ICoME2020 (International Conference for Media in Education)
Diversity Education in ICT Advanced Society   August 17 & 18, 2020
Online Conference   Host: Konan University, Kobe, Japan

The Search for New Normals in Education from 2020:
Focus on Language for Specific Purposes

Judy Noguchi
Kobe Gakuin University

What do the following have in common?

- The fall of the Roman Empire
- The Gion Festival (Japanese festival)
- The fall of the Aztec and Incan Empires

They all occurred due to epidemics

The fall of the Roman Empire

Much speculation about this
but recent papers (Harper, 2015; McCormick, 2015)
suggest the role of two plagues:
　　the Plague of Cyprian in the middle of the 3rd century C.E.
　　　　　　　　　and
　　the Plague of Justinian in the 6th century C.E. (Wazer, 2016)

The Gion Festival

- In 869, during an epidemic, the Emperor offered prayers to appease the angry spirits (*goryō-e*) that were thought to be causing the illness.
- He had 66 *hoko* or halberds to represent the regions of the land.
- This ritual was repeated when another epidemic struck.
- By 970, the Gion Festival was an annual event.
- From late 16th century, it started becoming more elaborate.

(The Gion Festival website)

The fall of the Aztec and Incan Empires

- In 1518, a smallpox epidemic broke out in the Americas on Hispaniola island—today, divided into a portion of the Dominican Republic and Haiti.
- By 1520, it had spread to the Aztec capital Tenochtitlán (now Mexico City)
- In 1521, Hernán Cortés was able to conquer the city.
- Smallpox continued to spread to the Incan Empire.

(Kolbert, 2020)

The COVID-19 Pandemic

- This is giving us a unique opportunity to experience history in the making
- During the pandemics of the past, humans did not have the science and communications networks to fully grasp what was happening
- Today, we are flooded with information as well as misinformation

What should we do to try to achieve "new normals" to move on?

Paul Reville (Francis Keppel Professor of Practice of Educational Policy and Administration, Harvard Graduate School of Education)

- "We're in uncharted territory."
- "In politics we say, 'Never lose the opportunity of a crisis.' And in this situation, we don't simply want to frantically struggle to restore the status quo because the status quo wasn't operating at an effective level and certainly wasn't serving all of our children fairly."
- "Let's take this opportunity to end the 'one size fits all' factory model of education."
- "Within this coronavirus crisis there is an opportunity to reshape American education. The only precedent in our field was when the Sputnik went up in 1957, and suddenly, Americans became very worried that their educational system wasn't competitive with that of the Soviet Union."

(Mineo, 2020)

President Barack Obama

At the Forsyth Technical Community College in Winston-Salem, North Carolina

"In 1957, just before this college opened, the Soviet Union beat us into space by launching a satellite known as Sputnik. And that was a wake-up call that caused the United States to boost our investment in innovation and education -– particularly in math and science. And as a result, once we put our minds to it, once we got focused, once we got unified, not only did we surpass the Soviets, we developed new American technologies, industries, and jobs." (Lee, 2010)

State of the Union address in 2011: US must seize 'Sputnik moment' (McGreal, 2011)

Our Sputnik moment: how to teach in a pandemic situation

In Japan, to support this effort,

the National Institute of Informatics,

on March 26,

launched the "First Cyber Symposium on Remote Teaching at Universities and Other Institutions from April"

https://www.nii.ac.jp/event/other/decs/

What did the students think about this?

Findings from a questionnaire by

Yuna Takei at University of Tokyo

Student views of online classes (in Japanese)「学生から見たオンライン授業」

Reported at the Ninth Cyber Symposium on Remote Teaching at Universities and Other Institutions from April. 【第9回】4月からの大学等遠隔授業に関する取組状況共有サイバーシンポジウム.

May 29, 2020. National Institute of Informatics, Japan.

University of Tokyo student questionnaire: Are you satisfied with remote teaching? About 74% expressed satisfaction

オンライン授業に満足していますか？

- Red: Yes
- Blue: Yes, to some extent
- Gray: It's OK.
- Green: A bit dissatisfied
- Purple: Very dissatisfied
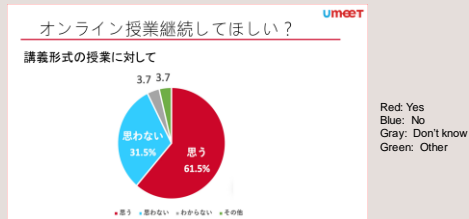
n = 70

Student comments

What was good?

- Did not have to commute
- Easy to ask questions
- Can take the class in a comfortable environment

What could be improved?

- Courses with only handouts
- Not being able to review the class video
- No writing on the blackboard
- Enforced video attendance
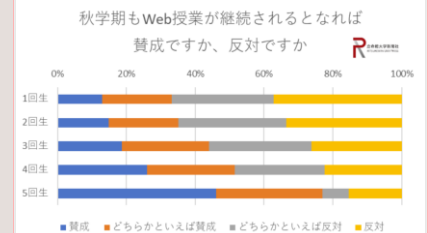- Not being able to get to know the other students

Slide 1

U of Tokyo: Do you want remote teaching continued?
About 61.5% said "yes"

オンライン授業継続してほしい？
UMEET

講義形式の授業に対して

3.7 3.7

思わない 31.5%   思う 61.5%

Red: Yes
Blue: No
Gray: Don't know
Green: Other

■思う ■思わない ■わからない ■その他

Slide 2

Ritsumeikan University (n = 1115)

Are you for or against Web classes for the fall semester?

Blue = definitely "Yes"

Orange = prefer "Yes"

Gray = prefer "No"

Light orange = definitely "No"

秋学期もWeb授業が継続されるとなれば
賛成ですか、反対ですか

0%   20%   40%   60%   80%   100%

1回生
2回生
3回生
4回生
5回生

■賛成 ■どちらかといえば賛成 ■どちらかといえば反対 ■反対

Slide 3

Technology is here to stay!

Using automatic subtitling software with translation capability

Taketoshi Yokemura: How to support students with hearing impairment and its applications

Eleventh Cyber Symposium on Remote Teaching at Universities and Other Institutions from April. June 26, 2020. National Institute of Informatics, Japan.

https://www.nii.ac.jp/event/upload/20200626-10_Yokemura.pdf

Slide 4

「聴覚障害を持つ学生の支援方法とその応用」除村 健俊 芝浦工業大学システム理工学部特任教授

Slide 5

Slide 6

Pocketalk

Translates text for 75 languages

Does text and speech for 55 languages

So what **do** we need to teach?
And **why**?

What kind of language teaching do we need?

First, let's think about types of knowledge
What? Propositional knowledge
How? Procedural knowledge
Stanford Encyclopedia of Philosophy (Fantl, 2017)

In the case of language teaching
Propositional knowledge: "knowledge about language"
Procedural knowledge: "knowledge about how to use language"

Knowledge about language

Propositional knowledge

- Vocabulary
- Grammar rules
- Pronunciation and prosody

"Book" learning
Tasks: Exercises, quizzes

Conducive to machine learning

Procedural knowledge

- Linguistic relativity
- Discourse communities
- Genres

"Experience" learning
Tasks: Activities, portfolios

Not so easily handled by AI…yet

Knowledge about language

Propositional knowledge

- Vocabulary
- Grammar rules
- Pronunciation and prosody

"Book" learning
Tasks: Exercises, quizzes

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"Experience" learning
Tasks: Activities, portfolios

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Linguistic relativity

- Wolff & Holmes (2010) "…**language can augment certain types of thinking**. …there is growing support for the view that language has a profound effect on thought"
- Miner (2020), a venture capitalist considered to have made remarkable contributions to the value growth of venture businesses in Japan: **East is relational while the West is transactional**
- Nisbett (2003) "The **relative degree of sensitivity to others' emotions** is reflected in tacit assumptions about the nature of communication."
  - Westerners find the **indirectness of Asians** difficult to understand
  - Asians find the **directness of Westerners** condescending or rude

---

Dealing with linguistic relativity

- Acknowledge its existence
- Do not judge as good or bad but do be aware of differences
- Trust in the human capacity to learn and use more than one language/culture system
- Use an ESP/LSP approach to grasping what you need to communicate effectively
  - ESP = English for specific purposes
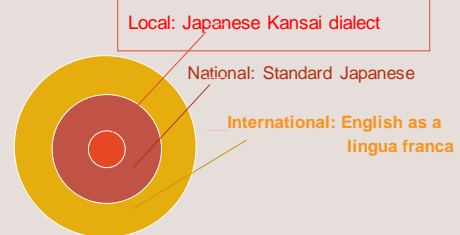 - LSP = Languages for specific purposes

From ESP: Discourse communities

A discourse community

• Is a group of people who are connected by discourse

• Is not bound by location → Global connections

• Has means of communication → Genres

• In the case of a professional community →
Constructs knowledge in the relevant field

Swales (1990)

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Different discourse community, different "language"

Local: Japanese Kansai dialect

National: Standard Japanese

International: English as a lingua franca

Learning different types of "Japanese" to participate in society

Family: Language of everyday life
School PTA: Language of parents, especially mothers
Chatting about children
Negotiating social relationships
Professional organization: Language of peers in professional contexts
Talking about classes
Discussing research
Presenting at conferences
Participating in meetings
Writing email, reports and research papers

From ESP: Genres

Swales (1990)

A discourse community is connected by discourse, or means of communication.

As these means of communication are repeatedly used, they form classes of text types, or genres.

Miller (1984:151)

"A rhetorically sound definition of genre must be centered not on the **substance** or the **form** of discourse but on the **action** it is used to accomplish."

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Visual concept of genre

Effect on the discourse community

Action

Substance

Form

Information
for the discourse community

Linguistic packaging
for genre recognition
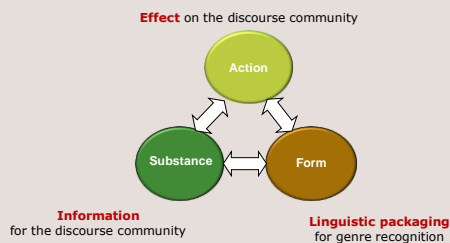
29

Language is composed of patterns

• **Sound patterns** form words — • **Pronunciation, prosody**

• **Word patterns** form phrases and clauses — • **Collocation**

• **Phrase and clause patterns** form sentences — • **Grammar**

• **Sentence patterns** form texts — • **Rhetorical structure**

• **Text patterns** form **genres** — • **Text framework**

Slide 1

An example embodying the aspects of linguistic relativity,
discourse community and
genre

Slide 2

Letters on price increase

平成26年4月3日
○○○株式会社
○○部長　○○○○様

○○○株式会社
○○　○○○○

価格改定のご挨拶

　拝啓　貴社ますますご繁栄のこととお慶び申し上げます。また、毎々格別のご愛顧を賜わり厚く御礼申し上げます。

　さて、今回のご挨拶は、経済情勢の悪化と資材の値上りなどで、弊社は経常収益の苦しい立場になってきました。

　これまで、全社を挙げて経費削減・人件費削減・合理化等により、コストの上昇を目指してまいりましたが、ついに商品価格を継続できない状況となりました。

　つきましては、誠に不本意ながら、別紙のとおり価格の改定を実施させていただくことになりましたので、あらかじめご通知申し上げます。

　新コスト体系の実施は○○月○○日からで、内容は別紙コスト表をご覧ください。

　何卒、事情ご高察のうえ、ご協力賜わりますようお願い申し上げます。

　今後ともよろしくお願い申し上げます。

敬具

Alpha Motorcycles
6 Birmingham Road
Wolverhampton, UK
April 13, 2014

Dayton Motorcycles Inc.
88 Farr Street
Dallas, Texas
USA

Dear Sirs,

I enclose our new price list which will come into effect from the end of this month.

You will see that we have increased our prices on most models. We have, however, refrained from doing so on some models of which we hold large stocks. We feel we should explain why we have increased our prices.

We are paying 10% more for our raw materials than we were paying last year. Some of our subcontractors have raised their prices by as much as 15%.

As you know, we take great pride in our machines and value the reputation for quality and dependability which we have achieved over the last 40 years. We will not compromise that reputation because of rising costs. We have, therefore, decided to raise the price of some of our machines.

We hope you will understand our position and look forward to your orders.

Yours faithfully,

Jim Powers
President

Slide 3

平成26年4月3日
○○○株式会社
○○部長　○○○○様

○○○株式会社
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敬具

- Date
- Inside address
- Sender's address
- **Topic**
- Politeness expressions
- **Why?**
- Politeness expressions
- **What? When?**
- Politeness expressions
- Closing

Slide 4

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Jim Powers
President

- Letterhead
- Date
- Inside address
- Salutation
  - **What? When?**
- **Why?**
- Politeness expression
- Signature line

Slide 5

平成26年4月3日
○○○株式会社
○○部長　○○○○様

○○○株式会社
○○　○○○○

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President

Slide 6

What do we need to teach?

Propositional knowledge	Procedural knowledge
• Vocabulary	• Linguistic relativity
• Grammar rules	• Discourse communities
• Pronunciation and prosody	• Genres
"Book" learning, transfer of information Tasks: Exercises, quizzes	"Experience" learning, assimilation of information **Tasks: Activities, portfolios**
Conducive to machine learning	Not so easily handled by AI…yet

Encourage
"experience" learning and
assimilation of procedural knowledge with
activities and
portfolios of student work

Activity example:
    Flipped classroom using Bundles (Mini-libraries)

Tokuhama-Espinosa (2020)

- Offers a flipped classroom course in which she has students read or watch material on the Web to prepare for the topic to be covered in class
- Prepares lists of hyperlinked articles, videos, podcasts for each topic to be covered in class
- Has students choose one or more from the list to prepare for class and bring their ideas to the discussion
- Allows different entry points for students at different levels

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Activity example: Mediating* research news

- Class: Graduate students in science and engineering
- Class size: 20+ students
- Course type: ESP class
- Task: Examine oral and written genres and develop own materials based on findings

*CEFR (2018) on mediation: Make communication possible between persons who are unable, **for whatever reason**, to communicate with each other directly.

Today we are dealing with two pandemics

- The COVID-19 pandemic
- The "pandemic of misinformation" (U.N. Secretary-General António Guterres)

   "Ubiquity of social media has made it easier to spread or even create COVID-19 falsehoods, making the work of public health officials harder"

                       (Pazzanese, 2020)

The age of post-normal science
                Ravetz, J. & Funtowicz, S. (1999)

Post-normal science is an approach **to interface science and policy** in cases where **decisions need to be made before conclusive scientific evidence is available**. Often, **a single and conclusive scientific answer will not be available for highly complex systems** such as fisheries, climate, society and the human body. In such cases, more research does not necessarily lead to less uncertainty, but can lead to unforeseen complexity. Values are often in dispute when the potential impacts of decisions based on uncertain science have very large consequences.

                (University of Bergen, 2014)

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Mediating: important in this age of post-normal science

In pure science, as in art, little is urgent. Gravitational waves were discovered — a triumph for curiosity-driven science — thanks to physicists' patience and imaginative power. That they had waited decades is irrelevant. **Alas, not all science has the luxury of timelessness**.

Urgent science touches on issues that rank high on the social agenda. Theorists have classified fields such as climatology and global-change research as **post-normal science**, **in which socio-economic stakes are high and decisions are pressing.**   Nature Editorial (2016) 42

Slide 1:

Explaining Your Research to the Public: Why It Matters, How to Do It!

February 15, 2018 by Sharon Page-Medrich

"Can you explain your work, in a nutshell? Can you say why what you do is valuable? For students engaged in research projects in academic settings, it may not be easy to explain their studies or its importance to the layperson. This may be one reason **why a surprisingly large segment of the public** is uncertain that college degrees are worthwhile or whether expertise is beneficial — they **don't understand how the inquiries of academics are relevant to their lives or the common good."**

"**Workshops** such as "Going Public: Explaining What We Do and Why It Matters" and "Claiming Expertise: How to Explain Your Research in Three Minutes" **offer students the skills, training, and confidence needed to translate their often complex, technical close-up views into a wider picture with broader relevance."**

https://grad.berkeley.edu/news/headlines/explaining-research/

Slide 2:

Learning how to "mediate" your research

- Find a science news item from a website
  - Breaking News English, Science Podcasts (AAAS), 60-Second Science
- Listen very carefully to how it is presented
- Recite the news item
- Examine the genre features of the news item
- Prepare a news item about your own research
- Present this to the class

Slide 3:

Recitation of science news from a website

Scientific American 60-Second Science
Computerized Chemical Toxicity Prediction Beats Animal Testing
By Deboki Chakravarti on August 10, 2018

Chemists come up with **new** substances **every** year / to go in everything from makeup / to medicines. But introducing these chemicals into products / also raises questions about their **potential dangers**. Can they irritate the **skin**? The **eyes**? Could they damage **DNA**?

To identify these possible risks, / companies often test chemicals on **animals**. But these trials are **expensive / and time-consuming**, / and the results **aren't always reliable. Plus**, / many consumers are **uncomfortable** with their favorite products being tested on animals—like **mice**, / **rabbits**, / and **guinea pigs**.

But we may be able to **avoid** animal tests / without **sacrificing the ability** to forecast problems. / Because researchers have developed a **computer program** / that can predict the **toxic effects** of new chemicals / better than **animal testing can**.

https://www.scientificamerican.com/podcast/episode/computerized-chemical-toxicity-prediction-beats-animal-testing/#:~:text=Computerized%20Chemical%20Toxicity%20Prediction%20Beats%20Animal%20Testing,-By%20Deboki%20Chakravarti&text=Researchers%20programmed%20a%20computer%20to,structural%20similarity%20to%20known%20ones.

Slide 4:

Features of science news

- Aims to explain cutting-edge research to the lay public
- Explains technical terms
- Uses conversational speech: contractions, sentences starting with "but" and "and"
- Has a news report structure:

  Hook: **Chemists** come up with **new** substances **every** year / to go in everything from makeup / to medicines. But introducing these chemicals into products / also raises questions about their **potential dangers**.

  News details: But we may be able to **avoid** animal tests / without **sacrificing the ability** to forecast problems. / Because researchers have developed a **computer program** / that can predict the **toxic effects of new chemicals** / better than **animal testing can**. The method relies on a **database** that the scientists created / that includes the results of more than **800,000 animal tests /** documented in various toxicology registries, / covering about **10,000 chemicals**.

  Summary: And this method enabled the scientists to predict a chemical's dangers **more accurately** / than did some of the **most commonly used animal tests**.

  Concluding statement: Given that computer programs **don't need the money or time** to run / that animal experiments do, / this **virtual toxicology screening** should appeal to **companies** / and **animal lovers** alike.

Slide 5:

Preparation and presentation of own science news

How alveolar macrophages act in the presence of lung cancer cells

Hook
Currently, there are a lot of immunotherapies against many types of cancer. The immune cells, such as neutrophils, eosinophils, macrophages, and dendritic cells, have complex and multi-focused roles. They can act as suppressors or as promoters of tumor development. Now, let's focus on the role of macrophages, especially tumor-associated macrophages. Let's call them TAMs. TAMs are derived from bone marrow, re-educated by the tumor and promote tumor development and progression. On the other hand, alveolar macrophages (AMs), which reside in tissues, populate lung tissue during early embryogenesis. They maintain immunological homoeostasis and host defense in the lung. But it is not clear how alveolar macrophages interact with lung cancer cells.

News (who, what, when, where, how, why)
So, in order to find out how AMs interact with lung cancer cells, I analyzed the gene expression of AMs by RNA sequencing. The results showed that the expression levels of the gene named XXX was upregulated in AMs. Next, I assessed the effect of metastasis to the contralateral lung by YYY and found that metastasized cancer cells were difficult to detect after treatment with YYY.

Summary
From our findings, YYY, secreted from alveolar macrophages may increase the metastasis to the contralateral lung.

Concluding statement
We are hoping that YYY secreted from alveolar macrophages can become a new therapeutic target for lung cancer patients.

Slide 6:

What students learn from this activity

- Learn how to analyze genres by first working with the recitation of a sample item
- Grasp the features of "everyday" genres for the general public
- Start with individual drafting but get feedback from class and instructor
- Learn from feedback to revise own work
- Find out how to use genres to transmit own messages
- Understand the value of using a genre approach to communication

What do we need to teach?

Propositional knowledge

- Vocabulary
- Grammar rules
- Pronunciation and prosody

"Book" learning, transfer of information
Tasks: Exercises, quizzes

Conducive to machine learning

Procedural knowledge

- Linguistic relativity
- Discourse communities
- Genres

"Experience" learning, assimilation of information
Tasks: Activities, portfolios

Not so easily handled by AI…yet

E-Portfolio

- Is a collection of the work the student has done during the course
- Can also include feedback on tasks (e.g. presentations) from the instructor and peers
- Documents student progress during the course
- Can include student reflection notes about the course
- Should be useful as a future reference for students when they encounter new learning needs as a guide to "how to learn"

Portfolio cover sheet

Graduate School of XXX, YYY University
Portfolio
PresentingYour Research
Title:
Name: _____
Student No.:_____
Send as a zip folder (folder name sample: XXXYYY20NoguchiJudy) by
_____ by email to XX at **<OE@gmail.com>**. Be sure that all files within the folder are labeled with the content and your name (e.g. CorpusDiscoveryNoguchiJudy; AbstractAnalysisNoguchiJudy).

Date turned in:_____

1. Cover sheet
2. My Paper (according to instructions for target journal or using journal template)
   Title page; Abstract (optional); **Introduction; Experimental section** (one portion); **Results** (one portion); Discussion (optional); **Acknowledgements; Figure, table, scheme** (with legend); **References** (one portion)
3. Cover Letter to the Editor
4. Journal Instructions
5. Sample Paper
6. **Corpus Discovery (how to use corpus linguistics techniques as aids)**
7. Abstract analysis (Excel file with marked hint expressions and moves)
8. Introduction analysis (Word file with marked hint expressions and moves)
9. Self introduction with prosody markings
10. Science news recitation script with prosody markings
11. My science news script with prosody markings
12. Slides of your oral presentation
13. Evaluation feedback and your responses
14. Comments on what you learned and suggestions for improvement of class

Corpus discovery

- ◆ Build a corpus of journal articles in your research area
- ◆ Use concordance software to examine the collocational patterns that frequently appear in the texts
  - ➢ Download freeware such as
    - ➢ AntConc https://www.laurenceanthony.net/software/antconc/
    - ➢ CasualConc https://sites.google.com/site/casualconc/Home
- ◆ Use the information to polish your own writing

   A sample corpus discovery by a student
- Number of papers in corpus: 27 papers
- Journals/Field: Heart failure
- Word/phrase/expression examined: "impact" vs "effect"
- Reason for choice To examine the differences

Sample concordance lines

- My own sentence: Although the impact of diabetes mellitus on the prognosis of heart failure is widely known, very few therapeutic strategies have been shown to have beneficial effects on the progression of heart failure in diabetic patients.

- Conclusion（日本語でもOK）
- "Impact" tends to be used with a broader meaning,
    and it seems to refer to the influence of A on B.
- "Effect" tends to be used with a more specific meaning,
    and it seems to refer to the result of an action of A on B.

New Normals in Language Teaching

- Moving from the acquisition of propositional knowledge to a grasp of procedural knowledge
- Taking a systematic view of language acquisition for diverse contexts
    - Being aware of linguistic relativity
    - Using ESP (LSP) concepts and tools
- Using technology to support learning
    - Taking advantage of the wealth of Web resources
    - Using corpus linguistics

"Good" teachers will always be needed

"Many of these students mentioned that they valued teacher-student engagement, teachers who had command over their subject areas, and interactive teaching styles. As one student commented, *"All I wish for in a classroom setting is an effective teacher who plans their classes ahead of time and who wants students to succeed. I like teachers who actually know the information they are teaching, and who can teach it to students in a way that makes learning easy and enjoyable. …Technology and resources don't mean anything unless the teacher is effective and fully capable of their job and engaging students."*

Takei (2020)

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