



Research Article

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## Can the flipped classroom be used as a reiterative method to promote learners' learning engagement?

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### ABSTRACT

In recent years, the flipped classroom model has gained significant attention in tertiary education for its potential to transform conventional teaching methods. Despite growing interest, research on its effectiveness remains limited. This study contributes to the existing literature by investigating student perceptions and the pedagogical impact of the flipped classroom model. Data were collected through two primary instruments: (a) student questionnaires and (b) analytics on video views. Findings indicate that students held a positive perception of the flipped model, reporting that in-class activities enhanced their conceptual understanding. The flexibility to revisit video content at their convenience enabled self-paced learning and better comprehension. Materials were shared via Google Classroom, and self-produced tutorial videos were made available on YouTube, offering clear instructions and reinforcing independent learning. Across disciplines, the flipped model showed promising outcomes. Students engaged with both self-made and MOOC-based videos, participated in in-video quizzes, and demonstrated improved self-efficacy. Instructors also benefitted from increased classroom time for interactive, activity-based learning. The study involved 45 second-year Literature students from the Faculty of Arts and 48 Computer Science students from the Faculty of Science at Stella Maris College, Chennai. Overall, the flipped classroom approach positively influenced student engagement, academic performance, and satisfaction in core disciplinary courses.

### INTRODUCTION

The twenty-first century has brought forth a diverse student population and corresponding challenges in both knowledge transmission and pedagogical practices, despite rapid technological advancements. As a result, higher education has seen a range of pedagogical innovations that increasingly question the relevance of the traditional lecture format. It is therefore essential to establish a balanced teaching methodology that meets the needs of both academicians and practitioners. This study focuses on one such model, the flipped classroom which seeks to foster greater student engagement and interest in learning.

Recent research underscores the positive impact of the flipped classroom approach in tertiary education. This model reverses the traditional instructional sequence by requiring students to engage with lecture content outside the classroom, thereby allowing in-class time to be dedicated to interactive discussions and deeper exploration of concepts. For educators, this shift necessitates the delivery of instructional content through digital platforms while transforming classroom sessions into spaces for active learning. The flipped model enables students to interact with course materials at their own pace, leading to enhanced comprehension, increased retention, and improved learning outcomes.

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## LITERATURE REVIEW

Innovative teaching approaches have become essential to meet the educational demands of 21st-century students. Although the flipped classroom is not a new concept, its earlier adoption was limited by lack of access to technology and insufficient training (Salam Hoshang, Tariq Abu Hilal, Hasan Abu Hilal, 2021). The COVID-19 pandemic accelerated the adoption of blended learning models like the flipped classroom. This student-centric approach has gained significant attention across disciplines (Ozdamli & Asiksoy, 2016). However, pedagogical strategies must be customized to fit specific subject domains, benefiting especially junior teachers by moving beyond traditional methods (Baig & Yadegaridehkordi, 2023). Systematic reviews indicate clear improvements in student learning through flipped classrooms.

The flipped model promotes individualized learning and enhances feedback and interaction between students and teachers (Kara, 2016). Its rising popularity is supported by greater access to technological resources. Besides fostering autonomy and improved learning outcomes, it increases motivation and engagement, particularly in secondary and higher education (Awidi & Paynter, 2019; Galindo-Dominguez, 2021; Cho et al., 2021). Teachers gain more time for research and lab work, while students can catch up on missed classes at their convenience. This model encourages active involvement in learning both inside and outside the classroom (Herreid & Schiller, 2013) and gradually reduces teacher workload by allowing more time for discussion (Aidoo et al., 2022).

The flipped classroom effectively supports grammar learning and creates a positive learning environment, benefiting students in both STEM and humanities fields (Mandasari & Wahyudin, 2021). It requires clearly defined objectives and well-designed content to help students focus on key concepts in a supported, self-directed setting with comprehensive guidance throughout the course (Sointu et al., 2023). Studies show that teachers prefer using YouTube videos and online forms to assess pre- and post-class understanding (Cueva & Inga, 2022). While students generally respond positively, initial resistance and concerns about increased workload need to be addressed (Fuchs, 2021; Brandon, 2017).

### The Reiterative Nature of the Flipped Classroom

In the traditional method, students are introduced to a topic for the first time in class, followed by homework. In contrast, the flipped classroom is iterative, involving three stages. The first stage is content exposure, where students independently review instructional materials—such as texts, videos, notes—and prepare questions to gain a preliminary understanding. The second stage occurs in class, where the instructor deepens understanding through activities like problem-solving, brainstorming, quizzes, group work, and discussions, fostering active

learning. The third stage involves post-class reflective exercises and activities to further reinforce and expand learning. This approach also supports students who may lack parental help with homework in specialized subjects (Salam Hoshang, Tariq Abu Hilal, Hasan Abu Hilal, 2021). Unlike traditional teaching, the flipped classroom redefines the teacher's role from primary knowledge provider to facilitator and mentor, offering guidance and support throughout the learning process (Abdulmalik Ahmad Lawan et al., 2023). While traditional classrooms rely on lectures and limited interaction, flipped classrooms replace lectures with media-based content delivered at home and emphasize active problem-solving and interaction during class time (Swart, 2017).

### Challenges in implementing technology

Adopting a flipped method involves students reviewing learning materials before coming to class, whilst in-class time is devoted to exploring topics in greater depths via collaborative problem-solving and peer instruction. It's important to note that the effectiveness of the flipped classroom approach can vary depending on factors such as the subject matter, student demographics, and instructor implementation. Careful planning and consideration of these factors are crucial for successful implementation.

The major challenges in this are related to activities outside the classroom such as inadequate preparation of the students before the class (Gökçe Akçayır, Murat Akçayır 2018). This strategy requires the development of both reflexive and reflective practices where reflective is problem oriented and reflexive is self oriented (Greenfield, G., Hibbert, P. 2017).

Managing a flipped classroom in a large class setting, which is common in densely populated countries like India, presents unique challenges. Student-Centric flipped learning combined with individualised instructions can further enhance the shortcomings of flipped learning. It is necessary to have measured outcomes to enable students to actively engage in the learning process and take ownership of the same (Abdulmalik Ahmad Lawan, et al 2023).

### Description of the Study

#### Humanities Faculty

The study involved 45 second-year Literature students from the Faculty of Arts, taught T.S. Eliot's *"Tradition and the Individual Talent"* using the flipped classroom model. Video content accompanied by multiple-choice questions (MCQs) was shared during Literary Criticism classes. Survey results showed that most students found the videos engaging, clear, and well-paced, particularly appreciating the visual aids (Fig. 8). The MCQs were viewed as relevant and effective for assessing comprehension, with useful feedback provided (Fig. 9). Students reported feeling well-prepared for the MCQs after watching the videos and

valued the flexibility to learn at their own pace (Fig. 11). Many expressed a preference for more flipped classroom sessions and recommended this approach over traditional lectures, citing better alignment with their learning styles (Figs. 12, 13). Overall, learners were satisfied with their experience.

Students perceived flipped learning as enhancing their understanding of the material, with the video content and visual aids aiding comprehension of Eliot's key ideas (Figs. 14, 15). The combination of videos and MCQs reinforced learning and effectively assessed students' grasp of the content (Fig. 14). Compared to conventional methods, flipped learning improved information retention (Fig. 15), better preparing students for MCQs (Fig. 16) and motivating greater engagement with the subject (Fig. 17).

#### *Computer Science Faculty*

The flipped classroom approach was applied to the course "Procedure Oriented Programming in C" for 48 second-semester Bachelor of Computer Applications students. Previous research (Yizhou Qian & James Lehman, 2017; Derus & Ali, 2012; Milne & Rowe, 2002; Cheah, 2020) highlights student difficulties with syntax, logic, and programming environments, indicating a need for more effective pedagogical strategies. Recognizing the foundational nature of programming concepts, the author adopted the flipped classroom model, developing and uploading video tutorials to a YouTube channel accessible to students ahead of classes.

Initially, students were reluctant to watch the videos, viewing them as an intrusion into leisure time. However, they gradually adapted, watching videos comfortably at home when their attention was optimal. Viewing patterns (Figs. 1-4) reveal consistent engagement, with students revisiting tutorials to reinforce learning. The return rate data (Fig. 6) confirms ongoing use. Additional advanced topics, beyond the syllabus, were also uploaded to support higher-level learners. The videos benefited both struggling and advanced students.

Fig. 5 shows peak video views around assessments, introduction of new concepts, or complex topics requiring extra study time. Though video creation demands significant initial time and resources, the reusable nature of the content offers a long-term advantage for future cohorts.

## **FINDINGS-RESULT AND INTERPRETATION**

The findings indicate that students from both the Humanities and Science faculties generally perceive the flipped classroom method as effective and engaging. Students found the author-created video tutorials and MOOC content to be clear, well-paced, and engaging, which enhanced their understanding of the concepts. The study also reveals that incorporating visual aids further

contributed to this understanding. Analytics showed that students could watch the videos at their own pace and whenever needed. The videos helped them prepare for their assessments. The multiple-choice questions (MCQs) were considered relevant to the video content and effectively assessed students' understanding. The combination of video content and MCQs reinforced learning, and the feedback provided after the MCQs was helpful. Students felt adequately prepared for both the class and MCQs after watching the videos and retained more information compared to traditional lectures. The flipped classroom method also motivated greater engagement with the subject matter. This approach appeared both easier and more affordable to implement, as all students had smartphones, with 84.7% of views (Fig. 7) occurring via mobile devices. According to the self-created YouTube channel analytics and the survey conducted, the flipped classroom method aligns well with students' preferred learning styles. Overall, students were satisfied with their learning experience using the flipped classroom and believed this approach to be more effective than conventional teaching methods.

## **CONCLUSIONS**

The findings from this study clearly demonstrate that the flipped classroom method is both effective and well-received by students in the Humanities and Science streams. The use of author-created video tutorials and MOOCs significantly enhanced students' understanding of the concepts. Allowing students to watch videos at their own pace, combined with multiple-choice questions, fostered deeper engagement with the subject matter. This approach encouraged students to take ownership of their learning, enabling them not only to prepare for classes but also to use the video tutorials during regular assessment preparation and to grasp advanced concepts. The flipped classroom proved beneficial for both slower and advanced learners. Student feedback indicated that they felt better prepared before class and were able to retain and apply information more effectively compared to traditional lecture methods. Overall, the flipped classroom method aligns well with students' preferred learning styles and offers a more effective and engaging alternative to conventional teaching. This approach presents a promising strategy for improving course outcomes while motivating students to learn responsibly.

## **REFERENCES**

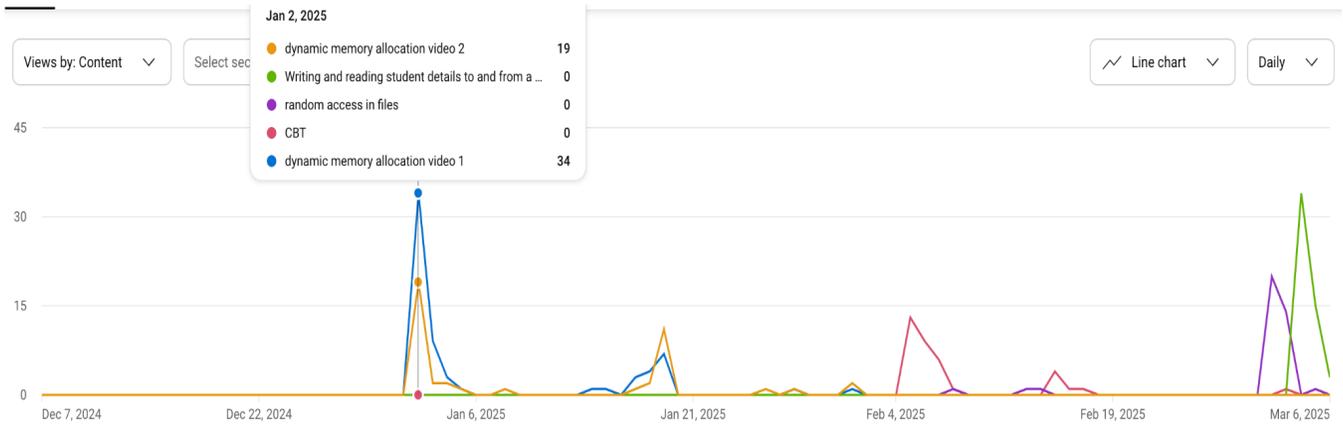
1. Abdulmalik Ahmad Lawan, et.al. (2023). Modified Flipped Learning as an Approach to Mitigate the Adverse Effects of Generative Artificial Intelligence on Education. *Education Journal*. Vol. 12, No. 4, pp. 136-143. doi: 10.11648/j.edu.20231204.14
2. Aidoo, B., Macdonald, M. A., Vesterinen, V.-M., Pétursdóttir S., & Gísladóttir, B. (2022). Transforming Teaching with ICT Using the Flipped Classroom Approach: Dealing with COVID-19 Pandemic. *Education Sciences*, 12(6), 421. <https://doi.org/10.3390/>



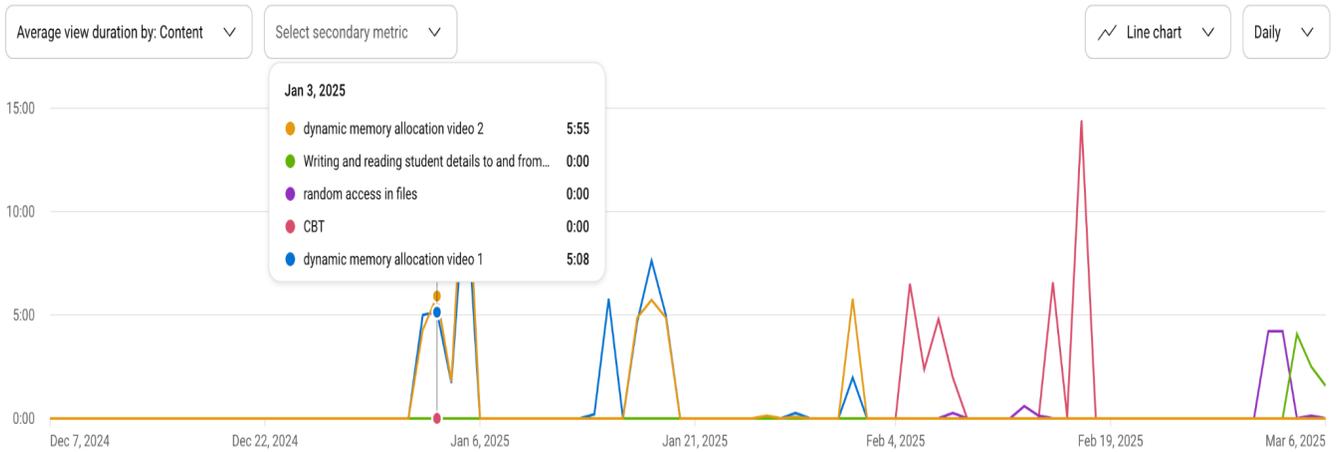
- educsci12060421
3. Baig, M. I., & Yadegaridehkordi, E. (2023). Flipped classroom in higher education: a systematic literature review and research challenges. *International Journal of Educational Technology in Higher Education*, 20(1), 61.
  4. Brandon, D. T. (2017). Motivation factors in flipped classes (Doctoral dissertation).
  5. Cheah, C. S. (2020). Factors Contributing to the Difficulties in Teaching and Learning of Computer Programming: A Literature Review. *Contemporary Educational Technology*, 12(2), ep272. <https://doi.org/10.30935/cedtech/8247>
  6. Cho, H.J., Zhao, K., Lee, C.R. et al. (2021). Active learning through flipped classroom in mechanical engineering: improving students' perception of learning and performance. *IJ STEM Ed* 8, 46. <https://doi.org/10.1186/s40594-021-00302-2>
  7. Cueva, A., & Inga, E. (2022). Information and Communication Technologies for Education Considering the Flipped Learning Model. *Education Sciences*, 12(3), 207. <https://doi.org/10.3390/educsci12030207>
  8. Derus, S. R. M., & Ali, A. M. (2012, September). Difficulties in learning programming: Views of students. *1st International Conference on Current Issues in Education (ICCIE 2012)* (pp. 74-79).
  9. Galindo-Dominguez, H. (2021). Flipped Classroom in the Educational System: Trend or Effective Pedagogical Model Compared to Other Methodologies? *Educational Technology & Society*, 24(3), 44–60. <https://www.jstor.org/stable/27032855>
  10. Gökçe Akçayır, Murat Akçayır. (2018). The flipped classroom: A review of its advantages and challenges. *Computers & Education*, Volume 126, 2018, Pages 334-345, ISSN 0360-1315, <https://doi.org/10.1016/j.compedu.2018.07.021>.
  11. Greenfield, G., Hibbert, P. (2017). Reflective and Reflexive Practices in the Flipped Classroom. In: Reidsema, C., Kavanagh, L., Hadgraft, R., Smith, N. (eds) *The Flipped Classroom*. Springer, Singapore. [https://doi.org/10.1007/978-981-10-3413-8\\_5](https://doi.org/10.1007/978-981-10-3413-8_5)
  12. Herreid, C. F., & Schiller, N. A. (2013). Case Study: Case Studies and the Flipped Classroom. *Journal of College Science Teaching*, 42(5), 62–66. [https://doi.org/10.2505/4/jcst13\\_042\\_05\\_62](https://doi.org/10.2505/4/jcst13_042_05_62)
  13. Isaiah T. Awidi, Mark Paynter. (2019). The impact of a flipped classroom approach on student learning experience, *Computers & Education*, Volume 128, Pages 269-283, ISSN 0360-1315, <https://doi.org/10.1016/j.compedu.2018.09.013>
  14. Kara CO. Flipped Classroom. *TED*. 2016;15(45).
  15. Kevin Fuchs. (2021). *International Journal of Learning, Teaching and Educational Research*, Vol. 20, No. 3, pp. 18-32, <https://doi.org/10.26803/ijlter.20.3.2>
  16. Mandasari, B., & Wahyudin, A. Y. (2021). Flipped Classroom Learning Model: Implementation and Its Impact on EFL Learners' Satisfaction on Grammar Class. *Ethical Lingua: Journal of Language Teaching and Literature*, 8(1), 150-158. Retrieved from <https://www.ethicallingua.org/25409190/article/view/234>
  17. Milne, I., Rowe, G. (2002). Difficulties in Learning and Teaching Programming—Views of Students and Tutors. *Education and Information Technologies* 7, 55– 66. <https://doi.org/10.1023/A:1015362608943>
  18. Ozdamli, F. & Asiksoy, G. (2016). Flipped classroom approach. *World Journal on Educational Technology: Current Issues*. 8(2), 98-105
  19. Salam Hoshang, Tariq Abu Hilal, Hasan Abu Hilal. (2021). Investigating the Acceptance of Flipped Classroom and Suggested Recommendations. *Procedia Computer Science*, Volume 184, Pages 411-418, ISSN 1877-0509, <https://doi.org/10.1016/j.procs.2021.03.052>.
  20. Sointu, E., Hyypiä, M., Lambert, M.C. et al (2023). Preliminary evidence of key factors in successful flipping: predicting positive student experiences in flipped classrooms. *High Education* 85, 503–520. <https://doi.org/10.1007/s10734-022-00848-2>
  21. Swart, W. (Ed.). (2017). Extending the principles of flipped learning to achieve measurable results: Emerging Research and Opportunities. *Emerging Research and Opportunities*. IGI Global
  22. Yizhou Qian and James Lehman. 2017. Students' Misconceptions and Other Difficulties in Introductory Programming: A Literature Review. *ACM Trans. Comput. Educ.* 18, 1, Article 1 (March 2018), 24 pages. <https://doi.org/10.1145/3077618>

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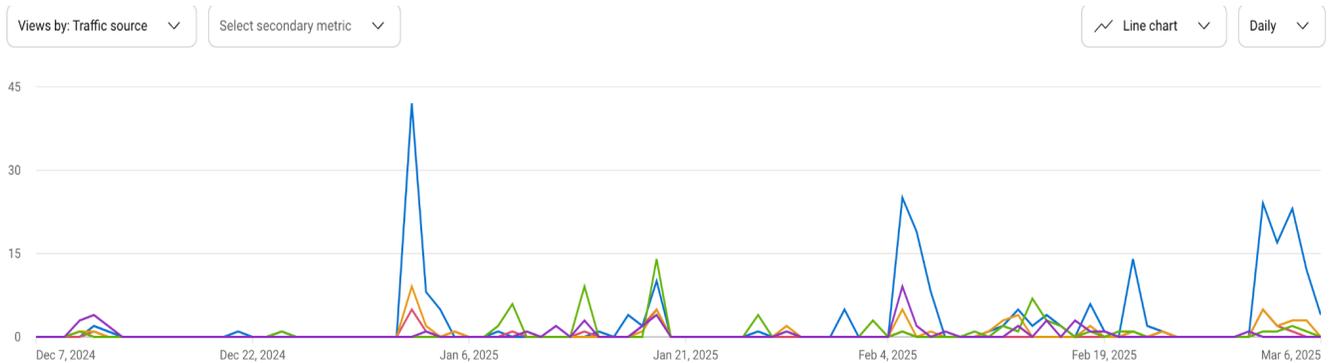
**APPENDIX**



**Fig. 1:** Views by Content as per Youtube Analytics of Author-Created Video Tutorials



**Fig. 2:** Average Percentage viewed by Content as per Youtube Analytics of Author-Created Video Tutorials



**Fig. 3:** View by traffic source content wise as per Youtube Analytics of Author-Created Video Tutorials



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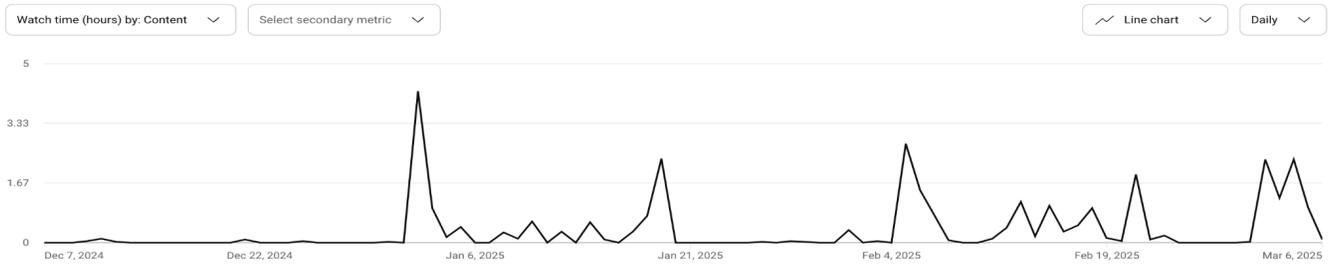


Fig. 4: Watch time by hours as per Youtube Analytics of Author-Created Video Tutorials

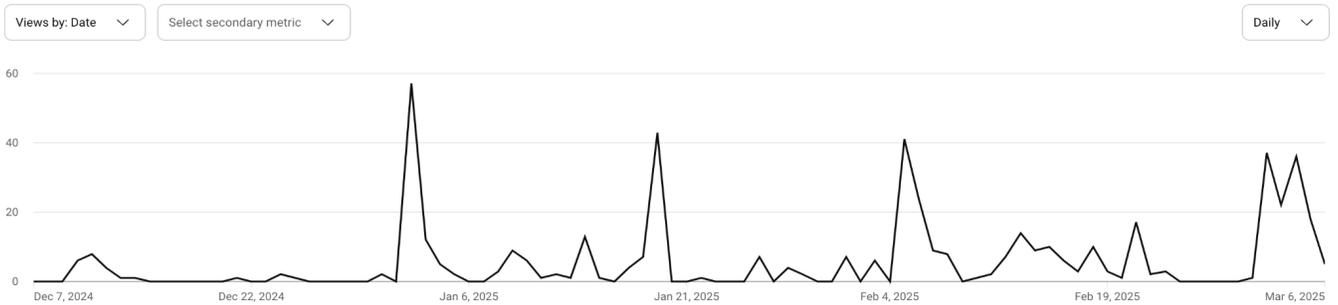


Fig. 5: Views by Date as per Youtube Analytics of Author-Created Video Tutorials

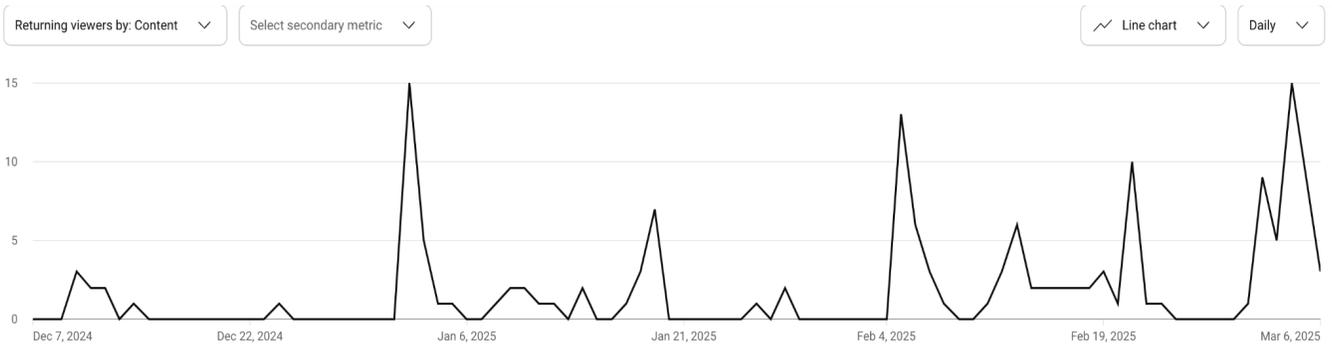


Fig. 6: Returning Viewers by Content as per Youtube Analytics of Author-Created Video Tutorials

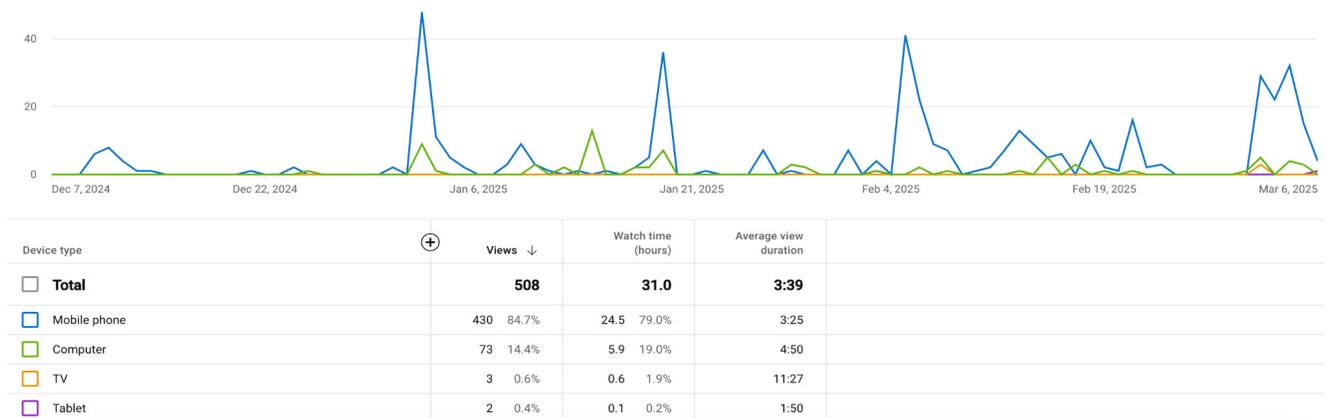
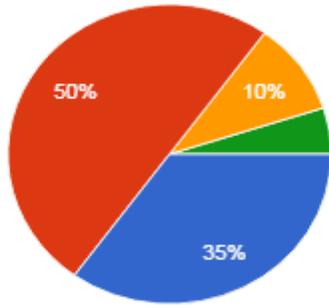
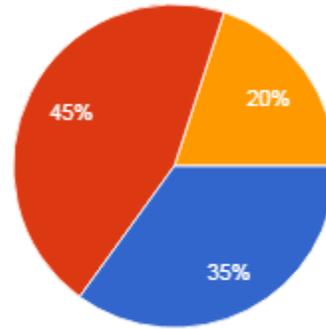


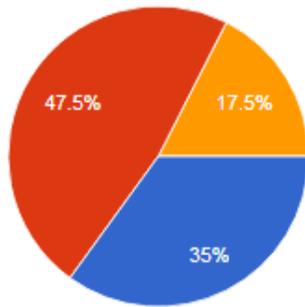
Fig. 7: Views by Device Type as per Youtube Analytics of Author-Created Video Tutorials



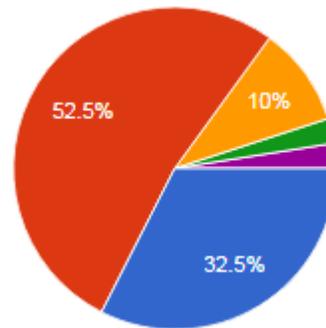
**Fig.8:** The video content provided was engaging



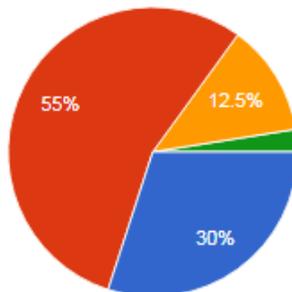
**Fig. 9:** The Flipped Classroom method enhanced my interest throughout understanding of T.S.Eliot's main ideas



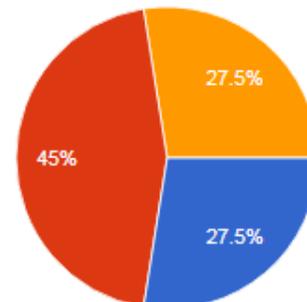
**Fig.10:** The combination of video content and MCQs helped reinforce my learning.



**Fig. 11:** The flipped class allowed me to learn at my own pace.

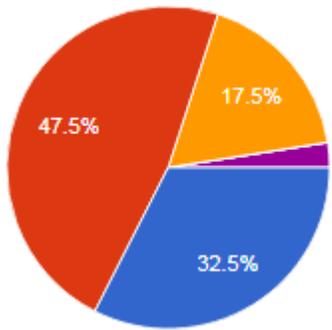


**Fig. 12:** I would prefer more Flip Classroom sessions on motivated with the subject matter

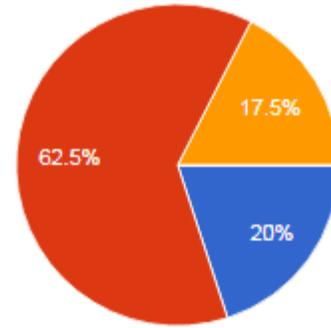


**Fig. 13:** The Flip Classroom method motivated me to explore topics in the future.

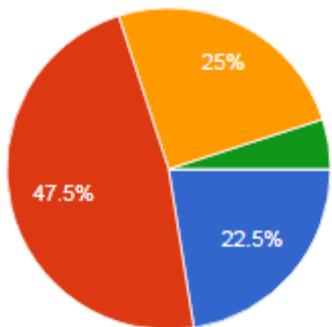
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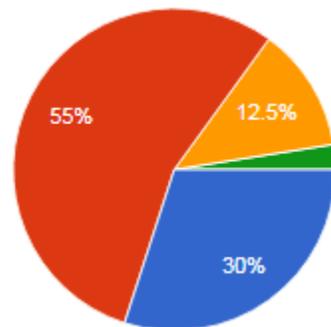
**Fig. 14:** The feedback provided after the MCQs aligns well learning was helpful.



**Fig. 15:** The Flip Classroom with my preferred learning style.



**Fig.16:** I retained more information from this method Compared to traditional lectures



**Fig. 17:** I believe that the combination of Video and MCQ's effective method of learning