Kashihara, A. et al. (Eds.) (2024). Proceedings of the 32nd International Conference on Computers in Education. Asia-Pacific Society for Computers in Education

Leveraging AI-Powered Virtual Meeting Summaries: Towards an Evidence-Based Classroom Observation Assessment

Arlene Mae CELESTIAL VALDERAMA
Jose Rizal University, Philippines
*arlene.valderama@jru.edu

Abstract: The rising integration of generative AI in teaching and learning processes has become a significant focus for educational institutions in both public and private sectors. Online learning and teaching have become the trend since 2020 due to Covid-19. Education modality in most higher education institutions have adapted and embraced teaching using virtual meetings until present time using the hybrid mode. In hybrid flexible mode of teaching, faculty preferences include synchronous online, face-to-face, and asynchronous online options. Promoting a healthy post-conference agreement between the faculty and the supervisor ratings in classroom observations improves productivity in performance. This study explores the integration of AI-generated summary content as supporting evidence for evaluator ratings in faculty classroom observation reports.

Keywords: AI-generated summary, evidence-based assessment, classroom observation assessment, virtual meeting summary

1. Introduction

The rising integration of generative AI in teaching and learning processes has become a significant focus for educational institutions in both public and private sectors. As AI integration has elicited both positive and negative feedback, many institutions are developing AI education policies and frameworks for mostly all levels of education. These initiatives aim to address the potential benefits and challenges of AI technologies while guiding the use of AI tools. Chan (2023) created a framework that fosters a nuanced understanding of the implications of AI integration in academic settings, ensuring that stakeholders are aware of their responsibilities and can take appropriate actions accordingly.

As online learning and teaching has highly become the trend since 2020 due to Covid-19, education modality in most higher education institutions have adapted and embraced teaching using virtual meetings until present time using the hybrid mode. Emerging studies suggest that this experience may have altered students' preferred learning modality, which was previously dominated by in-person instruction (Shlomo & Rosenberg-Kima, 2024).

In hybrid flexible mode of teaching, faculty preferences include synchronous online, face-to-face, and asynchronous online options. During classroom observations, faculty members are no longer satisfied with arbitrary and authoritarian evaluation by a department chair. They insist on a more formal evaluation based on specific criteria. Raikundalia (2012) used Logan, a Web Electronic Meeting Document Manager (WEMDM) to a mechanism for minutes creation, explanation of derivatives, meeting guides and summary points by using meeting guides. Using AI to analyze synchronous online modality using Zoom meeting summaries in the classroom (Zoom room) observation is a promising approach. It can provide quantitative data to supplement traditional methods, offering a more comprehensive and objective assessment. This study explores the integration of AI-generated summary content as supporting evidence for evaluator

ratings in faculty observation reports. This study seeks to create and implement a core process model using thematic analysis deductive and latent approach from the contents of the zoom meeting summary and the key areas in an existing classroom observation report.

2. Research Goal

Embedding rubric-based observations in school structures can, thus, facilitate continuous improvement efforts by better supporting teacher self-reflection, feedback, and collaboration. (White & Maher, 2024). This research focuses on integrating AI summary content as supplement evidence in an evaluator's score rating in a faculty observation report. A core process model will be proposed for implementation and the results of this study will comprised of evidence-based classroom observation ratings of faculty who have used the Zoom meeting summary with AI companion during their synchronous online class sessions. Observation tools need to be evidence-based, dependable, and valid. The indicators on the observation tool should be detailed, specific, and measurable for the specific context, level, and type of lesson (Werner, 2018). This study will gather Zoom meeting summaries sent to the faculty in one or several departments in a college and use the key concepts generated themes as evidence for the items in a classroom observation report.

3. Methods

The university-wide classroom observation report consists of 5 areas, Evaluation on Teaching Methods with 4-item indicators, Evaluation on Educational Process with 6-item indicators, Evaluation on Learning Assessment with 13-item indicators, and Evaluation on Faculty Attributes with 5-item indicators. A feature in Zoom generates a meeting summary with AI companion. The meeting summaries consist of the key contents are identified as Quick Recap, Next Steps, Summary of topics discussed, Diversified Discussion, and occasionally, Unclear and Fragmented Discussion, and Unclear and Disjointed Meeting Transcript. This generated summary provides comprehensive content when a faculty delivers a lecture, discussion, combined with student interaction in Zoom. It provides a thorough overview of everything that transpired during the session.

Thematic Analysis (TA) was used to analyze in-depth interviews of university students enrolled in synchronous courses (Godara, et. al, 2024). Williams, et. al. (2015) qualitatively analyzed instructional practice instruments to survey postsecondary instructional practices to document their features and methodologically sorted their items into autonomous categories based on their content. This study seeks to create and implement a core process model using thematic analysis deductive and latent approach from the contents of the zoom meeting summary and the key areas in an existing classroom observation report. To determine preconceived themes in this approach, coding the qualitative data from the meeting summary shall generate most appropriate matching themes from the item lists in each of the three areas of the classroom observation report. These will serve as the output evidence for the chairperson's rating using the key performance indicators on a 5-point Likert scale.

4. Preliminary Analysis

Data collection will be comprised of a dataset of Zoom meeting summaries and a corresponding faculty classroom observation evaluation. Integration is the incorporating the AI summary tool into the evaluation process. For data privacy and security, it is proposed to apply and implement robust measures to protect sensitive information. Figure 1 shows a proposed process model.

A transcript below shows a sample of a Zoom meeting summary with AI companion sent to a faculty member after a few minutes conducting the Zoom session. These will be the subjects

for the analysis codes and themes will be generated based on the key content items in the Classroom Observation report. Themes generated using deductive approach shall serve as evidence of the ratings using a 5-point Likert scale.

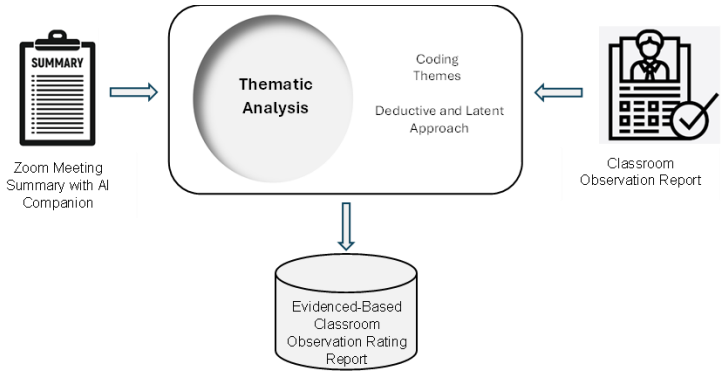

Figure 1. Proposed Core Process Model

"Meeting summary for ITC C301-304I
Quick recap
<Faculty-name> led discussions on various topics including web-based solutions, functions, and shared resources, with a focus on JavaScript, PHP, and HTML. She also provided an in-depth explanation of web-based architectures, the Model-View-Controller (Mvc) model, and the use of objects and methods in JavaScript. Additionally, the team discussed financial values, the concept of functions, and game attendance, with references to locations such as Singapore, San Jose, and Paris.
Next steps
- *Students to differentiate between static and dynamic websites and submit their analysis.*
- *Students to analyze the provided script and submit a screenshot of its final output when entering the correct password.*
- *Students to recreate the program that displays their first name and last name after "Good morning" or "Good afternoon".*
- *Students to complete the assigned activities within 30 minutes.*
- *Students to review the concepts of client-side and server-side architectures.*
- *Students to study JavaScript concepts including variables, operators, conditional statements, and loops.*
- *Students to familiarize themselves with JavaScript methods and objects, particularly date functions.*
- *Students to practice using alert, confirm, and prompt functions in JavaScript.*

Summary
Web Solution, Functions, and Resource Sharing
<Faculty-name> leads a discussion on various topics, including a web-based solution, creating functions, and developing a shared resource.
Web-Based Architectures and Coding Languages
<Faculty-name> led a lecture on web-based architectures, focusing on the use of JavaScript, PHP, and HTML. She emphasized the differences in coding between these languages and highlighted the importance of using the appropriate input and output methods. <Faculty-name> also discussed the use of dialog boxes, confirm boxes, and alert boxes for user interaction.
Integrative Programming and Web-Based Architectures

<Faculty-name> led a discussion on Integrative Programming and Technologies, focusing on the module 'Web-based Architectures'. She explained the significance of software architecture in defining the structure and behavior of an application. <Faculty-name> differentiated between two types of web-based architectures, with a particular focus on the client-side, and discussed the advantages of using a combined architecture.

Web Applications, Mvc, and Security

<Faculty-name> provided an explanation of the structure, behavior, and framework of web applications using the Mvc, distinguishing between client-side and server-side architecture. She highlighted the advantages of web servers, the necessity of web servers for processing payments, and the importance of security. <Faculty-name> also introduced the Model-View-Controller (Mvc) model and its layers.

Introduction to JavaScript and Syntax

<Faculty-name> discussed the basics of JavaScript, a scripting language that can be linked into HTML to add interactivity. She explained that JavaScript can be used to format text and design web pages, but it's not a web designing script. <Faculty-name> also covered the syntax of JavaScript, including the use of variables, data types, and control statements like for loops and conditional statements.

JavaScript Date Class and Objects

<Faculty-name> discussed the use of objects and methods in JavaScript, specifically focusing on the Date class. She explained the process of instantiation, accessing methods like getHours, and the importance of return types and relational operators.

JavaScript Operators, Data Types, and Conditional Statements

<Faculty-name> led a discussion on various aspects of JavaScript, focusing on operators, data types, and conditional statements.

Functions, Methods, and Programming Tasks

<Faculty-name> led a discussion on the concept of functions, comparing them to methods and explaining their execution. She also emphasized the importance of differentiating between static and dynamic elements. A task was assigned to Celerino to recreate a program that displays the user's first and last name after a greeting.”

The HEI’s Classroom Observation Report Form is coded as an ISO document F-COL-003 and was created by the representatives of the university academic council with the respective deans and other experts. The form is divided into parts with a total of 29 items. Key content parts of the form include items in Evaluation on Teaching Methods, Evaluation on Educational Process, Evaluation on Learning Assessment, and Evaluation on Faculty Attributes. These items will serve as themes and will be matched as evidence for the supervisor rating on the 5-point Likert scale. The occurrence of codes may influence the ratings of 5-Outstanding, 4-Very Satisfactory, 3-Satisfactory, 2-Fair, and 1- Needs Improvement.

The form’s reliability was determined using pilot data of 15 faculty scores for the 1st semester of SY 2024-2025. The Cronbach’s Alpha score is .592 which indicates moderate reliability. The score indicates a moderate level of internal consistency among the items on the classroom observation report form, suggesting that they are generally aligned for faculty assessment during classroom visits.

5. Conclusion and Future Work

Traditional human-factor-oriented approaches are based on experimentations followed by statistical analyses (Suhir, 2014). Kats & Kedem (2021) recommend that educators apply communicational strategies in virtual sessions to compensate for the forced distance, thus promoting a prominent level of effective learning in cognitive and affective terms. This relates to faculty delivery during virtual class sessions even in institutions practicing academic freedom. Observation tools need to be evidence-based, reliable, and valid. The indicators on the

observation tool should be detailed, specific, and measurable for the specific context, level, and type of lesson (Werner, 2018). This study will gather Zoom meeting summaries generated for faculty in one or several departments in a college and use the key concepts retrieves as coding themes for the items in a classroom observation report.

References

Chan, C.K.Y. (2023). A comprehensive AI policy education framework for university teaching and learning. Int J Educ Technol High Educ 20, 38. https://doi.org/10.1186/s41239-023-00408-3

Shlomo, A., & Rosenberg-Kima, R. B. (2024). F2F, zoom, or asynchronous learning? Higher education students' preferences and perceived benefits and pitfalls. International Journal of Science Education, 1–26. https://doi.org/10.1080/09500693.2024.2355673

Raikundalia, G. K. (2001). Exploiting Derivatives, Meeting Guides and Summary Points in Developing Electronic Meeting Minutes. *Journal of Decision Systems*, *10*(3–4), 481–510. https://doi.org/10.3166/jds.10.481-510

White, M., & Maher, B. L. (2024). How might rubric-based observations better support teacher learning and development? Educational Research, 66(1), 86–101. https://doi.org/10.1080/00131881.2024.2304542

Godara, K., Phakey, N., & Pandey, K. K. (2024). Excuse me professor, you're on mute – a qualitative exploration of experiences of video conferencing and zoom fatigue in university students. Fatigue: Biomedicine, Health & Behavior, 1–15. https://doi.org/10.1080/21641846.2024.2381382

Williams, C.T., Walter, E.M., Henderson, C. *et al.* (2015). Describing undergraduate STEM teaching practices: a comparison of instructor self-report instruments. *IJ STEM Ed* **2**, 18. https://doi.org/10.1186/s40594-015-0031-y

Suhir, E. (2014). Human-in-the-loop: probabilistic predictive modelling, its role, attributes, challenges, and applications. Theoretical Issues in Ergonomics Science, 16(2), 99–123. https://doi.org/10.1080/1463922X.2014.895879

Katz, A., & Kedem-Yemini, S. (2021). From classrooms to Zoom rooms: preserving effective communication in distance education. *Journal of Information Technology Case and Application Research*, *23*(3), 173–212. https://doi.org/10.1080/15228053.2021.1922248

Werner, S. (2018, February 15). The Problem with Teacher Observation. Chemonics International. https://chemonics.com/blog/problem-teacher-observation/