



Wordcloud





Geschied

Nee

De inhoudelijk context ontbreekt bijna volledig.



**T
O
P
I
C**



NSE's Next Top Model?

**M
O
D
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L
L
I
N
G**

Topic modelling

Een techniek om onderliggende thema's in een verzameling teksten te identificeren.

Je kunt hierbij gebruik maken van verschillende algoritmen.

De meest gebruikte is Latent Dirichlet Allocation en gaat uit van twee assumpties

1. Een tekst (document) is een verzameling van topics
2. Een topic is een verzameling van woorden

De output van de analyse bestaat dan ook uit twee onderdelen

1. De kans dat de topic tot een tekst (document) behoort
2. De kans dat een woord tot een topic behoort



Topic modelling uitvoeren

1. Data laden
2. Schonen van interpunctie en speciale karakters
3. Tokenizen (antwoorden omzetten in losse woorden)
4. Filteren
5. Woorden lemmatiseren
6. Tekst juist representeren
7. Model fitten (en tunen)
8. Interpretatie





Filtering van open antwoorden

Nvt-filter

Scheldwoorden en andere onzin

Privacy-aspecten

Namenfilter

Hoofdletterfilter

Stopwoorden verwijderen

Topic modelling uitvoeren

1. Data laden
2. Schonen van interpunctie en speciale karakters
3. Tokenizen (antwoorden omzetten in losse woorden)
4. **Filteren**
5. Woorden lemmatiseren
6. Tekst juist representeren
7. Model fitten (en tunen)
8. Interpretatie



Lemmatiseren

Vervoegingen/verbuigingen van woorden terug brengen naar hun lemma

Bv. Students, Student → Student
Results, Result → Result
Lecturers, Lecturer → Lecturer
Studying, Studies, Studied → Study
Involving, Involved, Involve → Involve
Involvement → Involvement

Topic modelling uitvoeren

1. Data laden
2. Schonen van interpunctie en speciale karakters
3. Tokenizen (antwoorden omzetten in losse woorden)
4. Filteren
5. **Woorden lemmatiseren**
6. Tekst juist representeren
7. Model fitten (en tunen)
8. Interpreteren



Tekst representatie

Maak een document term matrix (DTM)

Document	Student	Internship	Knowledge	Platform	University	Company	Job
Student_1	4	2	0	0	1	0	2
Student_2	3	0	0	0	1	0	0
Student_3	1	3	0	1	2	1	1
Student_4	3	2	0	0	1	1	0
Student_5	3	0	0	0	0	1	0
Student_6	3	1	0	0	0	1	0

Alternatief: TF-IDF → Woordbelangrijkheid meegenomen

Topic modelling uitvoeren

1. Data laden
2. Schonen van interpunctie en speciale karakters
3. Tokenizen (antwoorden omzetten in losse woorden)
4. Filteren
5. Woorden lemmatiseren
- 6. Tekst juist representeren**
7. Model fitten (en tunen)
8. Interpreteren

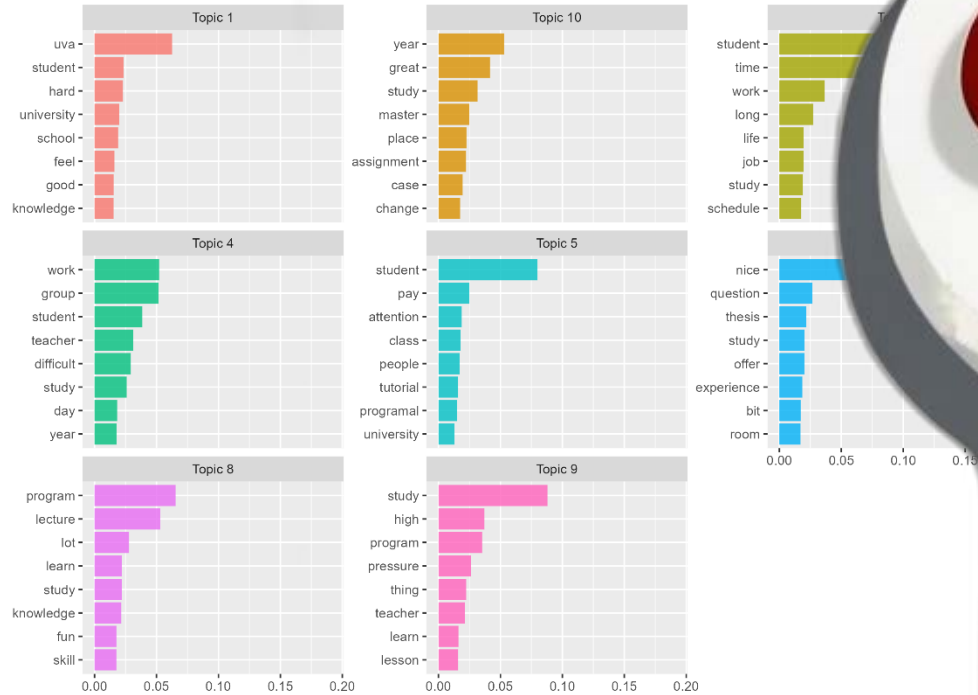




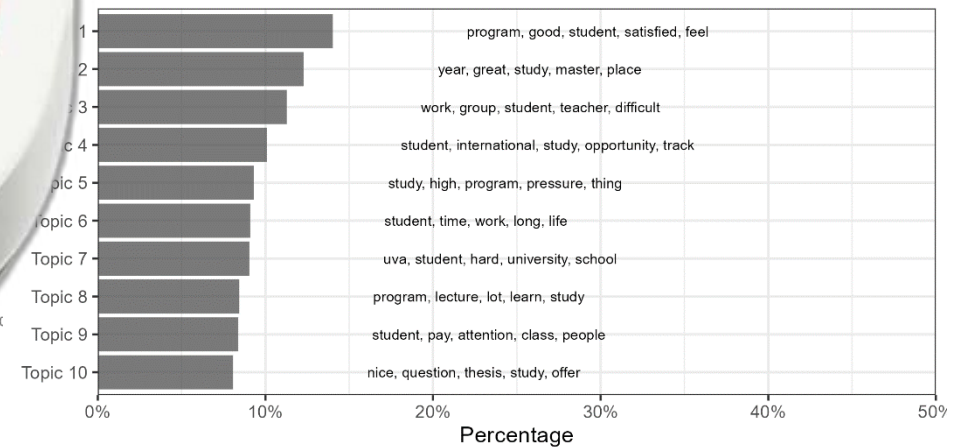
Interpreteren resultaten



Highest word probabilities for each topic
Different words are associated with different topics



Top topics
With the top words that contribute to each topic





Geschikt?

Nee ☹️

Maar:

- Optimalisatie stap bij model fitten niet toegepast
- Andere algoritmen werken wellicht beter (Egger & Yu, 2022)



Model fitten en optimaliseren

Drie parameters om te tunen:

1. K : aantal verwachte topics in de tekstverzameling
2. α - parameter: Verdeling van topics over de documenten.
3. β -parameter: Verdeling van woorden over topics



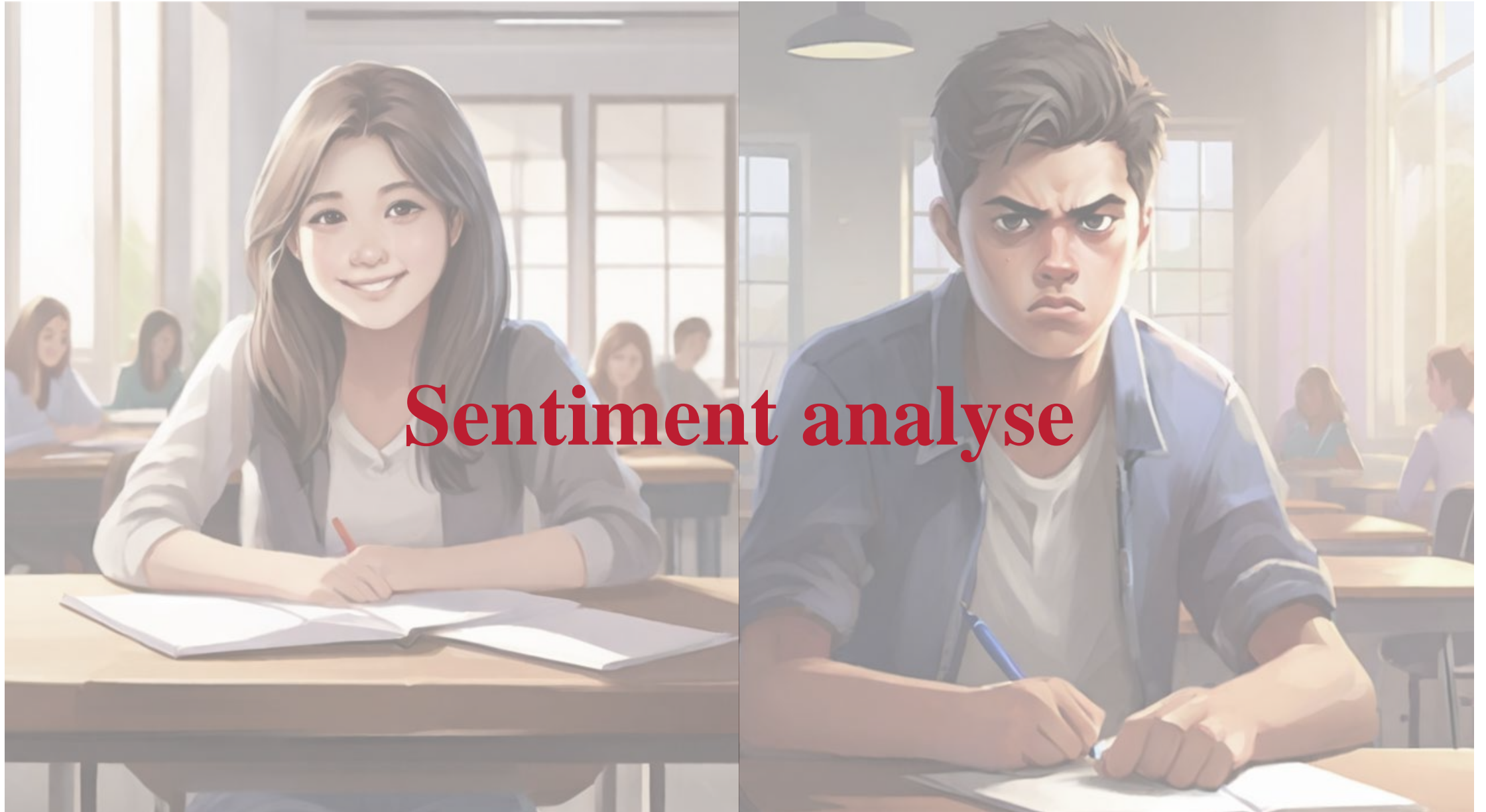
Topic modelling to be continued...

Egger en Yu (2022): LDA algoritme werkt het slechtst op het modelleren van tweets (korte berichten).

BERTopic en Top2Vec algoritmen gaven duidelijkere en nieuwe inzichten.

Tweets op face value qua lengte vergelijkbaar met de antwoorden van studenten op de NSE.

Wellicht BERTopic en Top2Vec toepassen op open antwoorden NSE.



Sentiment analyse

Sentiment analyse

Woorden met een bepaalde sentimentele (emotionele) waarde scoren

Verschillende lexicons om te kwantificeren

- NRC (6453 woorden; positief/negatief + emotionele classificaties)
- BING (6786 woorden; positief/negatief classificatie)
- AFINN (2477 woorden; score range -5 tot 5)

Keuze voor lexicon hangt af van het doel van het onderzoek en de fit.



Sentiment Analyse uitvoeren

1. Antwoorden vertalen
2. Data laden
3. Tokenizen (antwoorden omzetten in losse woorden)
4. Filteren
5. Woorden lemmatiseren
6. (Optioneel) Lexicons fitten op woordenlijst. Lexicons met de meeste overlap zijn het meest geschikt.
7. Score/Classificatie toewijzen op basis van gekozen lexicon
8. Sentiment per antwoord bepalen (Gemiddelde AFINN score of som positief/negatief classificatie bij NRC/BING)

Stapje verder: Correleren met de thema score



Resultaten

Question	Answer_origineel	Answer_ENG	open_question_sentiment_score
1 betrokkenheid en contact?	1) Voor [redacted] rond ik het zeer goed dat [redacted]	1) For [redacted] I thought it was very good th...	2.0000000
2 betrokkenheid en contact?	A lot of forms after exams about courses but I have no clue ...	A lot of forms after exams about courses but I have no clue ...	-2.0000000
3 betrokkenheid en contact?	Aan het einde van het blok wordt altijd om tips en tops gev...	At the end of the block, tips and tops are always requested, ...	1.0000000
4 betrokkenheid en contact?	Aantal situaties gehad waarbij feedback werd gegeven en di...	Had some situations where feedback was given and this was...	1.0000000
5 betrokkenheid en contact?	[redacted] gebruikt onze feedback wel, alleen het is duidelijk te z...	[redacted] does use our feedback, but it is clear to see that they ...	2.5000000

Question	n	total	mean_sentiment	sd_sentiment
Wil jij zelf iets kwijt over je opleiding dat nog niet aan bod is...	287	175.77933	0.61	1.78
betrokkenheid en contact?	428	339.36169	0.79	1.64
de aansluiting op de beroepspraktijk of beroepsloopbaan?	979	1.33.55833	1.26	1.58
de docenten aan je opleiding?	979	893.69770	0.91	1.81
de inhoud en opzet van het onderwijs?	1863	635.04005	0.34	1.67
de internationale aspecten van je opleiding?	429	401.18182	0.94	1.68
de structuur en samenhang van je opleiding?	332	94.81310	0.29	1.73
de studiebegeleiding?	607	453.80400	0.76	1.76
de vaardigheden die je leert in je opleiding?	356	230.71548	0.65	1.72
gelijke behandeling?	408	26.64423	0.07	1.56
het verbinden van kennis en ideeën?	146	111.14524	0.76	1.66
studeren met een beperking, ziekte, aandoening of bijzonde...	262	16.47068	0.06	1.57
toetsing en beoordeling?	877	129.88929	0.15	1.74

Question	correlation	pvalue	conf_int
betrokkenheid en contact?	0.32803482	3.400118e-12	[0.241,0.41]
de aansluiting op de beroepspraktijk of beroepsloopbaan?	0.15659280	1.497521e-06	[0.093,0.219]
de docenten aan je opleiding?	0.37273771	1.253775e-33	[0.317,0.425]
de inhoud en opzet van het onderwijs?	0.22784016	2.308104e-23	[0.144,0.27]
de internationale aspecten van je opleiding?	0.08967121	6.350787e-02	[-0.005,0.183]
de structuur en samenhang van je opleiding?	0.32947399	7.588137e-10	[0.239,0.422]
de studiebegeleiding?	0.39901918	4.936368e-24	[0.319,0.465]
de vaardigheden die je leert in je opleiding?	0.18740541	3.778784e-04	[0.085,0.286]
gelijke behandeling?	0.14950872	2.464247e-03	[0.053,0.243]
het verbinden van kennis en ideeën?	0.21768429	8.305041e-03	[0.057,0.367]
toetsing en beoordeling?	0.21312471	1.818857e-10	[0.149,0.275]



Geschied?

Ja!

Maar...

- Correlaties met thema scores laag (waarom?)
- Een groot deel van de inhoudelijk context ontbreekt.



Categorisering open antwoorden door beoordeelaars: Hoe goed werkt het en wat kost het?

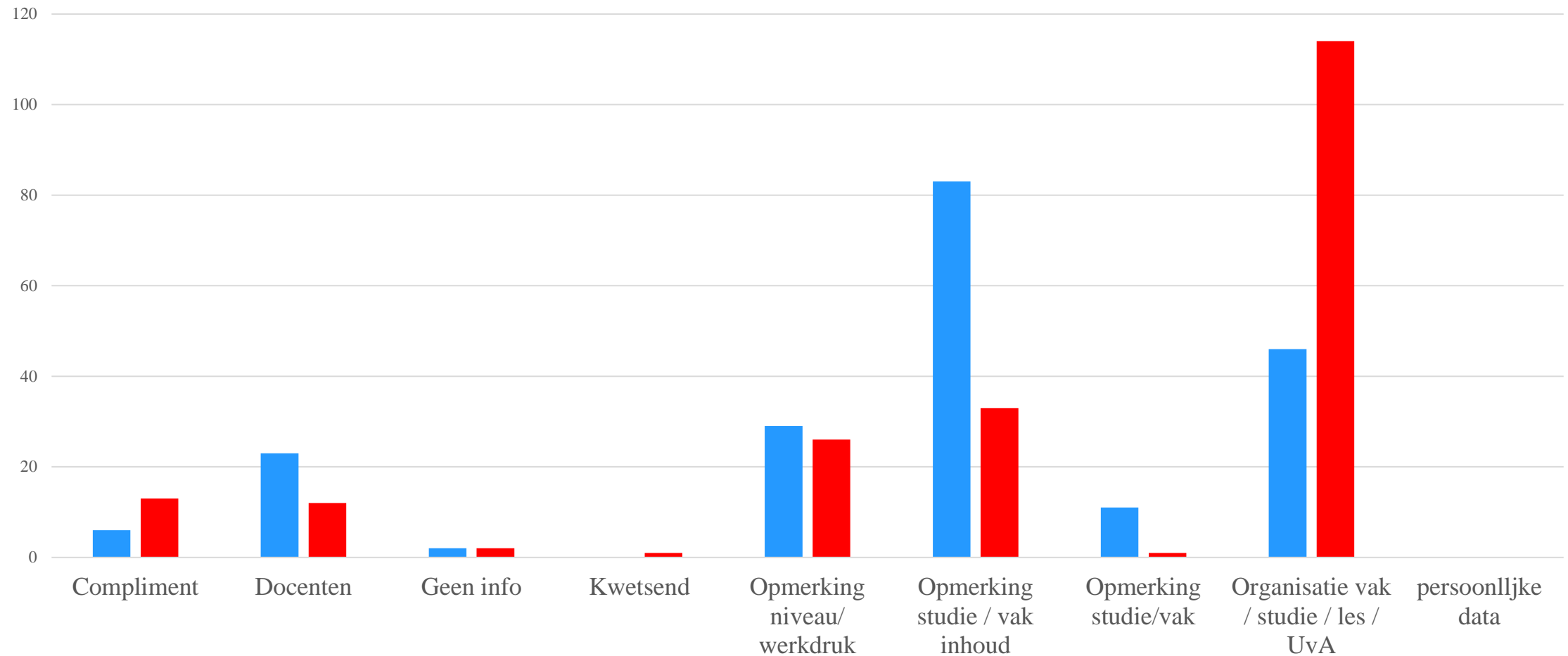
Protocol:

1. 2 studentassistenten (de beoordeelaars) om antwoorden te categoriseren
2. Drie categorieën vast (Geen info, Kwetsend, Persoonsgegevens)
3. 100 open antwoorden individueel categoriseren
4. Overleggen om tot een gedeelde categorisering te komen
5. 200 open antwoorden volgens gedeelde categorisering individueel indelen

Zijn onze beoordeelaars het onderling eens?

Eens: 54% (interbeoordeelaarscoëfficiënt)

Zelfs na afspraken zijn er tegengestelde interpretaties



Wat zou dit experiment voor de open antwoorden van de NSE betekenen?

Categoriseren kost ongeveer een half uur per 100 open antwoorden

Bij inzet twee beoordeelaars: 2x een half uur (1 uur) voor 100 antwoorden

Er zijn na schoning 14698 open antwoorden (1,2 per student)

Het verwerken door twee beoordeelaars kost 146,98 uur (ruim 18 werkdagen)

Dan is de 46% waar men het niet over eens is, niet opgelost.



Misschien kan AI een oplossing bieden?

Numerous for Excel

Quilbot

ChatGPT

GPT for Sheets

Open antwoorden NSE23 analyse

Bestand Bewerken Bekijken Invoegen Opmaak Gegevens Extra

Uitbreidingen Help

- Add-ons
- Macro's
- Apps Script
- GPT for Sheets™ and Docs™

AppSheet

GPT for Sheets™ and Docs™

- Open
- Enable GPT functions
- Retry errors
- Set API key
- Import data to Google Sheets
- Mail merge from Google Sheets
- Help

A	B	C	D	E
1	Croho Actuele Opleidingsnaam volgens CRT	Question		
2	50897 B Business Administration	de docenten aan je opleiding?		
3	50897 B Business Administration	de docenten aan je opleiding?		
4	50897 B Business Administration	de docenten aan je opleiding?		
5	50897 B Business Administration	de docenten aan je opleiding?		
6	50897 B Business Administration	de docenten aan je opleiding?		
7	50897 B Business Administration	de docenten aan je opleiding?		
8	50897 B Business Administration	de docenten aan je opleiding?		
9	50897 B Business Administration	de docenten aan je opleiding?		
10	50897 B Business Administration	de docenten aan je opleiding?		
11	50897 B Business Administration	de docenten aan je opleiding?		
12	50897 B Business Administration	de docenten aan je opleiding?		
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14	50897 B Business Administration	de docenten aan je opleiding?		
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Bestand Bewerken Bekijken Invoegen Opmaak Gegevens Extra

Uitbreidingen Help

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36	50897 B Business Administration	de docenten aan je opleiding?		

Answer_ENG+NLvertaald

Teachers are often very open to questions, but when I really have a complication they often refer me and I have not gotten much good out of that so far

Not all teachers speak English very well. Sometimes you hear them thinking for a while to articulate certain things.

Some Dutch teachers really need to improve their pronunciation

There is a big difference in skill of teaching between different teachers.

Some teachers speak English very poorly

Young teachers of the working groups are not always involved and would like to be liked.

Do a check once in a while whether their English is easily understood by all students.

I feel like the teachers understand what they're talking about.

more help for students

No the teachers are good

I hope all teachers can use quizzes to help students recall and practice at the end of each class.

Quality of teachers depends on each course and I would say it's satisfied level in general, but I also experienced such low quality tutors considering their behavior in classes (No motivation to teach, no responsibility as in regards to the course as explained by teachers, perhaps the course can provide more in-depth explanations for topics perceived to be difficult for students. For example, in my year group, QDA1 and Financial Accounting

The teachers may offer more space to ask questions. They mainly speak themselves and questions via e-mail are often not answered.

In regards to the course as explained by teachers, perhaps the course can provide more in-depth explanations for topics perceived to be difficult for students. For example, in my year group, QDA1 and Financial Accounting

Some teachers have strong accents and try to implement study inventions where it is not necessary, making the courses boring, slow, and confusing.

Most of the teachers know subject really well or are willing to search for some additional explanation etc.

Some teachers barely speak English or with a very heavy accent that cannot be understood.

Many teachers come from different backgrounds, which is very nice to see and educational. But, it happens too often that their English is not so good. This makes it very difficult to understand what they're talking about.

I have added neutral almost everywhere as there are really big differences between teachers.

mostly well chosen

the tutorial teachers are awful, and the methods/content/quality of the tutorials are basically a waste of time.

The tutors often don't give clear guidelines for grading eg. principles and economics 2 essay, we asked our tutor if the titles were included in the word count and he said they were

Some teachers might pay a little more attention to spelling errors in their communicated texts, but this obviously does not apply to every teacher.

-> uva could bring lecturers from other prestigious universities who can teach crash courses that are related to the studies; these courses could be extra credits or give some so

Teachers are all very knowledgeable and experienced in their fields. Method of teaching is sometimes ineffective.

All teachers can convey information in a way that is not too confusing. Of course, one slightly better than the other, but it has not been unbearable for any teacher.

its hard to form a good relationship with teachers as the courses are always so short

Very often I find silly mistakes in the lectures that make me get confused and misunderstand the content.

Third-year tutors are fine to help students with the essays, but we need the experience of a knowledgeable professor to elaborate on the topics and inspire students.

Very pleasant teachers who show a lot of understanding. I am very positively surprised about this training.

Depends a lot in which course you are.

Teachers are great, so energetic and like to help us but not all of them

I'd like to see more teachers that really teach and apply their actual experience when telling a story/explaining something. Rather than just reading off the powerpoint or what

Sometimes we cannot understand tutors and their teaching style.

GPT for Sheets™ and Docs™

Home gpt-3.5-turbo-1106

GPT functions

0 active 2 errors

Replace formula... Retry errors Pause

Settings

Token counter

Learn

Quick examples

List of GPT functions

Tips

Documentation Contact us

Google Sheets assistant

Generate formula

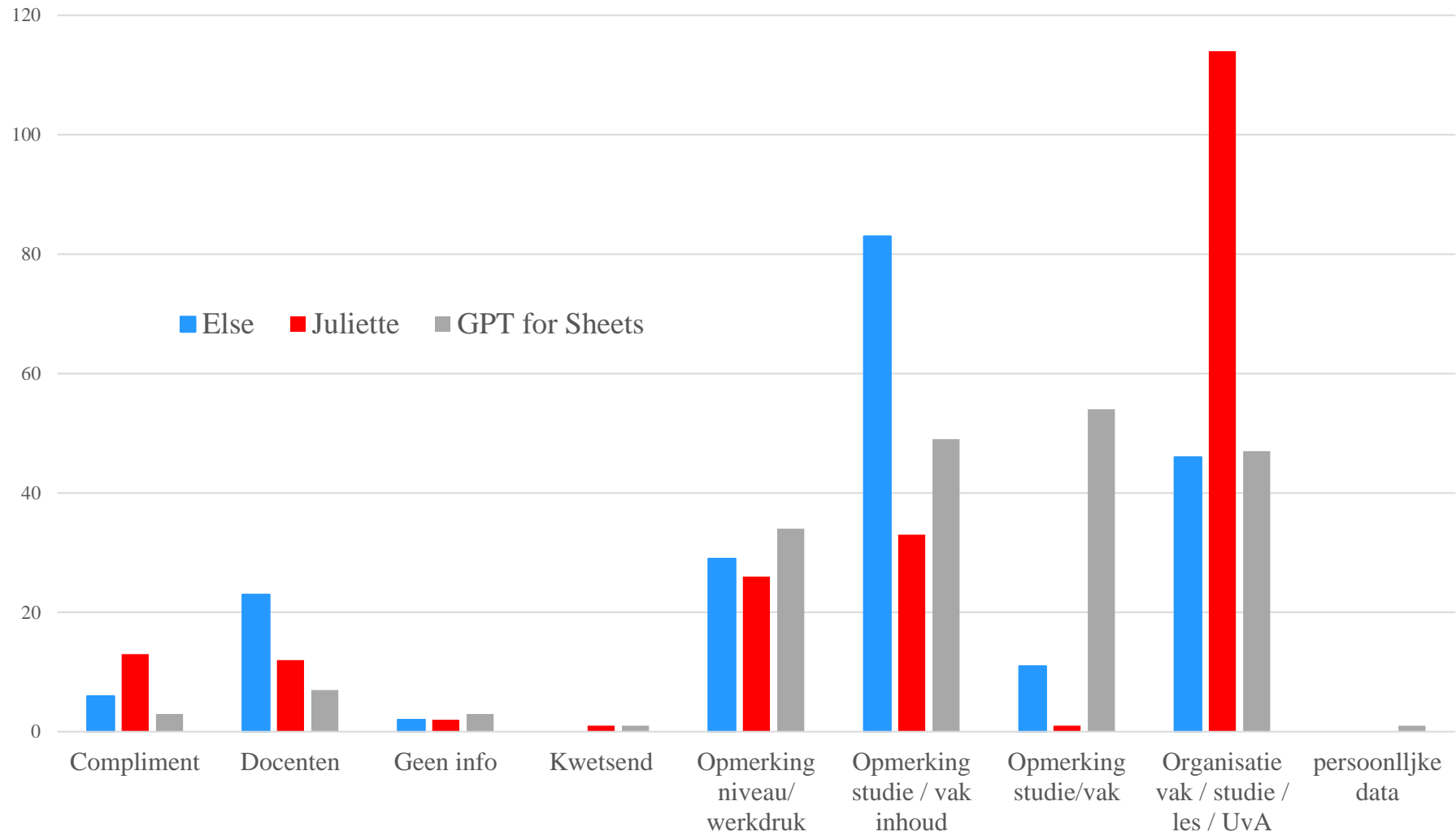
Explain formula



Kan AI categoriseren zoals de studentassistenten?

1. **Samenvatten van open antwoorden tot 10 woorden (ivm limiet)**
2. **AI trainen op de categorisering van de studentassistenten**
3. **Vervolgens het model (de AI) de laatste 200 open antwoorden voorleggen**

Interbeoordelaarscoëfficiënt van 44% en 45%





AI kan zelf ook categoriseren

Een Large Language Model (een AI) begrijpt de relatie tussen opeenvolgende woorden.

Wat Bart eerder deed in R kan ook met GPT for Sheets:

Sentimentanalyse op een vijfpuntsschaal

Question	Answer_ENG+NLvertaald	Sentiment
de docenten aan je opleiding?	Teachers are often very open to questions, but when I really have a complication they often refer me and I have not gotten much good out of that so far.	=GPT_CLASSIFY(D2;"very positive, positive, neutral, negative, very negative")
de docenten aan je opleiding?	Not all teachers speak English very well. Sometimes you hear them thinking for a while to articulate certain things.	
de docenten aan je opleiding?	Some Dutch teachers really need to improve their pronunciation.	
de docenten aan je opleiding?	There is a big difference in skill of teaching between different teachers.	
de docenten aan je opleiding?	Some teachers speak English very poorly.	
de docenten aan je opleiding?	Young teachers of the working groups are not always involved and would like to be liked.	
de docenten aan je opleiding?	Do a check once in a while whether their English is easily understood by all students.	
de docenten aan je opleiding?	I feel like the teachers understand what they're talking about.	
de docenten aan je opleiding?	more help for students	
de docenten aan je opleiding?	No the teachers are good	
de docenten aan je opleiding?	I hope all teachers can use quizzes to help students recall and practice at the end of each class.	
de docenten aan je opleiding?	Quality of teachers depends on each course and I would say it's satisfied level in general, but I also experienced such low quality tutors considering their behavior in classes (No motivation to teach, no responsibility as a tutor).	
de docenten aan je opleiding?	The teachers may offer more space to ask questions. They mainly speak themselves and questions via e-mail are often not answered.	
de docenten aan je opleiding?	In regards to the course as explained by teachers, perhaps the course can provide more in-depth explanations for topics perceived to be difficult for students. For example, in my year group, QDA1 and Financial Accounting 1 are two of the hardest courses that students have struggled with multiple times, and after receiving minimal help in passing, have to retake the course. Since I too struggle with numbers, perhaps more time provided by universities for such courses would help. Furthermore, maybe teachers can help students to pass by ensuring that we are equipped with helpful notes from previous years, past exams, and papers explaining how to solve difficult problems.	
de docenten aan je opleiding?	Some teachers have strong accents and try to implement study inventions where it is not necessary, making the courses boring, slow, and confusing.	
de docenten aan je opleiding?	Most of the teachers know subject really well or are willing to search for some additional explanation etc.	
de docenten aan je opleiding?	Some teachers barely speak English or with a very heavy accent that cannot be understood.	
de docenten aan je opleiding?	Many teachers come from different backgrounds, which is very nice to see and educational. But, it happens too often that their English is not so good. This makes it very difficult for me to get the explanation. I have experienced this with at least 70% percent of my teachers so far. Their knowledge is strong, but if it is not conveyed properly, it can be very annoying and it is also difficult to keep my attention.	
de docenten aan je opleiding?	I have added neutral almost everywhere as there are really big differences between teachers.	
de docenten aan je opleiding?	mostly well chosen	
de docenten aan je opleiding?	the tutorial teachers are awful, and the methods/content/quality of the tutorials are basically a waste of time.	

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Home gpt-3.5-turbo-1106

GPT functions

3 active 0 error

Replace formu... Retry errors Pause

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[Give us your feedback](#)

11	de docenten aan je opleiding?	No the teachers are good
12	de docenten aan je opleiding?	I hope all teachers can use quizzes to help students recall and practice at the end of each class.
13	de docenten aan je opleiding?	Quality of teachers depends on each course and I would say it's satisfied level in general, but I also experienced such low quality tutors considering their behavior in classes (No motivation to teach, no responsibility as a tutor).
14	de docenten aan je opleiding?	The teachers may offer more space to ask questions. They mainly speak themselves and questions via e-mail are often not answered.
15	de docenten aan je opleiding?	In regards to the course as explained by teachers, perhaps the course can provide more in-depth explanations for topics perceived to be difficult for students. For example, in my year group, QDA1 and Financial Accounting 1 are two of the hardest courses that students have struggled with multiple times, and after receiving minimal help in passing, have to retake the course. Since I too struggle with numbers, perhaps more time provided by universities for such courses would help. Furthermore, maybe teachers can help students to pass by ensuring that we are equipped with helpful notes from previous years, past exams, and papers explaining how to solve difficult problems.
16	de docenten aan je opleiding?	Some teachers have strong accents and try to implement study inventions where it is not necessary, making the courses boring, slow, and confusing.
17	de docenten aan je opleiding?	Most of the teachers know subject really well or are willing to search for some additional explanation etc.
18	de docenten aan je opleiding?	Some teachers barely speak English or with a very heavy accent that cannot be understood.
19	de docenten aan je opleiding?	Many teachers come from different backgrounds, which is very nice to see and educational. But, it happens too often that their English is not so good. This makes it very difficult for me to get the explanation. I have experienced this with at least 70% percent of my teachers so far. Their knowledge is strong, but if it is not conveyed properly, it can be very annoying and it is also difficult to keep my attention.
20	de docenten aan je opleiding?	I have added neutral almost everywhere as there are really big differences between teachers.
21	de docenten aan je opleiding?	mostly well chosen

Sentiment
negative
neutral
negative
neutral
negative
neutral
neutral
positive
very positive
positive
positive
negative
neutral
neutral
negative
positive
negative
negative
neutral
neutral
positive

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Explain formula



AI: samenvatten

Korte uitleg van wat ik gedaan heb met behulp van screenshots.

Bestand Bewerken Bekijken invoegen Opmaak Gegevens Extra Uitbreidingen Help

Menu's 100% 123 Google 10 B I Z A

E2 =GPT_SUMMARIZE({D:D63;"bullet points"})

A	B	C	D	E
41	50897	B Business Administration	de docenten aan je opleiding?	I don't always like the level of explanation of working groups by English of the lecturers in the lectures is not always good.
42	50897	B Business Administration	de docenten aan je opleiding?	students. In addition, the English of the lecturers in the lectures is not always good.
43	50897	B Business Administration	de docenten aan je opleiding?	some of them did not speak English as a first language and were very hard to understand, and Dutch adults are very involved and knowledgeable.
44	56981	B Kunstmatige Intelligentie	de docenten aan je opleiding?	Half of the teachers are very clear and nice to be taught (Logic, Prolog) but there are also teachers who cannot be followed (Webtech).
45	56981	B Kunstmatige Intelligentie	de docenten aan je opleiding?	Skilled teachers. Very satisfied.
46	56981	B Kunstmatige Intelligentie	de docenten aan je opleiding?	Not all teachers come across as clear.
47	56981	B Kunstmatige Intelligentie	de docenten aan je opleiding?	Too little connection with teachers. TAs don't always know what the teacher wants.
48	56981	B Kunstmatige Intelligentie	de docenten aan je opleiding?	It varies a lot per teacher how good they are, I have only had 2 teachers in 5 subjects so far that I liked, the rest I found disappointing. I do have the feeling that the teachers know a lot about their field, but the teaching itself is rather bad for some teachers.
49	56981	B Kunstmatige Intelligentie	de docenten aan je opleiding?	Most teachers explain their material very well. However, a few teachers are difficult to follow during the lectures.
70	56981	B Kunstmatige Intelligentie	de docenten aan je opleiding?	There are many foreign teachers who speak little Dutch.
71	56981	B Kunstmatige Intelligentie	de docenten aan je opleiding?	Many good experiences of teachers, but sometimes also a negative one. However, this is a small percentage.
72	56981	B Kunstmatige Intelligentie	de docenten aan je opleiding?	We are taught by students from the 2nd and 3rd year who are not even that good at the subject or have experience with explaining.
73	56981	B Kunstmatige Intelligentie	de docenten aan je opleiding?	Almost never had an emotionally useless lecture, bravo!
74	56981	B Kunstmatige Intelligentie	de docenten aan je opleiding?	This differs per teacher, in general it would be nice if at least the exams are reviewed within 3 weeks and recorded lectures are pleasant.
75	56981	B Kunstmatige Intelligentie	de docenten aan je opleiding?	There are many teachers who are not good at talking during lectures. They are difficult to understand, talk slowly or often say "uh..." during explanation.
76	56981	B Kunstmatige Intelligentie	de docenten aan je opleiding?	Especially for the web technology field, I find the explanation very unclear and often I don't understand it very well.
77	56981	B Kunstmatige Intelligentie	de docenten aan je opleiding?	More teachers like AB.
78	56981	B Kunstmatige Intelligentie	de docenten aan je opleiding?	Difficult to answer these questions, all teachers are also individuals with strengths and weaknesses. It's hard to lump them together. Some are easily understood others are not, some have a nice and clear structure of their lesson others not and with some you can ask questions well and comfortably and with others you cannot.
79	56981	B Kunstmatige Intelligentie	de docenten aan je opleiding?	Please make sure teachers and thesis supervisors/professors are engaged and motivated to help.
80	56981	B Kunstmatige Intelligentie	de docenten aan je opleiding?	For certain subjects, Dutch teachers sometimes choose to give the lectures in English. Personally, I don't think this is necessary since it is a Dutch-language study.
81	56981	B Kunstmatige Intelligentie	de docenten aan je opleiding?	The teachers can clearly convey the course material in English, but I would prefer to get it in Dutch. The level of the teachers really varies from teacher to teacher. You really notice which lecturers are

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E3 =GPT_SUMMARIZE({D:D63;"bullet points"})

	C	D	E
1	Question	Answer_ENG+NLvertaald	Samenvatting
2		Teachers are often very open to questions, but when I really have a complication they often refer me and I have not gotten much good out of that so far	- Teachers are often open to questions, but sometimes refer students without providing helpful solutions - Not all teachers speak English well and some need to improve their pronunciation - There is a big difference in teaching skills among different teachers - Some teachers speak English poorly or have strong accents that make it difficult for students to understand - Young working group tutors are not always involved or well-liked by students - Quality of teaching depends on the course, with some tutors being unhelpful and ineffective - Communication with teachers can be lacking, with unanswered emails and unclear guidelines for grading - More experienced professors are needed to provide in-depth explanations for difficult topics - Some tutorial teachers lack engagement and clear explanations, making classes unproductive - The level of teaching varies among teachers, and there is a need for better collaboration and communication between them.
3	de docenten aan je opleiding?	Not all teachers speak English very well. Sometimes you hear them thinking for a while to articulate certain things.	
4	de docenten aan je opleiding?	Some Dutch teachers really need to improve their pronunciation	
5	de docenten aan je opleiding?	There is a big difference in skill of teaching between different teachers.	
6	de docenten aan je opleiding?	Some teachers speak English very poorly	
7	de docenten aan je opleiding?	Young teachers of the working groups are not always involved and would like to be liked.	
8	de docenten aan je opleiding?	Do a check once in a while whether their English is easily understood by all students.	
9	de docenten aan je opleiding?	I feel like the teachers understand what they're talking about.	
10	de docenten aan je opleiding?	more help for students	
11	de docenten aan je opleiding?	No the teachers are good	
12	de docenten aan je opleiding?	I hope all teachers can use quizzes to help students recall and practice at the end of each class.	
13	de docenten aan je opleiding?	Quality of teachers depends on each course and I would say it's satisfied level in general, but I also experienced such low quality tutors considering their behavior in classes (No motivation to teach, no responsibility as a tutor).	
14	de docenten aan je opleiding?	The teachers may offer more space to ask questions. They mainly speak themselves and questions via e-mail are often not answered.	
15	de docenten aan je opleiding?	In regards to the course as explained by teachers, perhaps the course can provide more in-depth explanations for topics perceived to be difficult for students. For example, in my year group, QDA1 and Financial Accounting 1 are two of the hardest courses that students have struggled with multiple times, and after receiving minimal help in passing, have to retake the course. Since I too struggle with numbers, perhaps more time provided by universities for such courses would help. Furthermore, maybe teachers can help students to pass by ensuring that we are equipped with helpful notes from previous years, past exams, and papers explaining how to solve difficult problems.	
16	de docenten aan je opleiding?	Some teachers have strong accents and try to implement study inventions where it is not necessary, making the courses boring, slow, and confusing.	
17	de docenten aan je opleiding?	Most of the teachers know subject really well or are willing to search for some additional explanation etc.	
18	de docenten aan je opleiding?	Some teachers barely speak English or with a very heavy accent that cannot be understood.	
		Many teachers come from different backgrounds, which is very nice to see and educational. But, it	

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=GPT_SUMMARIZE(D2:D63; "rank 5 positive en 5 negative bullit points")

B	C	D	E	F	G
Actuele Opleidingsnaam	vc Question	Answer_ENG+NLvertaald	Sentiment	Samenvatting	
B Business Administration	de docenten aan je opleiding?	Teachers are often very open to questions, but when I really have a complication they often refer me and I have not gotten much good out of that so far	negative	=GPT_SUMMARIZE(D2:D63; "rank 5 positive en 5 negati bullit points")	
B Business Administration	de docenten aan je opleiding?	Not all teachers speak English very well. Sometimes you hear them thinking for a while to articulate certain things.	neutral		
B Business Administration	de docenten aan je opleiding?	Some Dutch teachers really need to improve their pronunciation	neutral		
B Business Administration	de docenten aan je opleiding?	There is a big difference in skill of teaching between different teachers.	neutral		
B Business Administration	de docenten aan je opleiding?	Some teachers speak English very poorly	negative		
B Business Administration	de docenten aan je opleiding?	Young teachers of the working groups are not always involved and would like to be liked.	neutral		
B Business Administration	de docenten aan je opleiding?	Do a check once in a while whether their English is easily understood by all students.	neutral		
B Business Administration	de docenten aan je opleiding?	I feel like the teachers understand what they're talking about.	positive		
B Business Administration	de docenten aan je opleiding?	more help for students	positive		
B Business Administration	de docenten aan je opleiding?	No the teachers are good	positive		
B Business Administration	de docenten aan je opleiding?	I hope all teachers can use quizzes to help students recall and practice at the end of each class.	positive		
B Business Administration	de docenten aan je opleiding?	Quality of teachers depends on each course and I would say it's satisfied level in general, but I also experienced such low quality tutors considering their behavior in classes (No motivation to teach, no responsibility as a tutor).	negative		
B Business Administration	de docenten aan je opleiding?	The teachers may offer more space to ask questions. They mainly speak themselves and questions via e-mail are often not answered.	negative		
		In regards to the course as explained by teachers, perhaps the course can provide more in-depth explanations for topics perceived to be difficult for students. For example, in my year group, QDA1 and Financial Accounting 1 are two of the hardest courses that students have struggled with multiple times, and after receiving minimal help in passing, have to retake the course. Since I too struggle			

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B	C	D	E	F	G
Actuele Opleidingsnaam	vc Question	Answer_ENG+NLvertaald	Sentiment	Samenvatting	
				Positive: - Teachers are very knowledgeable and experienced - Some teachers are very open to questions and und - Young teachers of the working groups are involve - Some tutorial teachers are engaging and provide - Many teachers come from different backgrounds, w Negative: - Not all teachers speak English well or have a st - There is a big difference in skill of teaching b - Some tutorial teachers are not trained to be tea - Sometimes there is an unpleasont atmosphere wher - Some teachers do not provide helpful notes or cl	
B Business Administration	de docenten aan je opleiding?	Teachers are often very open to questions, but when I really have a complication they often refer me and I have not gotten much good out of that so far	negative		
B Business Administration	de docenten aan je opleiding?	Not all teachers speak English very well. Sometimes you hear them thinking for a while to articulate certain things.	neutral		
B Business Administration	de docenten aan je opleiding?	Some Dutch teachers really need to improve their pronunciation	neutral		
B Business Administration	de docenten aan je opleiding?	There is a big difference in skill of teaching between different teachers.	neutral		
B Business Administration	de docenten aan je opleiding?	Some teachers speak English very poorly	negative		
B Business Administration	de docenten aan je opleiding?	Young teachers of the working groups are not always involved and would like to be liked.	neutral		
B Business Administration	de docenten aan je opleiding?	Do a check once in a while whether their English is easily understood by all students.	neutral		
B Business Administration	de docenten aan je opleiding?	I feel like the teachers understand what they're talking about.	positive		
B Business Administration	de docenten aan je opleiding?	more help for students	positive		
B Business Administration	de docenten aan je opleiding?	No the teachers are good	positive		
B Business Administration	de docenten aan je opleiding?	I hope all teachers can use quizzes to help students recall and practice at the end of each class.	positive		
		Quality of teachers depends on each course and I would say it's satisfied level in general, but I also experienced such low quality tutors considering their behavior in classes (No motivation to teach. no			

Summarize and classify together

Kunnen we beide methodes wellicht combineren?

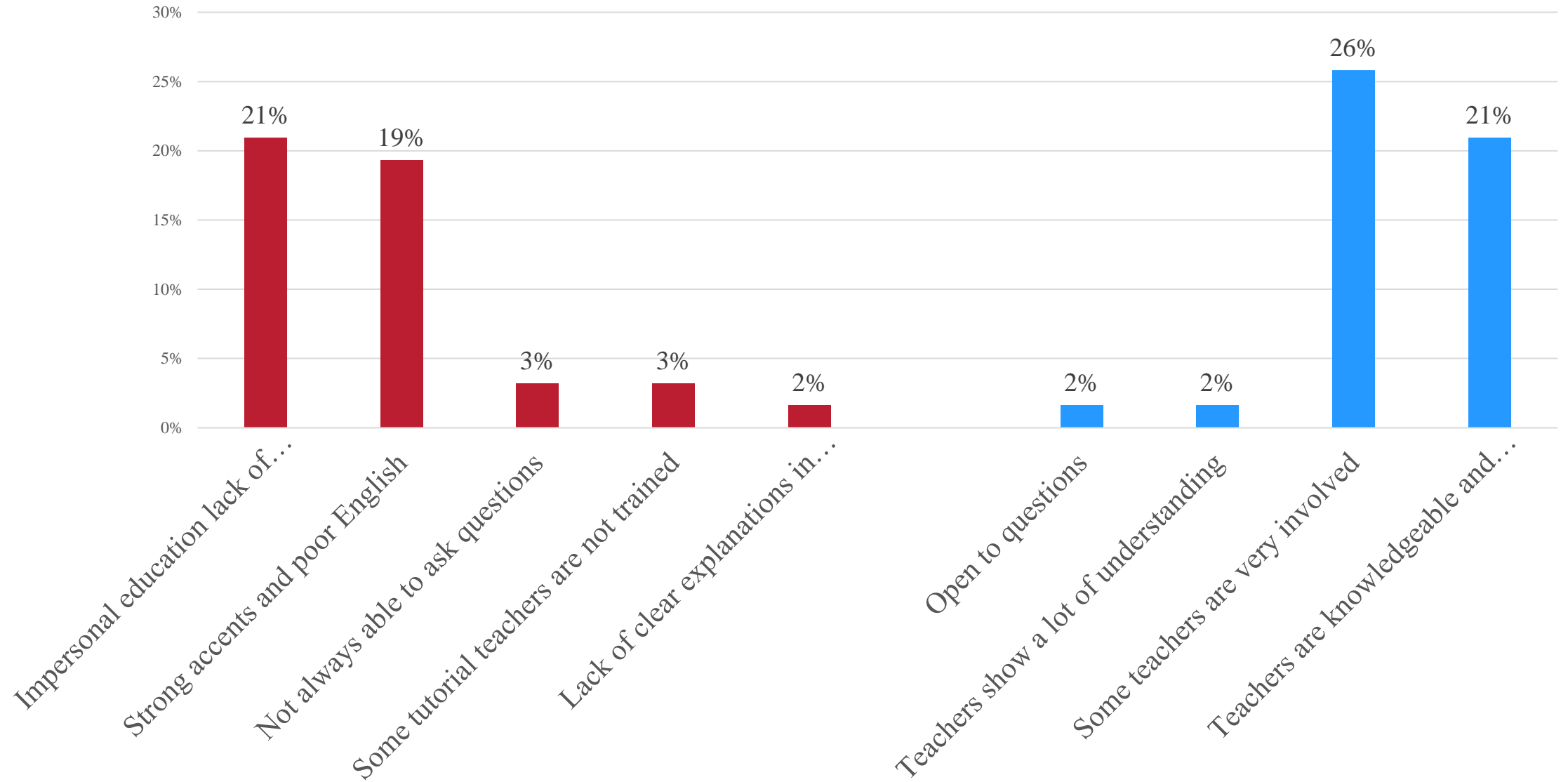
1. Eerst Summarize in bulletpoints van maximaal 6 woorden
2. Vervolgens Classify met bulletpoints als categorieën

	A	B	C	D	E	F	G	H
1	Croho	Actuele Opleidingsnaam vc	Question	Answer_ENG+NLvertaald	Korte bullitpoints	Bullitpoints categorieën		
2					<p>Positive:</p> <ol style="list-style-type: none"> 1. Teachers are knowledgeable and experienced 2. Some teachers are very involved 3. Open to questions 4. Very pleasant, understanding, and energetic teachers 5. Teachers show a lot of understanding <p>Negative:</p> <ol style="list-style-type: none"> 1. Strong accents and poor English 2. Some tutorial teachers are not trained 3. Impersonal education, lack of engagement 4. Not always able to ask questions 5. Lack of clear explanations in working groups 	<p>=GPT_CLASSIFY(D2: "Teachers are knowledgeable and experienced, Some teachers are very involved, Open to questions, Very pleasant and understanding and energetic teachers, Teachers show a lot of understanding and energetic teachers, Teachers show a lot of understanding, Strong accents and poor English, Some tutorial teachers are not trained, Impersonal education lack of engagement, Not always to ask questions, Lack of clear explanations in working groups")</p>		
	50897	B Business Administration	de docenten aan je opleiding?	Teachers are often very open to questions, but when I really have a complication they often refer me and I have not gotten much good out of that so far				
3	50897	B Business Administration	de docenten aan je opleiding?	Not all teachers speak English very well. Sometimes you hear them thinking for a while to articulate certain things.				
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9	50897	B Business Administration	de docenten aan je opleiding?	I feel like the teachers understand what they're talking about.				

d, Some teachers are very involved, Open to questions, Very pleasant and understanding and energetic teachers, Teachers show a lot of understand

	D	E	F	G
		ask English very well. Sometimes you for a while to articulate certain things.	Loading...	
		rs really need to improve their	Loading...	
		ence in skill of teaching between	Loading...	
6	50897	B Business Administration	de docenten aan je opleiding?	Some teachers speak English very poorly
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Bullit points in zes woorden: negatief (rood) en positief (blauw)





Vervolgstappen

- Onderzoeken hoe goed de AI samenvattingen zijn. Zijn ze reproduceerbaar? Welke tweaks maken ze beter?
- Hoeveel open antwoorden per opleiding en per vraag heb je nodig om tot een zinnige AI samenvatting te komen?
- Onderzoeken hoe dit is in te passen in de huidige NSE met een proefproject Humanities
- AI in eigen huis: met alle data die we hebben laten we een eigen AI gaan trainen die niet verbonden is met het internet.