Anything else about the video?

Review discussions

- Take turns defining in groups the following terms:
- Science genre
- Paragraph
- Topic sentence
- Supporting sentences
- Concluding sentences

HW NOTE ON REFLECTION

- Write 500 words reflecting on the article
- Use the paragraph structures we learned in class
- Just identify some important things from the reading
- If you can’t do this, just do your best

Week 1 homework

- Submit a written explanation of your needs assessment and evaluation from the class (500 words) (upload to Canvass)
  - What do you want to be able to do after completing this class?
  - What are your specific goals? (Remember BE SPECIFIC)
  - What areas do you think are the greatest challenges for you to reach this goal?
- READ: Read “Writing journal articles” (pp. 77-90) in How to write a lot (Canvass)
- WRITE: 500 word reflection: What did you find most interesting or important about writing

Lesson sources

- https://writingcenter.unc.edu/tips-and-tools/relative-clauses/
- https://www.perfect-english-grammar.com/relative-clauses.html
- https://aeo.sllf.qmul.ac.uk/grammar/relative-clauses/