WRITING IN THE DIGITAL AGE: TECHNOLOGY, COLLABORATION, AND MULTIMODALITY

Mimi Li, Ph.D.

Texas A&M University-Commerce

About Me

- English lecturer, Sichuan Normal University, 2002-2007
- Research Assistant, Learning Research and Development Center, University of Pittsburgh, 2008-2009 (with Dr. Charles Perfetti)

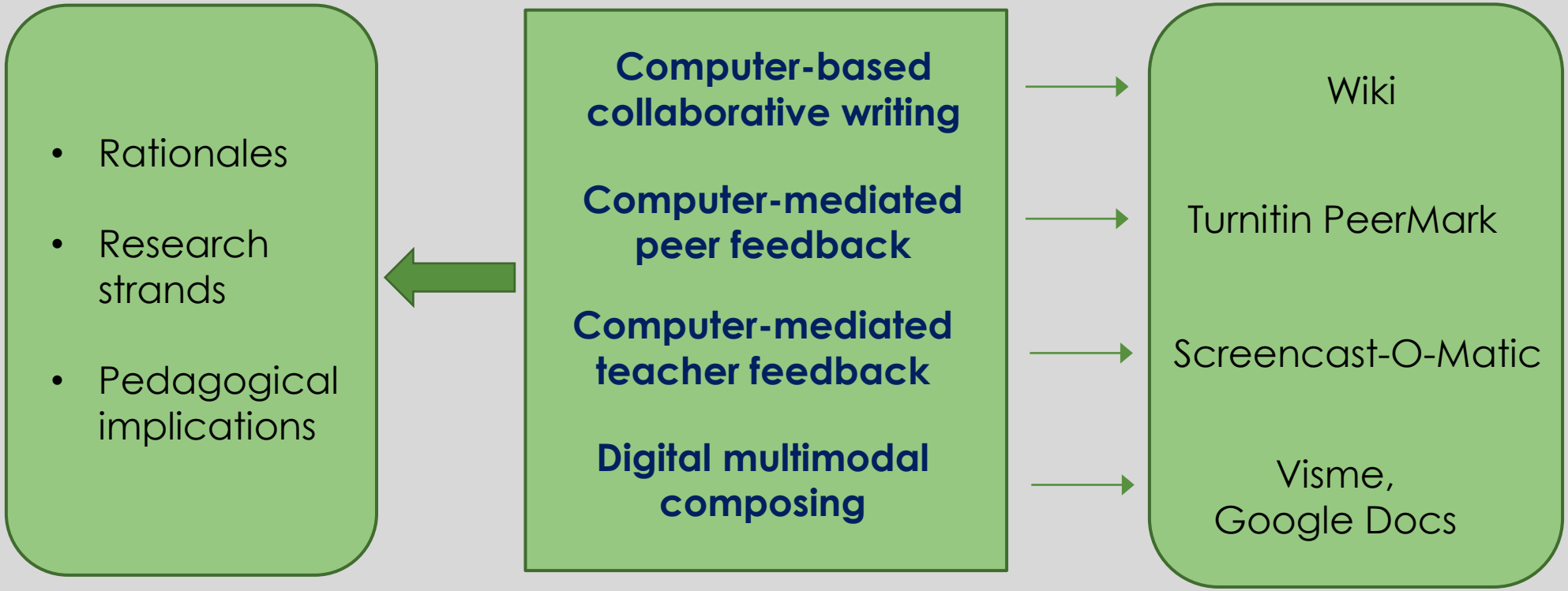
About Me

- Ph.D. study, Second Language Acquisition/Instructional Technology, University of South Florida (with Drs. Wei Zhu and Deoksoon Kim), 2009-2014
- Dissertation: small group interactions in wiki-based collaborative writing in the EAP context
- Having taught courses in linguistics, applied linguistics, TESOL, and first-year-writing at Marshall University, Georgia Southern University, and Texas A&M University-Commerce.

Research- L2 Writing and Technology

- New technologies have revolutionized the ways we communicate and construct knowledge;
- Technologies have reshaped the traditional notions of writing and literacy;
- There are new challenges and opportunities for L2 teachers and students.
- Research on L2 writing and technology is significant.

Overview


• Rationales
• Research strands
• Pedagogical implications
Computer-based collaborative writing
Computer-mediated peer feedback
Computer-mediated teacher feedback
Digital multimodal composing
Wiki
Turnitin PeerMark
Screencast-O-Matic
Visme, Google Docs

Computer-based collaborative writing

- Rationales

✓ Facilitates co-construction of L2 lexical & grammatical knowledge (Fernández Dobao, 2012)

✓ Promotes L2 writing development (Shehadeh, 2011)

✓ CBCW offers learners optimal opportunities to communicate and jointly write beyond time constraints of onsite classrooms.

✓ CMCW over a period of time well represents an authentic team writing project conducted in the real-life professional career (Li, 2018; Storch, 2013).

- Research strands

❑ Interaction/writing process: Chats/online discussion; Languaging (LRE); Revision behaviors; Patterns of interaction

❑ Writing product/outcome: Features/qualities of written products (e.g., accuracy, complexity, fluency, coherence); comparison (online CW vs individual writing; online CW vs. f2f CW)

❑ Effect on individual writing development

❑ Factors influencing online CW

❑ L2 students' perceptions

Collaborative wiki writing
(Li & Zhu, 2017)

- Context: an EAP course at a southeastern research university in the US.
- Research questions:

What are the qualities of the wiki texts that small groups produced in the collaborative wiki writing task environment?

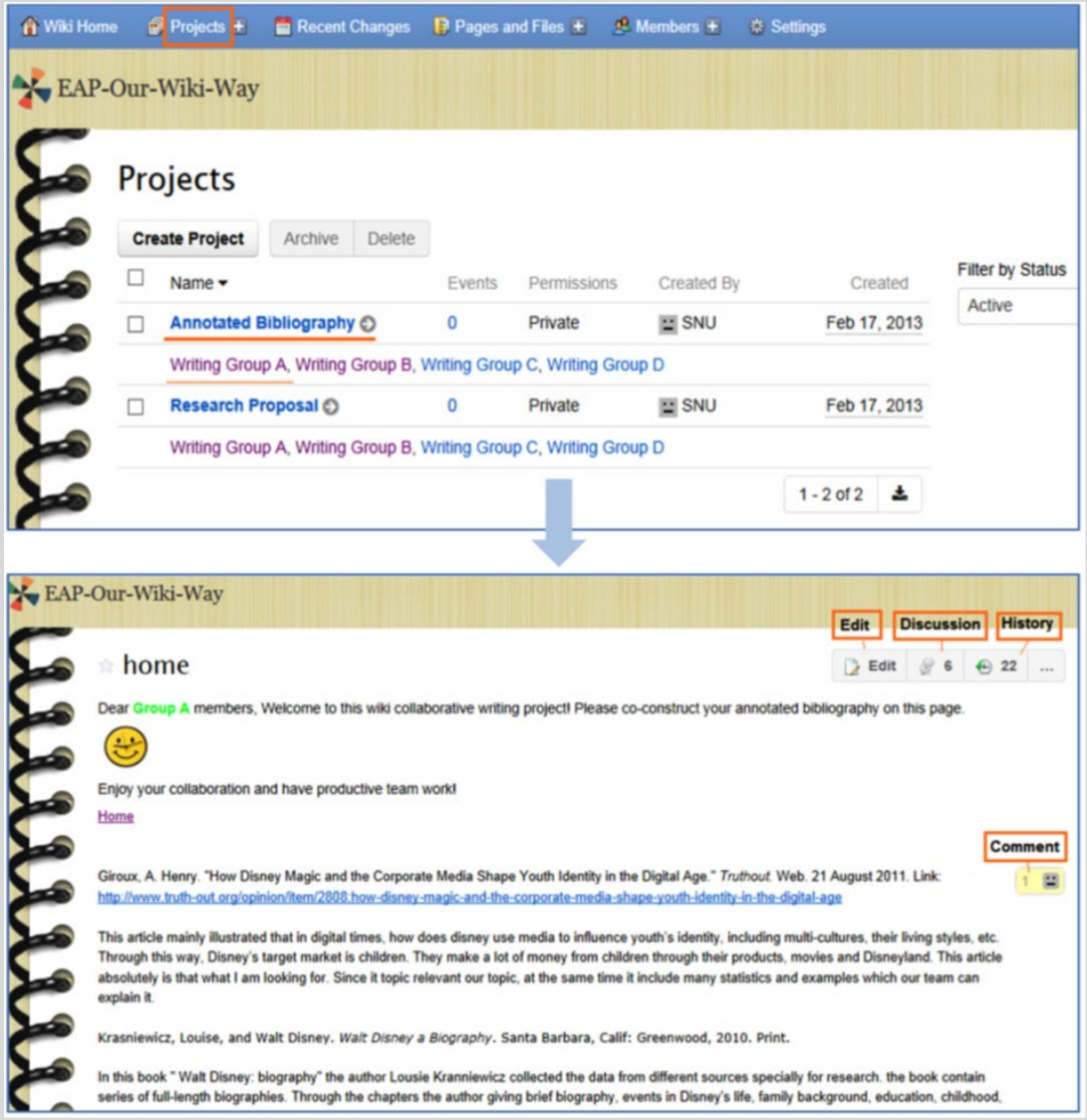
In what ways, if any, do peer interactions link to the qualities of wiki writing products?

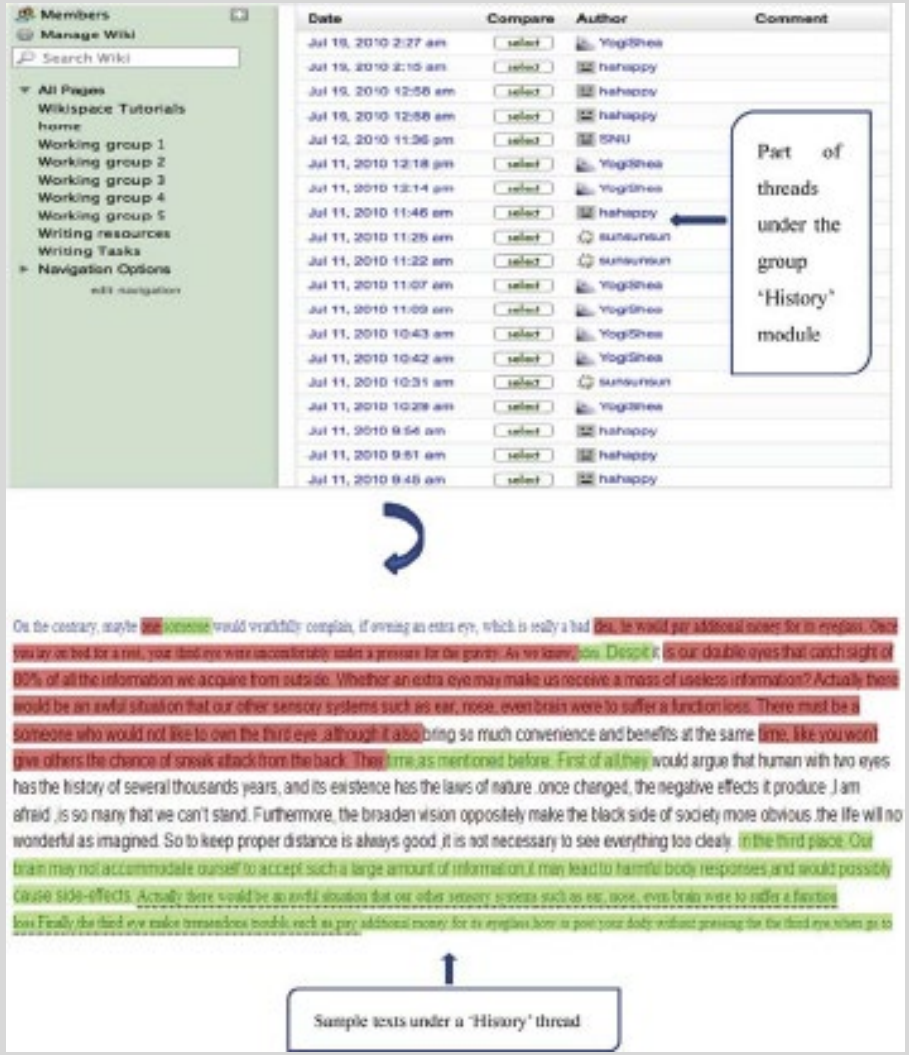
- Data:

Four small groups' wiki writing products in relation to Task 1 research proposal

Analysis: Overall rhetorical structure (subheadings indicating rhetorical elements), coherence(Wikborg's *coherence breaks)*, and accuracy (errors/words; analysis of syntactical, morphological, and spelling errors).

Small group writing via Wikispaces





Collaborative wiki writing

- Results

✓ Rhetorical structure

Group 1: a complete rhetorical structure
Group 2: covering most of the required components
Group 3: not aligned with the assignment requirement (lack of timeline and resources)
Group 4: not congruent with the assignment requirement (lack of significance of the study)

Task-related skills: 13.5, 11, 9.5, and 10.5

✓ Coherence breaks

	Group 1	Group 2	Group 3	Group 4
Misleading disposition	0	1	0	1
Misleading heading	0	0	1	3
Irrelevance	0	1	4	1
Unfocused paragraph	0	0	1	1
Lack of transition	1	2	3	2
Total	1	4	9	8

✓ Type of error	Group 1	Group 2	Group 3	Group 4
Syntactic error	4	10	7	3
Morphological error	23	30	17	31
Spelling error	1	4	3	1
Total words	759	941	1092	692
Distribution of errors				
(Total number of error/total words)	3.69%	4.68%	2.47%	5.06%

Collaborative wiki writing

- Results

✓ Group 1: Collective pattern ⟷ overall high writing qualities (particularly in rhetorical structure and coherence)

Group 2: Expert/novice pattern ⟷ overall good writing qualities (but relatively low accuracy)

Group 3: Dominant/defensive pattern ⟷ inadequate rhetorical structure and multiple coherence breaks.

Group 4: Cooperation-in-parallel pattern ⟷ low quality (rhetorical structure, coherence, accuracy)

- Implications

✓ Future research: Connection between peer interactions and writing products on other writing tasks; multiple factors mediating the wiki performance

✓ Pedagogy:

❑ Group members' mutual engagement during writing processes accounting for a certain portion of the final grade.

❑ Well-structured training

❑ Grading rubrics for self-/peer-evaluation

Computer-mediated peer response

- Rationales

✓ Benefits of peer response:

A sense of audience; learner autonomy; collaborative learning; language development (Min, 2006; Tsui & Ng, 2000)

✓ Advantages of CMPR:

Less threatening environment, fostering more participation (Liu & Sadler, 2003)

(With anonymity), encouraging honest and critical comments from reviewers and writers' objective assessment of reviewers' feedback (Chang, 2016; Guardado & Shi, 2007)

Computer-mediated peer response

- Research Strands

❑ Different modes of peer feedback

1. Electronic/online peer feedback vs. F2F peer feedback
2. Synchronous CMC peer feedback vs. asynchronous CMC peer feedback

❑ Impact of computer-mediated peer response on students' writing

1. Impact on revisions
2. Impact on writing development

❑ Peer interaction and group dynamics

❑ Students' perceptions

❑ Peer feedback training

❑ Factors influencing computer-mediated peer response

Peer response via Turnitin PeerMark
(Li & Li, 2017)

- Context: 26 students enrolled in two sections of English Composition I
- Research Questions:

✓ What different areas do the students comment on when they provide Turnitin-based peer feedback in the mainstream class and the ESL class?

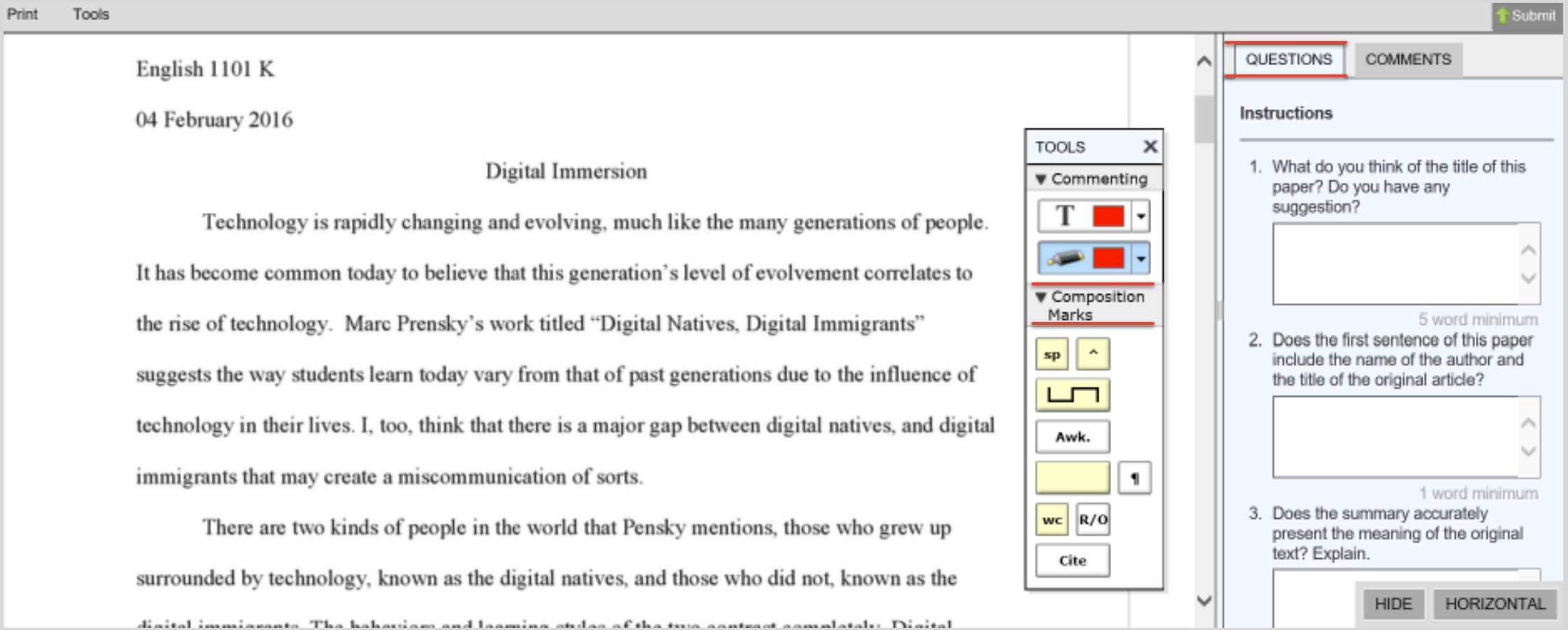
✓ How do mainstream students (Class 1) and ESL students (Class 2) perceive the use of Turnitin for peer review?

- Data:

✓ Students' writing drafts and peer feedback on summary & response paper and argumentative paper (Analysis: revision-oriented comments & non revision-oriented comments; global issues & local issues);

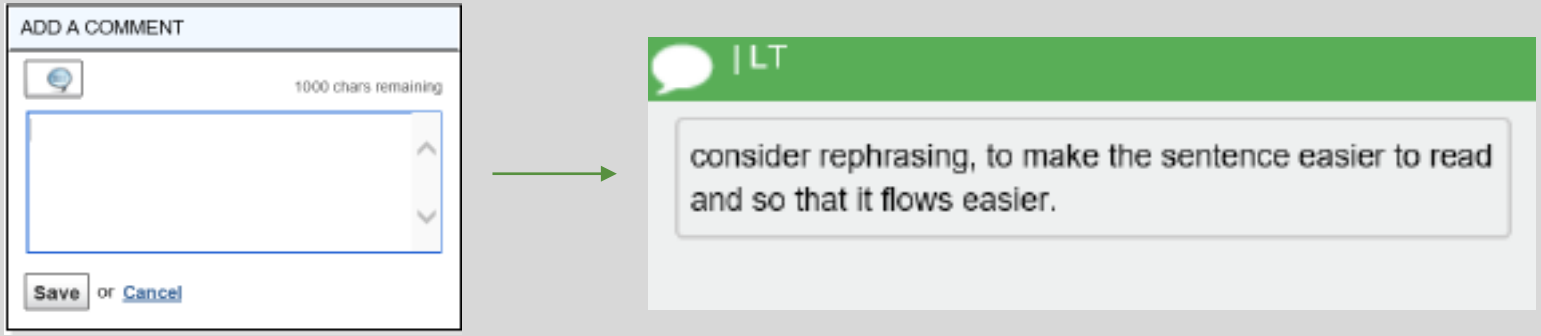
✓ Questionnaire survey (5 point Likert-scale + short-answer questions) and follow-up interviews (content analysis)

Turnitin PeerMark

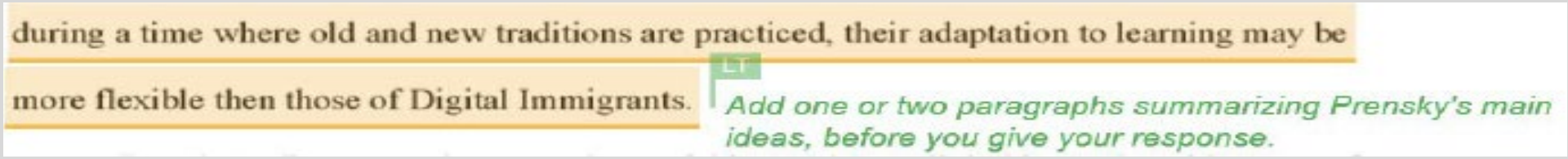


Turnitin PeerMark

Comment icon and bubble



Inline comments overlaid on paper



Turnitin PeerMark Feedback

- Results

✓ **Comments:** Task 1: revision-oriented feedback: 95.4% (class 1) & 97.4% (class 2)

37.8% global & 62.2% local (class 1); 35.6% global &64.4% local (class 2)

Task 2: revision-oriented feedback: 86% (class 1) & 78.5% (class 2)

34.3% global & 65.7% local (class 1); 71.2% global & 28.8% local (class 2)

✓ **Perceptions:** Class 1: average of 4.55; very positive on PeerMark commenting tools (4.85)

vs. Class 2: average of 3.925; very positive on PeerMark questions (4.58)

Advantages	**Constraints**
Convenience, efficiency, anonymity	Technical glitches/difficulties
More constructive/thorough feedback	Composition marks (Class 1 only)
Learning new writing perspectives	PeerMark question with the word limit (Class 1 only)
Helping one's own writing	No synchronous communication (Class 2 only)
Helping address language-related issues	Feedback quality (Class 2 only)
Helping with academic integrity (Class 1 only)	

Turnitin PeerMark Feedback

- Implications

✓Pedagogy:

❑ Well-structured technology training, including video tutorials, followed with a trial peer review session testing out multiple Turnitin PeerMark functions.

❑ Teach how to write appropriate and constructive comments: drawing on pragmatic knowledge, using polite expressions, and taking advantage of emoticons.

❑ Assess students' performance by assigning a portion of points to sub-tasks: answering PeerMark questions, writing comments using the commenting tool, and/or using composition marks.

❑ Embed a chatting tool with the Turnitin platform for synchronous communication.

✓Research:

❑ Accuracy of Turnitin PeerMark feedback

❑ Incorporation of peer feedback into revisions

❑ Effect of CMPR on writing development (in comparison with f2f peer feedback and teacher feedback)

Teacher Multimodal Feedback

- Rationales:

✓Catering to students of auditory/visual learning style

✓Enhances teachers' social presence—personal, supportive and engaging feedback (Cunningham, 2019)

✓ Practicing L2 listening skills (Elola & Oskoz, 2016)

- Research strands:

❑Nature of teacher multimodal feedback (focus/type/feature)

❑Student uptake of feedback

❑Perceptions

❑Effect of feedback on language learning and writing development

Screencast-O-Matic video feedback
(Cheng & Li, 2020)

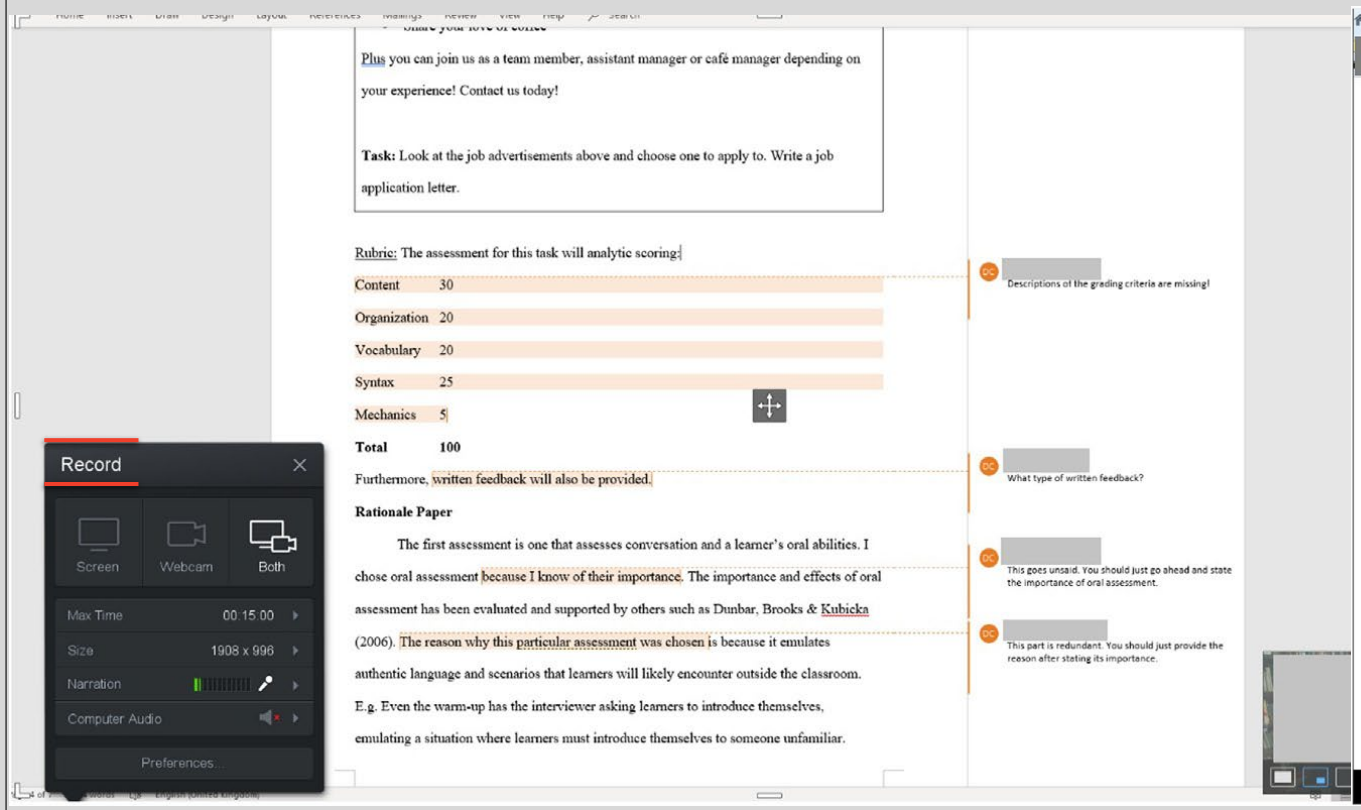
- Context: 54 students enrolled in an online graduate-level TESOL methods class at a public southern university in the US.
- Research Questions:

✓ How did screencast video feedback and text-only feedback compare in terms of the categories of comments?
✓ How did students incorporate the teacher feedback (i.e., video & text feedback) into their revisions?
✓ What are students' perceptions of screencast video feedback compared with text-only feedback?

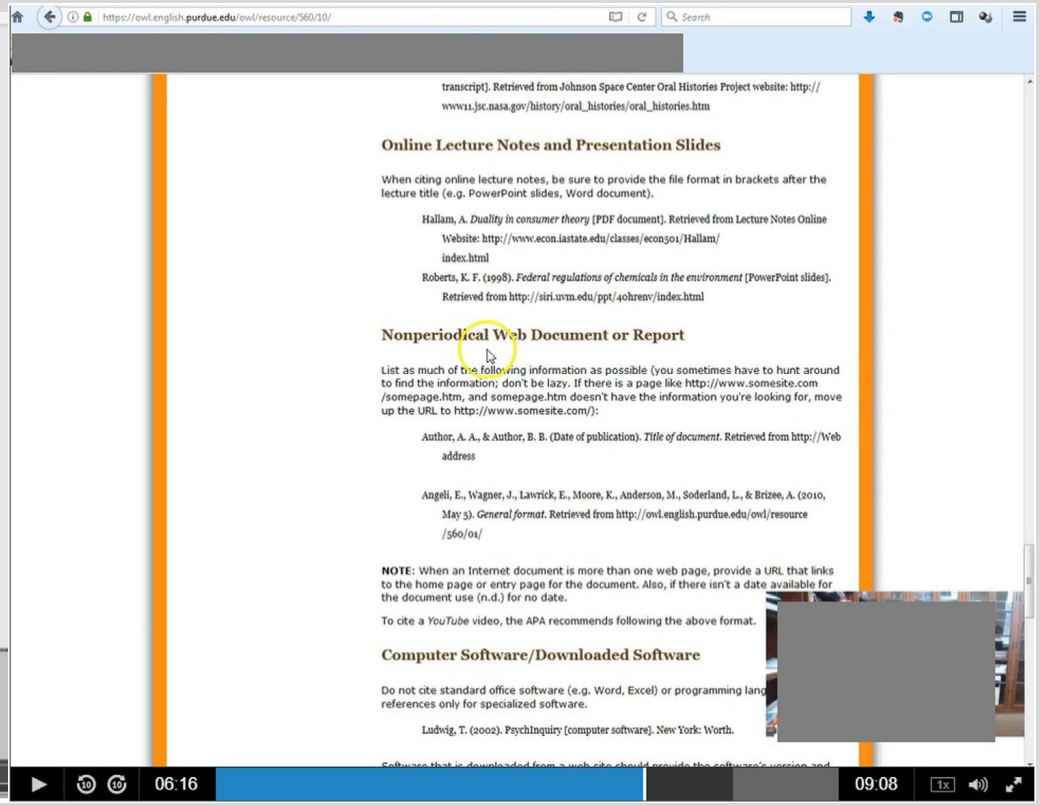
- Data:

✓ MP4 videos of the instructor's screencast recording (audio-visual comments on lesson plans) & Instructor's written comments on MS Word
✓ 96 lesson plans (48 drafts and 48 revisions)
✓ a short perception survey with students

Screencast-O-Matic Multimodal feedback



Screen + webcam recording



Teacher video feedback played

Screencast-O-Matic video feedback

- Results

✓Screencast comments: 380 total (201**contents**, 15 organization, 113 grammar/language use, 51documentation)
Text-only comments: 404 total (193 contents, 26 organization, 136 **grammar/language use**, 49 documentation)

✓ Screencast video feedback: More successful revisions

content: 70.65% vs. 51.30%; organization: 86.67% vs. 65.38%; grammar/language use: 68.14% vs. 78.68% ; documentation style: 100% vs. 53.06%

✓ Perceptions:

Screencast	Thoroughness (+)	8	Convenience (-)	6
	Personal connection (+)	10	Efficiency(-)	6
	Social presence (+)	4		
	Comprehensibility (+)	4		
	Role-modelling (+)	1		
Text feedback	Convenience (+)	7	Personal connection (-)	3
	Efficiency (+)	5	Thoroughness (-)	1

Screencast-O-Matic video feedback

- Implications

✓Pedagogy:

Screencast video feedback has advantages in helping students improve content, organization, and documentation style.

Screencast video feedback (visual/audio) increases social presence, motivating students to revise.

Prioritize what to record in the video. Provide both screencast video feedback and brief written notes highlighting important points for revisions.

✓Research:

Examining how in-service teachers transfer what they have experienced

❑ Producing a short screencast video to discuss their reactions to teacher feedback

❑ Conducting screencast video feedback on their own students' writing assignments

Examining the possibility and role of peer multimodal feedback in collaborative learning.

Digital Multimodal Composing

- Rationales

✓DMC supports writing as a discovery process of ideas and forms, a means of self-expression and reflection, and an effective way of communication (Belcher, 2017)

✓ Develops students' critical thinking, digital literacies skills, and writing development. (Bloch, 2007; Vandommele et al., 2017)

✓ With the authentic multimodal task and tangible real-world audience, DMC enhances learner motivation and autonomy (Hafner & Miller, 2011)

✓DMC opens up new identities for L2 learners. It allows writers to draw on their unique linguistic repertoire as well as non-linguistic alternatives to fully convey meaning and showcase their knowledge of heritage language and culture (Godwin-Jones, 2018; Jiang, Yang, & Yu, 2020; Smith, Pacheco, & de Almeida, 2017)

Digital Multimodal Composing

- Research Strands

❑ DMC process

1. Expressing identity and voice
2. Orchestrating multiple semiotic resources

❑ Students' perspectives

1. Benefits and challenges
2. Mediating factors

❑ Teachers' perspectives

1. Teacher investment
2. Assessment

❑ Learning outcome/development

1. Language development
2. Other learning-related development

DMC in foreign language classes

Study 1: DMC via Google Docs +Peer Assessment (Akoto, 2021)

✓Context: Elementary French class at a southern public university in the US.

✓ Research Questions:

How do French FL learners view the benefits and challenges of collaborative multimodal writing?

What factors do French FL learners perceive as mediating their writing processes in the collaborative multimodal writing task?

✓ Data:

Post-task questionnaire survey with 7 students; semi-structured individual interviews

Postcard Created on Google Docs

Le juillet 10,2019

Salut Jennifer,

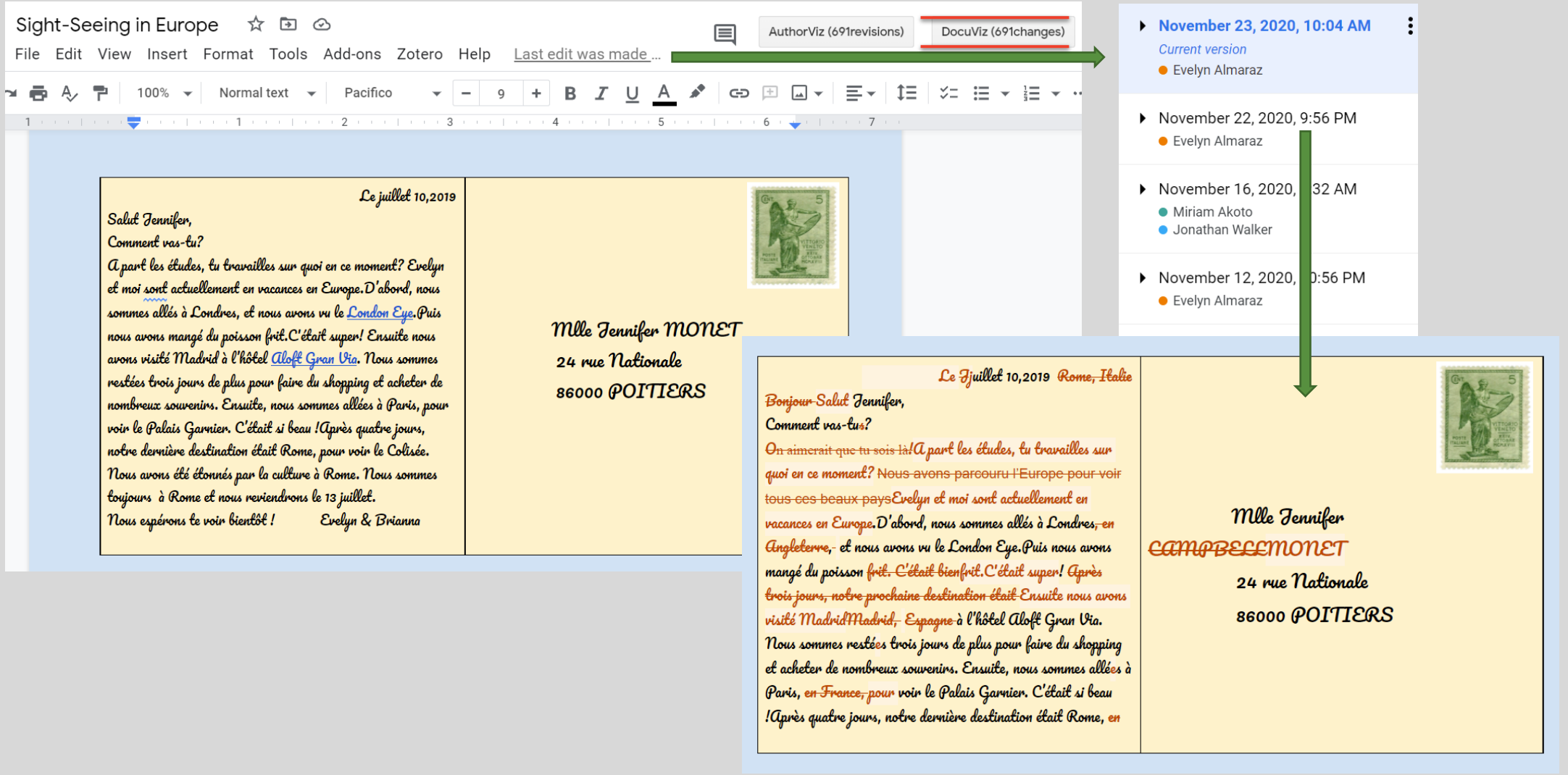
Comment vas-tu?

A part les études, tu travailles sur quoi en ce moment? Evelyn et moi sont actuellement en vacances en Europe.D'abord, nous sommes allés à Londres, et nous avons vu le London Eye. Puis nous avons mangé du poisson frit.C'était super! Ensuite nous avons visité Madrid à l'hôtel Aloft Gran Via. Nous sommes restées trois jours de plus pour faire du shopping et acheter de nombreux souvenirs. Ensuite, nous sommes allées à Paris, pour voir le Palais Garnier. C'était si beau !Après quatre jours, notre dernière destination était Rome, pour voir le Colisée. Nous avons été étonnés par la culture à Rome. Nous sommes toujours à Rome et nous reviendrons le 13 juillet.

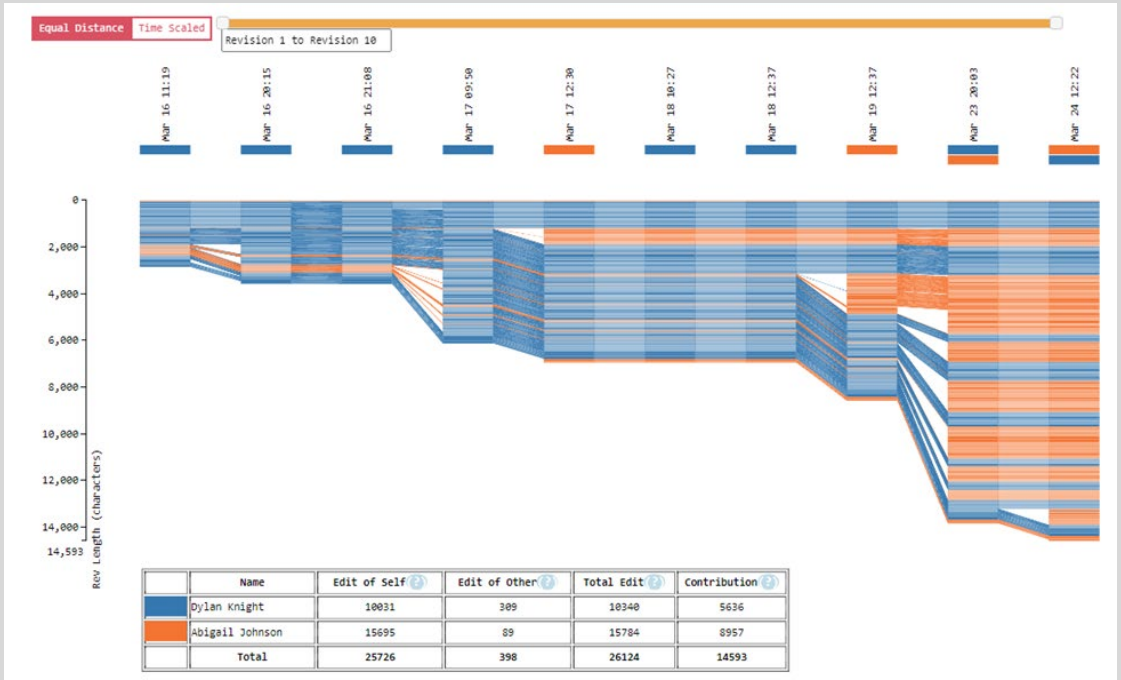
Nous espérons te voir bientôt ! Evelyn & Brianna

Mlle Jennifer MONET
24 rue Nationale
86000 POITIERS

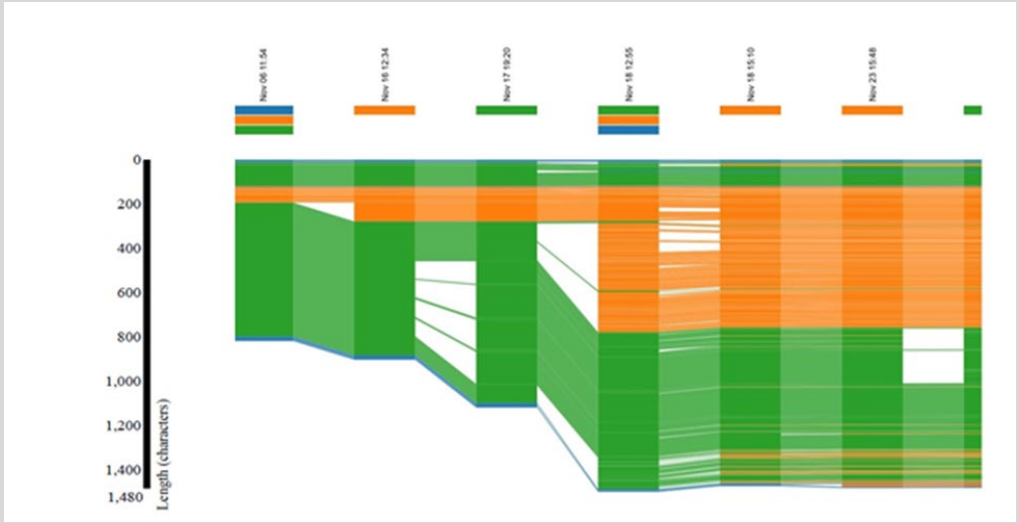
Collaborative Multimodal Writing via Google Docs



Collaborative multimodal writing via Google Docs (Docuviz embedded)



	Name	Edit of Self	Edit of Other	Total Edit	Contribution
	Dylan Knight	10031	309	10340	5636
	Abigail Johnson	15695	89	15784	8957
	Total	25726	398	26124	14593



Collaborative DMC in the French FL Class

- Results

✓ Overall perceptions:

Collaborative multimodal writing helped me improve my writing skills.	4.23
I found the peer assessment component to be beneficial.	4.63
I enjoyed working with my partner(s) on this collaborative multimodal project.	3.88
I felt motivated to write more than I generally would in the French class.	4.5
I found Google Docs helpful for this collaborative multimodal writing project.	4.25

✓ Challenges:

Tension with peers due to unequal participation

Students' insecurities of writing production skills and language proficiency

Technical glitches

✓ Mediating factors:

Technologically mediated environment

Instructional materials

Group member familiarity

DMC in foreign language classes

Study 2: Multimodal writing via Visme (Li & Pham, submitted)

- Context: the ESP class at a southern public university in Vietnam
- Research Questions:

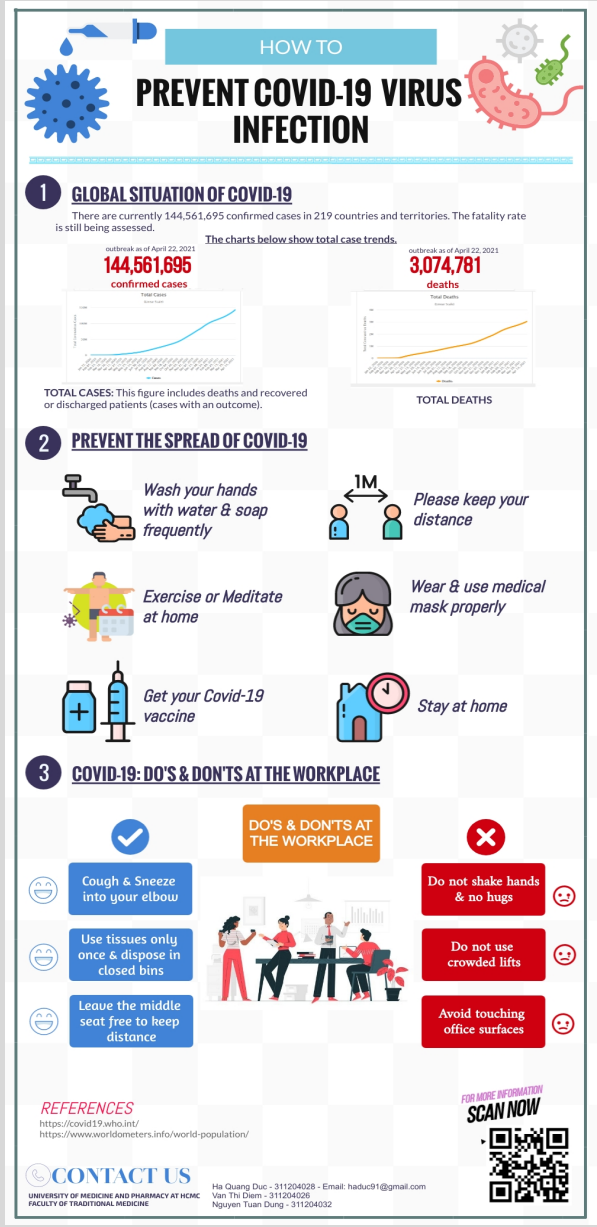
What are the qualities of the Vietnamese EFL students' collaborative digital multimodal products? How do they compare with those of individual multimodal composing products?

- Data:

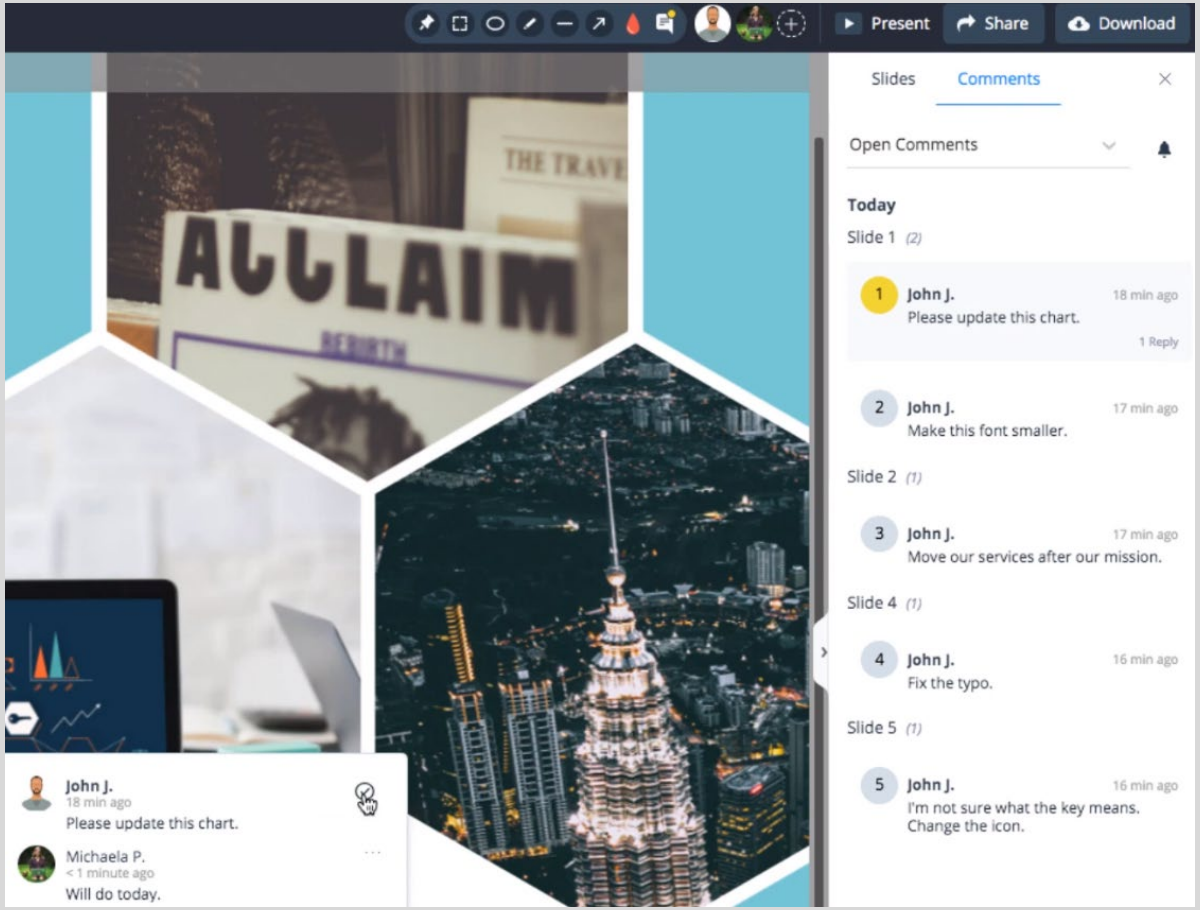
122 infographics posters (Task 1), and 127 infographics (Task 2)

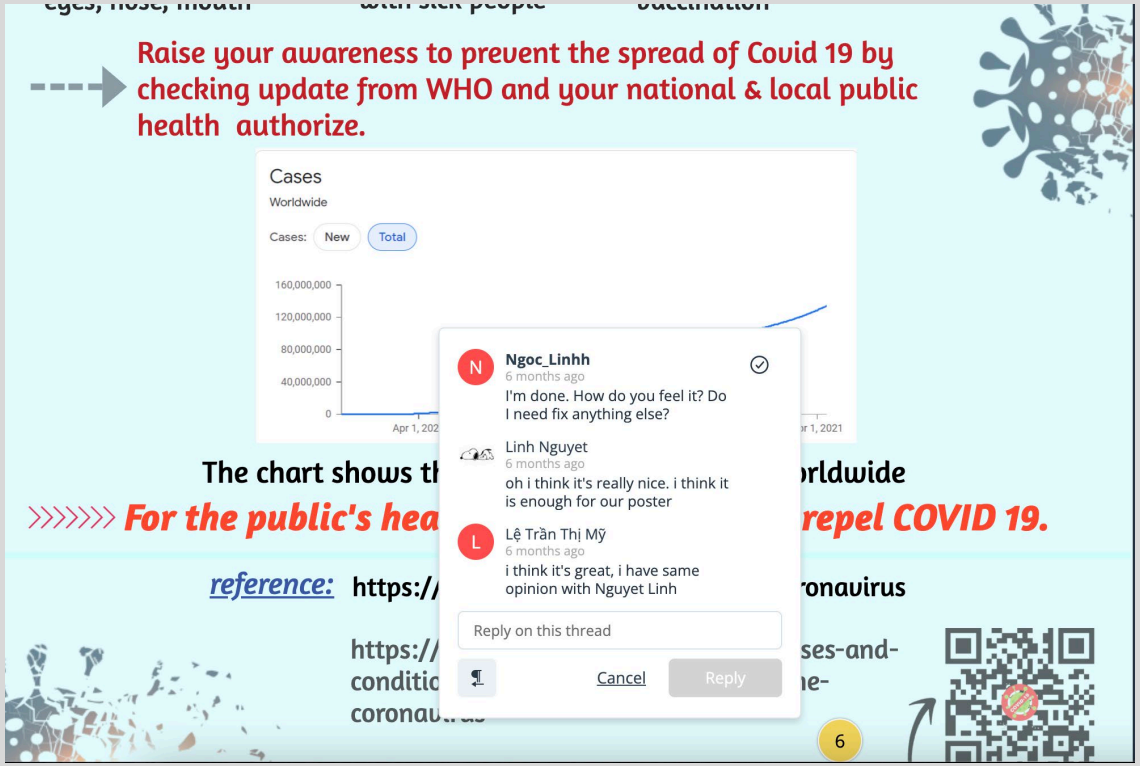
Analysis: Rating of infographics (i.e., content/organization, visual effect, language, and overall quality) & Accuracy (errors/words ratio),

Visme infographics



Collaborative DMC via Visme





DMC in the EFL Class

- Results: Overall high quality and high accuracy of collaborative DMC products

Overall rating	Task 1 (total pts: 15)		Task 2 (total pts: 15)	
	Mean	SD	Mean	SD
Content and organization	4.52 (90.4%)	.62	4.41(88.2%)	.74
Multimedia and visual effects	4.45 (89.0%)	.67	4.21(84.2%)	.95
Language	4.67 (93.4%)	.48	4.65 (93.0%)	.54
Total	13.64 (90.9%)	1.2	13.26 (88.4%)	2.0

Error	Task 1		Task 2	
	Mean	SD	Mean	SD
Total words	162.18	83.4	169.97	105.21
Total errors	1.79	2.56	2.03	2.17
Error/word ratio	.012	.014	.019	.035
Verb tense/form error	1.10	.32	1.78	1.09
Noun ending error	1.14	.38	1.70	1.06
Article error	1.00	.00	1.00	.00
Word choice error	1.00	.00	2.09	1.14
Part of speech error	1.00	.00	1.13	.35
Sentence structure error	1.00	.00	1.50	.71
Spelling error	2.25	1.91	2.09	1.14

DMC in the EFL Class

- Results: Comparing collaborative DMC and individual DMC products

- No statistically significant difference in the overall qualities of infographics for Task 1, based on the students' work approach (i.e., collaborative writing vs individual writing), $F(3118)=1.853$, $p=.141>.05$, Wilk's $\Lambda = 0.955$, partial $\eta 2 = .045$.
- No statistically significant difference in infographics for Task 2, $F(3123)=2.29$, $p=.082>.05$, Wilk's $\Lambda = 0.974$, partial $\eta 2 = .053$.
- A statically significant difference was found in the aspect of visual effects ($F=4.118$; $p= .045< .05$)in Task 1.
- A statistically significant differences in organization/content ($F=6.335$, $p=.013<.05$) in Task 2.

DMC in the Foreign Language Classes

- Implications

✓ Collaborative DMC has the potential to facilitate the development of both digital literacy skills and collaborative skills.

✓ DMC tasks would not jeopardize opportunities for students to practice language.

✓ Collaborative work can lead to better qualities of writing than individual work in the DMC task environment.

❑ Well-developed grading rubric

❑ Compatibility of technology with DMC tasks

❑ Grouping (self-perceived expertise: writing creativity/competence, language skills, knowledge of graphic design)

Reflection and Conclusion

- New directions in the digital age:
  - Digital multimodal composing
  - Computer-mediated collaborative writing
  - Online writing feedback
- Research and practice on L2 writing and technology will continue to blossom
  - artificial intelligence growing in capacity and applications
  - wider accessibility to technology options in the globe
- Fanning sparks and motivating scholars to undertake new L2 writing inquiries in technologically supported educational contexts

New book coming soon…

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Q & A

Email: mimi.li@tamuc.edu