

## PA2554: Assignment 1 – Critical appraisal

Student Name	P. No.	Contribution in the assignment (25 each % for equal contribution)
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Results of applying the checklist:

Table 1

ID	Evaluation item	Answer (Yes/No/NA)	Justification (please elaborate your answer)
1	Are the objective, research questions, and hypotheses (if applicable) clear and relevant?	Yes	Research questions are clearly defined the study goal, and the hypothesis assist throughout the interview study. The study target is quite evident and the research question-2 and the main object is detailed in the section-5 Gamification.
2	Are the case and its units of analysis well defined?	Yes	The research stated in the Methods section that after analysis of the survey responses they gained an insight which helps the developer and which indirectly relates to the purpose of the research and the research question.
3	Is the suitability of the case to address the research questions clearly motivated?	Yes	Coming to the developer's motivation section the research questions are clearly motivated and in the gamification section they answered second research question along with the main objective of the study, yes, they motivated how the research question are related to the case in the developer

			motivation and gamification section.
4	Is the case study based on theory or linked to existing literature?	Yes	The case study is quietly partial on existing literature where it defines some inductive and deductive data and explains some scenarios theoretically.
5	Are the data collection procedures sufficient for the purpose of the case study (data sources, collection, validation)?	Yes	The researchers chose survey to collect data because it collects a lot of data, and they validated the data by turning it into a suggestion for the developers to motivate them. However, one disadvantage is that the number of participants is low, despite the fact that it is a high-quality survey.
6	Is sufficient raw data presented to provide an understanding of the case and the analysis?	Yes	It is enough since the data gathered from the researchers is based on real-world experiences and difficulties. It broadens the breadth of the problem's understanding and analysis.
7	Are the analysis procedures sufficient for the purpose of the case study (repeatable, transparent)?	Yes	The researchers' analytical procedures are sufficient and somewhat repeatable. They answered all the research questions thoroughly, practiced, in order to achieve transparent results and to extend for future practices.
8	Is a clear chain of evidence established from observations to conclusions?	Yes	The case study exhibits the observed outcomes follows the conclusion and result addressing every research question which establishes a clear chain of evidence throughout the paper. The researchers clearly established their discovered evidence, they also addressed the concerns raised in case study 1 in case study 2, leading to a conclusion based on that implementation.

9	Are threats to validity analyses conducted in a systematic way and are countermeasures taken to reduce threats?	Yes	In case study -2, the number of people who participated in the survey was very low (6 out of 40) when compared to case study-1 (8 out of 14), and they did not take any countermeasures to increase the number of participants. They also stated that some developers did not like the tool features and thus would not participate in the survey.
10	Is triangulation applied (multiple collections and analysis methods, multiple authors, multiple theories)?	Yes	The research work follows the triangulation method, in which this work has 4 different authors (multiple authors) and reviewed 7 different papers and analysed the methodology in them. researchers inspired from the 2 papers and took the individual feedback and gamification method (multiple theories) and used them in this research, by this they followed triangulation method.
11	Are ethical issues properly addressed (personal intentions, integrity, confidentiality, consent, review board approval)?	No	The researchers do not specify the personal intentions. The researchers did not discuss or focus on any ethical issues.
12	Are conclusions, implications for practice, and future research, suitably reported for its audience?	Yes	The conclusion is well stated and quickly covers the research problems where the Implications for future practice are evident, and properly presented for its audience.

Briefly answer the following questions (where possible support your answer with results of the checklist-based evaluation):

A. Does the chosen research method (experiment/case study) address the objectives in the study? Which other research methods could address the same objectives?

Answer: Yes, the authors assessed different case studies, conducted interviews, and evaluated their chosen tools using an Individual feedback survey, thus chosen research technique satisfies the objectives. Researchers can also respond to the objectives through expert validation, but this method may not yield promising results. thus, the methods chosen are best for responding to the framed objectives.

B. What is the practical value of the given case study?

Answer: The entire case study is about developer code quality. Good coding quality of developers can increase readability, quality code with effective work. By establishing collaborative coding practises, major code errors and code smell can be reduced. To accomplish this, the author clearly provided a road map, as well as various tools and feedback to motivate the developers.

C. Which if any are the unaddressed ethical issues/concerns in the study?

Answer: The researchers did not address employee/manager concerns in this section of the survey. They should have considered these issues, and they should also mention how their personal information and survey responses are secured/ kept confidential.

D. What is your overall assessment of the quality of the case study? What do you consider are the main strengths and major limitations of the study?

Answer: In our opinion, researching code quality is a good thing and a new phase in coding. The main strength of the case study is collecting feedback in case study-1 and analysing it to identify issues, which are then resolved in case study-2. The main limitation will be the number of survey participants, which were reduced from case study 1 to case study 2, lowering the survey's quality.

E. Please answer the following questions regarding the use of the given checklist:

a. Please respond to what extent do you agree or disagree with the following statement: *Overall, the checklist was easy to use.*

strongly agree	agree	neutral	disagree	strongly disagree
	✓			

b. Please respond to what extent do you agree or disagree with the following statement:

*The questions were easy to understand.*

strongly agree	agree	neutral	disagree	strongly disagree
		✓		

c. Please write the question numbers (from Table 1), if any, that were difficult to understand.

d. Please respond to what extent do you agree or disagree with the following statement: *The questions were easy to answer.*

strongly agree	agree	neutral	disagree	strongly disagree
		✓		

e. Please write the question numbers (from Table 1), if any, that were difficult to answer.

Answer: 10

f. What made it difficult to answer these questions?

Answer: Only after thorough reviewing and studying the details of the work presented in the research paper can the question be answered.

g. Does the checklist cover all the important aspects (as mentioned in the guidelines for conducting case study research) for high quality case study research?

Answer: Yes, the above-mentioned checklist includes all of the necessary elements for conducting high-quality case study research.