

Comparative Study of ZOOM and VR Lessons in Language Education

Hiroyuki Obari (Ph.D.)

Aoyama Gakuin University (Prof. Emeritus)

The 61st LET Annual Conference

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YouTube Links: 実際の授業動画

<https://youtu.be/gPZU7cGzwis> (早稲田授業, Servant leadership, Prof. Weakley, 2022,6.27) 7 Groups, 6 CCC members vs. 3~4 students

2021: Zoom classroom, 2022: Face to face classroom

<https://youtu.be/CxGv5Y1V6u0> (Cross-cultural IQ, Prof. Weakley, 2022.5.11)

<https://youtu.be/BZTu22y94cl> (東工大院 世界観授業, 2022.6.1) Online

https://youtu.be/epVh_6dudHU(存在論 by Dr Harre, Scientific Realism)

<https://library.Educause.edu/resources/2022/4/2022-Educause-horizon-report-teaching-and-learning-edition> (Educause Horizon Report 2022)

Tools for Learning

<https://textinspector.com/>

<https://www.score-corpus.org/>

<https://www.english-corpora.org/coca/>

<https://voyant-tools.org/>

<https://www.grammarly.com/>

<https://www.trinka.ai/jp/>

<https://www.deepl.com/ja/home>

<https://textmining.userlocal.jp/>

<http://langtest.jp/> (Prof. Mizumoto)

<https://jasp-stats.org/> (Including Bayesian)

<https://papago.naver.com/>

Oxford links: 授業教材

Oxford Martin School

<https://www.oxfordmartin.ox.ac.uk/>

Oxford Internet Institute

<https://www.oii.ox.ac.uk/>

Oxford Blavatnik Government School

<https://www.bsg.ox.ac.uk/>

Oxford Said Business School

<https://www.sbs.ox.ac.uk/>

Alister McGrath vs. Richard Dawkins

https://www.youtube.com/results?search_query=dawkins+vs.+alister

John Lennox vs. Richard Dawkins

https://www.youtube.com/results?search_query=john+lennox.+dawkins

Presentations

1) ASIA TEFL 2022 (2022.8.7)

<https://youtu.be/TxfZ4mi8JmA>

2) My presentation at Cambridge Conference (2020.2.28)

<https://youtu.be/TSzgjf89Hg>

3) JALT 2020, AIと英語教育 (2020.11.3)

<https://youtu.be/VdUVZ1KLUcU> <https://youtu.be/AkwrOKCANL0>

4) 2020Expo Education 講演 (2020.11.21)

<https://youtu.be/AkwrOKCANL0>

Outline

Theoretical Background

Case Study 1: VR lessons

Case Study 2: ZOOM lessons

Questionnaire

Limitations

Summary

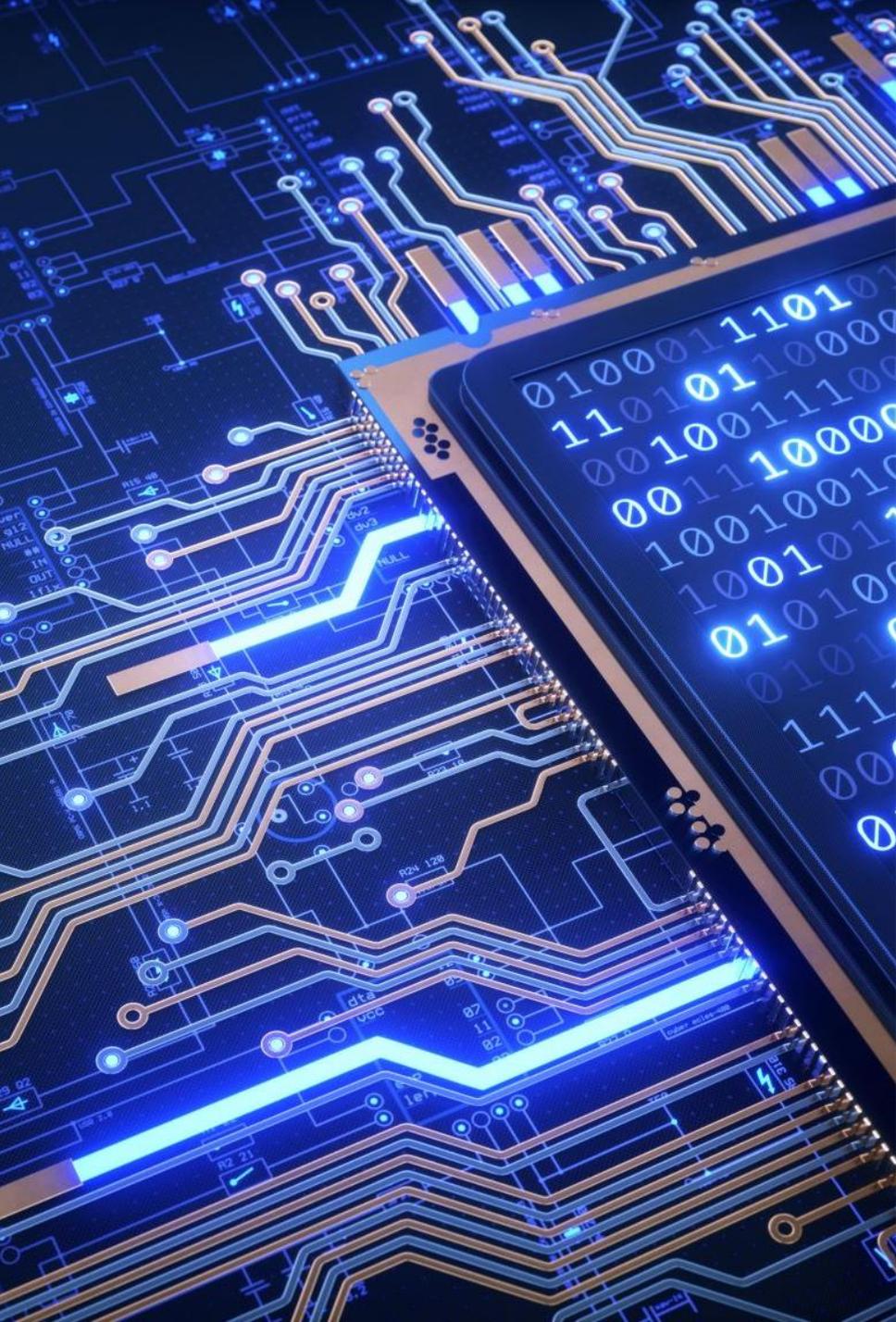
Conclusion



Research Questions:

- How does VR affect language learning and the higher-order thinking skills?
- How does interaction with young CCC members affect language learning and worldviews?





Paradigm Shift

Society 5.0

21st century, Society 5.0, DX

Our lives are transformed in many ways, and **education is dramatically affected.**

How to create a successful transition into new ways of language education in the 21st Century.

Changes in teachers' role: Facilitator, Curator, Mentor

Support the learning process by assigning the **appropriate scope of learning** to student

instead of giving the lectures, creating questions, and marking.

Feedbacks are especially important to raise students' motivations.

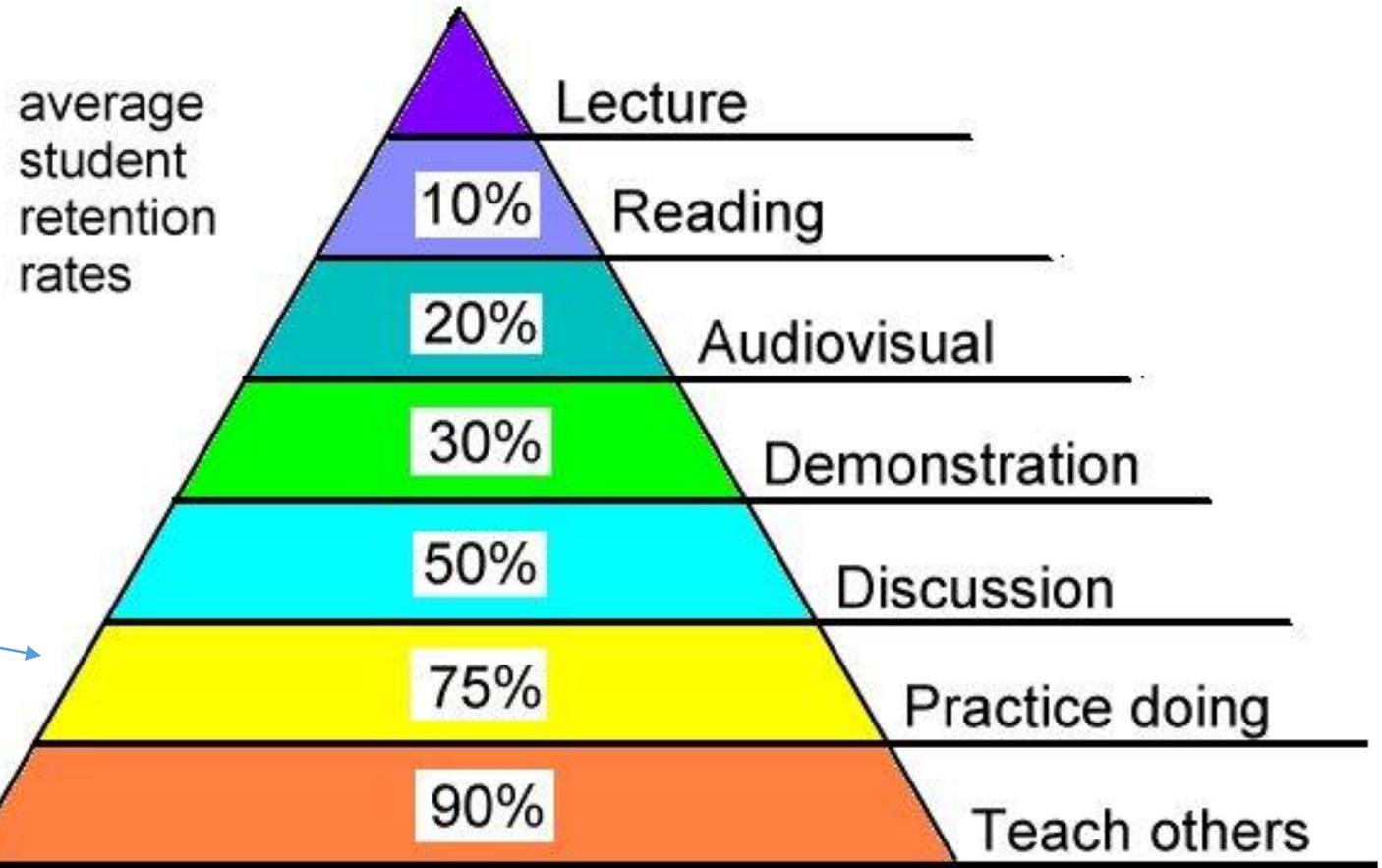
Theoretical Background

Socio-Constructivism: Online Dialogue with CCCs

Vygotsky's sociocultural theory of human learning which describes learning as a social process and the origination of human intelligence in society or culture. **Human development is socially situated.** Social interaction plays a fundamental role in the **development of cognition** and **knowledge is constructed through interaction with others.** **Does this theory work online?**

Retention rates

Learning Pyramid



Flipped Learning: PBL, TBL, CBL

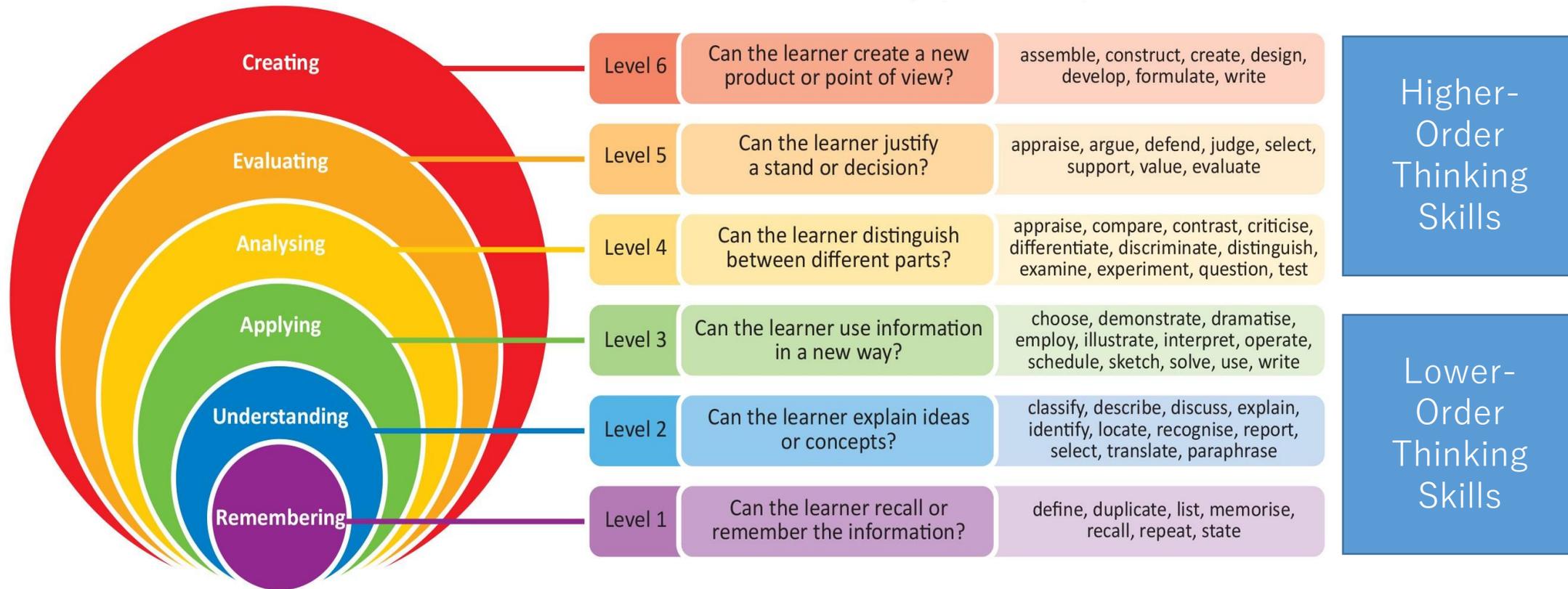


Source: National Training Laboratories, Bethel, Maine

Bloom's Digital Taxonomy (McNulty, 2018)

Educational psychologist Benjamin Bloom developed a taxonomy of learning objectives in 1956, as a structure to understand the learning process

Bloom's taxonomy (revised)



AI/Google home speaker with iPads Alexia + VR (Augmented reality)



History of our VR research

2018, Started using VR at my AGU seminar with Smart Speaker

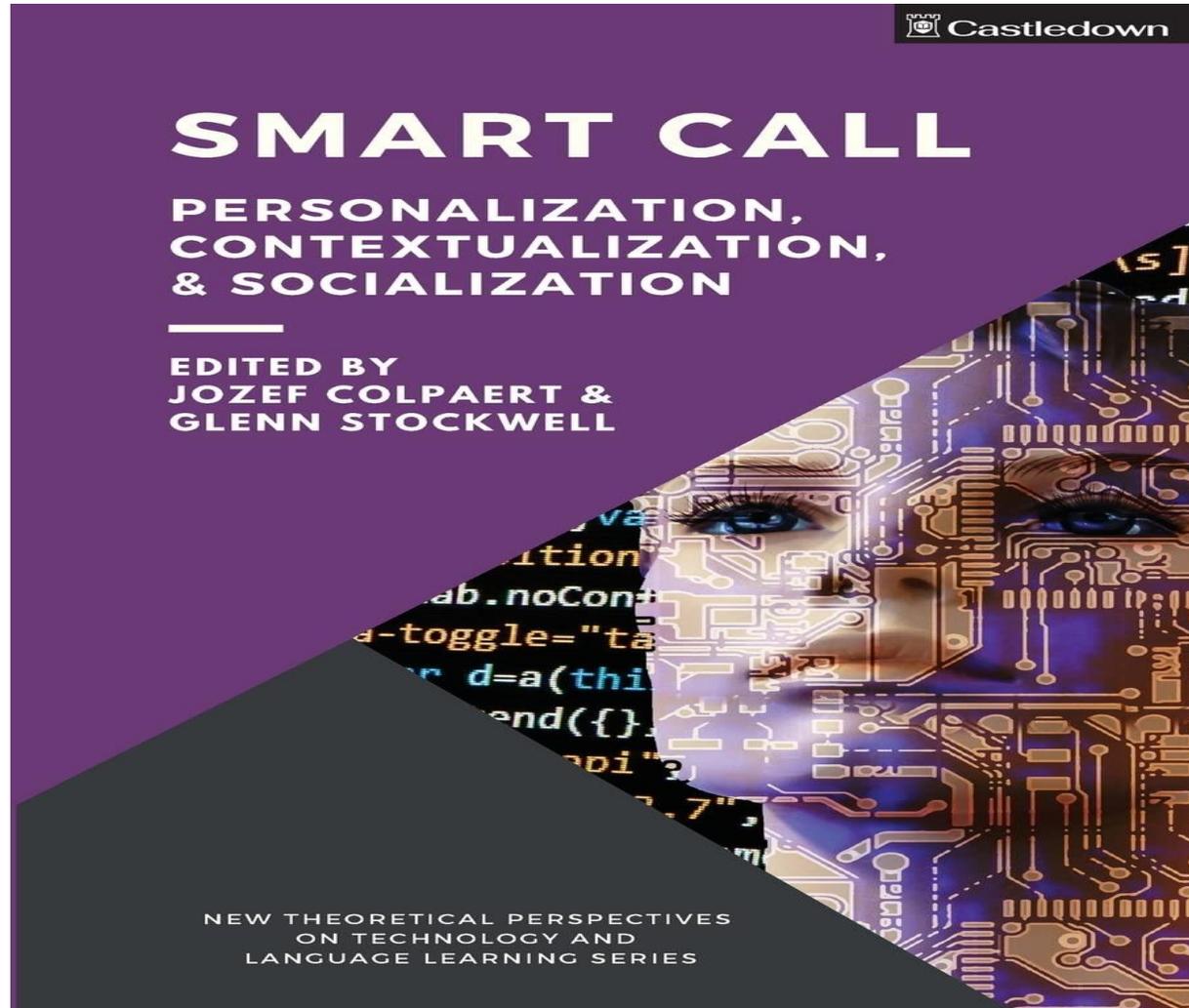
2019, AI + VR, Integration, 220 points in TOEIC

2021, VR lessons with 7 CCC members with Immerse

2022, VR lessons with 6 CCC members with Immerse

July 2022, VR lessons with ION for 2 weeks +12 weeks

SMART CALL, 6 Exploring the impact of AI on EFL teaching in Japan



1st Case Study: VR lessons with 6 CCCs



60 students took part in this project.



Immerse platform



6 CCCs taught English lessons with VR



45 minutes lesson per week



Many Topics



Pre-and Post OPIc Speaking Tests



Pre-and Post TOEIC Tests

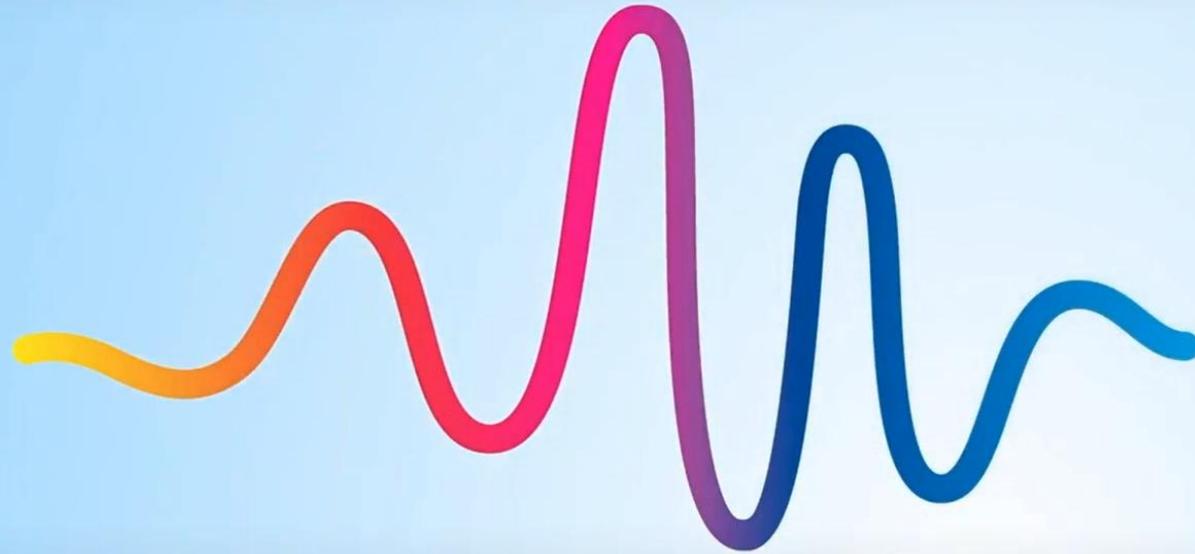


Questionnaires

20% dropped out

VR lesson with Immerse <https://www.immerse.online/ja/why-vr-japan>

留学レベルの効果！イマースの「VR英会話プラットフォーム」とは？（日本語字幕）



immerse

VR言語学習プラットフォームを開発!

一時停止 (k)



0:35 / 1:35

録画中です
00:00:00



Virtual lesson for 8 months (n=60) 45 minutes per week (1 vs 5~8 students)

PeerEval Teacher Login | 経済学部が「VR/AIを活用した先端...」

aoyama.ac.jp/post06/2021/news_20210721_02

アプリ | Yahoo! JAPAN | (1) 小張 敬之 | Yahoo!カレンダー | Living life | [bnc] British Nation... | IE ブックマーク | 【楽天市場】【31%O... | OXFORD EMI | 【楽天市場】【和食器... | 【楽天市場】【名入れ... | 【楽天市場】大人用... | その他のブックマーク | リーディングリスト

青山学院大学 AYOYAMA GAKUIN UNIVERSITY | 青山学院大学について ABOUT AGU | 学部・大学院 EDUCATION | 学生生活 CAMPUS LIFE | 研究・産学連携 RESEARCH | 国際交流・留学 INTERNATIONAL | 入試・入学情報 ADMISSIONS | 就職・キャリア CAREER | 青山学院 | LANGUAGE | SEARCH | MENU

タル技術者（企業）が協働で、教育現場で実践、試行錯誤、普及・実装していく取組です。学修者本位の大学教育を実現するため、サイバーとフィジカルを上手に組み合わせて授業の価値を最大化する、「大学教育のデジタルイノベーション」を目指します。



本プロジェクト用にVRゴーグルおよびAIスピーカーを77組用意しました



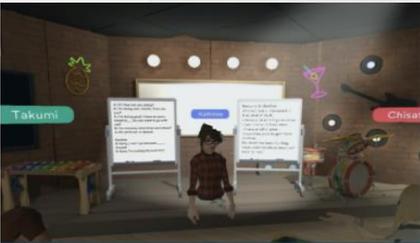
優しいアメリカ人ボランティアがワクワクするVRレッスンを提供しています



座ったままで安心して受講できますが、周囲の安全には注意が必要です



VRレッスンでは両手も使い、アバターになりきります



実際のVRレッスンの様子です

↑ TOP

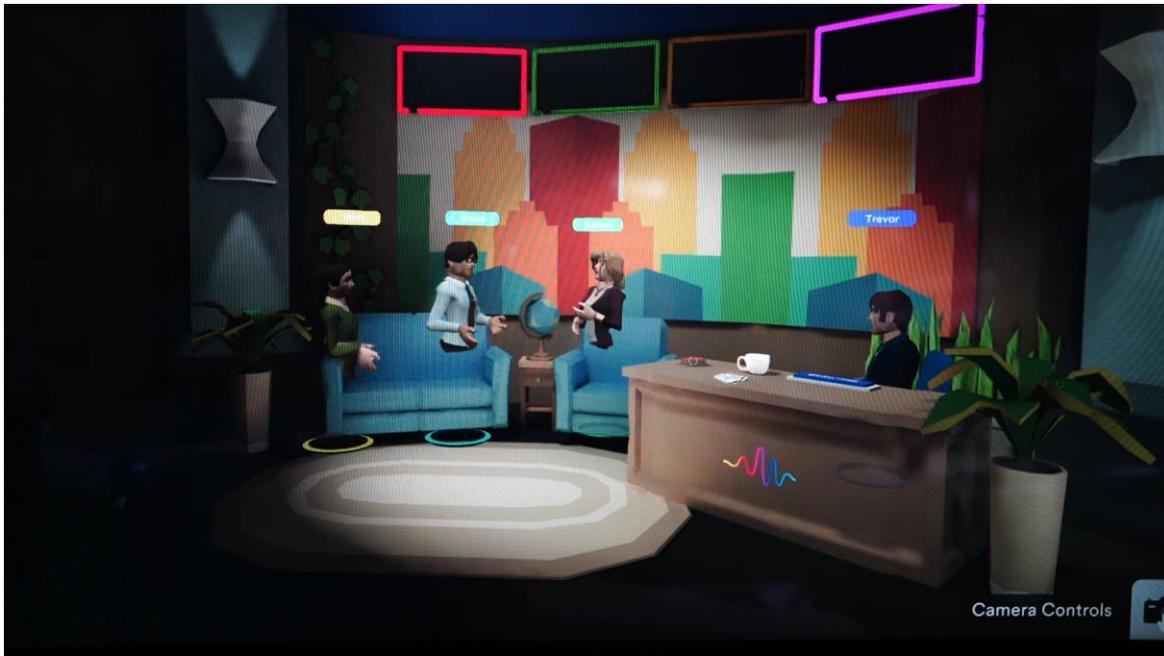
目次

青山学院大学経済学部VR英語レッスン・カレンダー (202107) ☆ @ 共有

100% Arial 10 B I U A

	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
40															
41		Kathrine 2877			Kathrine 2877					担当講師名 Teacher Name		Trevor 9408			
42										講師写真 Teacher photo					
43	Hi! My name is Kathrine! I'm from Houston, Texas. Adriana is my twin sister. I love animals, shopping, playing games, and exploring new places. I also really like to meet new people. Looking forward to meeting you!				Hi! My name is Kathrine! I'm from Houston, Texas. Adriana is my twin sister. I love animals, shopping, playing games, and exploring new places. I also really like to meet new people. Looking forward to meeting you!					講師紹介 Teacher Self-Introduction	Hey! My name is Trevor! I'm from the United States and my hometown is California. in the countryside so most of my hobbies include sports and other outdoor activities. Business Finance at Cal State Fullerton. Looking forward to meeting you virtually!				
44	July 5 (Monday)	July 5	July 12	July 12	July 19	July 19	July 26	July 26		レッスン日 Lesson Date	July 2 (Friday)	July 5 (Monday)	July 8 (Thursday)	July 14 (W	
45	11AM-11:30AM	5:00-5:30PM	11AM-11:30AM	5:00-5:30PM	11AM-11:30AM	5:00-5:30PM	11AM-11:30AM	5:00-5:30PM		レッスン時間 Lesson Time	11:00- 11:30	12:00-12:30	18:00-18:30	11:30-12:00	
46	Self Portrait at an art gallery	Self Portrait at an art gallery	Inviting a friend to an event	Inviting a friend to an event	Talking about likes and dislikes at a cafe	Talking about likes and dislikes at a cafe	Describing what is going on from a broadcast room	Describing what is going on from a broadcast room		レッスン概要 Lesson Overview					
47															
48															
49															
51	申し込み期日：6月25日21時から8月30日24時まで														
52	平日時に対応する赤い枠（赤いコマ）に名前をアルファベットで入力してください。先着順になります。（Shunさんの交代要員が決まるまでは）一人当たり月5レッスンを基本とします。														
53	斜して入力することは絶対にやめてください。														
54															
55															
56															
57	July 5 (Monday) 11AM-11:30AM	July 5 5:00-5:30PM	July 12 11AM-11:30AM	July 12 5:00-5:30PM	July 19 11AM-11:30AM	July 19 5:00-5:30PM	July 26 11AM-11:30AM	July 26 5:00-5:30PM			July 2 (Friday) 11:00- 11:30	July 5 (Monday) 12:00-12:30	July 8 (Thursday) 18:00-18:30	July 14 (Wk) 11:30-12:00	
58	Kotomi Sugita	Haruto Ohban	kotaro hori	Koki Hashimoto	Kotomi Sugita	yosei ezaki	kotaro hori	Ayaka Harada		申し込み学生	参加学生1	Masateru Makiguchi	Lee Saem	Rika Watar	
59	Taishi Kobayashi		Chisato Miura		Hayato Ogawa		Mari Ishii		参加学生2		Chisato Miura				
60			Hayato Ogawa		Taishi Kobayashi		Kotomi Sugita		参加学生3					Kanoki Oka	
61			Taishi Kobayashi				Mimi Kunisawa		参加学生4						
62			Takumi Nagata				Chisato Miura		参加学生5						
63							Takumi Nagata		参加学生6						
64									参加学生7						
65									参加学生8						

VR online Lesson with a CCC teacher 45 minutes per week (1 vs 3 or 4 students), Oculus 2



Results: No progresses at all.

OPIc Speaking test:

Pre 5.929 Post 5.714

TOEIC:

No data of all (n=60), 20% dropped out.

1 student

Pre 625 Post 805

OPIc 6 OPIc 8



Outcomes



Speaking skills



Intercultural communication skills



Motivation to study abroad



Reduced the foreign language anxiety

Participants' comments

Summary of comments (Satake, 2021)

It was fun and useful to take practical English conversation lessons at home using their avatar in various situations in VR, where they were less nervous about speaking in English

⇒ VR English lessons helped Japanese learners of English to reduce their foreign language anxiety in a short period

【レッスンプラン】 基本的に週単位でのレッスン内容とし、12週に亘って異なるレッスンのご提供を想定しています。

空港でのチェックイン後、フライトへ。その後、(帰国後をイメージして) イベント会場に集まり、VRレッスン全体の振り返りと、それに関連したいくつかのテーマでディスカッションを行います。
【文法項目：How questions, ing(fixed plan) etc.】



【トライアルレッスンプラン】2週間に亘って週単位で、ベースの流れは同じでツアーパートが異なるレッスンのご提供を想定しています。



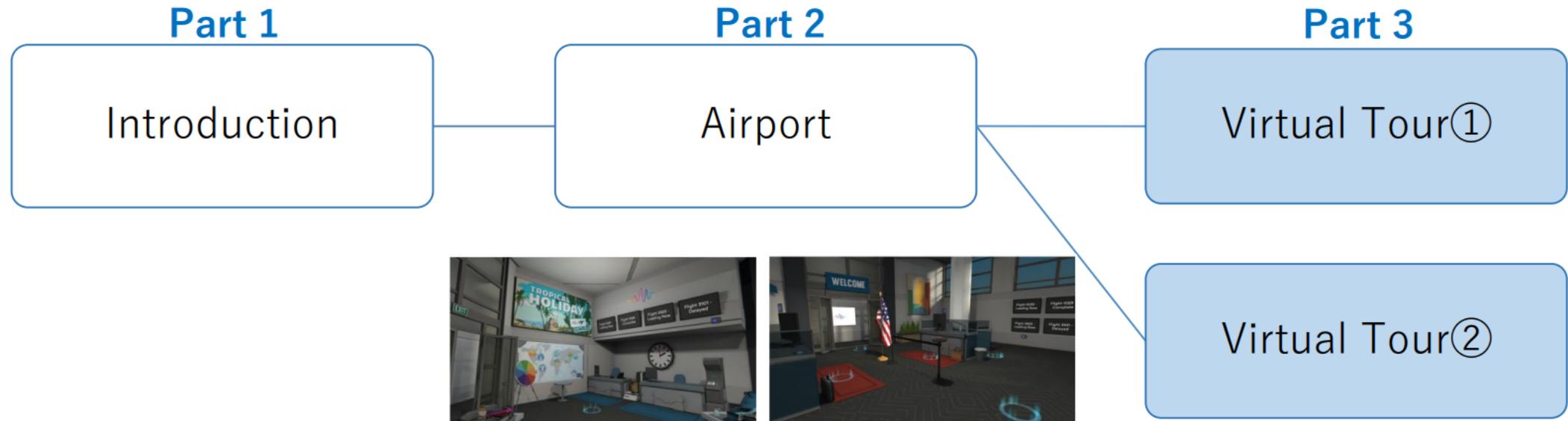
WELCOME DECK



NETWORKING EVENT



OBSERVATION DECK



AIRPORT DEPARTURE



AIRPORT ARRIVAL



STEP1

Zoomで事前説明

STEP2

VR英会話レッスン

所要時間：約2-3分

所要時間：約37-38分

トライアルレッスンにおいては、まずZoomにて集合し、immerseでのVRレッスン参加方法を再度で説明させていただいてから、VRレッスンに移行するのがスムーズかと考えております



2nd Case Study
During COVID-19
April 2021~January 2022

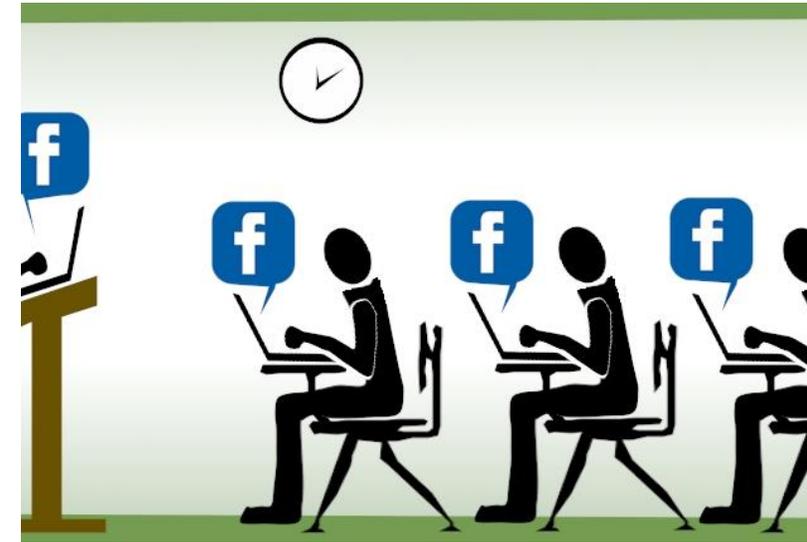


The Four Specific Purposes:

- To develop students' **higher order thinking skills** and **worldviews**.
 - Where are you coming from? What am I here for? What is your life purpose?
 - **Metaphysics**; Interaction with CCC(Campus Crusade) from U.S.A.
- To acquire **21st century skills** to prepare for **digitalized societies**.
- To acquire a more **cross-culturally sensitive understanding** via ICT and to develop CQ. (COIL: Collaborative Online International Learning)
- To improve **English proficiency** and **presentation skills**. Implicit knowledge to use Language.

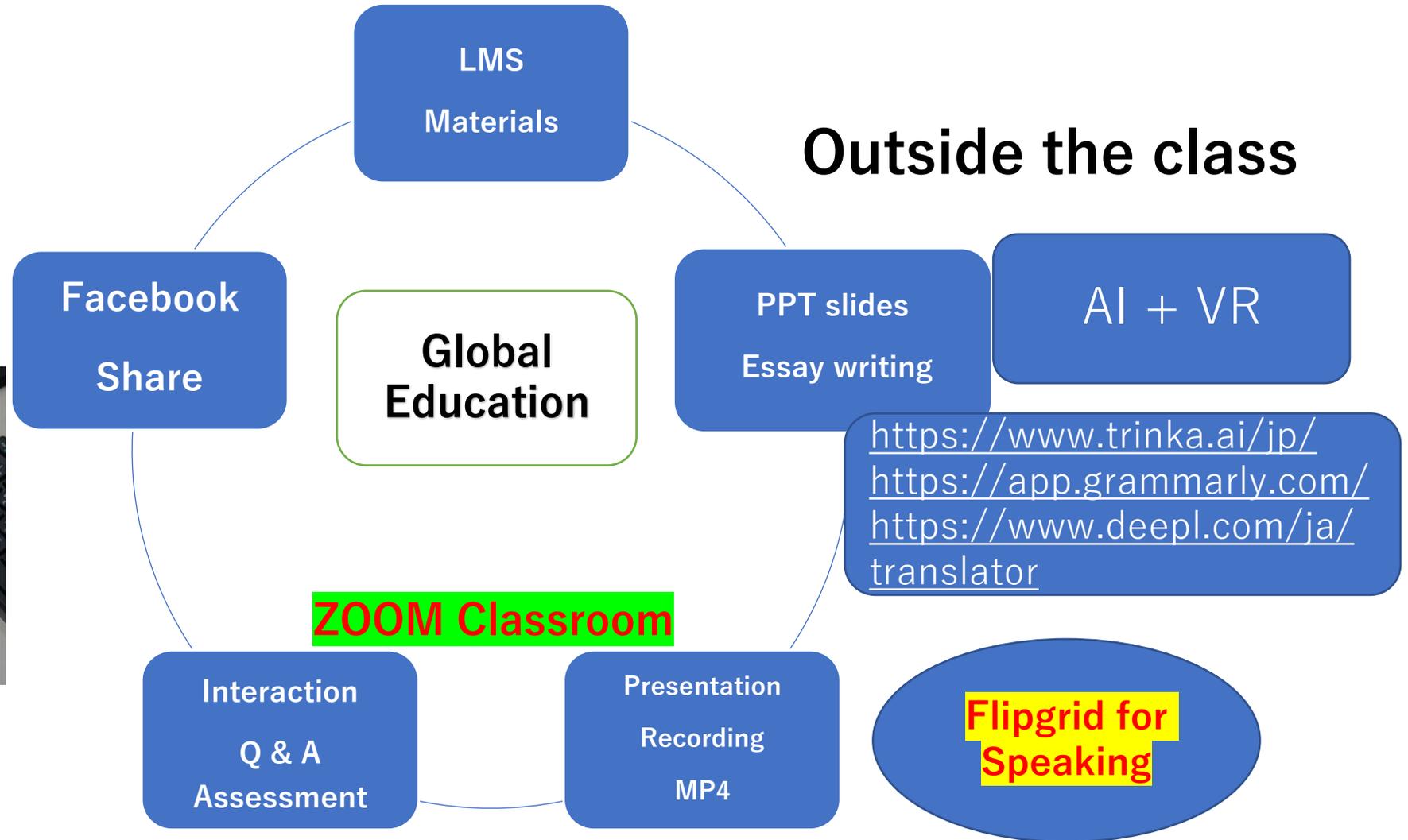
ZOOM
LMS/Course Power
Moodle
MP4 movie
SNS/Facebook
Messenger/Line/Slack

Flipgrid
Kahoot
Deep L/QuillBot
Grammarly /Trinka
Quizlet /PeerEval
YouTube
Computerized
Assessment
Learning Analytics
AI/VR/MR



Flipped Learning (Input → Output)

PeerEval



2nd Case Study 2: Interaction with 9 CCCs



17 students in this project. **Flipped lessons.**



Zoom platform



9 CCCs interacted, discussions, feedback with PeerEval



90 minutes lesson per week



Many Topics (21st century, worldviews, Cross-cultural CQ.



Pre-and Post OPIc Speaking Tests



Making DS(Digital storytelling)



Questionnaires



Interaction and Dialogue

Worldviews related to Higher Order Thinking

The way you look at the world

What you believe in (religious belief)

Cosmology (universe, etc.)

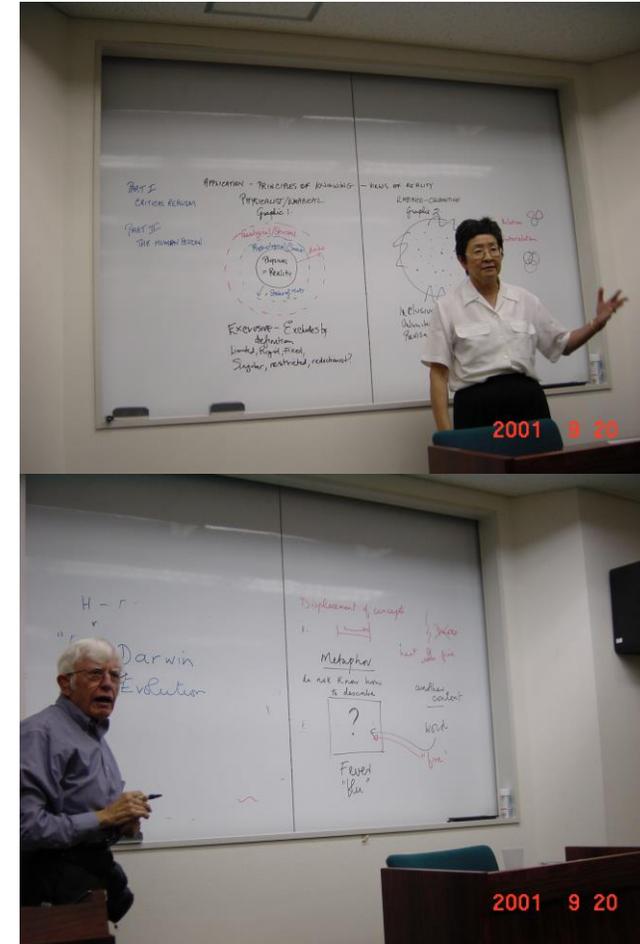
Evolution vs. Creation

The meaning of Humans

Providence
Cause and Effect

Concept of Time (past, present, future)

Rituals (funeral, marriage, New Year, etc.)



Purpose of Education: By John Lennox
(Oxford mathematician) **Who are you!**

Where do we come from?

What am I here for?

What is the purpose of my life?

Curator's role

10 Topics to be covered:

YouTube
Documents
Videos

For the digitalized society 5.0

EdTech (21st century skills)

AI and Society

Cross-Cultural IQ

Global leadership

Worldviews / Ontology & Epistemology

Science & Theology

World Heritage

[17 SDGs](#)

Global issues from Oxford Martin School

Presentation skills

A ZOOM CQ Lesson



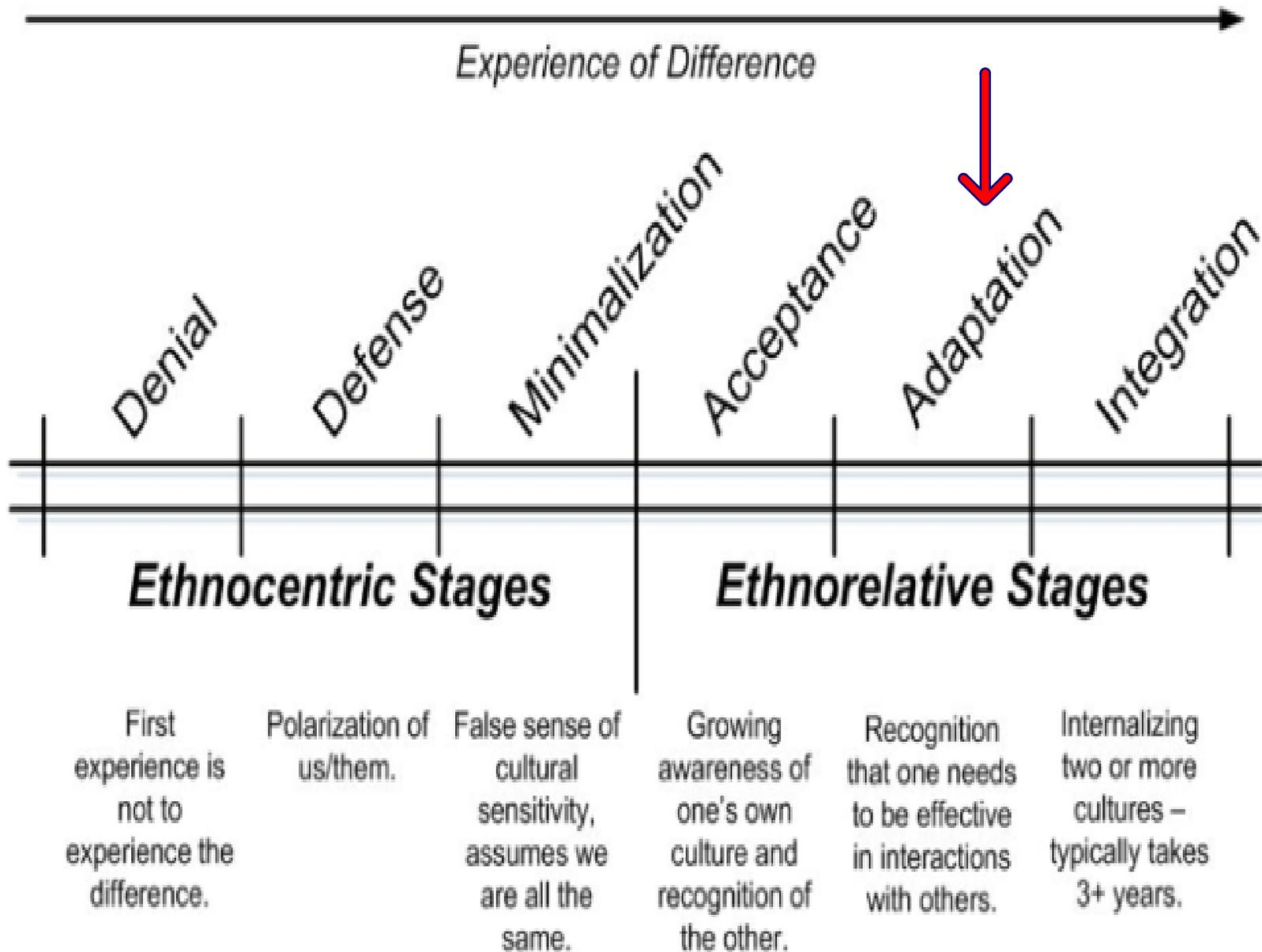
The What and Why of Culture?

The beliefs, values, customs, attitudes that makes one group unique or at least distinguishes it from another. (Livermore)

70% of international ventures fail because of a lack of CQ!



Development of Intercultural Sensitivity



Breakout session: Presentation/Interaction



Zoom Meeting

レコーディングしています...

Trevor Schmidt	hobari@aoni.waseda.jp	Fayth Wong	Kyle Aston (カイル)	Valarie
Jethro じこ	Jane Kim	Joanne Ho	Joseph Longo (ジョセフ)	Dawn QUAH
Gennu SEOW Zhi Hui	Brian KANG Ding Ying	Ashleigh LOW Kye Lyn	Jordan LIM Jun De	Ashley Yang
Ana	Rin	Grace □	Sr. CHEN shuichi	Sr. SUNAGA Shu
Obari, Hiroyuki	Srta. MATSUNA...	IWANAMI Takeshi	YAMAGUCHI Ka...	Akihito HIGUCHI

ミュート ビデオの停止 セキュリティ 参加者 投票 チャット 画面の共有 レコーディングを一時停止/停止 字幕 ブレイクアウトルーム リアクション 詳細 終了

参加者 (37)

参加者の検索

- SM Srta. MATSUNAG... (共同ホスト) 音 映
- ST Srta. TAKAHIRA Yu... (共同ホスト) 音 映
- SW Srta. WATANABE R... (共同ホスト) 音 映
- SZ Srta. ZUSHIDEN Yu (共同ホスト) 音 映
- TS Trevor Schmidt (共同ホスト) 音 映
- UN UCHIDA, Noma (共同ホスト) 音 映
- V Valarie (共同ホスト) 音 映
- YK YAMAGUCHI Kazuki (共同ホスト) 音 映
- y yukihiro matsui (共同ホスト) 音 映

招待 すべてミュート ...

チャット

自分から次へ: 全員

<https://peereval.mobi/KBWHXQEO>
Your name: c1~c11
Chen =Shuichi

メッセージは誰に表示されますか？録画が有効

送信先: 全員

ここにメッセージを入力します。。

2021 木4 後期 English Gate 8 S-1

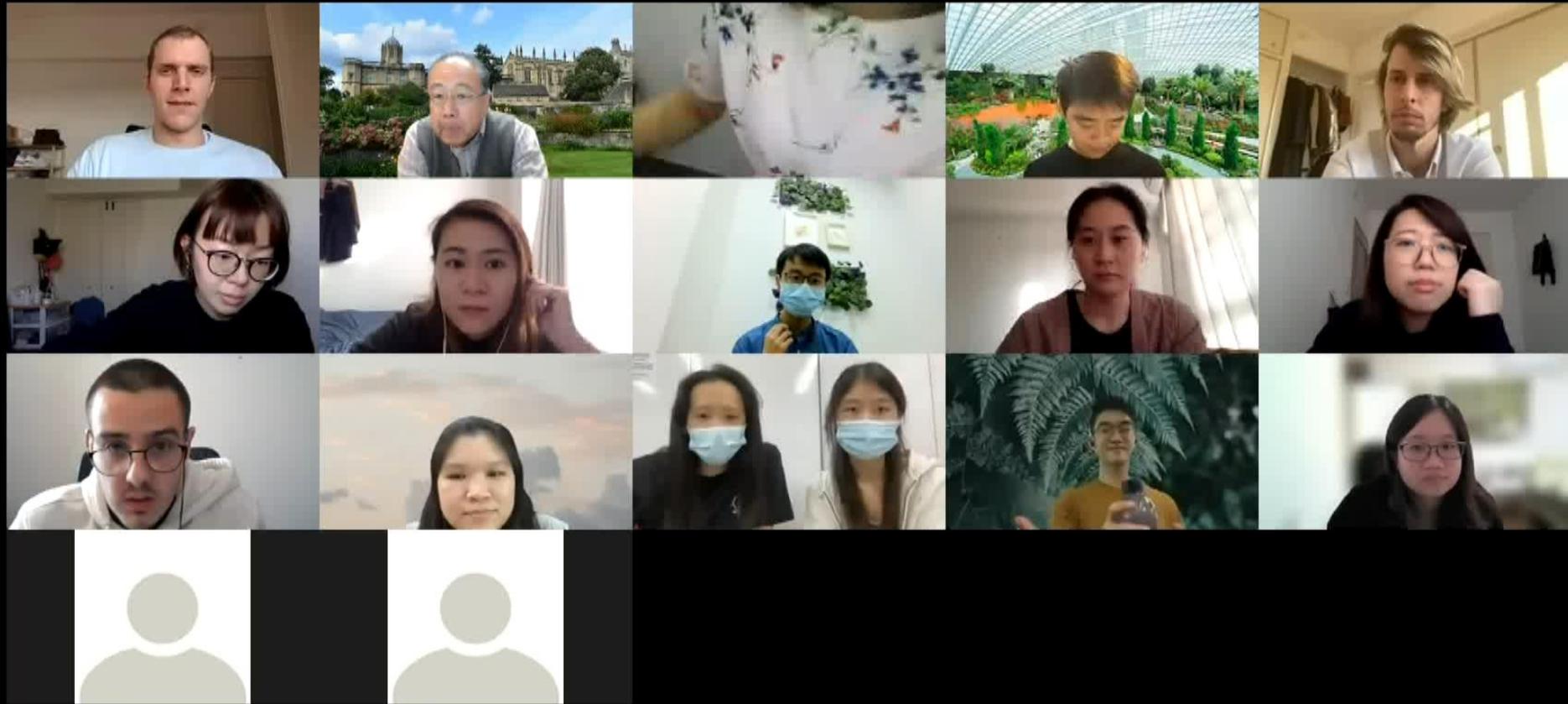
小張 敬之 · 2021年12月16日 · 11人が既読

概要 コメント あなたの返信 同...

最初のコメントを投稿しよう。

コメント...

Breakout session: Presentation/Interaction



What is a Digital Storytelling?

PPT slides → MP4 Movie

DS is a process blending media to enrich and enhance the written or spoken word.

DS merges the traditional art of storytelling with the power of new technologies.

Students can demonstrate creative thinking, construct knowledge, and develop innovative products.

2021 木4 後期 English Gate 8 S-1

The grid contains 48 video thumbnails arranged in 6 rows and 8 columns. The thumbnails are as follows:

- Row 1:
 - Thumbnail 1: "Important things I learned in the second semester"
 - Thumbnail 2: Video call grid with a 'y' logo
 - Thumbnail 3: Document titled "References"
 - Thumbnail 4: Video call grid
 - Thumbnail 5: "Differences in Values" slide
 - Thumbnail 6: Video call grid
- Row 2:
 - Thumbnail 1: "World Problems" slide
 - Thumbnail 2: Document titled "References"
 - Thumbnail 3: Document titled "References"
 - Thumbnail 4: Document titled "References"
 - Thumbnail 5: "Privacy" slide
 - Thumbnail 6: Document titled "References"
- Row 3:
 - Thumbnail 1: "Issues related to energy" slide
 - Thumbnail 2: "Loss of tropical forests" slide
 - Thumbnail 3: "References" slide
 - Thumbnail 4: Video of a man speaking
 - Thumbnail 5: "Industry" slide
 - Thumbnail 6: "Production of Invasive Species" slide
- Row 4:
 - Thumbnail 1: Video call grid
 - Thumbnail 2: "Solar Energy" slide
 - Thumbnail 3: Document titled "References"
 - Thumbnail 4: "Development" slide
 - Thumbnail 5: "Loss of tropical forests" slide
 - Thumbnail 6: Document titled "References"
- Row 5:
 - Thumbnail 1: Document titled "References"
 - Thumbnail 2: "The impact of AI and Big data on society" slide
 - Thumbnail 3: "Inclusion" slide
 - Thumbnail 4: "The important changes" slide
 - Thumbnail 5: "Summary" slide
 - Thumbnail 6: Document titled "References"
- Row 6:
 - Thumbnail 1: Document titled "References"
 - Thumbnail 2: "The impact of AI and Big data on society" slide
 - Thumbnail 3: "Inclusion" slide
 - Thumbnail 4: "The important changes" slide
 - Thumbnail 5: "Summary" slide
 - Thumbnail 6: "Thank you for listening!" slide



Assessment (Portfolio)

OPIc Speaking Proficiency Test (Pre vs Post)

Assess presentation with PeerEval

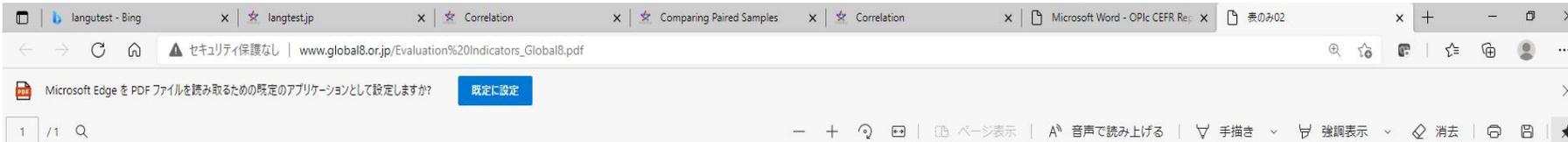
MPEG-4 movie product (PowerPoint slides + Voice)

Digital storytelling

Engagement by Observation (Filming each lesson)

Pre 6.7 (B1.1) vs Post 7.4 (B1.2)

(OPIc speaking test) n=17 CEFR Level



OPICを開発しているACTFL^{※1}による学校履修目安とUS政府が定める職務基準の関係とFSI^{※2}レポートによる学習所要目安時間

レベル名称	CEFR ^{※3}	数値 適用値	言語能力	米国での職務ガイド	修得対象	FSI ^{※2} 到達ガイド
Superior	C2	12	Discuss topics extensively, support opinions, hypothesize. Deal with linguistically unfamiliar situation	University Language Professor, Financial Services Marketing Consultant, Foreign Area Officer, Lawyer, Judge, Court Interpreter	6 Upper Division + 6 Lower Division	1320h
Advanced High	C1	11	Narrate and describe in past, present and future and deal effectively with an unanticipated complication	Physician, Human Resources Communications Consultant, Financial Services Senior Consultant, Quality Assurance Specialist, Marketing Manager, Financial Advisor, Broker, Military Linguist, Translation Officer	6 Upper Division + 6 Lower Division	
Advanced Mid	B2.2	10		Banking and Investment Services Customer Service Representative, Fraud Specialist, Account Executive, Medical Interpreter, Patient Advocate, Court Stenographer, Court Interpreter, Human Resources Benefits Specialist, Technical Services Agent, Collection Representative, Estimating Coordinator	6 Lower Division + 3 Upper Division	
Advanced Low	B2.1	9		K12 Language Teacher, Nurse, Social Worker, Claims Processor, Police Officer, Maintenance Administrator, Billing Clerk, Legal Secretary, Legal Receptionist, 911 Dispatcher, Consumer Products Customer Services Representative, Retail Services Personnel	9 Lower Division	
Intermediate High	B1.2	8		Create with language, initiate, maintain and bring to a close	Policeman, Fireman, Utilities Installer, Auto Inspector, Aviation Personnel, Missionary, Tour Guide	9 Lower Division
Intermediate Mid	B1.1	6(5.6) ^{※4}	simple conversations by asking and responding to simple questions	Cashier, Sales Clerk (highlight predictable contexts), Receptionist	6 Lower Division + 3 Upper Division	
Intermediate Low	A2	4		Housekeeping Staff	3 Lower Division	
Novice High	A1	3	Communicate minimally with formulaic and rote utterances, lists and phrases	平成26年度文部科学省英語力調査 (高校3年生) 平均値は1.94レベル http://www.mext.go.jp/component/a_menu/education/detail/_icsFiles/afidfile/2015/07/03/1358071_01.pdf	3 Lower Division	
Novice Mid	0	2				
Novice Low	0	1				

B1.2=7.4 (SD.1.97)

B1.1=6.7 (SD.1.36)

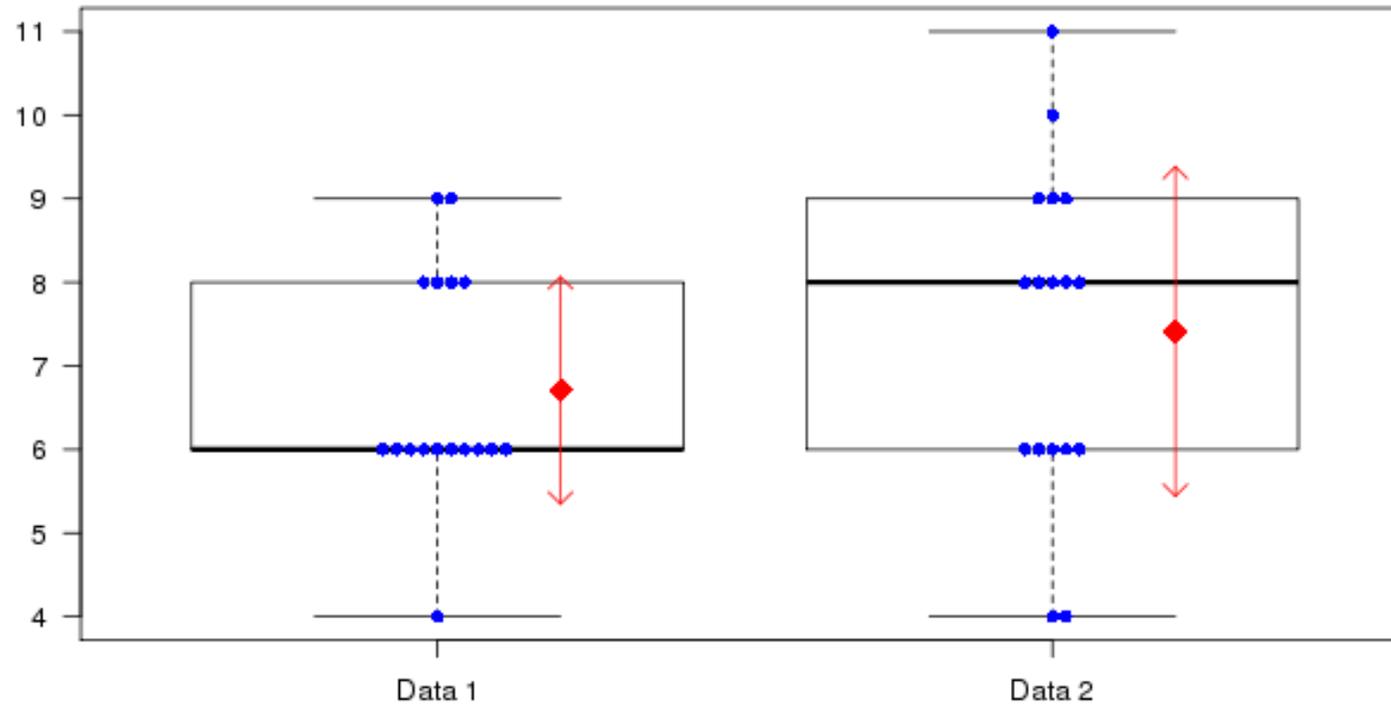
※1 American Council on the Teaching of Foreign Languages.
 ※2 Foreign Service Institute
 ※3 CEFR検証 https://en.wikipedia.org/wiki/Common_European_Framework_of_Reference_for_Languages
 (掲載元データ出展 <http://global8.or.jp/OPIc%20CEFR%20Study%20Final%20Report%20pdf.pdf>)
 ※4 数値適用値の考え方と移行措置 <http://global8.or.jp/posts/news56.html>

Google Chrome

LIVE: Blue Origin launches first human spaceflight with Jeff Bezos — CNBC Television is live
www.youtube.com

閉じる

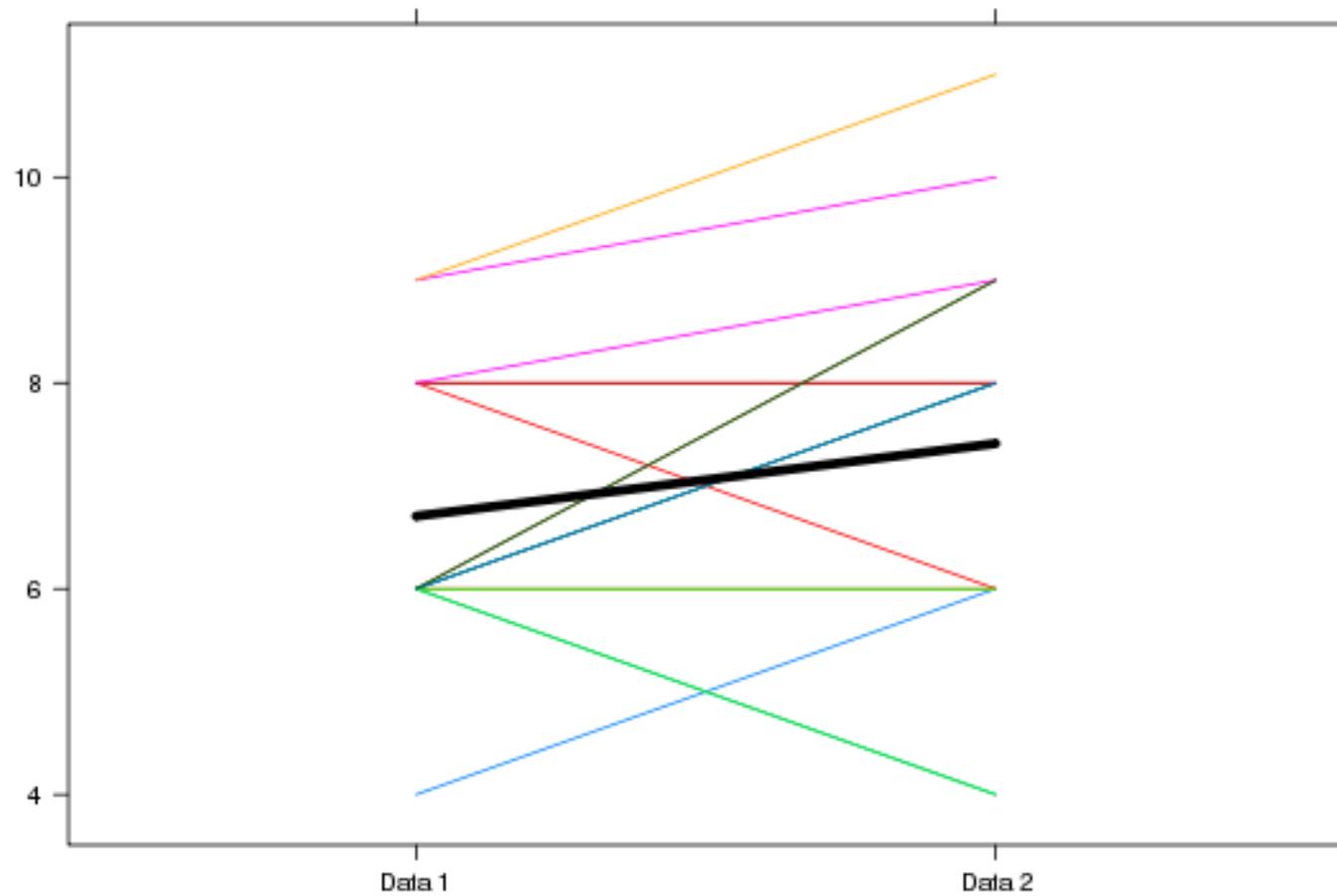
Box plots with individual data points



Means and ± 1 SDs are displayed in red.

Changes of the individual data

Only 2 students less progressed, 15 students made progress.





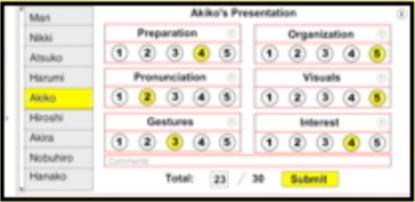
Assessment with a smart phone during a presentation.

PeerEval Assessment

The screenshot shows a web browser window with two tabs: 'PeerEval Teacher Login' and 'Multi-page template'. The address bar displays the URL 'https://peereval.mobi/quizApp/index.html'. The page content is titled 'obari's presentation' and features six assessment categories, each with a 5-point rating scale:

- Structure / Organization
- Prosody / Pronunciation
- Delivery / Speed / Volume
- Visual Aids / Slide Design
- Coherence / Logic
- Enthusiasm / Content

At the bottom of the assessment area, there is a 'Comment' text box, a 'Submit' button, and a score indicator showing 'Total: 0 / 30'. The Windows taskbar at the bottom includes a search bar with the text 'ここに入力して検索' and various application icons.



PeerEval

Technology for Better and More Frequent Presentations

<http://peereval.mobi>

Making peer evaluations accurate and fun!

Total Score

Name	Coherence/logic	Delivery/speed/volume	Enthusiasm/content	Prosody/pronunciation	Structure / organization	Visual aids /Slide design	Average
	4.8	4.6	5.0	4.6	4.8	5.0	4.8
	4.6	4.8	4.4	4.6	4.4	4.4	4.5
	4.2	3.8	4.0	3.5	3.8	4.3	3.9
	4.7	4.0	4.3	3.5	4.3	4.2	4.2
	4.9	4.9	4.9	5.0	4.3	4.7	4.8
	4.6	4.3	4.6	4.1	4.6	4.6	4.5
	5.0	3.8	4.4	3.8	4.6	3.8	4.2
	4.6	4.4	4.4	4.4	4.4	5.0	4.5
	4.7	4.3	4.5	4.2	4.4	4.5	4.4



Comments about the use of PeerEval

➤ It is easy to **reflect** on presentation to improve weakness and quickly to get the mean score among evaluators.

➤ **Quick feedback**

Questionnaire

5: I totally agree

4: I somewhat agree

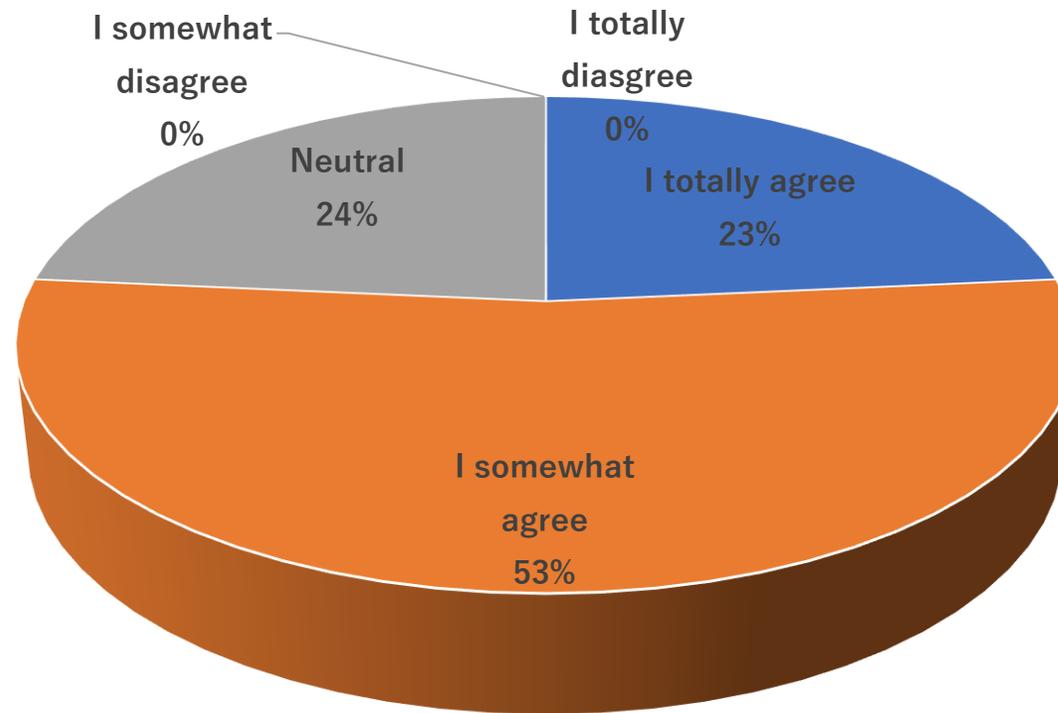
3: Neutral

2: I somewhat disagree

1: I totally disagree

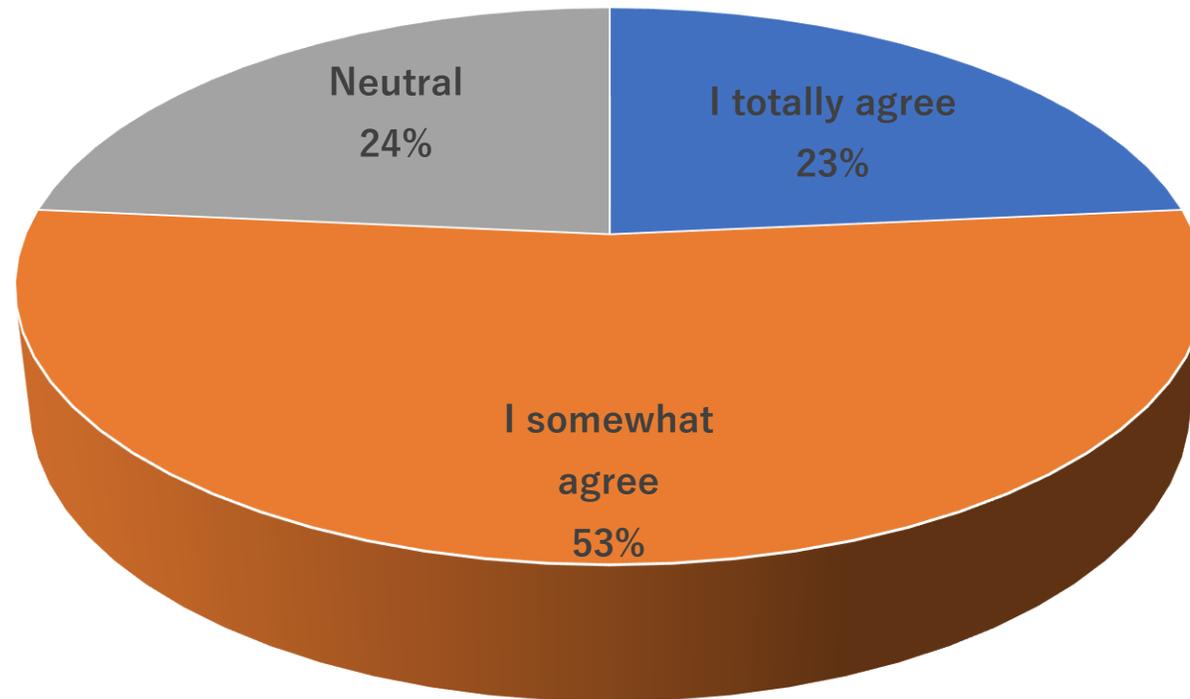
Do you think you have improved your English proficiency?

76 % agreed.



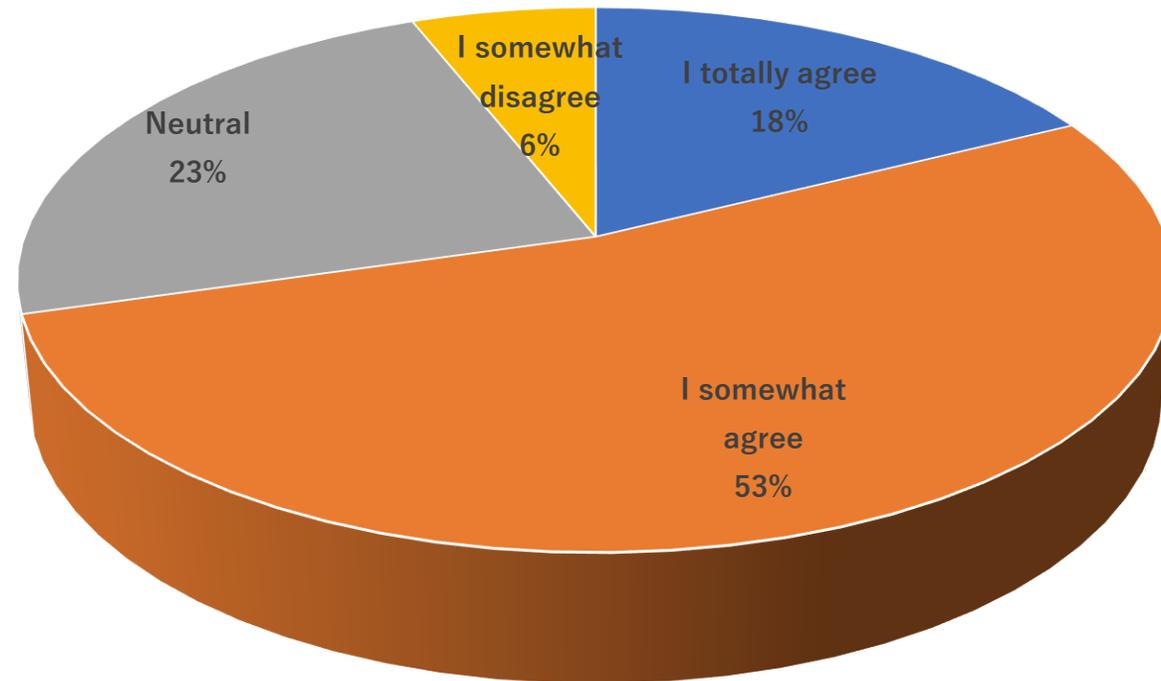
■ I totally agree ■ I somewhat agree ■ Neutral
■ I somewhat disagree ■ I totally disagree

Do you think OPIc speaking test would be useful to assess your oral English proficiency? **76% agreed.**



■ I totally agree ■ I somewhat agree ■ Neutral

Did you acquire the higher-order thinking skills? (Analysis, Evaluation, Creation) **71% agreed.**



■ I totally agree ■ I somewhat agree ■ Neutral ■ I somewhat disagree

21st Century Skills: 3Rs and 7Cs

2021.1
N=17
ZOOM

3Rs: Reading, Writing, Arithmetic

7Cs:

- **Critical Thinking & Problem-Solving**
- **Creativity & Innovation**
- **Collaboration, Teamwork & Leadership**
- Cross-cultural understanding
- Communication & Media Literacy
- **Computing & ITC Literacy**
- **Career & Learning Self-reliance**

—Bernard Trilling and Charles Fadel

21st Century Skills

How much students agreed

70%

71%

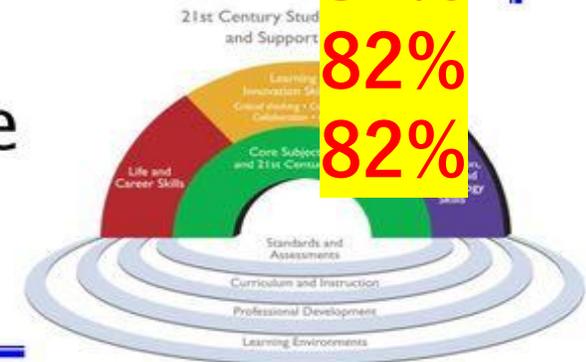
77%

82%

82%

82%

82%



21st Century Skills: 3Rs and 7Cs

2022
N=145
Hybrid

3Rs: Reading, Writing, Arithmetic

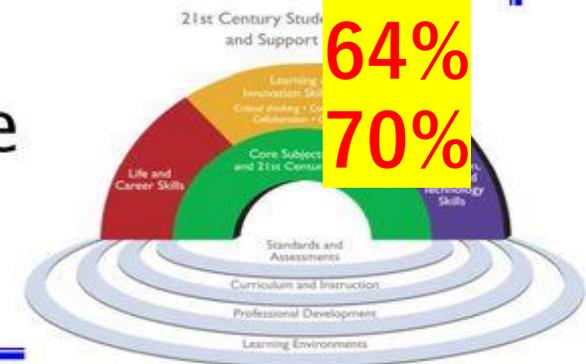
7Cs:

- **Critical Thinking & Problem-Solving** 81%
- **Creativity & Innovation** 68%
- **Collaboration, Teamwork & Leadership** 80%
- **Cross-cultural understanding** 88%
- **Communication & Media Literacy** 73%
- **Computing & ITC Literacy** 64%
- **Career & Learning Self-reliance** 70%

How much students agreed

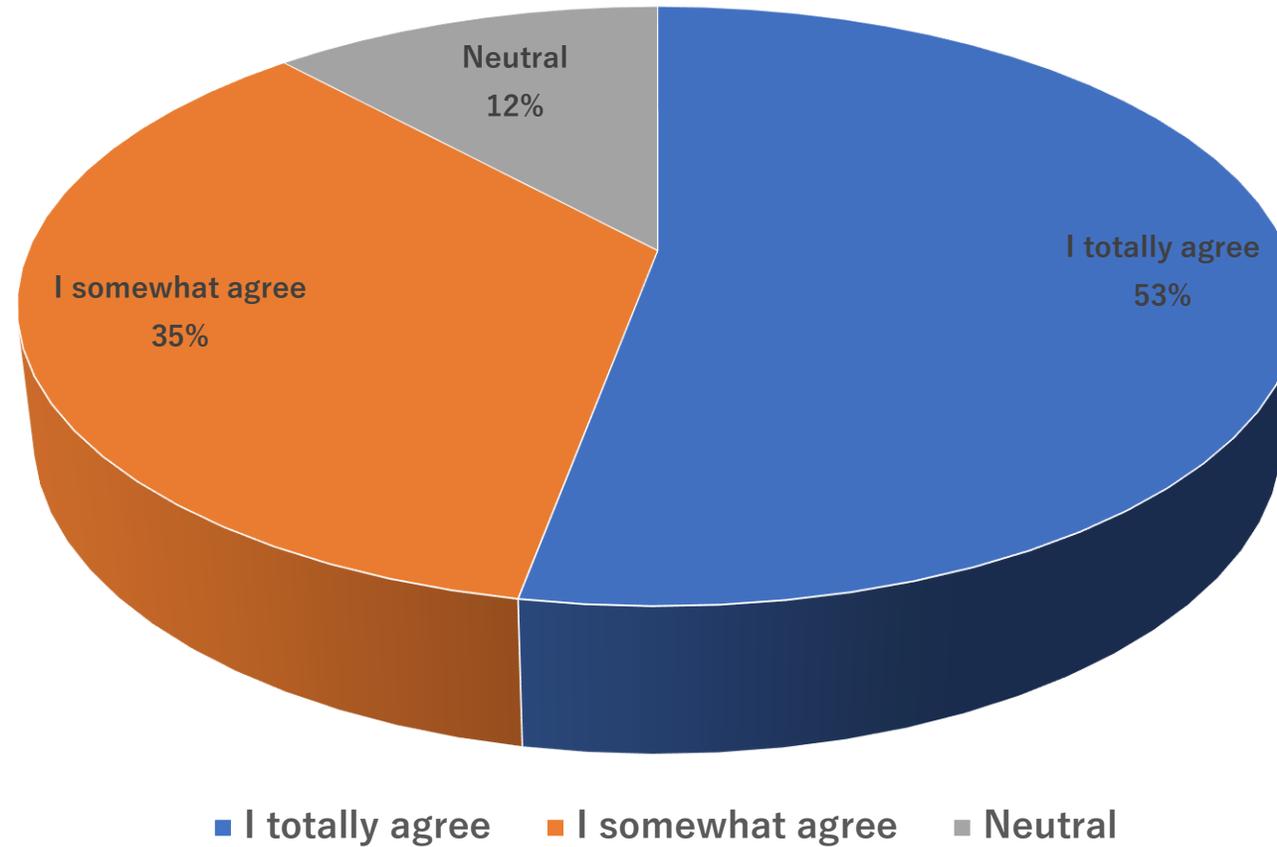
—Bernard Trilling and Charles Fadel

21st Century Skills

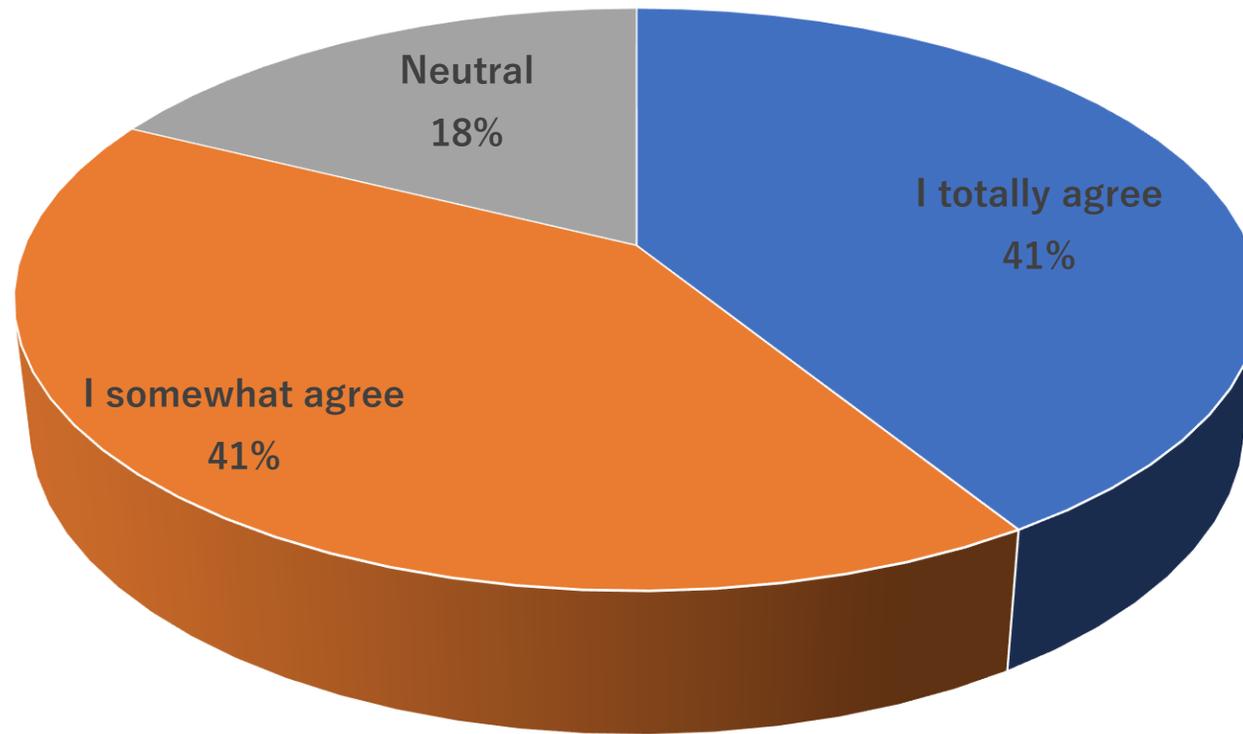


Did the interaction with CCCs help you to improve your English?

88 % agreed.



Did the interaction with CCC broaden your worldviews and make you more interested in other cultures? **82% agreed.** (meet with CCCs every other week)



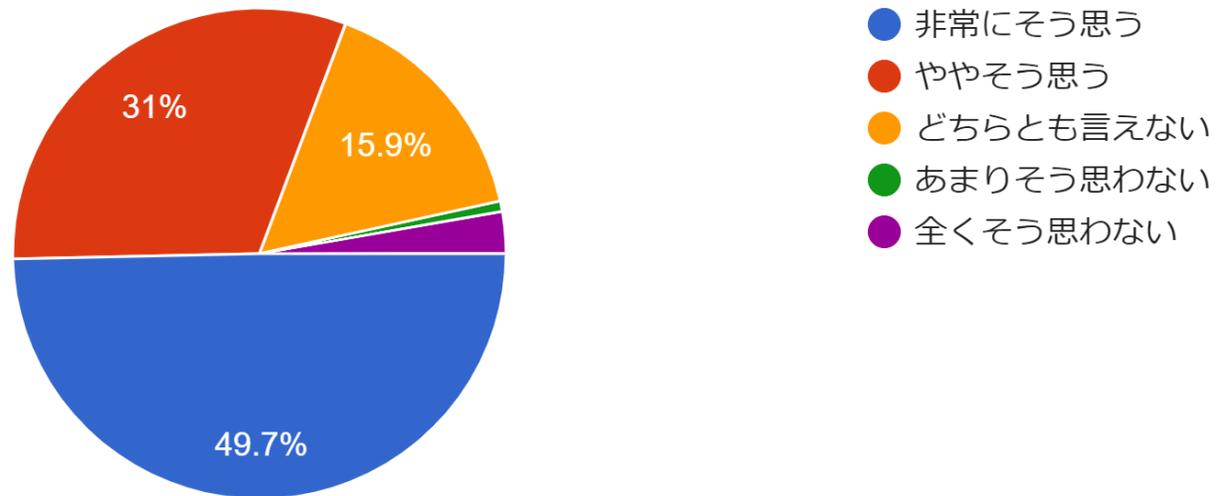
■ I totally agree ■ I somewhat agree ■ Neutral

80.7% agreed. (2022. July n=145, Waseda)

41. 外国からの若者(CCC members)

と交流をしました。交流は、自分の英語力を向上させるのに役立ちましたか。

145 件の回答

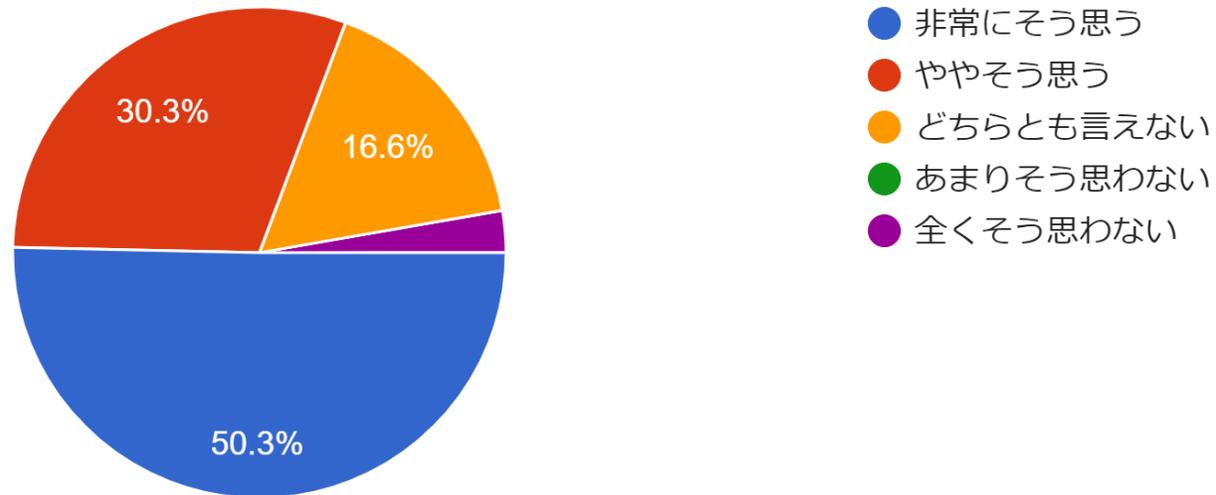


80.6% agreed.

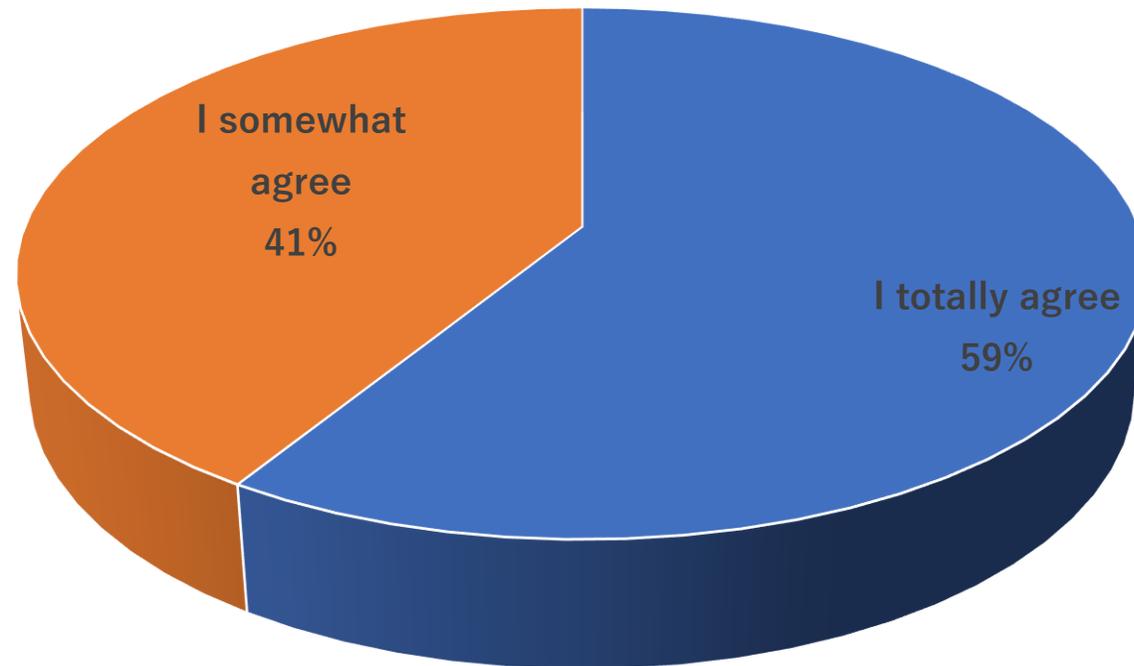
42. 外国からの若者(CCC members)

と交流を多くしました。交流を通して、自分の世...が広くなり、より異文化に興味を持ちましたか。

145 件の回答



Did the interaction at breakout rooms help you improve your English proficiency? **100% agreed.**



■ I totally agree ■ I somewhat agree

Comment by Student

"I feel that interacting with CCC(Campus Crusade for Christ) members was very meaningful in learning their worldviews. I felt that it was essential to listen to many stories from people of different backgrounds to understand different cultures. "

Comment by CCC member

"In April, the students did not speak much English, and their presentations were not good. However, after meeting and conversing with the students many times, they gained confidence, and by the last class, their presentations were quite good, and we could see significant progress from the students."

Feedback from students:

この授業は私が今まで受けてきた英語学習の中で、最も有意義なものだと感じた。というのも、私が受けてきた多くの英語の授業は、ほとんどが文章を読んだり、解釈するだけなのに対し、この授業はインプットよりも**アウトプットメインの授業**だったからだ。私は英語は読めるが話せないという悩みを抱えていた。英語を話せるようになるには、自律的に英語を話さないといけないということが、この授業を通して改めてわかった。特に学んだことは**英語圏の宗教や考え方で、ネイティブとの交流やゲストスピーカーの講演が非常に為になった。**

Research Questions:

- How does VR affect language learning and the higher-order thinking skills?
- How does interaction with young CCC members affect language learning and worldviews?



Summary of
two studies

1) Interaction in person

2) Interaction with VR

3) Interaction with ZOOM

4) Video on demand

Limitations of Research

- 1) Difficult to control the experiments over 8 months**
- 2) No obligation to take part in all VR lessons**
- 3) Lack of data between pre-vs. post**
- 4) Number of participants**
- 5) Difference in instructional designs**

John Dewey

(Experiential Learning)

John Dewey once said, “If we teach today as we taught yesterday , we rob our children of tomorrow.” The technology we have at our fingertips can help us to become those memorable teachers of tomorrow.

Implications for Future Research

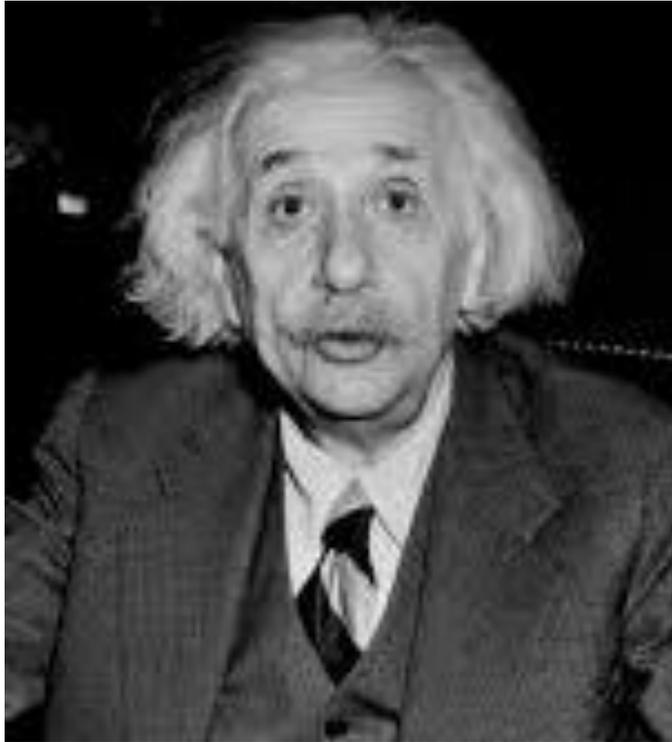
- 1) Does **Vygotsky's sociocultural theory** work even in digital age?
- 2) Face to face, there was a synchronization phenomenon in the frequency of brain responses. However, online, there was **no such synchronization** at all. Online communication can convey information, but **not emotional empathy**. How to deal with this ?
- 3) How to find out the good research methods to **assess the human cognition?**

Summary during COVID-19 Education for the 21st century



- Interaction with VR and CCCs
- Higher Order Thinking Skills
- Cross-cultural Sensitivity
- Autonomous Learners

Conclusion (Einstein)



“Education is what remains after you have forgotten what you have learned in school.”

Final comments

➤ Dominus illuminatio mea.

The Lord is my light.

(Psalms 27:1) University of Oxford

➤ The fear of the Lord is the beginning of knowledge. (Proverbs 1:7)



Acknowledgements:

This work was supported by JSPS KAKENHI, Grant in Aid for Scientific Research (C), 2019-2023. Grant Number: 19K00798

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Thank you for listening!

Please contact me for more information:

obari119@gmail.com

Blessings to you all !

How can we use technology to serve humanity (and education) best?
ICT Education in the Post-Corona Era

Not "state and capitalism-centered" but "life and human rights-centered" for a new society. "sharing, caring and learning community".

We share resources and capital, care for each other without leaving anyone behind, and solve various problems.

The "renovation of learning" that we seek is also to nurture children who will promote the construction of this "new society".

1) How does technology impact the cognitive abilities of students/ children?

- a. Higher-order thinking skills through interaction with young people from overseas and listening to the lectures by Foreign professors impacted the cognitive abilities.
- b. In the realm of cognitive science and brain science (for example, I think that the influence of social networking sites has led to **the spread of thinking and cognition that makes immediate and reflexive value judgments**).
- c. From an educational perspective in terms of its impact on the "development of cognitive abilities," in **the direction of "a shift from memorization to utilization/inquiry-based thinking and cognition"** which will lead students to **higher order-thinking skills**.
- d. ICT terminals have become **part of the infrastructure or teaching tools**.
- e. With the help of ICT, the traditional knowledge aspect (memorization) is being developed, while **the cognitive ability to tackle some kind of "question" to pursue curiosity or solve a real problem in society is required**.

2) Over reliance on technology/ what do you think technology will be like in the future?

- a. Science and technology will continue to advance further, and **technology has extended the reality of human augmentation to extend human capabilities**. We may be living in the age of **human augmentation**. In the field of education, **AI, VR/AR/XR**, etc. are being used for language learning. Especially **Big data is used to analyze the history of learners and apply it to individualized learning. Learning Analytics will be more useful. AI/BIG data will replace some teachers in the future.**
- b. AI will reach Singularity by 2045. AI could do almost the same kind of tasks just like humans. AI would be able to think and feel like humans.
- c. Some scientist (Kurzweil) predicted that AI is expected to reach Singularity by 2045. Functionally, it may be able to perform tasks similar to humans, but the major difference between humans and AI is a sort of metaphysical thinking. Humans consist of body, soul, spirit, and mind. What is the difference between the purpose of human life and the existence of AI? What makes a human being a person? When I attended the DCM Conference at Oxford University, the keynote speaker, a prominent Computer Scientist and creationist, said, “Then the LORD God formed a man^[a] from the dust of the ground and breathed into his nostrils the breath of life, and the man became a living being. Can God breathe on an AI and it becomes a person? (Genesis 2:7) This is also a major question of the worldviews. Where do we come from? what am I here for? what is the purpose of life or AI? Humans can not create a being.

3) What are the greatest challenges or dangers of the (over)use of technology in the future?

The most obvious ones that come to mind are health issues, changes in interpersonal relationships, and copyright and security issues. For example, in the introduction of digital textbooks, there are those who argue for the advantages of paper textbooks (teaching materials) due to health concerns. Personally, I don't think that these problems and concerns outweigh the benefits of ICT, but I do think that these negative aspects should be taken into consideration. However, I do think that we need to take these negative aspects into consideration.

4) What will happen to our brain activities?

--The Corona Disaster has increased online meetings and other non-face-to-face communication. Does this affect brain activity? By Professor Kawashima (2022, January 17, Asahi Newspaper)

Using a brain activity sensor developed by NeU, Tohoku University and Hitachi High-Technologies

When we are communicating well with others, the fluctuations in our brain activity are synchronized. It is a synchronization of brain activity.

Face to face, there was a synchronization phenomenon in the frequency of brain responses. However, online, there was no such synchronization at all.

The online communication tools that are heavily used in the Corona Disaster are not communicating for the brain.

Not being in sync means that you are not in a state of empathy, that you are not in a heart to heart connection with the other person.

In fact, communication is not deepening and we may become isolated.

Even though information can be communicated, -- In other words, online communication can convey information, but not emotional empathy.

The more the switching increases with the use of SNS, the lower people's ability to pay attention.

5) Important questions?

What is the difference between reality and Virtual/XR/MR?

AI will advance to get closer to reality?

Even college students were already showing signs of brain aging. These people were observed to have various mental and psychological abnormalities, such as low self-esteem, high anxiety and depression, and reduced empathy and emotional regulation skills.

We need to return to a society where normal interpersonal communication is possible, not a day, not a moment too soon.

Our current conclusion is that our brains feel as if we are watching a picture-story show, but the voices are not in sync with each other.

The new Corona has caused the children's self-esteem and self-esteem to drop dramatically.

The world will become a very difficult place in the future when children who are poor communicators become the center of society.

6) How can we use technology to serve humanity (and education) best? ICT Education in the Post-Corona Era

With the new Corona, those who seek a society that is not "state and capitalism-centered" but "life and human rights-centered" have begun the search for a new society. In other words, we call that society "sharing, caring and learning community". A society in which we share resources and capital, care for each other without leaving anyone behind, and solve various problems. Without the construction of this society, we will not be able to stop the runaway growth of capital and technology. There will be no future for human beings. The "renovation of learning" that we seek is also to nurture children who will promote the construction of this "new society".

Aim for a new society:

It is necessary to aim for a new society that is "life and human rights-centered" instead of "state and capital-centered."

Future Education

- 1) A good use for computers in education is to be one of the stationery like pencils and erasers.**
- 2) Raise awareness and discuss the future of ICT education and schools in the new Corona and post-Corona era, which will develop under the global 4th industrial revolution.**
- 3) Aim for a new society that is "life and human rights-centered" instead of "state and capital-centered."**

*Dominus
illuminatio
mea*

