

Wordcloud Based R Programming as a Supplementary Tool for Critical Discourse Analysis

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Abstract

The qualitative analysis of written discourse has a solid literature. However, discussions on the use of online software programs for faster text analysis have started to gain popularity due to a technology dominant era with a bulk of e-texts. Unlike online software tools for text analysis that entail internet connection, offline R programming with text mining packages, via certain codes, can visualize the text in a way that creates a proactive reader. The current research aims at investigating the integration of wordcloud based R programming with Fairclough model to develop the Fifth Settlement Languages Institution English department students' ability to critically analyze written discourse. The sample of the study included 30 students from the third year who were assigned a critical reading content as part of conversation course that targets the development of the four language skills. The pre-post research design proved the efficiency of wordcloud based R programming as a supplementary tool for discourse analysis.

Keywords: written discourse –wordcloud- Fairclough model of critical discourse analysis.

Introduction

Reading as a mandatory language skill among English department students goes beyond surface analysis of texts –lexical, semantic and syntactic levels. Students are assigned critical reading tasks that target main ideas, their supporting details and inference skills. Yet, dealing with text as discourse in terms of the author's purpose, the competing powers in the text and the ideologies covered in the text (Cervetti, Pardales, & Damico, 2001) deepens the comprehension process (Wu, 2017). The discourse perspective views the pragmatic aspect of a text's linguistic component (Council of Europe, 2001) as language is an act of

communication. The linguistic component targets the literal meaning of text. On the other hand, the pragmatic aspect targets what the writer calls for and the action that he/she likes the reader to perform based on a set of ideologies. Integrating word cloud based R programming with Fairclough model for critical discourse analysis can cover different layers of meaning. As R programming, originated in linguistics and statistical approaches (Zhou et al, 2012), can mine the high frequency words in a pattern that help in finding the theme of the text. Fairclough model, as a further step, works on the function of the linguistic elements and determine the action they call for, the competing powers and the ideologies of the author. The current research investigates the possibility of using both R programming and Fairclough model for deeper discourse analysis.

Statement of the problem

English department students at the Higher Institution of Languages and Translation in the Fifth Settlement are assigned reading material that represents a challenge as it requires multiple layers of analysis at semantic, textual and discourse levels. To cover all layers of meaning, Fairclough's model for critical discourse analysis can be initialized by Wordcloud which represents a visual tool that motivates readers to figure out the text themes via sizing words according to their importance in the text.

Research questions

What is the effectiveness of Wordcloud as a supplementary tool on developing critical discourse analysis ?

This main question is divided into 3 sub questions:

- What is the effectiveness of Wordcloud as a supplementary tool on developing critical discourse analysis at textual level?
- What is the effectiveness of Wordcloud as a supplementary tool on developing critical discourse analysis at discursive level?
- What is the effectiveness of Wordcloud as a supplementary tool on developing critical discourse analysis at social context level?

Research hypothesis

There will be no statistically significant differences between the critical discourse analysis pre-post test at .05 level in terms of overall critical discourse analysis skills and in terms of its branches, namely, text analysis, discursive analysis and social context analysis skills.

Review of literature

Written Discourse

Reading as a compulsory course for English department college students aims at developing critical reading skills at textual level in terms of analyzing its linguistic elements (phonological, lexical, semantic, grammatical and structural elements);distinguishing between main and supporting ideas; evaluating arguments and making inferences about the text(Manarin, Carey, Rathburn, and Ryland ,2015). Yet, profound analysis requires viewing text in its social context. In other words, dealing with text as discourse or as an act of communication figures out the author’s purpose(Wang&Gierl,2011) and inequality in society represented in elements of power and social ideologies(Habib,2012). Thus written discourse is not merely content received by the reader, but it is a dialogue between the author and the reader.

Written discourse analysis

Discourse can be critically analyzed based on relational approach (Fairclough, 2003) as competing powers and their ideologies are revealed. At internal level (text level or micro level), semantic, grammatical and lexical relations are covered. Semantic relations target meaning relations between words, parts of clauses and sentence. Grammatical

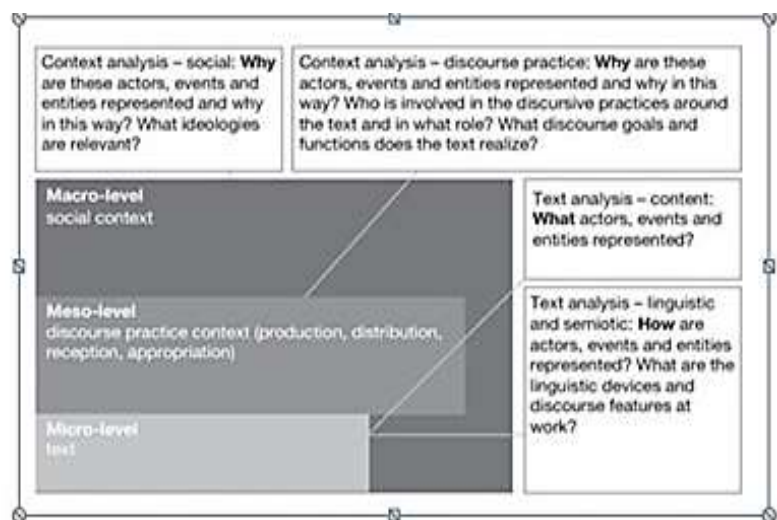


Figure 1 A three level model for discourse analysis (Fairclough, 2010)

relations mean the relation between word’s morphemes; words in phrases(e.g. indefinite article(‘a’);adjective(‘hot’)and noun (‘potato’) in ‘a hot potato’);between phrases within clauses and between clauses in sentences and lexical relations target word collocations. At mediating level (discourse or meso level), between the text and the social context (events and ideologies in society), the author integrates other discourses with different voices (interdiscursivity) to support his/her point of view. At external level(social level or macro level), the society events and ideologies are highlighted.

Critical discourse analysis can be approached in the classroom as a process that goes through 3 stages (Auerbach&Paxton,1997) represented in pre reading,

while reading and post reading. In the pre reading, stage prior knowledge is accessed and the topics from the title and the text structure can be predicted and identified. During reading, the reader can guess the meaning of unknown words from context, predict main ideas of each paragraph and draw pictures to show what he sees in his mind's eyes. Finally, in the post reading stage, the reader can make an outline of what he/she reads and retell what he thinks the author is telling. Approaching the written discourse as a process is an integration between top down approach (dealing with text's broad idea) and bottom up approach (dealing with linguistic elements).

Technology and R programming for discourse analysis

To develop students English language skills, the use of technology is a must (Solano, Carbrera, Ulhelova&Espinoza, 2017) in terms of providing a variety of authentic material. Wordcloud as R programming package is a technological tool that visualizes the text via converting the text into a set of words that differ in size according to their importance in the text(Forte,R.2015). Unlike online wordcloud tools that require internet connection, wordcloud based R programming can function offline via certain steps. The text is imported to R studio then it goes through cleaning stages represented in removing unnecessary words and punctuation marks. Finally, topics related words are shown in different sizes based on their importance. Such visual tool stimulates the reader to find the semantic relation between the words and thus they can figure out the topics in the text and how they are organized to cover certain ideologies.

Objective of the study

The current study aims at integrating bottom up and top down approaches to increase reading comprehension through Fairclough's model for critical discourse analysis initiated by wordcloud based R software. Due to the efficiency of interactivity between top down approach that targets the author's purpose and bottom up approach that targets text at linguistic level (Dhanapala and Yamada ,2015) , wordcloud at linguistic level can be used to give a visual image of vocabulary through which the reader can find the semantic relations between the words that help in identifying the topic of the text followed by the discovery of the competing powers and the social ideologies that affect the choice of the language of the text based on Fairclough's model which is originated in language as an act of communication.

Previous studies

Previous studies on wordcloud

Advocates for Wordles claim their use can help students activate previous knowledge about a given subject, share personal stories for brainstorming, and conduct research (McNaught & Lam, 2010). There is one additional aspect of Wordles bearing mentioning: they are fun. Students, generally speaking, work harder and more positively at something they enjoy (Wiggins, 2014). For instance, visualization has been shown to be a significant predictor of learned knowledge, and was approximately as valuable as prior knowledge in impacting test scores (Piburn, et al., 2005.). Efforts to build critical thinking, then, can potentially be fostered by a similar commitment to visual literacy (Shuh, 1999; Woyshner, 2006; Risinger & Heitzmann, 2008; Edler, 2011). Others describe how using Wordle in the classroom can help students develop their own reading skills (e.g., predicting, summarizing, and comparing), as well as their writing skills, especially in prewriting and revising (Hayes, 2008). Wordle's utility to help journalism students determine if their article drafts effectively represent the topic about which they are writing was examined (Verster, 2010).

Previous studies on CDA based reading

The study of Hazaea(2018) fostered critical intercultural awareness among EFL University students in KSA via decoding and encoding intercultural texts based on critical discourse analysis(CDA). The positive results were reflected in students' ability to analyze and interpret intercultural elements in intercultural texts. Adding to improvement in critical reading skills via (cda),the study of Dar,Rahimi and Shams(2010) proved the role of cda in improving EFL students' attitude towards critical reading. Moreover,English department students at Higher Education ACECR- Khuzestan Branch received training on critical discourse analysis in reading classes with proven improvements in their critical reading skills according to the study of Haromi(2014).

Methodology

The methodology handles the research design, the participants, the research tools, the research material, the experiment and the training strategy.

The research design

The present study will adopt quasi-experimental design in which one group will receive training on the use of word cloud package as pre reading activity as part

of Fairclough model for discourse analysis. Both Wordcloud and Fairclough's model reflect reading as a process.

Participants

A group of 30 first year English department students-- both male and female--at the Higher Institution of Languages and Translation in Cairo are randomly selected.

The research tool

Among varied methods of assessing critical discourse (Shams, Khanam & Khan, 2016) and (Marashi, 2018) who respectively preferred writing and questionnaires, the researcher designed a multiple choice questions based test as an assessment tool due to the system of the exams in the institution --bubble sheet--where the study was conducted .

Test description

The critical discourse analysis pre-posttest aims at assessing the students' development in the critical analysis of different types of discourses including media, economy, adverts and literature with 25 multiple questions. The test includes 12 questions to assess discourse at micro level (questions n.1,2,3,4,5,7,9,10,15,16,24,25) ;8 questions to assess discourse at meso level (questions n.8,12,13,14,19,20,21,23) and 5 questions to assess discourse at macro level (questions n.6,8,11,17,18,22). (see Appendix A)

The rating scale

The test has a total of 25 questions. The candidate gets a score for the right answer and no score for the wrong answer. (see Appendix B for the grading rate)

The test validity

The test is to be valid when it assesses what it is designed for. This current critical discourse analysis test is submitted to 7 EFL professors to respond to the following questions: a) Are the exam instructions clear?; Do the exam questions assess what they are designed for in terms of critical discourse analysis at micro, meso and macro levels ?

The jury's comments were supportive as 3 of them recommended the simplicity of the language of multiple choice items and the replace of the multiple choice item "none of the above" with another item. Regarding the content, 4 of the jury recommended the increase of the number of questions that assess critical discourse analysis at micro level because they reflect the understanding of the content comparing to other levels of discourse analysis. The other 3 jury

recommended that the criterion should be the degree of the importance of the three levels based on the adopted model.

Based on the jury's comments, the researcher replaced the "none of the above" choice item with another choice. She also allocated each level in discourse analysis with a set of questions: 12 questions, 8 questions and 5 questions for micro, meso and macro levels respectively in the light of Fairclough's model for critical discourse analysis that highlighted the role of the language in reflecting the author's opinion and the ideologies in the society.

Test Reliability

The assessment of results consistency, defined as test reliability, can be measured by applying the same test on two different occasions (Nikto,1996). Thus, the researcher piloted the test's reliability on 10 students within 15 day period to be calculated via Pearson correlation. The correlation coefficient for the whole test was .67 and the correlation coefficient for critical discourse analysis at micro level, meso level and macro level was .72, .65 and .68 respectively—values that reflect the test's reliability.

The experiment and the training strategy

A 2 month experiment for the use of wordcloud package in R programming was conducted on a group of 30 second year students in the first term of the academic year 2022-2023 who are assigned reading subject. First, students were informed that the aim of the experiment is critically read texts within its social context via interesting tool supported by a model for critical analysis. Then, students were shown how to install R programming with word cloud package that visualize the text in words with different sizes based on their relative frequency. In the pre-reading stage, students were asked to predict the topic, the purpose of writing it and how it is organized. In the while reading stage, students critically read the text in term of its main idea and its supporting detail based on CDA features by Jank (2005)(see Appendix C). Students discover any argument in the text, the elements of power, the ideologies in the society and how they are defined in the text. In the post-reading stage, students check if their prediction about the author's purpose is true and respond to the interactive multiple choice questions on each text.(see Appendix D)

Statistical analysis of data and discussion of results

T-test for paired samples was used to compare between the students' pre-post test performance. The null hypotheses of the current study are rejected at all

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levels of the critical discourse analysis test as a whole as well as its skills as the results are significant at a p value less than .05

Table(1)

T-test results of students' overall performance in the pre-post critical discourse analysis test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 pre-post test	-7.16667	2.24505	.40989	-8.00498	-6.32835	-17.484	29	.000

The results reject the null hypothesis with preference to the post test scores backed up by the results of the previous studies that used wordcloud as a proactive pre reading strategy. During the experiment, the researcher noticed students' positive attitude towards the use of wordcloud in terms of stimulating them to know the reading topic with no entailment to read the whole article adding to the prediction of the main idea via connecting between the words in the vocab image. The study of Jumpakate and Rungruangthum(2020) conducted on Thai University students showed the effectiveness of word cloud as a stimulating pre reading activity. Such enthusiasm extended to encouragement of students to predict the main ideas and the relation between words as reflected in the studies of Perveen(2021) and Filatova(2016). Wordcloud is a potential effective learning tool because it can enhance motivation and engagement through the flexibility of use and design acting as a useful adjunct to other learning strategies (Miley & Read, 2011).

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Table(2)

T-test results of students' performance in the pre-post critical discourse analysis test at micro level(textual level)

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 pre-post test	-2.1333	1.19578	.21832	-2.57984	-1.68682	-9.772	29	.000

Approaching text at linguistic level via predicting the relation between words ,visualized by wordcloud ,helped the students in getting holistic view about the text and its purpose. Students can distinguish between main ideas and supporting details.Mc Naught and Lam(2010),Koppersmith and Kelly(2014) proved the efficiency of wordle,online visualization of text, in grasping the basic information in a text.Such an improvement is augmented by the integration between wordcloud in the pre reading stage and close reading in the while reading stage which is mandatory to identify words meaning and implied meaning via context.

Table(3)

T-test results of students' performance in the pre-post critical discourse analysis test at meso level(discursive level)

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 pre-post test	-2.3333	1.34762	.24604	-2.83654	-1.83012	-9.483	29	.000

The role of wordcloud as a pre reading tool helped the students in realizing the text context in terms of predicting the author's identity, his purpose , the readers and the elements of argument in the text and assessing this prediction while reading the text. Molen,Buitinck and Pieters(2017)called for the use of word cloud to analyze discourse at mesolevel. Students became aware of the principle

that any type of writing is a purpose that reflects elements of power and argument that can be explicit or even implicit.

Table (4)

T-test results of students' performance in the pre-post critical discourse analysis test at macro level (social context level)

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pa pretest - r1 posttest	-2.9333	1.04826	.19139	-3.32476	-2.54191	-15.327	29	.000

The ideologies that lead to the writing of articles can be figured out by connecting between the visualized words. Hokkanen(2019) proved the efficiency of Word Clouds in predicting corpus concepts via the visualized text. This prediction is assessed by Fairclough model at macro level that targets the social ideologies which affect the author's writing.

Discussion of the results

Wordcloud, an initial step for critical discourse analysis, can function as a tool that helps in predicting the topics in an article via visualizing its words which differ in size based on its frequency. However, wordcloud can not be used alone as text mining because discourse analysis at micro level requires close reading as suggested by Molen,Buitinck and Pieters(2017) and McNaught&Lam(2010) who suggested the use wordcloud as supplementary material . In the current study, students were trained to use wordcloud as pre reading activity. Thus,students were also trained to use Fairclogh's model for critical discourse analysis in the while reading stage to discover the author's purpose and the competing ideologies in the discourse.Students could have further development if they were familiar with the texts' content which included unknown words and metaphorical phrases that affected their inference skill which targets implicit knowledge(Beers,2003).

Recommendations

Wordcloud as a supplementary tool can be used to develop other language skills .For example; it can be used as pre writing activity in which an image of words can be given to the students. Thus, students can figure out the topic that connects

between the given words and they start writing about this topic in the light of ideologies and competing powers as shown In Fairclough model. Worcloud as initial step for Fairclough model can detect bias in speeches. R packages can also be used for sentiment analysis in novels to analyze characters.

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حزمة الـ Wordcloud المبنية علي برمجية الـ R كأداة تكميلية لتحليل الخطاب النقدي الكتابي

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المستخلص:

في ظل عصر تسوده التكنولوجيا والمكتظ بالمحتوي الالكتروني، فإن ذلك يستوجب التنقيب العميق للنص. ومع تمتع تحليل النصوص الكتابية بإطار نظري راسخ الا أن البرامج الالكترونية لتحليل النصوص المتوافرة عبر شبكة الانترنت تنتشر بشكل سريع. وعلي عكس هذه البرامج، فإن برنامج الـ R يمكن استخدامه علي الحاسوب بدون شبكة الانترنت حيث يتم تحويل النص الي تصور ممتثل في استخراج اكثر الكلمات أهمية والتي بدورها تخلق قارئ متفاعل مع النص حيث يقوم بالتنبؤ بالأفكار التي يحتويها النص .

يهدف البحث الحالي إلى تقصي اثر استخدام wordcloud المضمنة في R studio بناءً على برمجة التعلم الآلي كأداة تكميلية بجانب نموذج Fairclogh لتحليل الخطاب النقدي ، لتحفيز طلاب قسم اللغة الإنجليزية في معهد التجمع الخامس للغات على تحليل الخطاب المكتوب. ضمت العينة 20 طالبا من السنة الثالثة تم تكليفهم بدورة قراءة و أثبت تصميم البحث القبلي البعدي كفاءته كأداة تكميلية في تحليل الخطاب المكتوب في إطار قراءة الخطاب كعملية (مرحلة ما قبل القراءة ، مرحلة أثناء القراءة و مرحلة ما بعد القراءة).

الكلمات الدالة: -القراءة كعملية -التعلم القائم على المهام-نموذج فيركلوف لتحليل الخطاب- التعلم الآلي - حزمة R - الخطاب النقدي المكتوب

Appendix (A)

Critical Discourse Analysis Pre-Post Test

Exam Duration: an hour

Test instructions

Read the following passages and circle your answer in the bubble sheet

Section (1)

1 Poets and authors have frequently written about sunset, a magical time in the daily cycle. 2For great writers and spiritual leaders, sunset has often symbolized the end of an event or the death of a loved one. 3Glorious sunsets on beautiful beaches have inspired lovers to reflect on the day just passing and to dream of tomorrow. 4Soft pink sunsets seen from porches or patios have provided a sense of peace to parents after a hard day at work. 5This traditionally reflective time of day, however, has taken on a new meaning in the late twentieth century, and those in the medical profession have even dubbed a certain behavioral change in elderly dementia sufferers as "the sundown effect." 6People who suffer from dementia have short-term memory loss or impairment. 7For example, they forget the names of their friends and family and often get lost while driving in their own neighborhoods. 8They struggle to make general conversation, for they cannot find the right words to complete their thoughts. 9Many times they become overwhelmed by previously simple tasks, such as paying bills. 10But one of the most frightening aspects of dementia seems to occur at sunset. 11The coming darkness creates incredible fear for those who suffer from dementia. 12They may become delirious and imagine they see monsters coming at them. 13Sunset, once proclaimed by poets as a natural time of death and reflection, has become a time of terror for millions of aging people who have lost their precious ability to remember.

1.The paragraph (A.highlights the positive associations of sunsets B. reflects on past experience C. highlights the causes of dementia D. informs the readers about one of dementia's symptoms)

2. The two sentences best expressing the main idea are (A. 5 & 13 B. 13 & 10 C. 12 & 8 D. 1 & 6)

3. According to the passage, which changes in behavior are associated with dementia? (A. Increased trust in strangers. B. Increased frustration with common tasks C. Short-term memory loss D. both B and C)

4. In this passage, which groups of people have been positively affected by sunsets? (A. poets B. lovers C. parents D. authors)

5. Which of the following is NOT associated with sunsets in this passage? (A. reflection B. a spike in criminal activity C. an increased risk of delirium for people with dementia D. both a and c)

6. The ideology of (A. perspectivism B. grudge C. war D. sacrifice) is covered in the paragraph .

Section(2) Choose A if the sentence is correct; choose B if the sentence is incorrect and choose C if the sentence is not given

7. The beauty products in the advert requires expertise to make them ()

8. The advert calls for saving the customer's money by using natural products()

9. You look younger if you use these organic beauty products ()

10. These beauty products give the user a silky hair()

11. The advert is a call for natural beauty ()

12. Cooking discourse is integrated in the advert ()

Section(3) Ukraine: Russia plans biggest war in Europe since 1945 - Boris Johnson

Evidence suggests Russia is planning "the biggest war in Europe since 1945", Prime Minister Boris Johnson has said.

He told the BBC's Sophie Raworth in an interview: "All the signs are that the plan has already in some senses begun".

Intelligence suggests Russia intends to launch an invasion that will encircle Ukrainian capital Kyiv, Mr Johnson said.

"People need to understand the sheer cost in human life that could entail," he said.

The prime minister was speaking from Munich, where world leaders are meeting for an annual security conference.

The latest estimates by the US government suggests that between 169,000 and 190,000 Russian troops are stationed along Ukraine's border, both in Russia and neighboring Belarus.

Mr Johnson warned that any conflict could be "bloody and protracted", saying Russian President Vladimir Putin was possibly "thinking illogically about this" and did not "see the disaster ahead."

"I think it's vital for us all now to get over what a catastrophe it would be for Russia," he added.

He indicated that the UK and US would bring further sanctions against Russia than have been suggested before, including stopping its companies "trading in pounds and dollars" - a move that he said would "hit very, very hard."

Questions

13.The excerpt is taken from(A. newspaper- B. book-C. catalogue D. movie review(

14.The text (A. calls for stopping war against Ukraine- B. informs the readers about war launching-C. lists causes of war against Ukraine D.a call for attacking Ukraine(

15.The British side (A. rebukes- B.encourages-C.welcomes D.flatters)war against Ukraine(

16.The clause” between 169,000 and 190,000 Russian troops are stationed along Ukraine's border” is (A. an evidence for B. analogy of C. an effect of D. contradicts) the clause”All the signs are that the plan has already in some senses begun.”

Choose A if the sentence is correct; choose B if the sentence is incorrect and choose C if the sentence is not given

17.The ideology of economy is reflected in the text()

18.The competing powers at social context reflected in the text are war and peace()

19.The language of Johnson is threatening()

Section (4)

In today's idea-driven economy, the cost of time is what really matters. With the constant pressure to innovate, it makes little sense to waste countless collective hours commuting. So, the most efficient and productive regions are those in which people are thinking and working—not sitting in traffic .

The auto-dependent transportation system has reached its limit in most major cities and megaregions. Commuting by car is among the least efficient of all our activities—not to mention among the least enjoyable, according to detailed research by the Nobel Prize-winning economist Daniel Kahneman and his colleagues. Though one might think that the economic crisis beginning in 2007 would have reduced traffic (high unemployment means fewer workers traveling to and from work), the opposite has been true. Average commutes have lengthened, and congestion has gotten worse, if anything. The average commute rose in 2008 to 25.5 minutes, “erasing years of decreases to stand at the level of 2000, as people had to leave home earlier in the morning to pick up friends for their ride to work or to catch a bus or subway train,” according to the U.S. Census Bureau, which collects the figures .

It's ironic that so many people still believe the main remedy for traffic congestion is to build more roads and highways, which of course only makes the problem worse. New roads generate higher levels of “induced traffic,” that is, new roads just invite drivers to drive more and lure people who take mass transit back to their cars. Eventually, we end up with more clogged roads rather than a long-term improvement in traffic flow .

The coming decades will likely see more intense clustering of jobs, innovation, and productivity in a smaller number of bigger cities and city-regions. Some regions could end up bloated beyond the capacity of their infrastructure, while others struggle, their promise stymied by inadequate human or other resources.

20. The passage most strongly suggests that researchers at the Martin Prosperity Institute share which assumption ?

A. Employees who work from home are more valuable to their employers than employees who commute. B. Employees whose commutes are shortened will use the time saved to do additional productive work for their employers. C. Employees can conduct business activities, such as composing memos or joining conference calls, while commuting. D. Employees who have longer commutes tend to make more money than employees who have shorter commutes

21. The author is probably A) An economist B) A commuter C) A protagonist D. none of the above
22. Which of the following ideologies are covered at social level A) time is money B) love C) punctuality D. war)
23. The author depends on which of the following to support his claim (A. statistics B. anecdote C. expertise' opinion D. both A & C)
24. Induced means (A. attract B. replenish C. pause D. haul)
25. The average commute (A. increased B. doubled C. tripled D. decreased) in 2009 comparing to 2008.

Appendix (B)

The exam grading scale

N.of questions	N.of wrong answers	Grade(%)	Grade letter
25	0	100	A
25	1	96	A
25	2	92	A
25	3	88	B
25	4	84	B
25	5	80	B
25	6	76	C
25	7	72	C
25	8	68	D
25	9	64	D
25	10	60	D
25	11	56	F
25	12	52	F
25	13	48	F
25	14	44	F
25	15	40	F
25	16	36	F
25	17	32	F
25	18	28	F
25	19	24	F
25	20	20	F
25	21	16	F
25	22	12	F
25	23	8	F
25	24	4	F
25	25	0	F

Appendix (C)

CDA features(Jank,2005)

Linguistic features Explanation

Lexicalization

Overlexicalization

Relexicalization

Lexical cohesion

Metaphor

Euphemism The selection of words.Different words construct the same idea differently

Many words for the same phenomena

Renaming

Created by synonyms, antonyms, repetition, collocation

Used for yoking ideas and for the discursive construction of new ideas

Hides negative actions or implications

Transitivity

Process in verbs ;Doing: material process; Being or having: relational process

Thinking/believing/perceiving: mental; Saying: verbal processes

Physiological: behavioral process; existential

Voice Active/passive

Nominalization A process is turned into a thing or event without participants or tense modality

Quoted speech

Direct speech

Indirect speech

Who is quoted?

What reporting speech was used?

Turn taking Who gets the floor? How many turns do different participants get? who is silent? who interrupt?

Mood Clause, statement, question, or command?

Polarity and tense Positive polarity(yes(

Negative polarity(No(

Present tense for absolute certainty

Modality

Degrees of uncertainty Probability

Social authority

Pronouns Include/exclude we/you

Definite article the Something share before

Theme(syntax)first part of the clause What is foregrounded in the clause

Rheme: second part of the clause New information is at the end of the clause

Sequence of information Sequence sets up cause and effect; additive: in addition ;causal: because

Adversative: although, yet ;temporal: when, while

Appendix (D)

The experiment material and the methodology of its teaching

Lecture (1) 3 hrs face to face

Objectives

1. To highlight the concept of discourse in the light of Fairclough model
2. To introduce word cloud package in R program: its purpose and how to install it

Procedures

1. Ice break via asking the students the following question” can you deal with the text as a dialogue with participants?
2. The lecturer tells the students that dealing with the text as discourse requires identifying the author,his purpose and the ideologies in the society that stimulated the author to write
3. The lecturer shows the students how to install R program with word cloud package that convert the text into vocab image
4. The students apply word cloud on any paragraph to check their ability to use the program

Lecture (2)+ Lecture (3) 4 hrs: face to face and online respectively

Objectives

1. To apply word cloud on informative discourse analysis to predict its topic and how is it presented in the article
2. To use Fairclough model in the analysis of reading passage at micro--supported by Jack’s outline(2005), meso and macro levels

Procedures

(pre reading stage)

Students convert the text into image via word cloud and respond to the following questions :

what is the topic? What is the author's purpose? How does the author structure the text based on his purpose? What is the ideology that can be covered in the text ?

(while-reading stage)

The students read the text to analyze it based on Fairclough model for discourse analysis at micro level(text language, main ideas,supporting details,what is stated,what is implied,vocab definition),at meso level (infer who is the author and define any argument in the text) and at macro level(infer the ideology covered in the text and the competing powers(

(post –reading stage)

Students respond to interactive multiple choice and true/false questions that reflect their understanding of the while reading stage questions.

The post reading questions

Choose the correct answer

1. The author is probably a (a. pharmacist b. psychologist c. botanist(
2. The passage is (a. informative b. narrative c. persuasive(
3. Who can treat dyslexia? (a. oculist b. pediatrician c. none of the above(

True,false,ng

1. If a child has dyslexia, he/she has acoustic problems()
2. Students with dyslexia have high scores in reading()
3. The ideology of medical awareness is highlighted in the text()

Lecture (4) 2 hrs face to face

Objective

To critically analyze argumentative discourse via wordcloud and Fairclough model in the analysis of reading passage at micro--supported by Jack's outline(2005), meso and macro levels

Procedures

(pre reading stage)

1. Students convert the text into image via word cloud and respond to the following questions: what is the topic? What is the author's purpose? How does the author structure the text based on his purpose? What is the ideology that can be covered in the text ?

(while-reading stage)

2. The students read the text to analyze it based on Fairclough model for discourse analysis at micro level(text language, main ideas,supporting details,what is stated,what is implied,vocab definition),at meso level (infer who is the author and define any argument in the text) and at macro level(infer the ideology covered in the text and the competing powers)

(post –reading stage)

3. Students respond to interactive multiple choice that reflect their understanding of the while reading stage questions.

The post reading questions

1. The ideology of (a. animal rights b. economy c. beauty) is reflected in the text.

2. The author (a. calls for mercy b. highlights animal testing benefits c. advertises for cosmetics)

3. Do away means (a. leave b. maintain c. keep)

4. The view that animal testing is necessary is not valid because(a. it is supported by false stats b. it is not supported by any evidence c. it provides false facts)

Reading material

Animal Testing

I endorse the final conclusion that there are many better alternatives to animal testing.The Food and Drug administration has stated that they support the development and use of alternatives to animal testing. Moreover, scientists have developed methods to test cosmetics which are faster,cheaper and more accurate. Some readers may challenge the view that animal testing can be done away.After all,many believe that it is impossible to eliminate the need for animals in research.

Lecture (5)+Lecture(6) lecture(7) 6hrs face to face(3hrs) and online(3hrs) respectively

Objective

To critically analyze literary discourse via word cloud and Fairclough model in the analysis of reading passage at micro--supported by Jack's outline(2005), meso and macro levels

Procedures

(pre reading stage)

Students convert the text into image via word cloud and respond to the following questions :

what is the topic? What is the author's purpose? How does the author structure the text based on his purpose? What is the ideology that can be covered in the text?.The same technique will be applied to the whole paragraphs to get full picture of the text due to its length .

(while-reading stage)

The students read the text to analyze it based on Fairclough model for discourse analysis at micro level(text language, main ideas, supporting details, what is stated, what is implied, vocab definition),at meso level (infer who is the author and define any argument in the text) and at macro level(infer the ideology covered in the text and the competing powers(

(post –reading stage)

Students respond to interactive multiple choice that reflect their understanding of the while reading stage questions.

The post reading questions

1. The passage states that Sir Thomas's sons reacted to Fanny with(a. teasing interest b. distant kindness c. cold condescension(
2. According to the passage, how do Sir Thomas's and Lady Bertram's reactions to Fanny differ?(a. Sir Thomas is more talkative towards Fanny than is his wife b. Sir Thomas understands Fanny's reticence more than his wife does c. Lady Bertram pays more attention to Fanny than does her husband(

3. Fanny could not swallow the gooseberry tart because (a. she was always crying due to being far from home b. she had stomachache c. the tart was not tasty)

Reading material

This passage is adapted from Jane Austen, *Mansfield Park*. Originally published 1814. Fanny has recently moved to live with her relatives at Mansfield Park.

The little girl performed her long journey in safety; and at Northampton was met by Mrs. Norris, who thus regaled in the credit of being foremost to welcome her, and in the importance of leading her in to the others, and recommending her to their kindness.

Fanny Price was at this time just ten years old, and though there might not be much in her first appearance to captivate, there was, at least, nothing to disgust her relations. She was small of her age, with no glow of complexion, nor any other striking beauty; exceedingly timid and shy, and shrinking from notice; but her air, though awkward, was not vulgar, her voice was sweet, and when she spoke her countenance was pretty. Sir Thomas and Lady Bertram received her very kindly; and Sir Thomas, seeing how much she needed encouragement, tried to be all that was conciliating: but he had to work against a most untoward gravity of deportment; and Lady Bertram, without taking half so much trouble, or speaking one word where he spoke ten, by the mere aid of a good-humored smile, became immediately the less awful character of the two .

The young people were all at home, and sustained their share in the introduction very well, with much good humor, and no embarrassment, at least on the part of the sons, who, at seventeen and sixteen, and tall of their age, had all the grandeur of men in the eyes of their little cousin. The two girls were more at a loss from being younger and in greater awe of their father, who addressed them on the occasion with rather an injudicious particularity. But they were too much used to company and praise to have anything like natural shyness; and their confidence increasing from their cousin's total want of it, they were soon able to take a full survey of her face and her frock in easy indifference .

They were a remarkably fine family, the sons very well-looking, the daughters decidedly handsome, and all of them well-grown and forward of their age, which produced as striking a difference between the cousins in person, as education had given to their address; and no one would have supposed the girls so nearly of an age as they really were. There were in fact but two years between the youngest and Fanny. Julia Bertram was only twelve, and Maria but a year older.

The little visitor meanwhile was as unhappy as possible. Afraid of everybody, ashamed of herself, and longing for the home she had left, she knew not how to look up, and could scarcely speak to be heard, or without crying. Mrs. Norris had been talking to her the whole way from Northampton of Fanny's wonderful good fortune, and the extraordinary degree of gratitude and good behavior which it ought to produce, and her consciousness of misery was therefore increased by the idea of its being a wicked thing for her not to be happy.

The fatigue, too, of so long a journey, became soon no trifling evil. In vain were the well-meant condescensions of Sir Thomas, and all the officious prognostications of Mrs. Norris that she would be a good girl; in vain did Lady Bertram smile and make her sit on the sofa with herself and pug, and vain was even the sight of a gooseberry tart towards giving her comfort; she could scarcely swallow two mouthfuls before tears interrupted her, and sleep seeming to be her likeliest friend, she was taken to finish her sorrows in bed.

“This is not a very promising beginning,” said Mrs. Norris, when Fanny had left the room. “After all that I said to her as we came along, I thought she would have behaved better; I told her how much might depend upon her acquitting herself well at first. I wish there may not be a little sulkiness of temper—her poor mother had a good deal; but we must make allowances for such a child—and I do not know that her being sorry to leave her home is really against her, for, with all its faults, it was her home, and she cannot as yet understand how much she has changed for the better; but then there is moderation in all things”.

It required a longer time, however, than Mrs. Norris was inclined to allow to reconcile Fanny to the novelty of Mansfield Park, and the separation from everybody she had been used to. Her feelings were very acute and too little understood to be properly attended to. Nobody meant to be unkind, but nobody put themselves out of their way to secure her comfort.

Fanny, whether near or from her cousins, whether in the schoolroom, the drawing-room, or the shrubbery, was equally forlorn, finding something to fear in every person and place. She was disheartened by Lady Bertram's silence, awed by Sir Thomas's grave looks, and quite overcome by Mrs. Norris's admonitions. Her elder cousins mortified her by reflections on her size, and abashed her by noticing her shyness: Miss Lee wondered at her ignorance, and the maid-servants sneered at her clothes; and when to these sorrows was added the idea of the brothers and sisters among whom she had always been important

as playfellow, instructress, and nurse, the despondence that sunk her little heart was severe.

Lecture (8) 2hrs Face to face

Objective

To critically analyze advert discourse via word cloud and Fairclough model in the analysis of reading passage at micro--supported by Jack's outline(2005), meso and macro levels

Pre reading stage

Students will be provided add the text in the advert to wordcloud that provides words image to

discuss the following questions: who is the author ,what is his purpose and what are the covered ideologies?

While reading

The students read the advert to analyze it based on Fairclough model for discourse analysis at micro level(text language, main ideas, supporting details, what is stated, what is implied, vocab definition),at meso level (infer who is the author and define any argument in the text) and at macro level(infer the ideology covered in the text and the competing powers(

Post reading stage

Students will respond to the interactive true, false, ng questions

1. The ideology of beauty is covered in the advert()
2. Kolynos will make you laugh ()
3. Kolynos is for women only()
4. The advert is a call for using natural products ()

Advert material

Lectures 9&10 2hrs face to face

Objective

To critically analyze advert discourse via word cloud and Fairclough model in the analysis of reading passage at micro--supported by Jack's outline(2005), meso and macro levels

Pre reading stage

Students will be provided add the text in the advert to wordcloud that provides words image to

discuss the following questions: who is the author ,what is his purpose and what are the covered ideologies?

While reading

The students read the advert to analyze it based on Fairclough model for discourse analysis at micro level(text language, main ideas, supporting details, what is stated, what is implied, vocab definition),at meso level (infer who is the author and define any argument in the text) and at macro level(infer the ideology covered in the text and the competing powers(

Post reading stage

Students will respond to the interactive true, false, ng questions

1. Freedom of expression, according to Mark, is each citizen's right()
2. Frank opposes war on Iraq
3. The only reason to create facebook is to bring people together
4. Frank's argument is supported by expertise 'opinion()

Reading material

This is the text of Facebook CEO Mark Zuckerberg's speech at Georgetown University. Facebook provided the transcript.

Hey everyone. It's great to be here at Georgetown with all of you today.

Before we get started, I want to acknowledge that today we lost an icon, Elijah Cummings. He was a powerful voice for equality, social progress and bringing people together.

When I was in college, our country had just gone to war in Iraq. The mood on campus was disbelief. It felt like we were acting without hearing a lot of important perspectives. The toll on soldiers, families and our national psyche was severe, and most of us felt powerless to stop it. I remember feeling that if more people had a voice to share their experiences, maybe things would have gone differently. Those early years shaped my belief that giving everyone a voice empowers the powerless and pushes society to be better over time.

Back then, I was building an early version of Facebook for my community, and I got to see my beliefs play out at smaller scale. When students got to express who they were and what mattered to them, they organized more social events, started more businesses, and even challenged some established ways of doing things on campus. It taught me that while the world's attention focuses on major events and institutions, the bigger story is that most progress in our lives comes from regular people having more of a voice.

Since then, I've focused on building services to do two things: give people voice, and bring people together. These two simple ideas — voice and inclusion — go hand in hand. We've seen this throughout history, even if it doesn't feel that way today. More people being able to share their perspectives has always been necessary to build a more inclusive society. And our mutual commitment to each other — that we hold each others' right to express our views and be heard above our own desire to always get the outcomes we want — is how we make progress together.