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Using artificial intelligence for qualitative analysis of interviews: A case study from Latvia

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The banner for the 9th World Conference on Qualitative Research (WCQR) features a dark blue background with silhouettes of buildings. On the left, the WCQR logo is displayed above the text '9th World Conference on Qualitative Research'. In the center, the location 'KRAKÓW | POLAND' is listed for the dates '4 to 6 FEB/2025', with 'ONLINE' sessions scheduled for '11 to 13 FEB/2025'. The website 'wcqr.ludomedia.org' is provided at the bottom. On the right, an orange box indicates the dates '4 to 6 & 11 to 13 FEB 2025'. Logos for the organizing institutions, Universitas Jagellonica Cracoviensis, CAQDAS TM laboratory, and ludomedia, are shown in the bottom right corner.



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Introduction

The University of Latvia academic staff has extensive experience in computer-supported interview analysis since 2003. They have been trained in qualitative research using the Open Access AQUAD software, created by Professor Emeritus Günther Ludwig Huber.

The current study is the first experience where the project researchers' team has been used the AI tool ChatGPT-4o.

This paper presents the lessons learnt from the qualitative analysis of interviews on youth' moral growth combining AI and computer assisted potentialities for furthered research on family literacy in moral sexuality education 2024-2026 funded by the Recovery and resilience Facility project "Internal and external consolidation of the University of Latvia" (No.5.2.1.1.i.0/24/I/CFLA/007), grant No. LU-BA-PA-2024/1-0011 (University of Latvia Homepage).

Content

- o Research and problem design
- o Data collection approach
- o Data analysis approach
- o Results and applications discussion



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Methodology choice



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Research and problem design

The goal of the study is to describe the lessons learnt during the qualitative analysis of interviews integrating AI and computer assisted tools.

The research question addressed in this paper is: what were the benefits and challenges of using AI together with traditional computer assisted methods for interview analysis? Concretely, how useful and trustworthiness was the AI tool ChatGPT-4o for summarizing, counting and retrieving relevant quotations in a large set of qualitative data, compared to **computer assisted methods?**

Detail research design and methods 1



Data collection approach

The study conducted interviews across two grade levels: 7th and 9th, involving both an experimental group and a control group. In the 7th grade, the experimental group contributed 14 interviews, while the control group provided 51 interviews, totalling 65 interviews. In the 9th grade, the experimental group conducted 58 interviews, and the control group contributed 48 interviews, resulting in 106 interviews. Overall, the study collected 72 interviews from the experimental group, 99 from the control group, culminating in a total of 171 interviews. This comprehensive data collection ensures diverse insights for current and the furthered research analysis.

Detail research design and methods 2



Instrument: A Structured Interview

Parts	Questions
Past	Think of someone you admired who inspired you to develop your moral character!
	Inspired character traits
	Turning point in the development of moral character
	Opportunity and/or need to help others
	So far, committed to the development of moral character
	Best practice in developing moral character
	What was most difficult/obstructive for character development?
Present	What was most helpful for character development?
	Received help from others
	Biggest obstacles
Future	The desire to develop moral character
	How can you inspire others to develop character?
	What would you like to hear about your character?

Detail research design and methods 3

Data analysis approach

The analysis followed the following steps:

First, the interviews of each 7th class – experimental and control - were summarized separately using AI tool ChatGPT-4o, and two researchers reviewed and corrected the summaries for trustworthiness.

Secondly, a frequency analysis of particular codes was implemented, first using AQUAD 8e software using a human-created code catalogue, and then using the AI tool for checking AI potential and reliability in this numeric task.

Finally, relevant quotations were retrieved in the data of Year 7 pupils' set of interviews, first using AQUAD 8e software and then the AI for checking AI potential and reliability in this task which required a higher degree of sophistication. The details of each step are presented below.



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Detail research design and methods 4



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Step 1: Separate analysis class by class

The AI analysis, which provided main topics and frequency counts.

Three groups of prompts were used for the inquiry – one for the interview section referring to the past experiences, another one for the present situation and the third one - for the future plans.

Each prompt referred to the correspondent period (parts of the interview) and included the questions of this part.

For example, the prompt regarding the section “Present – your current situation” was: “Look into the answers to the section “Present - your current situation” of the interviews in the last document. What do respondents do regularly that helps them develop their moral character? Do respondents receive any help from others to develop their moral character? What kind of help? What are the biggest obstacles that respondents face at present in developing their moral character? Be specific about the number of occurrences of each theme”.

The AI output included the main topics mentioned by pupils and the number of occurrences. It was reviewed by 2 researchers for coherence.

Step 2: Frequencies analysis

Regrouping with AI - interview preparation for analysis

Using AI, two Word documents were created: one with all interviews from pupils in Year 7 experiment group, 1 with those from pupils in Year 7 control group. In each word document all the responses to each particular question were put together for facilitating the analysis.

Coding with AQUAD 8e

The both word document were uploaded in AQUAD environment, and the new project was opened. A code catalogue was created and particular codes were retrieved, counted, and grouped into meta-codes.

The meta-codes were added to codes controlling the overlapping of these degree of sophistication.

The details of each step are presented below.



Code catalogue for Analysis with AQUAD 8e

Detail research design and methods 6



Meta-codes	Particular codes
Past	Think of someone you admired who inspired you to develop your moral character!
	Inspired character traits
	Turning point in the development of moral character
	Opportunity and/or need to help others
	So far, committed to the development of moral character
	Best practice in developing moral character
	What was most difficult/obstructive for character development?
Present	What was most helpful for character development?
	Received help from others
	Biggest obstacles
Future	The desire to develop moral character
	How can you inspire others to develop character?
	What would you like to hear about your character?

Detail research design and methods 7



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Writing of AQUAD 8e table of frequencies of main codes for each class and class group

A frequency analysis of particular codes was implemented, using AQUAD 8e software using a human-created code catalogue (Table 2), filtering out overlapped codes. The final code catalogue had 15 entries, - 7 codes related to the first section (past), and 4 codes to the second section (present) and 4 to the last section (future). The coded texts were analysed and interpreted by the research team.

Frequency analysis with AI

First the couth prepared files were uploaded on ChatGPT environment. The ChatGPT was asked to count the particular occurrences for each of the 15 codes in the code catalogue created with AQUAD 8 for comparison.

Then, the prompts were prepared and refined code by code.

For example, for the code “inspirers”, the first prompt “For each file, count the number of times that inspirers are mentioned” gave the following answer: “The term “inspirers” was not mentioned in any of the uploaded documents” A new prompt was introduced: “For each file, count the number of times that respondents mention someone inspiring them”, which also gave a similar answer: “There were no mentions of respondents being inspired by someone in any of the uploaded documents”.

A more precise prompt indicating where to look for the answer was “For each file, count the number of times that respondents mention someone inspiring them, looking in the answers to the first question “Think of someone you admired who Inspired you to develop your moral character!” This prompt produced the requested count per file.

A similar prompt was given for each entry of the AQUAD8e code table with reference to the question in the original file. In general, this system worked well, excepting the question about personal commitment.

The results for each code were introduced manually in a table for comparison.

Detail research design and methods 8



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Step 3: Retrieving expressions from grade 7 interviews

Retrieving expressions with AQUAD 8e

Finally, in-depth qualitative content analysis was conducted using AQUAD8e, incorporating AI-generated and new emergent themes during coding. The coded texts were analysed and interpreted by the research team. Thematic analysis followed three steps. First, interview responses were grouped into three sections: past (life events and inspirations shaping moral character), present (current efforts, support, and challenges), and future (traits to be cultivated and inspiring others).

The most relevant quotations were selected in the files with expressions from the experimental and control classes in grade 7 using AQUAD 8e option on analysis of texts.

Retrieving expression with AI

The same files were uploaded in ChatGPT environment. Then a prompt for each section and subsection was created, including also the indicators for each section. For example, for the first section, the prompt was: "Select some answers that illustrate respondents' understanding of moral growth process. Understanding of moral growth processes includes the following aspects: awareness that they can improve character during all their life, that when character grows, inner freedom also grows, that educating moral emotions is part of character building, that improving moral reasoning is part of character building, that character development implies training, repetition of good moral behaviour, and that inner joy of getting good habits facilitates the character development process". The quotations were selected according to the main components of the model of moral growth: section A 'Beliefs'; section B 'Status', section C 'Practices', including section set C1 'Goal-orientation to moral growth' and section set C2 "Moral growth engagement' with 2 subsets: section sub-set C2.1 'Engagement plan' and section sub-set C2.2 'Engagement areas' items; and Section D 'Selfhood'.

Questionnaire items and codes for analysis with AI

Detail research design and methods 9

ChatGPT gave a set of quotations for each the indicators mentioned in the prompt.



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Codes	Items	Shorted items
Section A	'Beliefs' items (in positive form)	
A1_1	You can improve your character during all your life.	Possibility
A1_2	When your character grows, your inner freedom also grows.	Freedom
A1_3	Educating moral emotions is part of character building.	Emotions
A1-4	Improving moral reasoning is part of character building.	Reasoning
A1-5	Character development implies training, repetition of good moral behaviour.	Training
A1-6	Inner joy of getting good habits facilitates the character development process.	Joy
Section B	'Status' item (5 levels)	
	Not interested; never thought about it; have doubts about engaging; engaged since childhood; engaged after overcoming a moral crisis	
Section C	'Practices'	
Section C1	'Goal-orientation to moral growth'	
C1_1	My interest in character growth is quite stable	Stability
C1_2	Setbacks in acquiring good moral habits don't discourage me to develop my character I have determination in developing my moral character.	Not discouraged
C1_3	I am really trying hard to develop my moral character. determination in developing my	Determination
C1_4	moral character. It is easy for me to focus on getting into good habits for more than a month.	Effort
C1_5	Once I have decided to acquire a good habit, I never give up until I get it.	Sustainability
C1_6	My interest in developing moral character is strong.	Stickability
C1_7	I am constantly improving my moral character and never give up.	Strength
C1_8	I was passionate about getting into good habits, and my interest stayed alive.	Perseverance
C1_9	I have overcome difficulties to develop my moral character.	Passion
C1-10		Resilience

Questionnaire items and codes for analysis with AI

Detail research design and methods 9

ChatGPT gave a set of quotations for each the indicators mentioned in the prompt.



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Codes	Items	Shorted items
Section C2	<i>“Moral growth engagement”</i>	
<i>Section C2.1</i>	<i>‘Engagement plan’</i>	
C2_1	I have a clear plan for my free time.	Free time
C2_2	I avoid places, people and events that encourage immoral behaviour.	Life environment
C2_3	I avoid websites, social networks, etc. that encourage immoral behaviour.	Online environment
C2_4	I take an interest in people of good moral character (e.g. by reading or watching videos about them).	Moral exemplars
C2_5	I meet friends who motivate me to develop my moral character by their example.	Friends
C2-6	I ask for advice on developing moral character (from friends, parents, teachers...).	Advisers
Section C2.2	<i>‘Engagement areas’</i>	
C2.2_1	I do my homework with order and intensity.	Homework
C2.2_2	I work hard at school.	School
C2.2_3	I involve in family chores actively.	Family
C2.2_4	I involve in voluntary activities.	Volunteering
C2.2_5	I involve in sport and/or open-air activities.	Sport
C2.2_6	I involve in artistic and/or cultural activities.	Culture
C2.2_7	I involve in religious and/or spiritual activities.	Religion
Section D	<i>‘Selfhood’</i>	
D1_1	How much are you doing to develop your moral character?	Perceived involvement
D1_2	What feelings does the process of developing moral character arouse in you?	Perceived emotions
D2_1	Perceived support from family (parents, siblings, grandparents, etc.).	Family support
D2_2	Perceived support at school (teachers, school leaders and other staff).	School support
D2_3	Perceived support and recognition from your closest friends.	Friends' support



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Challenges and solutions



Lessons learned from step 1

Combining AI and classical computer-assisted analysis for summarizing interview contents', the AI tool was most useful and quite thrust for summarizing pupils' reported opportunities (e.g., family kindness), challenges (e.g., negative influences, laziness), and strategies (helping others, empathy) guiding their moral development

The analysis revealed pupils' reported opportunities (e.g., family kindness), challenges (e.g., negative influences, laziness), and strategies (helping others, empathy) guiding their moral development. These insights are crucial for enhancing moral education support and curriculum effectiveness.

Mistakes found:

- Errors in the frequency counts.
- Mixing information belonging to one class into another classes.

Lessons learned from step 2

Combining AI and classical computer-assisted analysis for implementing frequency analysis of interviews, the AI tool had a very low reliability for counting the most frequent codes in the data, often missing the textual context in Latvian.

It is necessary to mark that AQUAD searches for explicit and implicit latent data, and AI searches mostly for explicit data (words that were put into a prompt), although AI has a trained language with synonyms; therefore, it does not search only for keywords. However, AI cannot understand well the transferred meanings of words. Examples with AQUAD8e show that it could find more people who help (coaches, you-tubers ...), but AI generally looks for family members. Frequencies are also not always accurately counted with AI.

While the AI analysis is precisely guided about where to look for answers, AQUAD8e looks for the coded explicit and implicit latent meanings in the whole file.

Lessons learned

Lessons learned from step 3

Combining AI and classical computer-assisted analysis for retrieving relevant quotations highlighted the most significant quotations on adolescent's moral growth.

The AI tool was useful and quite trustwordness for selecting significant quotations according to predetermined topics provided that the prompt was very clear and included the description of the indicators, which contained the keywords. However, human-driven verification was still necessary. It should consider asking questions of the AI before or after the AQUAD8 text analysis.



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Discussion of results and applications



Step 1: Findings from separate analysis class by class with AI

10 students in class E1

The analysis of 10 E1 adolescents' expressions revealed that they were primarily inspired by their family members and teachers, who admired their character traits. These qualities, such as politeness, kindness, honesty, and the courage to love others, are highly valued for their promotion of harmonious and positive relationships. Some adolescents experienced turning points in the development of their moral character, such as changing their residence and school, betrayal by friends, and arguments with family members. These events helped them understand their own value and the motives of others. Some adolescents were purposeful in developing their moral character, thinking about how to acquire desired qualities and trying to learn from people who inspired them. This purposefulness manifested both in everyday activities and in achieving long-term goals. Some respondents found the best experience in developing moral character related to the support of friends and family, as well as moving to a new place of residence or changing schools. Family support was important in developing moral character, and receiving a positive comment (thank you) made them continue to strive to be a better person. However, the adolescents' moral character development was hindered by bad friends, panic attacks, external environment, academic load, and fatigue. Overcoming difficulties involved the help of relatives and friends, reading the Bible, praying, maintaining emotional balance and motivation, changing the social environment, focusing on favourite activities, and not allowing negative opinions to influence them. In terms of future goals, most respondents believe they need to improve their moral character by becoming more patient, polite, and positive. They also want to improve determination and perseverance and reduce aggression. Key traits they want to cultivate include patience, kindness, determination, emotional stability, and a positive attitude. To inspire others to develop their moral character, some adolescents believe they could do so through personal example, motivation, and support, while others believe they could inspire others by showing their behaviour and achievements, motivating and encouraging others, and offering support and advice.

5 students in class E2

The AI summary for class E2 adolescents consists of three main sources of inspiration: their mothers, friends, and family. Mothers were admired for their respect for others, calmness, patience, and ability to teach ethical principles. Friends motivated them to be purposeful and set goals, while the family was admired for its mutual support and helpfulness. Character traits inspired by mothers included courtesy and respect, purposefulness and diligence, and the ability to listen. Patience and peace were particularly appreciated, as well as respect for others. Goal-orientees and helpfulness were also admired and tried to be developed. There was no specific turning point in the development of moral character for the respondents, but rather a continuous learning process from family and friends. Turning points in the development of moral character included suffering and difficulties, family support, own efforts and determination, and conflict situations. Many respondents experienced or observed others' suffering, which were important turning points in the development of their moral character. Some respondents had the opportunity to help others, contributing to the development of their moral character by making them more empathetic and compassionate. Purposeful help often improved social skills and relationships. Contact with suffering and helping others significantly affected the development of moral character, making respondents more empathetic and compassionate. Helping others promoted support and understanding, promoting compassion and helpfulness. Personal growth was also noted as a significant factor in the development of moral character. Adolescents have been purposeful in developing moral character so far, practicing polite behaviour, helping others, and listening. Most respondents have been goal-orientated, focusing on personal growth and strengthening moral character. In conclusion, adolescents highlight the importance of mothers, friends, and family in shaping one's moral character. By focusing on these qualities, students can develop a strong sense of responsibility, empathy, and commitment to their values.



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Step 2: Findings from frequencies analysis

As seen, only one times the frequencies of particular codes were similar by using the both methods, and three times comparable. Mostly, AQUAD8e as well AI provide in-depth insight in the frequencies of particular codes (4 times each). Significant for evidence on pupils' moral growth in the experimental class is the finding that a desire to develop moral character is double often mentioned in the control class. eTap support-materials were only one time mentioned as very helpful. One participant has written "I don't know what all this means."



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Particular codes	AQUAD8e		AI		Differences
	A	B	A	B	
eTap support-materials were very helpful	1	0			AQUAD8e > AI
I don't know what all this means	0	1			AQUAD8e > AI
Inspired character traits	16	32	11	23	AQUAD8e > AI
Someone you admired who inspired you to develop your moral character	11	33	3	4	AQUAD8e > AI
Someone you admired who inspired you to develop your moral character -	4	7			
Someone you admired who inspired you to develop your moral character +-	0	1			
Opportunity and/or need to help others	7	4	14	28	AQUAD8e < AI
Opportunity and/or need to help others -	2	2			
How you can inspire others to develop character?	7	37	13	12	AQUAD8e < AI
How you can inspire others to develop character? -	2				
How you can inspire others to develop character? +-	1	5			
What was most helpful for character development?	15	44	20	34	
What was most helpful for character development? +-	0	2			
What was most difficult/obstructive for character development?	8		8	21	Comparable
What was most difficult/obstructive for character development? -	1	9			
What was most difficult/obstructive for character development? +-	0	3			
So far, committed to the development of moral character -	0	1			
So far, committed to the development of moral character +-	0	1			
Turning point in the development of moral character	6	4	3	7	E class=AQUAD8e > AI C class= AQUAD8e < AI
Turning point in the development of moral character -	1	5			
Turning point in the development of moral character +-	0	4			
sabiedriski aktivitāte skolā	1	0			
Opportunity and/or need to help others	12	22	15	30	Comparable
Opportunity and/or need to help others -	2	10			
Opportunity and/or need to help others +-	0	17			
Whether there has been close contact with the suffering of others	1				
Whether there has been close contact with the suffering of others -	0	1			
The desire to develop moral character	9		18	31	AQUAD8e < AI
The desire to develop moral character -	2	15			
The desire to develop moral character +-	2	13			
What would you like to hear about your character?	9		12	24	Comparable
What would you like to hear about your character? -	1	7			

In note: A=7th class experimental; B=7th class control; +- means that the response is positive but not argued; - means that a negative response is provided,

Evidence on adolescents' of experimental 7th class moral growth: Retrieved expressions for each component with AQUAD 8

Components	Quotations
A. Understanding moral growth	<p>Because my mother is very ambitious and hard-working, I have also acquired these qualities. (7th class E).</p> <p>Many people, friends, and family encourage me, tell me how I could have done better, and what to do next time. (7th class E).</p> <p>I get help from my closest friends and family—support, joy, and solutions in difficult situations. (7th class E).</p> <p>Never treat others badly and think about how the other person will feel. Each person needs to think about their own actions and emotions. In this way, it will be easier to develop their moral character. (7th class E).</p> <p>I sometimes come into contact with the wrong people, which does not affect me well. But I try to stay away from them and not get involved in bad things. (7th class E).</p>
B. Maturity of the moral growth decision	<p>The "wrong crowds" should be avoided because they can drag you down with them, and their actions can be harmful for the future, and you have to understand this yourself. (7th class E).</p> <p>Nowadays, young people do not follow up on their statements; they often use bad language. It can be easy to "stick it," of course, but I have a firm position that I don't need it, and it's not cool. (7th class E).</p> <p>I have been in an exacerbated relationship situation where I wanted to take the easy option—start shouting, behave aggressively. But I restrained myself and looked at the situation from the outside with a cool head. The best option is to pause, consider all the circumstances, and then make the right decision. (7th class E).</p>
C1. Experience in developing moral character	<p>I was inspired to develop moral character by my family. Seeing how each family member treats each other with helpfulness and niceness and echoes each other. I can ask my brothers and sister to be helpful because they have already had the experience of learning and virtue. The foundations of my moral upbringing have been laid from birth. (7th class E).</p> <p>My best experience was with my childhood best friend. And these memories that we made together and that we experienced together help us in the present. (7th class E).</p> <p>My best experience has been having a positive comment said to me about my helpfulness, which made me keep trying to be a better person. (7th class E).</p> <p>It is the words of others that hinder my personal growth; if someone shouts at me or my mom gets on top of me, I lose motivation to continue on my path of growth. (7th class E).</p> <p>The external environment bothered me because it remained unchanged for a little and was not conducive to change. (7th class E).</p>

Components	Quotations
C2.1 A plan for developing moral character	<p>There have been several people who have helped me to improve and not be like I used to be. They have helped me not to be so wrong, to be grateful for every little thing that I get or have, and not to get involved, not to participate in all kinds of nonsense. (7th class E).</p> <p>I was inspired to have courage, to love other people, because this person had those qualities, and I wanted to improve that in myself. I was determined. This manifested itself in me thinking about how to have these qualities. (7th class E).</p> <p>I regularly try to analyse the behaviour of others and my own behaviour. (7th class E).</p> <p>I was inspired by my description. He was a very clever and decent person. I always wanted to be like him. I am still inspired by him and persevere to be perfect as he taught me. (7th class E).</p> <p>To improve my character, I take examples from others by impressing my moral character in this way. (7th class E).</p> <p>I think I should, because everything is never 100%. I would like to cultivate determination and non-giving up. (7th class E).</p> <p>Yes, everything can be improved. If something is good, it has to get better. I don't really know what I want; I just want to be perfect in the eyes of others. (7th class E).</p>
C2.2. Activities that helped to develop moral character	<p>I have acted out a conflict, and I have shown how to do the right thing—to understand the situation and to help prevent conflict. By learning these things in difficult situations, you can become a better person by helping others. (7th class E).</p> <p>I have helped and listened to others, and this has made me a good person. (7th class E).</p> <p>Helping someone to develop is very difficult; there are so many changes in adolescence. Helping with contact and support is a good way to allow them to experience a state of peace. (7th class E).</p> <p>I think everyone needs to understand how to behave in society, and everyone understands it in their own time. (7th class E).</p> <p>I think that everyone person has to understand how they want to develop it themselves. And everyone has their own approach to how it happens. (7th class E).</p> <p>I try not to take other people's negative comments to heart because there will always be something bad to add, and you just have to ignore it and stick to yourself and your own thoughts. (7th class E).</p> <p>Communicating with people helps me to develop my moral character. From an early age I have been a confident and talkative person. Communication plays a great role in its development. (7th class E).</p> <p>Because I am socially active at school and take part in and organise various events on a daily basis, I get to interact with both young people and adults. It is a very good opportunity to gain experience in developing moral character. (7th class E).</p>
D1. Personal recognition and motivation need	<p>I would like people to remember me as a nice and sensible person. (7th class E).</p> <p>I think the most important thing is to appreciate yourself neither too much nor too little. (7th class E).</p> <p>Personally, I would like to be talked about, but if one has to choose, I would like to be seen as creative and intellectual. (7th class E).</p> <p>I would like people to see all my good qualities in me, but the main one is kindness. I want people to know and think first thoughts that I am someone they can trust. (7th class E).</p> <p>I want others to see me as a cool, emotional, and all-around ideal person. I want to learn everything in order to adapt to others and others' interests. I will inspire others with myself because I will be ideal and a good example for motivation. (7th class E).</p> <p>I would like people to say that I had many virtuous qualities and that they were really perfection-giving. Also, that other people would be inspired. (7th class E).</p>
D2 Social recognition and support	<p>I try to get closer to my friends and stay close to my family(7th class E)</p> <p>I am around and make friends with good people who also help me to develop all this. It also helps that I can spend time around loving people who develop good qualities in me. Praying also helps me because God helps a lot. (7th class E).</p> <p>From parents, friends, brothers, and sisters. I also get a lot of motivation from friendship, love, etc. (7th class E).</p> <p>I get a lot of help from my family members. My parents have explained and told everyone in the family from an early age about the do's and don'ts. Talking and communicating with parents and siblings and sharing experiences. This helps me. (7th class E).</p>



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Step 3: Evidence on moral growth find out from AQUAD 8e and AI

Evidence on adolescents' moral growth was found out first with AQUAD8e, then with the AI for checking its potential and trustworthiness because this task required a higher degree of sophistication.



***AI analysis:
Retrieved
expressions for each
component.***

These responses demonstrate the adolescent' reflections on their efforts, the joy and satisfaction they derive from moral development, and the critical role of family, school, and friends in supporting their growth.

For example:

Planning how to use free time

"To improve my character, I take an example from others by influencing my moral character in this way."

"I think very regularly about the things I do and say."

"I pray and try to be in a positive environment."

Step 3: Evidence on moral growth find out from AQUAD 8e and AI

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Data analysis model for further research



Summaries:
Sequential
(using results
of AI for
human based
refining)

AI: initial
thematic
analysis at the
class level

- **Output:** main topics and frequency counts for each class; reduce the amount of information from 342 pages to 26 pages

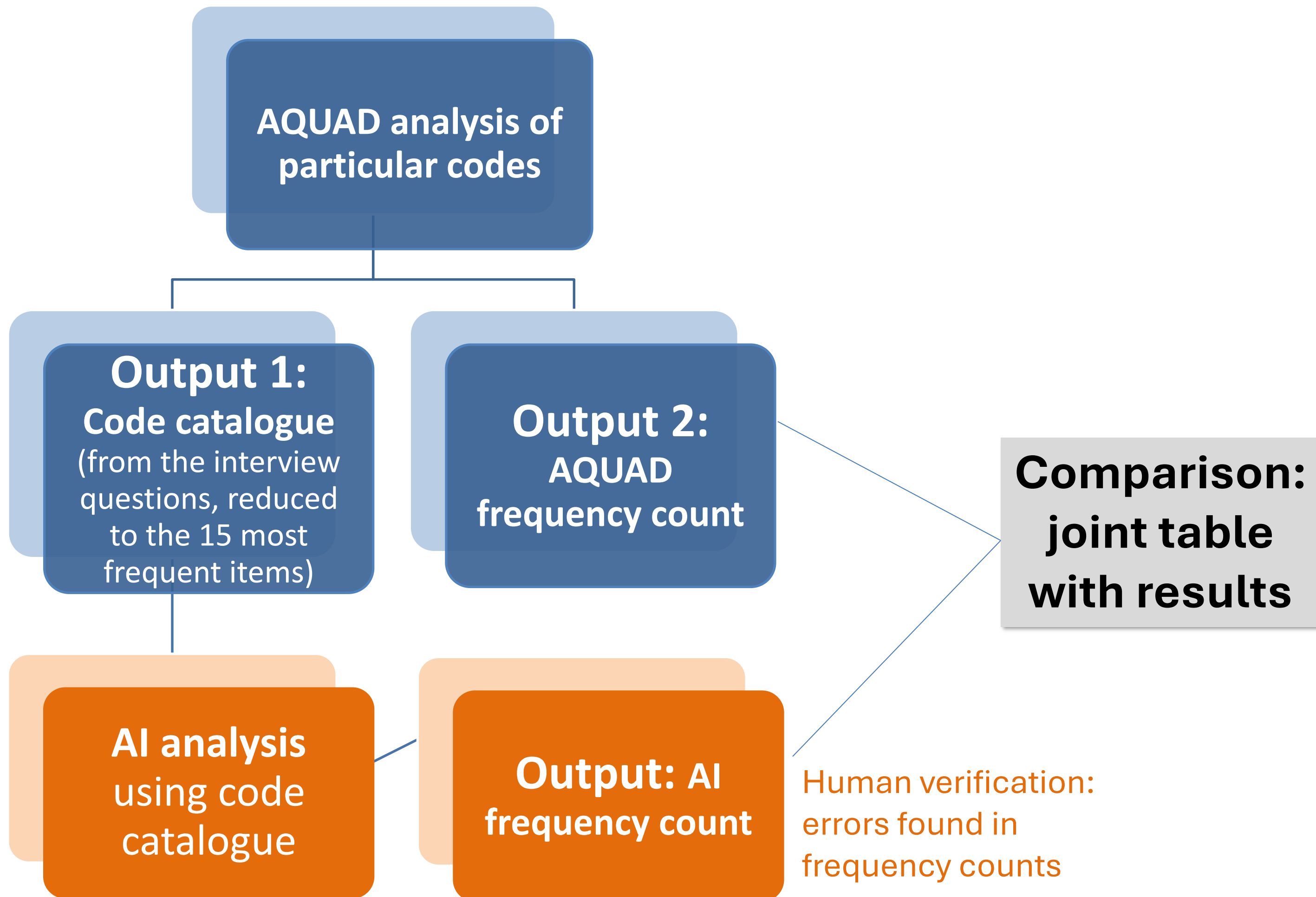
Human: each
file reviewed by
2 researchers for
coherence

- **Output:** errors in the frequency counts; Mixing information belonging to one class into another classes

Final versions
sent to schools



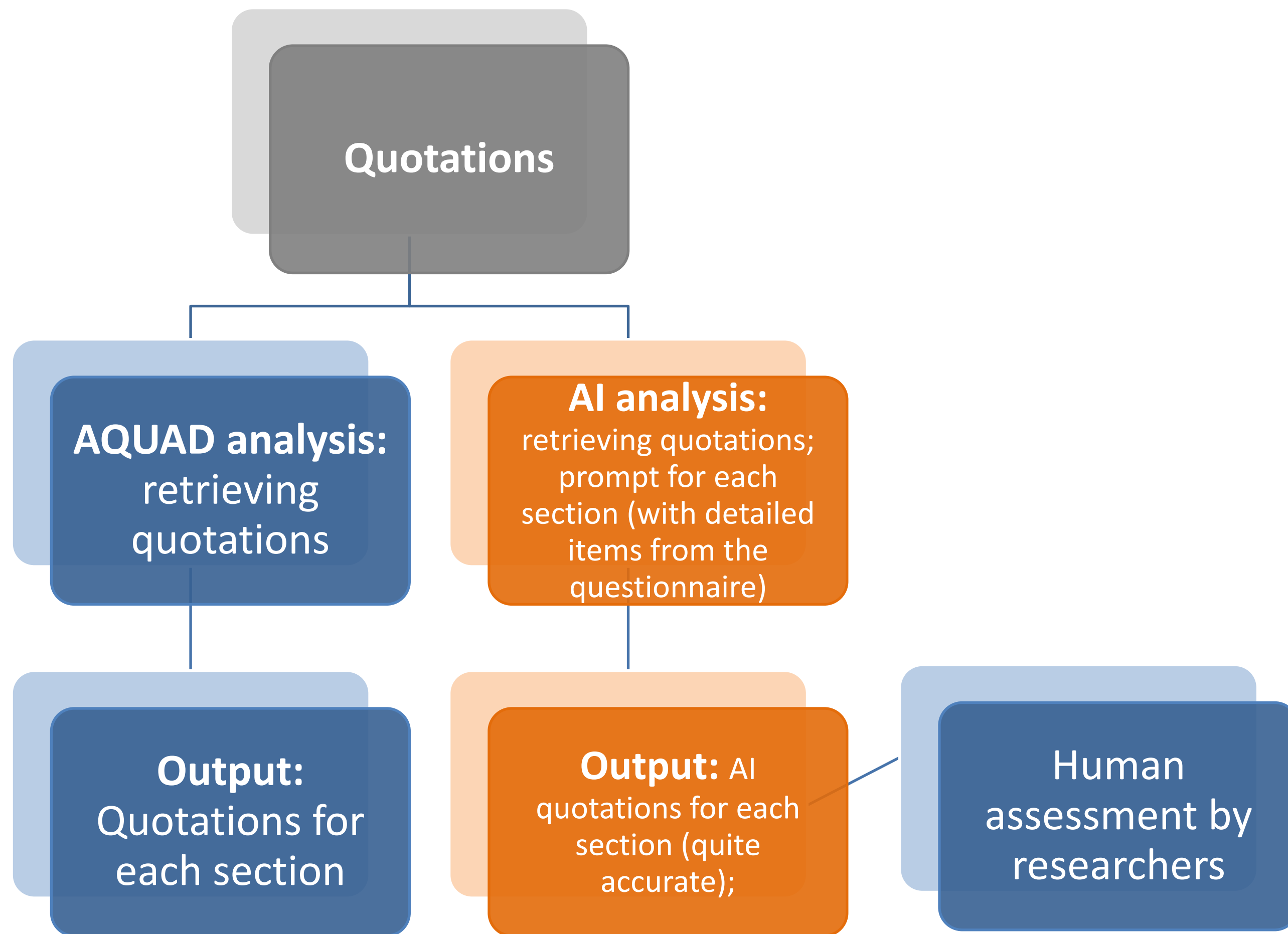
Frequency analysis:
sequential approach for criteria definition and parallel analysis



AI: criteria based on AQUAD reduced code catalogue (15 items from Output 1); improved with precise prompts (where to find the answer); frequency count independently of AQUAD (parallelly)



Quotations:
parallel
analysis,
[*comparative
choice – not
done*]





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**Thank you for questions and
discussion!**

