BCIIT e-Journal 2026

Journal of Innovations in Computer Science and Trends in IT, (October 2026), Vol 3, Issue2, ISSN 3048-4707

Is AI enhancing the quality of Output? An Evaluative study

Karman Arora, Student MCA Semester 3rd
Jagan Institute of Management Studies,
Rohini Sector – 5, Near Rithala Metro Station, New Delhi

Abstract: In todays' hyper competitive world, AI has taken the front role. In fact, there is no arena left in our life wherein AI has not made an ingress. For example, it has widely used by students in doing complex and complicated tasks. On the other hand, several incidents have been reported wherein AI has generated adverse output. This necessitates the need for evaluating the quality of an output generated by AI. This paper seeks to answer the following research questions (a) What defines the quality of an AI output? And (b)What is the criterion for evaluating the quality of the output generated by the widespread usage of AI? The domain of the study is limited to education domain while the respondent's size targeted was 200. The respondents in the study include the students pursuing technical, management and allied degree programs. The study concludes with the findings that quality is a generic term and this needs to be scoped before we can develop the evaluation parameters. Further, the concept of quality and the evaluation parameters are to be developed in the application of the context where in the output generated by AI tool is to be evaluated.

Key words: **AI, Quality, Evaluation, Output, Output Quality Assessment, Evaluation Criteria, Higher Education.**

Introduction

Technological advancements have transformed our lives significantly. Today technology is widely being deployed to enhance the teaching and learning process and create interest amongst the student community (Halili, S. H. (2019). In todays' world the concept of Artificial intelligence (AI) is widely being discussed and used as continues to invade the functioning of our day-to-day operations (Poola, I. (2017); Dandotiya, A. S., *et. Al* (2024). For example, AI is widely adopted by students in preparing presentations, generating contents for the project documentation as well as assisting the research community in preparing readymade research paper (Raja, S., *et. al* ,2024; Guilherme, A. (2019) by giving appropriate prompts to the AI tool.

Journal of Innovations in Computer Science and Trends in IT, (October 2026), Vol 3, Issue2, ISSN 3048-4707

However, while numerous benefits are being churned out by the AI, yet significant drawbacks are being exposed on account of wide adoption. There have been incidences wherein people have made the use of AI for treatment of an ailment to which they are suffering *only to be found later in the ICU unit of a hospital* (Haleem, A., *et. al* ,2019). These incidences of surrendering to the AI revolution have *triggered* the need for evaluating the quality of the output generated by AI.

This paper deals with the issues concerned with the quality of the output generated by AI.

Literature Review

Several studies are conducted to define quality yet there has been no agreed consensus as to what defines quality (Harvey, L.,1993; Martin, J., *et, al,*2025; Arcaro, J. (2024). There has been attempt to associate quality with meeting the requirements of the customer, to meeting the timelines of with the process of developing an environment (Okoye, N. M., *et, al,* 2024; Mohzana, M., 2024). In todays' context generative AI is raging across the world and yet the issues pertaining to the quality of the output generated has gained traction (Lombardo, R., 2025; Park, J., 2025). Prompt engineering is a crucial function for generating the output by means of an AI tool (Mujica-Sequera, R. M. (2025) yet it has demonstrated the adverse output in many of the instances of AI usage. Hence, what is provided to AI tool by means of prompts forms a vital component as it necessarily forces the AI tool to surf through large data sets to generate the requirements provided by means of prompts (Zadenoori, M. A, 2025).

On the other hand, even if the prompt is correct yet the output may not reflect the desired attributes in the context of safety, cross tabulation of information and the contextual data that is required as well as the datasets which were taken into consideration may not be appropriate (Geroimenko, V. ,2025; Zaghir, J, 2024).

Research Questions

The paper addresses the following research questions

a. What defines the quality of an AI output?

Journal of Innovations in Computer Science and Trends in IT, (October 2026), Vol 3, Issue2, ISSN 3048-4707

b. What is the criterion for evaluating the quality of the output generated by the widespread usage of AI?

Research Methodology

The development of the paper adopted a structured approach. The initial step included the formulation of the topic for the study. Several considerations were taken to limit the scope of the topic. The aspects included taking into consideration the application of AI or the inappropriate usage of AI or restricting the usage to medical field or the education field. Finally, the author decided to limit the scope to the evaluation of the output generated by AI in the context of enhancement of quality. The next step involved freezing the domain of the study whether we should apply to medical field, education field or in the field of marketing and sales. On account of the proximity to the education field, it was decided to limit the scope to the education domain. Once the scope was fixed it was decided to deliberate on the issues of quality and the evaluation parameters which will form the basis of the study as well as the basis for the collection of data. The next step involved the process of collecting the data from the respondents by means of questionnaire. Also, the consideration of the sample size and the type of the respondents was also taken into consideration. Thus, it was decided to include the sample size of 200. This was the initial target. The respondents profile included the students pursuing technical degree courses, management courses and other allied courses from the higher education domain. The data collection was done by means of google forms as well as from face-to-face interactions. Upon collecting the data, it was subjected to data cleaning and data treatment. The next step led to the analysis of the data. This included the application of descriptive statistics as the basis for the study. The prime reason for choosing the descriptive statistics is fact that it provides the ground reality of the data distribution *from which future research work can* be undertaken.

Journal of Innovations in Computer Science and Trends in IT, (October 2026), Vol 3, Issue2, ISSN 3048-4707

Findings and interpretation

Table 1: Respondents Profile Cross tabulation

Respondents Demographic Distribution			
Role / Stream	**Technical Stream**	**Management Stream**	**Allied Stream**
UG Students	50	40	8
PG students	27	30	20
Ph.D. Scholars	10	3	2
Research Associates	3	3	4

Table 1 above depicts the respondents cross tabulation profile distribution. it is evident that the majority of the respondents are from the technical and management stream. This is due to the fact that technical stream students as well as management stream students are driven by quality framework. In other words, the degree of compliance, especially in the management field, is very high for any lapse on the quality front directly impacts the business financials. On the other hand, the technical stream students are responsible for writing the code or other technical aspects of the quality parameters, hence they need to be clear and specific about the requirements of the customer.

Table 2: Defining the Quality parameters

Defining The Quality of an AI Output			
Role / Stream	**Technical Stream**	**Management Stream**	**Allied Stream**
Quality Parameter	**Meeting Requirements**	**Context Appropriateness**	**Applicability in Day-to-Day Operations**
UG Students	50	18	30
PG students	30	32	15
Ph.D. Scholars	2	10	3

Journal of Innovations in Computer Science and Trends in IT, (October 2026), Vol 3, Issue2, ISSN 3048-4707

Research Associates	3	5	2

Table 2 above depicts the quality parameters in terms of defining the quality of AI output. It is evident that major portion is attributed to meeting the requirements which is the basic tenets of the quality framework. On the other hand, applicability in day-to-day operations forms the next portion of the quality definition. This indicates that all the three parameters must work in synchronization before any evaluation parameters can be formulated

Table 3: Defining Evaluation Parameters

Defining Evaluation Parameters			
Role / Stream	**Technical Stream**	**Management Stream**	**Allied Stream**
Quality Parameter	**Meeting Standard Quality Framework**	**Documented System**	**Configuration Management / Change Management**
UG Students	40	23	35
PG students	25	40	12
Phd. Scholars	6	6	3
Research Associates	2	7	1

Table 3 above depicts the evaluation parameters. It is evident that meeting standards of the quality framework is the most important consideration for the evaluation parameters while the configuration management is the next evaluation criterion. For meeting the change management requirements forms the essence of quality framework

Journal of Innovations in Computer Science and Trends in IT, (October 2026), Vol 3, Issue2, ISSN 3048-4707

Limitations

The study exposed the limitations in terms of limiting the sample size to 200 as well as limiting the scope of the study to education domain. New insights and findings would have surfaced had the study took into consideration of an increased sample size as well in terms of enhancing the scope beyond the education domain.

Future Recommendations

The future recommendation of the study is the possibility of including new parameters for evaluation as well as increasing the attributes which constitute the quality of the output.

Conclusion

Quality is a generic term and to study the quality of a product or an output, specific attributes are required to be identified. In a similar parlance, when it comes to evaluation of the quality of an output, we need to be clear as to what evaluation parameters are needed to form the base of the study from the perspective of quality.

In the present study, the quality and evaluation of the output generated by AI is construed to mean (a) relevance of an output to the context (b) The quality of the prompt which is provided to the AI tool (c) the impact of the output to subsequent applications and above all (d) the propensity for the usage of the AI tool in complex tasks.

Thus, the study concludes that one needs to take into consideration all the aspects before one is in a position to do perform any constructive quality work through AI.

References

[1] Arcaro, J. (2024). *Quality in education: An implementation handbook*. Taylor & Francis.

[2] Dandotiya, A. S., Gupta, S. K., Dandotiya, N., & Sharma, M. P. (2024). *AI in everyday life: Transforming society*. Navi International Book Publication House.

[3] Geroimenko, V. (2025). Key challenges in prompt engineering. In *The essential guide to prompt engineering: Key principles, techniques, challenges, and security risks* (pp. 85–102). Springer Nature Switzerland.

[4] Guilherme, A. (2019). AI and education: The importance of teacher and student relations. *AI & Society, 34*(1), 47–54.

[5] Haleem, A., Javaid, M., & Khan, I. H. (2019). Current status and applications of artificial intelligence (AI) in medical field: An overview. *Current Medicine Research and Practice, 9*(6), 231–237.

[6] Halili, S. H. (2019). Technological advancements in education 4.0. *The Online Journal of Distance Education and e-Learning, 7*(1), 63–69.

[7] Harvey, L., & Green, D. (1993). Defining quality. *Assessment & Evaluation in Higher Education, 18*(1), 9–34.

[8] Lombardo, R., Gallo, G., Stira, J., Turchi, B., Santoro, G., Riolo, S., ... De Nunzio, C. (2025). Quality of information and appropriateness of Open AI outputs for prostate cancer. *Prostate Cancer and Prostatic Diseases, 28*(1), 229–231.

[9] Martin, J., Elg, M., & Gremyr, I. (2025). The many meanings of quality: Towards a definition in support of sustainable operations. *Total Quality Management & Business Excellence, 36*(3–4), 185–198.

[10] Mohzana, M., Arifin, M., Pranawukir, I., Mahardhani, A. J., & Hariyadi, A. (2024). Quality assurance system in improving the quality of education in schools. *Mudir: Jurnal Manajemen Pendidikan, 6*(1).

[11] Mujica-Sequera, R. M. (2025). AI prompts: Tools for optimizing scientific research. *Revista Tecnológica-Educativa Docentes 2.0, 18*(1), 267–277.

[12] Okoye, N. M., Obiora, C. O., Bert-Okonkwor, C. B., Ezeokoli, F. O., Ode, M. O., & Fadumo, D. O. (2024). Quality assessment systems: A review. *Tropical Built Environment Journal, 9*(3).

[13] Park, J., & Choo, S. (2025). Generative AI prompt engineering for educators: Practical strategies. *Journal of Special Education Technology, 40*(3), 411–417.

Journal of Innovations in Computer Science and Trends in IT, (October 2026), Vol 3, Issue2, ISSN 3048-4707

[14] Poola, I. (2017). How artificial intelligence is impacting real life everyday. *International Journal for Advance Research and Development, 2*(10), 96–100.

[15] Raja, S., Jebadurai, D. J., Ivan, L., Mykola, R. V., Ruslan, K., & Nadiia, P. R. (2024). Impact of artificial intelligence in students' learning life. In *AI in business: Opportunities and limitations* (Vol. 2, pp. 3–17). Springer Nature Switzerland.

[16] Zadenoori, M. A., Zhao, L., Alhoshan, W., & Ferrari, A. (2025). Automatic prompt engineering: The case of requirements classification. In *International working conference on requirements engineering: Foundation for software quality* (pp. 217–225). Springer Nature Switzerland.

[17] Zaghir, J., Naguib, M., Bjelogrlic, M., Névéol, A., Tannier, X., & Lovis, C. (2024). Prompt engineering paradigms for medical applications: Scoping review. *Journal of Medical Internet Research, 26*, Article e60501.