

# BSP-S1 Reviewing Report for Chatbot as a Dictionary of Sumaiya AKTER

Emmanouil TSAGKATAKIS, Eman ABDAL,  
Auguste Duc-Liêm Kim NGUYEN  
Emails: auguste.nguyen.001@student.uni.lu, emmanouil.tsagkatakis.001@student.uni.lu,  
eman.abdai.001@student.uni.lu

This report has been produced under the supervision of:

Nicolas GUELFY  
University of Luxembourg  
Email: nicolas.guelfy@uni.lu

10 January 2024

## 1. Review Objectives and Disclaimer

The review objectives are defined in the course reference document and discussed in tutoring sessions.

This review report, while trying to represent an objective quality analysis of a project, does not represent at all any official qualitative evaluation of the concerned project. It is made for pedagogical purpose.

## 2. TASK5 (SCIPROD) Scientific deliverable(s) Production

This review focuses on the scientific deliverable production. The primary objective is to assess the quality of the scientific content of this project, in order to conclude whether the project is properly done or should be improved. The aim is to identify the weaknesses within the deliverable and propose potential areas for improvement.

A great scientific deliverable production should answer the scientific question as well as present all the relevant solutions to the subject in question. Additionally, the scientific approach and reasoning to clarify the scientific problem should be well-structured and well-founded.

The comprehensive analysis follows a structured approach, evaluating various criteria integral to scientific rigor. These criteria include (see Table 1):

Criteria	Score of 0 Evaluation	Score of 1 Evaluation	Score of 2 Evaluation	Weight
On target & Completeness	The scientific question was not answered or not related to the scientific production. Or the scientific deliverable production does not provide the necessary solutions related to the scientific question.	The scientific question was answered but does not entirely correlate to the scientific deliverable production. Or the proposed solutions lack detailing.	The scientific question was perfectly answered in the scientific deliverable production. The scientific production provides every solution needed to answer the scientific question in detail.	3
Scientific Quality & Correctness	The scientific deliverable production doesn't include reliable or academic sources and approaches. Or the proposed arguments follow no logical patterns, therefore the scientific deliverable production is not reliable.	The scientific deliverable production does include reliable or academic sources and approaches. The proposed arguments are structured. Overall, some improvements could be made.	The scientific deliverable production shows excellent understanding and command of the subject and contributes to the academic discourse.	2
Readability & Clarity	The scientific deliverable production is poorly structured, and the presented arguments are not understandable.	The scientific deliverable production is well structured and the presented arguments are clear although some improvements could be made.	The scientific deliverable production is perfectly structured with explicit arguments which answer the main question in every perspective.	1

Table 1: Scientific Production Criteria

### 2.1. On target & Completeness:

**Evaluation:** 1/2

**Weight:** 3x

**Section:** 1. , 4.1.

**Justification:** The scientific question is not clear and precise enough and does not entirely correlate with the scientific production. The scientific production focuses on what a chatbot is, what evolution

the chatbot has gone through and what benefits and limitation a chatbot brings. Whereas the scientific question proposed ("How chatbots are essential as a dictionary") is focused on the essentiality of a chatbot as a dictionary.

**Action:** Change the scientific question to: "How did chatbots evolve, and which are the benefits of using chatbot as a dictionary for language skills improvements?"

#### Section: 4.3.1

**Justification:** Talks to much about other types of chatbots instead of focusing on the chatbot as a dictionary.

**Action:** Regroup all the types of chatbots and indicate that the type of a chatbot might change depending on its programming, depending on the goal the chatbot has to produce.

## 2.2. Scientific Quality& Correctness:

**Evaluation:** 1.5/2

**Weight:** 2x

**Section:** 4.3.2.

**Justification:** In section 4.3.2. when talking about the limitations of chatbot as a dictionary, the author indicates that chatbots lack of comprehensiveness and of contextual understanding and may also lack of resources/database, but the author doesn't make a comparison with a normal dictionary which may also encounter those type of problems.

**Action:** Add a comparison between the usage of a chatbot as a dictionary and the usage of a standard dictionary, as this points out the relevance and the benefits of using a chatbot as dictionary.

#### Section: 4.3.3.

**Justification:** In section 4.3.3. when the author presents her survey and explains the results of, it lacks understanding why the outcome was like this. Furthermore, the low number of participants in the survey weakens the quality and the reliability of the program.

**Action:** The author could have explained where her program did fail to work and did not satisfy the user's expectations or requirements. It would have been also very interesting to add some tests runs (from the user's), especially from those who were unsatisfied to see where the chatbot as a dictionary can be improved. Also, the author could have chosen native English speakers or even English Professors to participate in the survey to give it more credibility.

## 2.3. Readability & Clarity:

**Evaluation:** 2/2

**Weight:** 1x

**Section:** 4.3.

**Justification:** The structure of the scientific production enables the reader to dive into the subject without any difficulties. Explaining the evolution of the chatbot from its start to the modern days, while including its benefits and limitations.

**Action:** No improvement action is needed for the structure.

## 2.4. Overview:

The criteria "On target & Completeness" is given a weight of 3, because the main point of the research paper is to answer adequately the scientific question and have a complete understanding of the subject. The criteria "Scientific Quality& Correctness" is given a weight of 2, because it is important to proceed by a scientific reasoning and approach to the scientific problem. The criteria "Readability & Clarity" is given a weight of 1, because it does not affect the content much and is just a bonus for the reader to understand.

Overview	
Criteria	Score x Weight
On target & Completeness	3 out of 6
Scientific Quality & Correctness	3 out of 4
Readability & Clarity	2 out of 2
Overall	
8 out of 12	

Table 2: Overall Weighted Score

The most points lost here (see Table 2), is because the proposed scientific question was not concise enough to correlate with the scientific production. Therefore the criteria "On target" was not fulfilled, even though the work is mostly complete.

Overall, the scientific deliverable production scores 8 out of 12 and shows good knowledge and concise arguments to the subject in question.

### 3. TASK6 (SCIASS) Scientific deliverable(s) Assessment

Criteria	Score of 0	Score of 1	Score of 2	Score of 3
<b>Completeness</b>	important parts are missing.	Incomplete; lacks some key aspects.	Mostly complete: needs additional details.	Thoroughly complete.
<b>On Target</b>	Not on target; lacks main elements.	less on target; needs specifics.	On target with gaps: with small areas requiring clarification.	On target; easily quantifiable .
<b>Consistency</b>	Inconsistent with objectives.	Some inconsistencies; needs alignment.	Generally consistent with minor issues.	Consistent with objectives.
<b>Clarity and Precision</b>	not clear & not percise.	lackes alot of clarity or precision.	clear but not percise needs more detail.	clear & precise.

Table 3: Criteria

#### 3.1. Completeness:

**Score:** 2 (Mostly complete; needs additional details.)

The assessment briefly acknowledges the successful fulfillment of the requirement to address the scientific question through a bibliographic research technique. However, it lacks details on the planned surveys or experiments, leaving a gap in understanding the research methodology.

**Improvement Action:** Provide detailed methodologies for surveys or experiments to enhance completeness. Despite efforts to locate more research papers, it would be beneficial to broaden the scope of the bibliographic review, incorporating more recent studies and providing a more comprehensive examination of the subject matter.

#### 3.2. On Target:

**Score:** 2 (On target with gaps; with small areas requiring clarification.)

The assessment recognizes that it successfully addresses the scientific question, but there are small gaps in explaining how the literature review connects with the empirical research plan.

**Improvement Action:** To make it more on target, we need to dive into specifics details about how the research precisely aims to assess the practical effectiveness of chatbots as dictionaries. Adding more specifics, such as methodologies and their direct relevance to the main scientific question, will ensure a clearer and more focused review.

#### 3.3. Consistency:

**Score:** 1 (Some inconsistencies: needs alignment.)

While the assessment maintains a straightforward objective, it could benefit from a more explicit connection between the success of meeting the requirement and the planned empirical research. The transition between these aspects is not well articulated. The assessment could benefit from a more seamless transition between the discussion of various chatbot types and the literature review.

For instance, after elaborating on the different chatbot categories, a smoother connection to the historical context in the literature review would enhance the overall consistency of the scientific deliverable. To achieve this, a concise summary or introduction could be integrated, explicitly linking the exploration of chatbot types to the historical developments discussed in the literature review.

**Improvement Action:** When transitioning from the literature review to the research, it should connect how the chosen research methods can specifically evaluate the practical effectiveness of chatbots as dictionaries. This ensures a direct and purposeful alignment with the scientific question.

To achieve this, a concise summary or introduction could be integrated, explicitly linking the exploration of chatbot types to the historical developments discussed in the literature review.

#### 3.4. Clarity and Precision:

**Score:** 2 (clear but not precise needs more detail.)

The assessment is clear in stating the fulfillment of the requirement of the scientific deliverable and the plan for empirical data collection.

However, it lacks depth and details, making it less informative. Providing more insights into the research design and methodologies would enhance clarity.

**Improvement Action:** Clarify technical terms and consider incorporating visuals for a clearer presentation of survey results.

3.5. Overview:

Criteria	score
Completeness	2
On Target	2
Consistency	1
Clarity & Precision	2
overall	7 over 12

Table 4: Modified Assessment Criteria

The assessment of the scientific deliverable objective is to address the scientific question : How chatbots are essential as a dictionary? by employing a bibliographic review methodology, examines research papers, uncovering connections between chatbots , dictionaries, and related terms as synonyms, antonyms, and meanings.

To better meet the criteria and the requirements of the scientific deliverable, enhancements are needed to augment completeness by providing more details on upcoming surveys or experiments. Including the target sample size, the selection participants, and the specific questions designed to evaluate the practical effectiveness of chatbots in a dictionary role. This step would refine precision in maintaining a direct link between the historical context of chatbots and their role as dictionaries. Additionally, integrating more details and visuals, such as charts, in the production phase could enhance clarity, especially for technical terms.

Addressing these aspects ensures the assessment aligns closely with the provided criteria, making it a comprehensive and refined review that resonates with the requirements of the scientific deliverable.

4. TASK10 (TECHPROD) Technical deliverable(s) Production

This review focuses on the technical deliverable production. The primary objective of this evaluation is to assess the quality of the technical content and methodologies employed in the project. In doing so, I aim to identify the weaknesses within the deliverable and propose potential areas for improvement. The comprehensive analysis will follow a structured approach, evaluating various criteria integral to scientific rigor. These criteria include:

criteria	Score of 0	Score of 1	Score of 2	Score of 3	Score of 4
Clarity	The presentation lacks clarity, making it difficult to understand the main points and message.	The presentation has some clarity issues, making it somewhat challenging to understand the main points and message.	The presentation demonstrates a moderate level of clarity, but some areas could be further refined for better understanding of the main points and message.	The presentation demonstrates good clarity, making it easy to understand the main points and message.	The presentation demonstrates exceptional clarity, effectively conveying the main points and message with utmost clarity and precision.
Coherence	The content lacks coherence and fails to provide a logical flow of ideas, making it challenging to follow along.	The content partially lacks coherence and could benefit from a more logical flow of ideas to improve the overall understanding.	The content partially lacks coherence and could benefit from a more logical flow of ideas to improve the overall understanding.	The content maintains a logical flow of ideas, allowing the audience to follow along and comprehend the presentation effectively.	The content exhibits a high level of coherence, presenting ideas in a well-structured and logical manner, ensuring a seamless flow of information and understanding.
Technical Accuracy	The presentation contains significant technical inaccuracies, demonstrating a lack of understanding or research.	The presentation contains a few technical inaccuracies that need to be addressed to enhance the audience's understanding.	The presentation generally maintains technical accuracy, but a few improvements are required to ensure a more precise and accurate delivery of the topic.	The presentation showcases outstanding technical accuracy, displaying a deep understanding of the topic and delivering precise and accurate information flawlessly.	The presentation exhibits a high level of technical accuracy, showcasing a solid understanding of the topic and delivering precise information.
Completeness	The presentation is incomplete, missing essential information or failing to address key aspects of the topic.	The presentation is somewhat incomplete, missing some essential information or failing to fully address key aspects of the topic.	The presentation covers the main aspects of the topic, but there are some gaps in information or areas that could be further developed for a more comprehensive understanding.	The presentation is thorough and covers all the essential aspects of the topic, providing a comprehensive understanding to the audience.	The presentation is remarkably comprehensive, covering all the necessary aspects of the topic in a thorough and detailed manner, leaving no room for ambiguity or gaps in knowledge.
Use of Language	The language used in the presentation is unclear, imprecise, or inappropriate, hindering effective communication.	The language used in the presentation is somewhat unclear, imprecise, or occasionally inappropriate, affecting effective communication.	The language used in the presentation is somewhat clear, but occasional instances of unclear or imprecise language might hinder effective communication.	The language used in the presentation is clear, precise, and appropriate, facilitating effective communication and comprehension.	The language used in the presentation is impeccable, incorporating precise, clear, and appropriate language choices, resulting in effective communication and exceptional comprehension.

Table 5: Criteria

4.1. Clarity:

Weight: 3x

Score: 3.5 out of 4

**Explanation:** The text is generally clear and provides detailed explanations. However, to improve clarity, provide more specific examples of input/output for each function and elaborate on any potential limitations or edge cases that may arise. This will help readers better understand the practical application of the described functions.

4.2. Coherence:

Weight: 3x

Score: 3.5 out of 4

**Explanation:** The text is well-structured and organized, with a logical flow. To enhance coherence, consider adding transitional sentences or paragraphs between different sections to improve the overall flow of information. This will create smoother transitions and improve the overall coherence of the text.

### 4.3. Technical Accuracy:

**Weight:** 3.5x

**Score:** 4 out of 4

**Explanation:** The text accurately describes the implementation details, utilizing appropriate libraries and modules. To further enhance technical accuracy, consider referencing specific versions of libraries used and any potential dependencies or requirements for the implementation. This will ensure that readers have the necessary information to reproduce the described functionality.

### 4.4. Completeness:

**Weight:** 3x

**Score:** 3.5 out of 4

**Explanation:** The text covers the main aspects of the production section but lacks specific input/output specifications for each function. To increase completeness, provide more detailed information about the expected input format, data types, and the corresponding output or return values for each function. This will provide a more comprehensive understanding of the functions and their usage.

### 4.5. Use of Language:

**Weight:** 1.5x

**Score:** 3.5 out of 4

**Summary:** The text effectively uses technical language with a good balance of accessibility. To further improve the use of language, simplify complex concepts even further where possible and consider providing definitions or explanations for any technical terms that may be unfamiliar to some readers. This will enhance the overall readability and accessibility of the text.

Criteria	Score	Weight	Weighted Score
Clarity	3.5	3	10.5 out of 12
Coherence	3.5	3	10.5 out of 12
Technical Accuracy:	4	4	16 out of 16
Completeness:	3.5	3	10.5 out of 12
Use of Language:	3.5	1.5	5.25 out of 6
Overall	18 out of 20		50.75 out of 58 17.5 out of 20

Table 6: Overall Weighted score

To conclude, the technical deliverable production has little improvements to make in the different criteria section. Overall, it is a very good technical deliverable production.

## 5. TASK 13 (TECHSRC) Technical deliverable(s) Source Code

Criteria	Score of 0	Score of 1	Score of 2
Correctness	The code runs as expected	The code runs but has some errors.	The code has many errors, does not meet requirements.
Testability	executable as expected.	executable but needs improvment.	not excutable as expected.
Readability	readable with propriate comments and variables.	not easy to read the variables,function& lacks comments.	difficult to read the variables,function& no useful comments.

Table 7: The code criteria

### 5.1. Correctness:

**Score:** 2

The codes follows the PEP 8 style guide for Python code. The codes are correct in terms of its functionality. They handle user input, provides appropriate responses, and includes specific functionality for retrieving word meanings, synonyms, and antonyms.

**Improvement Action:** No improvement action is needed for the codes correctness.

### 5.2. Readability:

**Score:** 1

The codes are generally readable and well-organized. Variable and function names are descriptive and follow Python naming conventions. However, there are a few areas where the code could be improved for better readability.

**Improvement Action:**

- **Variable Naming:** The variable name chat is used for both the Chat instance and the chat() function. This can lead to confusion and should be avoided. It should be considered using a different variable name for the Chat instance, such as chatbot.
- **Commenting:** While the codes are commented overall, there are a few areas where additional comments can be added to provide more clarity. For example, comments can be added to explain the purpose of the different if-else conditions .



- Adding Spellchecker library:;

The implementation for the spellchecker library is beneficial as it mentioned in the project section 2.1.2. This library provides functionalities for spell checking, suggesting corrections for misspelled words, and other related features. However, the code functions correctly without it.

### 5.3. Testability:

**Score: 2**

The codes are testable and executable as expected. They function properly on Mac 2017 and windows 10.

**Improvement Action:** No improvement action is needed for the codes testability.

### 5.4. Overview:

Criteria	score
<b>Correctness</b>	<b>2</b>
<b>Readability</b>	<b>1</b>
<b>Testability</b>	<b>2</b>
<b>overall</b>	<b>5/6</b>

Table 8: Code Score

Overall, a well done technical deliverable source code.

## 6. Appendix

All additional material go there.

## References

[BiCS(2021)] BiCS Bachelor Semester Project Report Template. <https://github.com/nicolasguelfi/lu.uni.course.bics.global> University of Luxembourg, BiCS - Bachelor in Computer Science (2021).

[BiCS(2021)] Bachelor in Computer Science: BiCS Semester Projects Reference Document. Technical report, University of Luxembourg (2021)

[Armstrong and Green(2017)] J Scott Armstrong and Kesten C Green. Guidelines for science: Evidence and checklists. *Scholarly Commons*, pages 1–24, 2017. [https://repository.upenn.edu/marketing\\_papers/181/](https://repository.upenn.edu/marketing_papers/181/)

## Plagiarism statement

*This 350 words section without this first paragraph must be included in the submitted report and placed after the References section. This section is not counting in the total words quantity.*

I declare that I am aware of the following facts:

- I understand that in the following statement the term "person" represents a human or **ANY AUTOMATIC GENERATION SYTEM.**
- As a student at the University of Luxembourg I must respect the rules of intellectual honesty, in particular not to resort to plagiarism, fraud or any other method that is illegal or contrary to scientific integrity.
- My report will be checked for plagiarism and if the plagiarism check is positive, an internal procedure will be started by my tutor. I am advised to request a pre-check by my tutor to avoid any issue.
- As declared in the assessment procedure of the University of Luxembourg, plagiarism is committed whenever the source of information used in an assignment, research report, paper or otherwise published/circulated piece of work is not properly acknowledged. In other words, plagiarism is the passing off as one's own the words, ideas or work of another person, without attribution to the author. The omission of such proper acknowledgement amounts to claiming authorship for the work of another person. Plagiarism is committed regardless of the language of the original work used. Plagiarism can be deliberate or accidental. Instances of plagiarism include, but are not limited to:

1. Not putting quotation marks around a quote from another person's work
2. Pretending to paraphrase while in fact quoting
3. Citing incorrectly or incompletely
4. Failing to cite the source of a quoted or paraphrased work
5. Copying/reproducing sections of another person's work without acknowledging the source
6. Paraphrasing another person's work without acknowledging the source
7. Having another person write/author a work for oneself and submitting/publishing it (with permission, with or without compensation) in one's own name ('ghost-writing')

8. Using another person's unpublished work without attribution and permission ('stealing')
9. Presenting a piece of work as one's own that contains a high proportion of quoted/-copied or paraphrased text (images, graphs, etc.), even if adequately referenced

Auto- or self-plagiarism, that is the reproduction of (portions of a) text previously written by the author without citing that text, i.e. passing previously authored text as new, may be regarded as fraud if deemed sufficiently severe.

## Source Code

Listing 1: Caption example.

---

```

1 from spellchecker import SpellChecker
2
3 def spellcheck_input(spell_checker, user_input):
4     """
5     Perform spell checking on the user's input.
6
7     Args:
8         spell_checker (SpellChecker): The spell checker
9         instance.
10        user_input (str): The user's input.
11
12    Returns:
13        str: The corrected input if a correction is suggested,
14        otherwise the original input.
15    """
16    try:
17        # Use the spell checker on the input
18        corrected_input = spell_checker.correction(user_input)
19
20        # Ask for confirmation if a correction is suggested
21        if corrected_input != user_input:
22            print(f"Did you mean: {corrected_input}?")
23            confirmation = input().lower()
24            if confirmation == 'yes':
25                return corrected_input
26
27        return user_input
28
29    except Exception as e:
30        # Handle unexpected exceptions
31        return f"An error occurred during spell checking: {str(e)}"
32
33 # Example usage:
34 # Create a SpellChecker instance
35 spell_checker = SpellChecker(language='en')
36
37 # Get user input
38 user_input = input("Enter a sentence: ")
39
40 # Perform spell checking and get the corrected input
41 corrected_input = spellcheck_input(spell_checker, user_input)
42
43 # Print the processed input
44 print(f"Processed Input: {corrected_input}")

```

---