# 1 Verbatim survey overview

Survey as used in: Maartje ter Hoeve, Julia Kiseleva and Maarten de Rijke. 2022. What Makes a Good and Useful Summary? Incorporating Users in Automatic Summarization Research. In *Proceedings of the 2022 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies*.

Table 1: A complete overview of the survey. This table includes the explanation that participants received, as well as all the questions and the answer options. If a question was the start of a branch, the direction of the branch has been written behind the answer options in italic. (This was never shown to the participants.) Note that the survey was performed in SurveyMonkey. The survey had a lay-out as provided by SurveyMonkey, i.e., it consisted of different pages and colors were used to highlight certain important parts in texts.

# **Question Nr. Question and Answer Options**

#### O1 Introduction and Instructions

Thank you for taking the time to fill out this survey! Before you start, please take the time to read these instructions carefully. If you still have any questions after reading the instructions, please send them to m.a.terhoeve@uva.nl.

We will give away 10 bol.com vouchers of 10 euros each among the participants. If you would like to take part in the raffle, you can leave your email address at the end of this survey.

### Goal of the study

The goal of this survey is to get insight in how summaries help or can help you when studying.

# What the survey will look like

In what follows you will get questions that aim to develop an understanding for:

- For which types of study material it is useful to have summaries
- How these summaries can help you with your task
- What these summaries should look like

We expect this survey to take approximately 10 minutes of your time.

Use the next button to go to the next page once you have filled out all the questions on the page. Use the prev button to go back one page.

### **About your privacy**

We value your privacy and will process your answers anonymously. The answers of all participants in this survey will be used to gain insight in how pre-made summaries can be helpful for different types of studying activities. The answers will be presented in a research paper about this topic. This will be done either in an aggregated manner, or by citing verbatim examples of the answers. Again, this will all be done anonymously.

¹http://surveymonkey.com

Question Nr.	Question and Answer Options				
	I agree that I have read and understood the instructions. I also understand that my participation in this survey is voluntarily.				
	□ I agree				
Q2	Important! Some background knowledge you need to know Throughout this survey we make use of the term pre-made summary. It is very important that you understand what this means. On this page we explain this term, so please make sure to read this carefully.  Definition pre-made summary One type of summary is one that you make yourself. Another type of summary is one that has been made for you. In this survey, we focus on this latter type and we call them pre-made summaries.  Who makes these pre-made summaries? These pre-made summaries can be made by a person, for example your teacher, your friend, a fellow student or someone at some official organisation, etc. The pre-made summaries can also be made by a computer.  What kinds of summaries are we talking about? There are no restrictions on what these pre-made summaries can look like. On the contrary, that is one of the things we aim to find out with this survey! But, to give some examples, you could think of a written overview of a text book, highlights in text				
	to draw your attention to important bits, blog posts, etc. These are really just examples and don't let them limit your creativity! You can come up with any example of a pre-made summary that is helpful for you.  Yes, I understand what a pre-made summary is!				
	□ Yes				
Q3	Please think back to your recent study activities. Examples of study activities can be: studying for an exam, writing a paper, doing homework exercises, etc. Note that these are just examples, any other study activity is fine too.  Did you use a pre-made summary in any of these study activities?  Yes – participants are led to Q6  No – participants are led to Q4				
Q4	Can you think of one of your recent study activities where a pre-made summary would have been useful for you?  ☐ Yes − participants are led to Q25 ☐ No − participants are led to Q5				

<b>Question Nr.</b>	Question and Answer Options					
Q5	Why do you think a pre-made summary would not have helped you with any of your recent study activities?					
	Open response – participants are led to Q48					
Start branch	of participants who described an existing summary					
	If you have multiple study activities where you used a pre-made summary, please take the one where you found the pre-made summary most useful.					
Q6	The original study material consisted of					
	$\square$ Mainly text – participants are led to $Q8$					
	☐ Mainly figures – participants are led to Q7					
	☐ Mainly video – participants are led to Q7					
	$\square$ Mainly audio – participants are led to Q7					
	$\square$ A combination of some or all of the above – participants are led to Q7					
	$\Box$ I do not know, because I have not seen the study material – <i>participants are led to Q7</i>					
	$\Box$ Other (please specify) – participants are led to Q7					
Q7	For now we narrow down our survey to study material that is mostly textual. Do you recall any other recent study activity where you made use of a pre-made summary and where the original study material mainly consisted of text? $\Box$ Yes – participants are led to Q8 $\Box$ No – participants are led to Q48					
Q8	What was the goal of this study activity?					
	☐ Studying for an exam					
	☐ Writing a paper / essay / report / etc.					
	☐ Doing homework exercises					
	☐ Other (please specify)					
Q9	Who made this pre-made summary?					
	☐ A teacher or teaching assistant					
	☐ A fellow student					
	☐ An official organisation					
	☐ The authors of the original study material					
	☐ A computer program					
	☐ I am not sure, I found it online					
	☐ Other (please specify)					

<b>Question Nr.</b>	Question and A	Answer Optio	ons			
	Now some ques	tions will fol	low about what	the study mat	erial that was si	ummarized
Q10	What was the l	ength of the	study materia	1?		
	☐ A single artic	_	· ·			
	☐ Multiple arti					
	☐ A single boo					
	☐ Multiple boo	•	om the same bo	ook		
	☐ Multiple boo	•				
	☐ A combination	•				
	☐ I do not know	v because I h	ave not seen th	e study materi	al, only the sum	ımary
	☐ Other (please			Ĭ	•	•
Q11	How was the st	udy materia	l structured?	(Multiple ans	wers possible)	
	$\Box$ There was no	o particular st	ructure - e.g. jı	ist one large te	ext	
	$\Box$ The text cont					
	$\Box$ The text cont		•			
	$\Box$ The text cons		_			
	$\Box$ The text cons				_	
	☐ I do not know		ave not seen th	e study materi	al, only the sum	ımary
	☐ Other (please	e specify)				
Q12	What was the g  ☐ Mainly educe ☐ Mainly scien ☐ Mainly nonfi ☐ Mainly fictio ☐ Other (please	ational (such tific (such as ction writing on writing (su	as a text book ( an academic an (such as (auto)	(chapter)) rticle, publicat biographies, h	istory books, et	
Q13	How would you  ☐ Ordinary: mo ☐ Specialized: ☐ Geographica area, for exam	ost people wo you need to l lly based: you	ould be able to know the jargor	understand it n of the field to erstand it if you	be able to und	
	Now we will ask used.	x some questi	ons about the p	urpose of the p	ore-made summ	ary that you
Q14	The summary	_	ecifically to he	elp me (and po	otentially fellow	w students)
	with my study	•	Naithan	A 00000	Ctnon also	I dan't
	Strongly disagree	Disagree	Neither	Agree	Strongly	I don't know
	uisagree		agree nor		agree	KIIOW
			disagree □			

Question Nr.	Question and Answe	er Options				
Q15	For what type of people was the summary intended? Your score can range from					
	(1) Untargetted, to ( Untargetted: No domain knowledge is expected from the users of the summmary.  (1)	(2)	(3)	(4)	Targetted: Full domain knowledge is expected from the users of the summmary. (5)	
Q16	How did this summary help  The summary help  I used the summar  I used the summar  I used the summar  I used the summar  The summary help  Other (please spec	ry to preview ry as a substi- ry to refresh ry ry as a remin- ped to get an ped to unders	e parts of the or the text that I v tute for the orig my memory of the der that I had to overview of the	riginal study mate was about to read inal study materi the original study read the original coriginal study m	erial al material study material	
Q17	What was the type of  ☐ Lecture notes ☐ Blog post ☐ Highlights of som ☐ Abstractive piece of paper, etc. ☐ Short video ☐ A slide show ☐ Other (please spec	e kind in the of text, such	original study r		ok, an abstract of a	
Q18	How was the summary was  The summary conparticular structure The summary itsellights, etc The summary conThe su	s a running te sisted of high e If contained s tained diagra tained tables tained graphs tained figure tained headin sisted of diff	xt, without part alights in the or special formatti ams s s s ngs	icular structure iginal study mate ng, such as bold o	rial, without	

<b>Question Nr.</b>	Question and A	nswer Options					
Q19	How much of th	e study material	was covered by	y the summary?			
	None of the	Almost none	Some of the	Most of the	All of the		
	study	of the study	study	study	study		
	material was	material was	material was	material was	material was		
	covered	covered	covered	covered	covered		
	(1)	(2)	(3)	(4)	(5)		
020		-	_	_	_		
Q20	What was the st  ☐ Informative: t study materia ☐ Indicative: the more	he summary simp l	oly conveyed the		was in the original naterial, but not		
	☐ Critical: the s☐ Aggregative:	the summary put gave an overview	different source	texts in relation	al to one another and		
Q21	Overall, how he	lpful was the pro	e-made summa	ry for you? You	r score can range		
	from (1) Not hel	-			S		
	Not helpful				Very helpful		
	at all				-		
	(1)	(2)	(3)	(4)	(5)		
Q22	Imagine you could turn this summary into your ideal summary. What would						
Q22	you change?						
	Open response						
Q23	Is there anything else you want us to know about the summary that we have not						
	covered yet?						
	Open response						
Q24	Is there anything else you want us to know about the original study material						
	that we have not covered yet?						
	Open response – participants are led to Q40						
Start branch	of participants w	ho described an	imagined sumn	nary			
	Please take one of	of these study acti	vities in mind ar	nd imagine you w	ould have had a		
	pre-made summa	ıry.					
Q25	The original study material consisted of						
	☐ Mainly text – participants are led to Q27						
	☐ Mainly figures – participants are led to Q26						
	☐ Mainly video – participants are led to Q26						
	☐ Mainly audio – participants are led to Q26						
	$\square$ A combination of some or all of the above – participants are led to Q26						
	☐ Other (please specify) – participants are led to Q26						

Question Nr.	Question and Answer Options
Q26	For now we narrow down our survey to study material that is mostly textual. Do you recall any other recent study activity where you could have used a pre-made summary and where the original study material mainly consisted of text?   Yes – participants are led to Q27  No – participants are led to Q48
Q27	What was the goal of this study activity?  ☐ Studying for an exam ☐ Writing a paper / essay / report / etc. ☐ Doing homework exercises ☐ Other (please specify)
	Now some questions will follow about what the study material that could be summarized looked like.
Q28	What was the length of the study material?  ☐ A single article ☐ Multiple articles ☐ A single book chapter ☐ Multiple book chapters from the same book ☐ Multiple book chapters from various books ☐ A combination of the above ☐ Other (please specify)
Q29	How was the study material structured? (Multiple answers possible)  There was no particular structure - e.g. just one large text  The text contained a title or titles  The text contained subheadings  The text consisted of different chapters  The text consisted of different sections and / or paragraphs  Other (please specify)
Q30	What was the genre of the study material?  ☐ Mainly educational (such as a text book (chapter))  ☐ Mainly scientific (such as an academic article, publication, report, etc)  ☐ Mainly nonfiction writing (such as (auto)biographies, history books, etc)  ☐ Mainly fiction writing (such as novels, short fictional stories, etc)  ☐ Other (please specify)

Question Nr.	Question and Ar	nswer Options			
Q31	How would you classify the difficulty level of the study material?  ☐ Ordinary: most people would be able to understand it  ☐ Specialized: you need to know the jargon of the field to be able to understand it  ☐ Geographically based: you can only understand it if you are familiar with a certain area, for example because it contains local names				
	Now we will ask some questions about the purpose of the pre-made summary that would have been helpful.				
Q32	For what type of can range from (Untargetted: No domain knowledge is expected from the users of the summmary.  (1)		-	-	Targetted: Full domain knowledge is expected from the users of the summmary.  (5)
Q33	How would this summary help you with your task? (Multiple answers possible)  The summary would help to retrieve parts of the original study material  I would use the summary to preview the text that I was about to read  I would use the summary as a substitute for the original study material  I would use the summary to refresh my memory of the original study material  I would use the summary as a reminder that I had to read the original study material  The summary would help to get an overview of the original study material  The summary would help to understand the original study material,  Other (please specify)				
Q34	What would be t  ☐ Lecture notes ☐ Blog post ☐ Highlights of s	some kind in the	f the summary? c original study n	naterial	look like and cover. ook, an abstract of a

Question Nr.	Question and An	nswer Options			
Q35	What is the ideal structure of the summary? (Multiple answers possible)  ☐ The summary should be a running text, without particular structure  ☐ The summary should consist of highlights in the original study material, without particular structure  ☐ The summary itself should contain special formatting, such as bold or cursive text, highlights, etc.  ☐ The summary should contain diagrams  ☐ The summary should contain tables  ☐ The summary should contain graphs  ☐ The summary should contain figures  ☐ The summary should contain headings  ☐ The summary should consist of different sections / paragraphs  ☐ Other (please specify)				
Q36	How much of the None of the study material should be covered (1)	e study material Almost none of the study material should be covered (2)	should be cove Some of the study material should be covered (3)	red by the sumn Most of the study material should be covered (4)	All of the study material should be covered (5)
Q37	What should the style of this summary be?  ☐ Informative: the summary should simply convey the information that was in the original study material ☐ Indicative: the summary should give an idea of the topic of the study material, but not more ☐ Critical: the summary should give a critical review of the study material ☐ Aggregative: the summary should put different source texts in relation to one another and by doing this give an overview of a certain topic ☐ Other (please specify)				
Q38	Is there anything else you would want us to know about your ideal summary that we have not covered yet?  Open response				
Q39	Is there anything else you would want us to know about the original study material that we have not covered yet?  Open response				zinal study
Look out and	rtions				

# Look out questions

Now, let's assume the pre-made summary was generated by a computer. You can assume that this machine generated summary captures all the needs you have identified in the previous questions.

Question Nr.	Question and Answer Options
Q40	Would it make a difference to you whether the summary was generated by a computer program or by a human?  ☐ Yes − participants are led to Q41  ☐ No − participants are led to Q43
Q41	Please explain the difference. Open response
Q42	Which type of summary would you trust more:  ☐ A summary generated by a human, for example a teacher or a good performing fellow student ☐ A summary generated by a computer ☐ No difference
Q43	Please explain your answer. Open response
Q44	Which type of summary would you trust more:  ☐ A summary generated by a human, for example a teacher or a good performing fellow student ☐ A summary generated by a computer ☐ No difference
Q45	Now imagine that you can interact with the computer program that made the summary, in the form of a digital assistant. Imagine that your digital assistant made an initial summary for you and you can ask questions about it to your digital assistant and the assistant can answer them. Answers can be voice output, but also screen output, e.g. a written summary on the screen. In the next part we would like to investigate how you would interact with the assistant. Please do not feel restricted by the capabilities of today's digital assistants.  Please choose the three most useful features for a digital assistant to have in this
Υπυ	scenario.  Summarize particular parts of the study material with more detail Summarize particular parts of the study material with less detail Switch between different summary styles (for example highlighting vs a generated small piece of text) Explain why particular pieces ended up in the summary Provide the source of certain parts of the summary on request Search for different related sources based on the content of the summary Answer specific questions based on the content of the summary

<b>Question Nr.</b>	Question and Answer Options
Q46	Please choose the three least useful features for a digital assistant to have in this scenario.
	☐ Summarize particular parts of the study material with more detail
	☐ Summarize particular parts of the study material with less detail
	☐ Switch between different summary styles (for example highlighting vs a generated small piece of text)
	☐ Explain why particular pieces ended up in the summary
	☐ Provide the source of certain parts of the summary on request
	☐ Search for different related sources based on the content of the summary
	☐ Answer specific questions based on the content of the summary
Q47	Can you think of any other features that you would like your digital assistant to have to help you in this scenario?
	Open response
Background	questions
	Thank you for filling out this survey so far! We would still like to ask you two final background questions.
Q48	What is the current level of education you are pursuing?
<b>Q</b> 10	☐ Bachelor's degree
	☐ Master's degree
	□ MBA
	☐ Other, please specify
Q49	What is your main field of study?
	Open response
Thank you!	
	You have come to the end of our survey. Thanks a lot for helping out! We very much
	appreciate your time.
Q50	If you would like to participate in the raffle to win a voucher, please fill out your e-mail address below. We will only use this e-mail address to blindly draw 10
	names who win a voucher and to contact you if your name has been drawn. Open response