



## An Integrated Learning Analytics Dashboard for English for Professional Purposes: A Study of Engagement, Self-Score, and Attendance among University Students

Saowanee Thapphet<sup>1\*</sup> and Norathep Sakphet<sup>2</sup>

<sup>1</sup>Ph.D., College of Innovation and Management, Songkla Rajchabhat University.

<sup>2</sup>Ph.D., College of Innovation and Management, Songkla Rajchabhat University.

\*Corresponding author, E-mail: micle2001@yahoo.com

### Abstract

This study aimed to develop and evaluate an integrated learning analytics dashboard for the university-level course *English for Professional Purposes*. The study examined the relationships among student engagement, self-assessment scores, and attendance using multiple learning data sources. Participants consisted of 30 third-year undergraduate students enrolled in the course. Data were collected from Google Classroom learning logs, instructor evaluation rubrics, and Exit Ticket reflections. Quantitative data were analyzed using descriptive statistics and Pearson correlation analysis, while qualitative reflections provided contextual insights into student learning experiences. The results revealed a significant positive relationship between student engagement and self-assessment scores ( $r = .58, p < .01$ ). Engagement was also positively correlated with attendance ( $r = .49, p < .05$ ), indicating that students who attended classes regularly tended to participate more actively in learning activities. Instructor evaluations showed relatively strong competencies in communication ( $M = 3.93$ ) and teamwork ( $M = 3.80$ ), whereas critical thinking skills ( $M = 3.47$ ) demonstrated greater variability among students. Students' self-assessment scores reflected moderate levels of learning confidence ( $M = 3.37$ ). Exit Ticket reflections further indicated that vocabulary development and time management were the most common learning challenges. Overall, the findings suggest that integrated learning analytics dashboards can support evidence-based instructional decision-making and enable instructors to monitor engagement patterns and provide timely learning support in English for Professional Purposes courses. This study contributes to the field of learning analytics in language education by proposing an integrated dashboard model that combines behavioral engagement, self-assessment, and attendance data for instructional decision-making in EPP contexts.



**Keywords:** Learning Analytics, Learning Analytics Dashboard, English for Professional Purposes, Student Engagement, Self-Assessment, Attendance, Google Classroom, Higher Education

## Introduction

In today's globalized society, English has become an essential skill in professional and academic environments. Higher education institutions increasingly emphasize English for Professional Purposes (EPP) to prepare students for workplace communication and global collaboration (Hyland, 2006). Recent data indicate that 85% of Thai universities require EPP courses, yet only 42% of graduates report workplace-ready English proficiency (UNESCO, 2024). The development of professional language competencies requires not only linguistic knowledge but also sustained engagement, reflection, and authentic learning experiences.

Despite the growing integration of technology in higher education, many university students continue to struggle with participation, confidence, and sustained engagement in English learning contexts (Fredricks et al., 2004). Recent surveys report disengagement rates of up to 67% in Asian EFL classrooms (British Council, 2023). Moreover, instructional evaluation in language courses often relies heavily on summative assessments, such as examinations or final project results, which may fail to capture the complexity of learning behaviors over time (Black & Wiliam, 1998). This limitation highlights the need for continuous monitoring and alternative assessment approaches capable of revealing patterns of student engagement and learning development.

With the rapid adoption of digital learning platforms such as Google Classroom, universities now have access to large amounts of learner-generated data, including login frequency, assignment submissions, and time spent on learning activities. Learning Analytics has emerged as an important field that utilizes such data to improve teaching and learning processes through evidence-based decision-making (Siemens & Long, 2011). One practical implementation of learning analytics is the use of digital dashboards, which transform raw data into visual information that can support instructors in monitoring student progress and identifying learning difficulties. Recent studies suggest that dashboard-supported learning environments can improve student engagement and learning performance in digital learning contexts (Wang et al., 2023; Saqr, 2024).

In addition to behavioral data, student self-reflection is widely recognized as an important component of language learning. Tools such as Exit Tickets and self-assessment activities help students develop metacognitive awareness and reflect on their learning progress (Brookhart, 2008). However, in many instructional settings these reflective data sources remain separate from system-generated analytics and instructor



evaluation. As a result, instructors often lack a comprehensive understanding of students' learning behaviors, engagement patterns, and perceived learning progress.

Although digital learning environments provide extensive data on learner activity, these data are rarely analyzed systematically for instructional improvement in language education (Siemens & Long, 2011). In many higher education contexts, technology continues to function primarily as a platform for content delivery rather than as a tool for instructional evaluation and strategic intervention (Verbert et al., 2013). This limitation is particularly evident in English for Professional Purposes courses, where the integration of learning analytics for classroom-level decision-making remains relatively limited compared with other disciplines.

A review of existing literature reveals several key research gaps. First, many learning analytics studies rely on single data sources, such as test scores or system logs, rather than integrating multiple forms of learning evidence (Siemens & Long, 2011). Second, research in learning analytics has been concentrated largely within STEM disciplines, with comparatively limited attention to applied linguistics and professional English learning environments (Matcha et al., 2020). Third, although student engagement has been widely studied, fewer investigations combine behavioral engagement data with student reflection and instructor evaluation to provide a more comprehensive understanding of the learning process (Fredricks et al., 2004; Brookhart, 2008).

Therefore, this study addresses these gaps by developing and examining an integrated learning analytics dashboard that combines student engagement data, self-assessment scores, and attendance records in an English for Professional Purposes course. By integrating behavioral, reflective, and instructor-based data, the study aims to support evidence-based instructional decision-making and provide a more comprehensive perspective on student learning in EPP contexts.

### Research Objectives

1. To develop an integrated learning analytics dashboard for the course *English for Professional Purposes* using data from Google Classroom, instructor evaluation, and Exit Ticket reflections.
2. To investigate the levels of student engagement, self-score, and attendance among third-year undergraduate students.

### Research Questions

1. How can an integrated learning analytics dashboard be developed?
2. What are the levels of engagement, self-score, and attendance?
3. What relationships exist among engagement, self-score, attendance, and learning outcomes?



## Concepts, Theories, and Conceptual Framework

### 1. Conceptual Foundations

This study is grounded in three major conceptual foundations:

#### (1) Learning Analytics

Learning Analytics refers to the collection, measurement, analysis, and reporting of learner data for understanding and optimizing learning and learning environments (Siemens & Long, 2011). In this study, behavioral data from Google Classroom—such as login frequency, assignment submission, and attendance records—are used to examine patterns of engagement and inform instructional improvement.

#### (2) Self-Regulated Learning

Self-regulated learning emphasizes learners' ability to monitor, evaluate, and direct their own learning processes (Zimmerman, 2002). Through Exit Ticket reflections and self-score ratings, students engage in metacognitive processes that include self-assessment, goal setting, and self-reflection, which are essential for developing autonomy and professional learning habits.

#### (3) Student Engagement Theory

Student engagement is considered a critical determinant of academic success and learning quality. Engagement encompasses behavioral, emotional, and cognitive involvement in learning activities (Fredricks et al., 2004). This framework explains how students' participation, motivation, and learning investment influence outcomes in professional English education.

Previous studies have developed learning analytics dashboards primarily for monitoring student activity in online learning environments (Verbert et al., 2013). However, these dashboards often focus on behavioral data such as login frequency and task completion. In contrast, the dashboard proposed in this study integrates three complementary data sources—engagement logs, self-assessment reflections, and instructor evaluations. This integrated approach allows instructors to gain a more holistic understanding of student learning behavior and performance.

### 2. Theoretical Framework

This study is informed by four key theoretical perspectives:

#### (1) Student Engagement Theory — Fredricks et al. (2004)

Engagement is conceptualized as a multidimensional construct, including:

- **Behavioral engagement** (attendance, participation, task completion),
- **Emotional engagement** (interest, attitudes), and
- **Cognitive engagement** (investment in learning strategies).

#### (2) Formative Assessment Theory — Black & William (1998)



Formative assessment emphasizes the use of classroom-based evidence to inform and improve teaching and learning. Instructor evaluation and continuous feedback play a role in supporting student development and instructional decisions.

### (3) Self-Regulated Learning Theory — Zimmerman (2002)

This theory highlights students' capacity to plan, monitor, and reflect upon their learning. Self-score and Exit Ticket responses are grounded in this perspective, enabling learners to regulate their academic behavior and motivation.

### (4) Learning Analytics Theory — Siemens & Long (2011)

Learning Analytics provides a theoretical foundation for using digital data in pedagogical decision-making. Dashboards are visual tools that translate complex learning data into actionable insights for instructors.

### 3. Previous studies

Previous studies have developed learning analytics dashboards primarily for monitoring student activity in online learning environments (Verbert et al., 2013). However, these dashboards often focus on behavioral data such as login frequency and task completion. In contrast, the dashboard proposed in this study integrates three complementary data sources—engagement logs, self-assessment reflections, and instructor evaluations. This integrated approach allows instructors to gain a more holistic understanding of student learning behavior and performance.

**Table 1:** Comparison of Previous Learning Analytics Studies and the Present Study

| Study                 | Data Source                          | Focus                     | Limitation            |
|-----------------------|--------------------------------------|---------------------------|-----------------------|
| Verbert et al. (2013) | LMS logs                             | Student activity          | No reflective data    |
| Siemens & Long (2011) | Learning analytics data              | Institutional analytics   | Limited classroom use |
| <b>This Study</b>     | Engagement + Self-score + Attendance | Classroom decision-making | Applied in EPP course |

### Conceptual Framework

In this study, the conceptual framework is designed to explain how digital learning behaviors captured through Google Classroom relate to students' English learning outcomes. As online and blended learning environments increasingly rely on learning analytics, behavioral indicators such as engagement patterns, class attendance, and self-evaluation provide valuable insights into learners' progress. These indicators



reflect not only the frequency of participation but also the quality of learners' involvement in classroom activities. The study proposes that these measurable behaviors influence the overall learning outcomes in English. In addition, learner characteristics, instructional methods, and the nature of instructor feedback may strengthen or weaken the relationships among these variables.

#### Independent Variables

- Engagement (Google Classroom logs)
- Attendance (class participation records)
- Self-score (Exit Ticket self-assessment)

#### Dependent Variable

- Learning Outcomes (English learning achievement)

#### Moderating Variables

- Individual learner differences
- Instructional methods
- Instructor feedback

#### Conceptual Framework Diagram

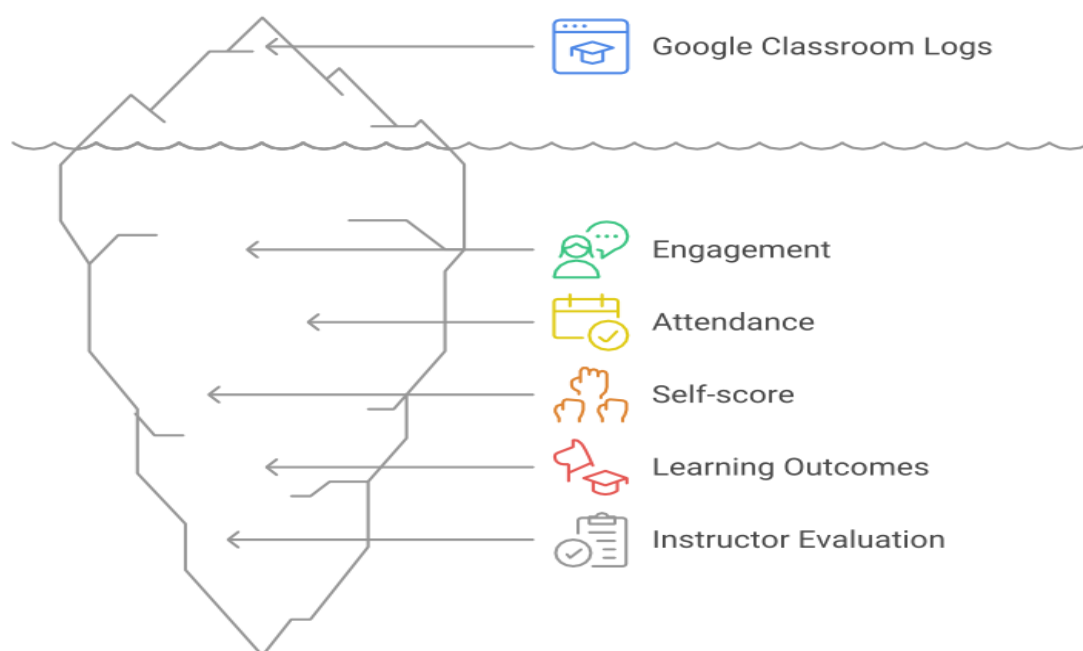


Figure 1: Google Classroom Logs Reveal Deeper Insights

#### Conceptual Assumptions

This study is based on the following assumptions:

- Higher engagement is associated with higher self-score (Fredricks et al., 2004).
- Consistent attendance positively influences learning outcomes (Black & Wiliam,



1998).

- An analytics dashboard enhances instructional responsiveness and data-informed teaching practices (Siemens & Long, 2011).
- Self-regulation promotes improved academic performance through reflection and goal-setting (Zimmerman, 2002).

## Research Methodology

### Research Design

This study employed a **mixed-methods research design**, integrating both quantitative and qualitative approaches. The purpose was to examine student learning behaviors, self-assessment, and attendance through a Learning Analytics Dashboard, with Google Classroom serving as the primary data source. Quantitative data were used to analyze engagement levels, attendance, and self-evaluation scores, while qualitative data were collected from student reflections to provide deeper insights into learning experiences.

### Population and Sample

The population of this study consisted of all third-year undergraduate students enrolled in the course *English for Professional Purposes*. The sample consisted of 30 students enrolled during the 2025 academic year and selected using purposive sampling, as they were directly involved in the instructional context under investigation.

### Research Variables

#### Independent Variables

- Student engagement derived from Google Classroom data
- Self-score obtained from Exit Ticket responses
- Attendance based on class participation records

#### Dependent Variable

- Learning outcomes in the course *English for Professional Purposes*

### Research Instruments

#### (1) Learning Analytics Dashboard

A dashboard developed using Looker Studio was utilized to visualize learning data through:

- Radar charts
- Line charts
- Heatmaps
- Scorecards

#### (2) Exit Ticket Questionnaire

The Exit Ticket served as a reflective assessment tool containing:

- Open-ended questions



- A 5-point Likert scale self-score rating

The instrument was reviewed by experts using the Index of Item-Objective Congruence (IOC) technique.

### (3) Instructor Evaluation Rubric

An instructor-based rubric assessed four dimensions of student performance:

- Communication
- Professionalism
- Teamwork
- Critical Thinking

Ratings were based on a 5-point scale.

### (4) Google Classroom Log Records

Learning activity data were extracted from Google Classroom including:

- Login frequency
- Time spent on tasks
- Assignment submission counts
- Attendance rates

### Dashboard Design and Development Process

The learning analytics dashboard was developed using Google Looker Studio to integrate multiple sources of learning data collected during the course. The dashboard design followed three main stages. First, relevant data were collected from Google Classroom logs, including login frequency, assignment submission records, and attendance data. Second, the collected data were organized and processed in Google Sheets to ensure consistency and accuracy. Third, the data were visualized through interactive dashboard components, including radar charts, line graphs, heatmaps, and scorecards.

The purpose of the dashboard design was to enable instructors to monitor student learning behaviors and performance patterns in real time. The visual interface allowed instructors to track engagement trends, identify students with low participation, and provide timely instructional support. The design process emphasized clarity, usability, and instructional relevance to support data-informed teaching decisions.

### Instrument Development and Validation

To ensure that all research instruments were both conceptually sound and empirically robust, a systematic process of instrument development and validation was conducted. The instruments were constructed based on the research objectives, related theories, and previous studies to ensure alignment with the variables examined in this study. After the initial drafting, each instrument underwent expert review and statistical validation to confirm that the items accurately represented the intended constructs and



demonstrated consistency in measurement. The following procedures were applied to examine content validity and reliability.

### Content Validity

Content validity was evaluated by three experts in English language education and educational measurement using the Index of Item–Objective Congruence (IOC). The IOC values ranged from 0.67 to 1.00, indicating acceptable alignment between the items and the research objectives.

### Reliability

Instrument reliability was assessed using Cronbach’s Alpha to examine internal consistency. The analysis yielded a coefficient of  $\alpha = 0.84$ , exceeding the acceptable threshold of 0.70 and indicating satisfactory reliability.

### Data Collection Procedures

Data collection occurred during the academic term as follows:

1. Attendance was recorded via Google Classroom.
2. Engagement data were collected weekly.
3. Exit Tickets were administered after major lessons.
4. Instructor evaluations occurred biweekly.
5. All data were integrated into the dashboard for analysis.

### Data Analysis

To address the research objectives and examine the relationships among the key variables, a combination of descriptive and inferential statistical techniques was employed. Descriptive statistics were used to summarize learners’ engagement patterns, attendance records, and self-assessment scores, while inferential statistics were applied to explore the relationships among variables and determine their significance. In addition, qualitative responses were analyzed to provide deeper insights into learner behavior and complement the quantitative findings. The specific methods used for each objective are presented in Table 2.

**Table 2:** Analysis Method

| Objective         | Analysis Method          |
|-------------------|--------------------------|
| Engagement levels | Mean, Standard Deviation |
| Self-score        | Percentage               |
| Attendance        | Percentage rate          |
| Relationships     | Pearson correlation      |
| Qualitative data  | Content analysis         |



### Ethical Considerations

- Informed consent was obtained from all participants.
- Student identity was anonymized.
- Results were reported in aggregate form.

### Research Instruments

To evaluate students' performance in essential professional competencies, an instructor evaluation rubric was developed and applied throughout the course. The rubric focuses on four key dimensions that align with the learning objectives of English for Professional Purposes: communication, professionalism, teamwork, and critical thinking. Each dimension captures a specific aspect of students' applied skills, enabling instructors to provide structured, consistent, and measurable assessments. The rating scale ranges from 1 to 5, allowing for differentiation in the quality of student performance across the four competency areas.

**Table 3:** Instructor Evaluation Rubric

| Dimension         | Description                |
|-------------------|----------------------------|
| Communication     | Clarity of expression      |
| Professionalism   | Responsibility and conduct |
| Teamwork          | Collaboration              |
| Critical Thinking | Problem-solving skills     |

Rating scale: 1–5

#### (1) Exit Ticket Sample Questions

1. What did you understand best today?
2. What part was most difficult for you?
3. Rate your learning today (1–5).
4. Provide suggestions for improvement.

#### (2) Engagement Log Variables

- Login frequency
- Total learning duration
- Assignment submission count
- Attendance percentage

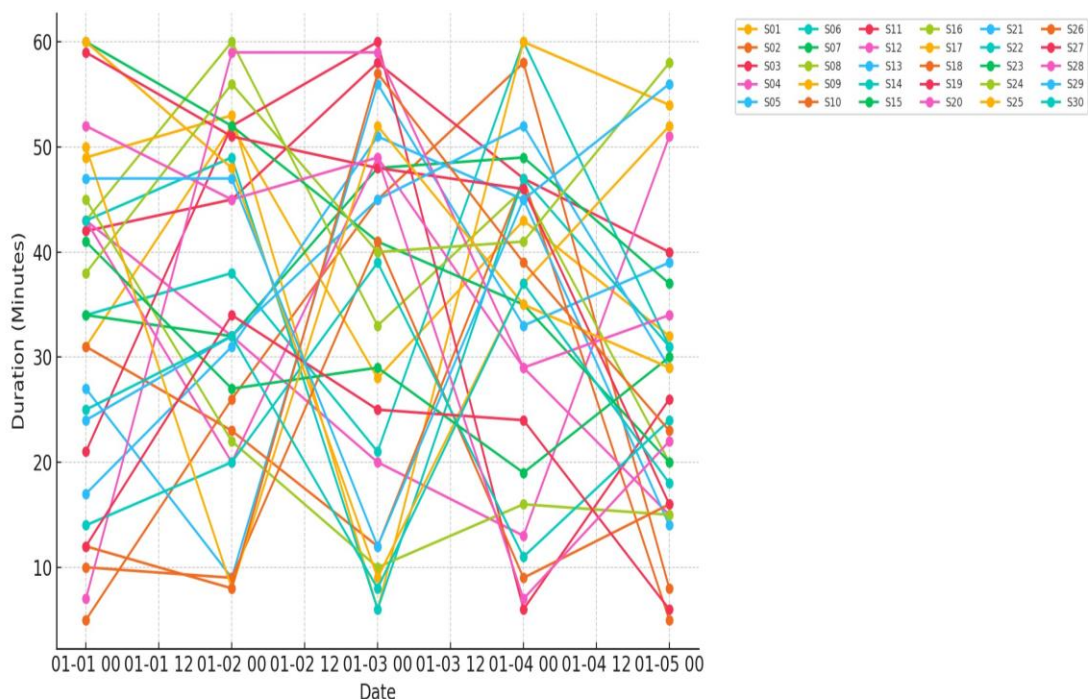
### Results

The analysis of student data provides a comprehensive overview of learning behaviors, performance patterns, and self-perceptions within the cohort. Multiple data sources—including engagement records, instructor evaluations, self-assessment scores,



and reported learning difficulties—were examined to identify trends and individual differences among the 30 students. The results reveal notable variability in how students engage with learning activities, develop essential professional skills, and perceive their own progress. These insights form the basis for understanding learner needs and designing targeted instructional interventions.

Descriptive statistics indicated that students demonstrated relatively strong competencies in communication ( $M = 3.93$ ) and teamwork ( $M = 3.80$ ), while critical thinking skills ( $M = 3.47$ ) showed greater variation. The overall self-assessment score reflected a moderate level of perceived learning progress ( $M = 3.37$ ). The average attendance rate was 89.3%, suggesting consistent participation in course activities. Correlation analysis further revealed a moderate positive relationship between student engagement and self-assessment scores ( $r = .58, p < .01$ ). In addition, engagement was positively associated with attendance ( $r = .49, p < .05$ ), indicating that students who attended classes more regularly tended to participate more actively in learning activities. These findings suggest that engagement and attendance play an important role in supporting students' perceived learning development.



**Figure 2:** Learning Engagement Duration by Student

Figure 2 presents a line graph illustrating daily engagement duration (minutes) for 30 students (S01–S30). The figure shows variation in learning behaviors over time, highlighting individual differences in engagement levels and learning consistency across the cohort.

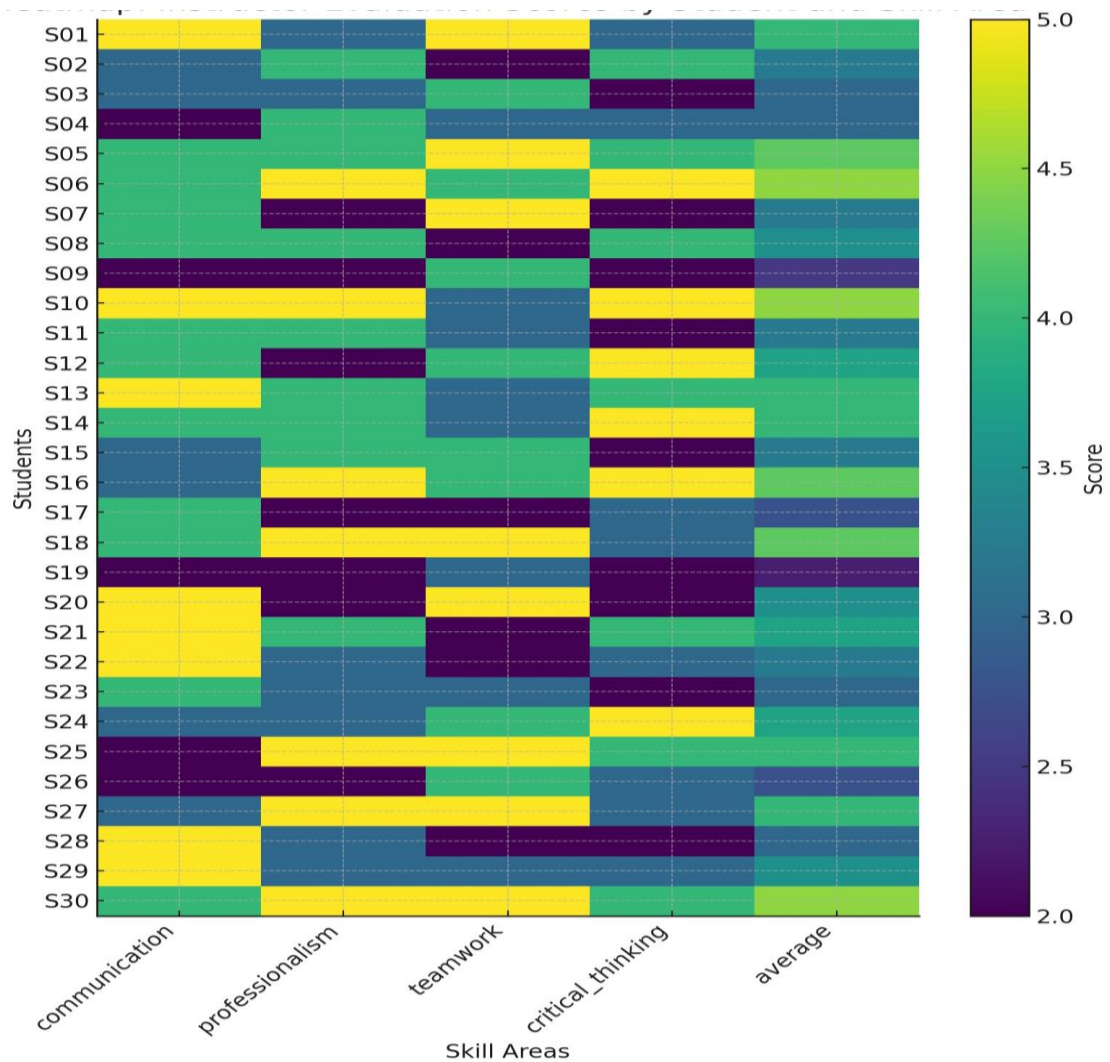


Figure 3: Instructor Evaluation Scores by Student and Skill Area

Figure 3 displays a heatmap of Instructor Evaluation Scores by Student and Skill Area. The heatmap illustrates individual performance across four competency areas—communication, professionalism, teamwork, and critical thinking—for 30 students (S01–S30). Higher intensity indicates stronger performance. The visualization reveals variability among students and across skill areas, supporting targeted instructional feedback and development planning.

The bar graph illustrates self-assessment scores reported by 30 students. The variation in scores indicates differences in learners perceived understanding and confidence. Several students reported high levels of confidence, while others indicated lower self-perceived competence, suggesting the need for targeted academic support.

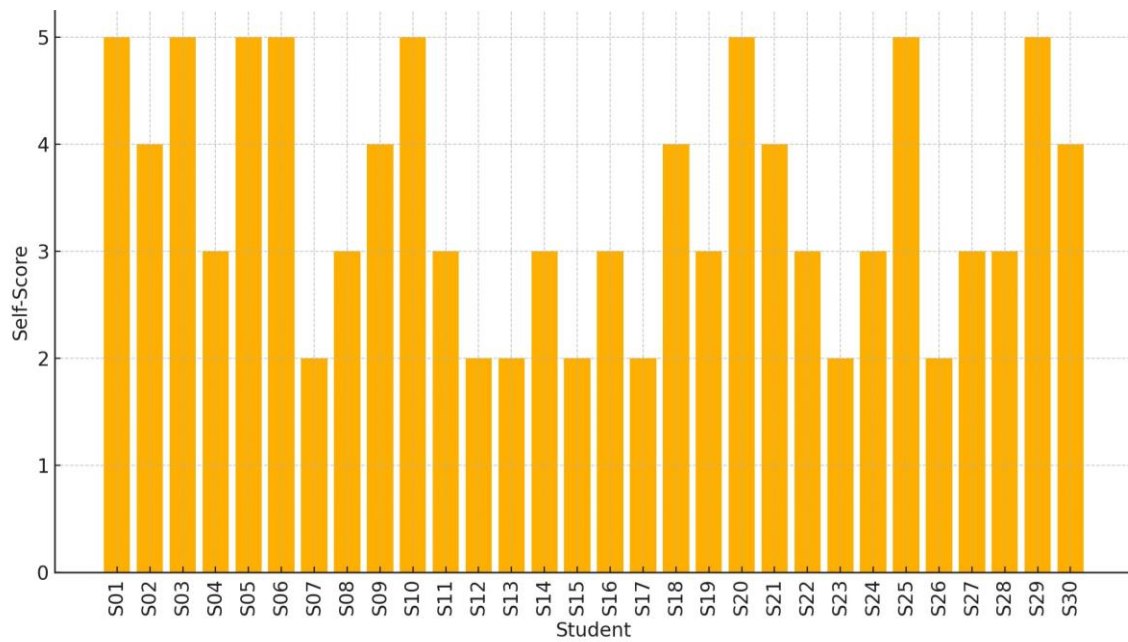


Figure 4: Self-Score by Student

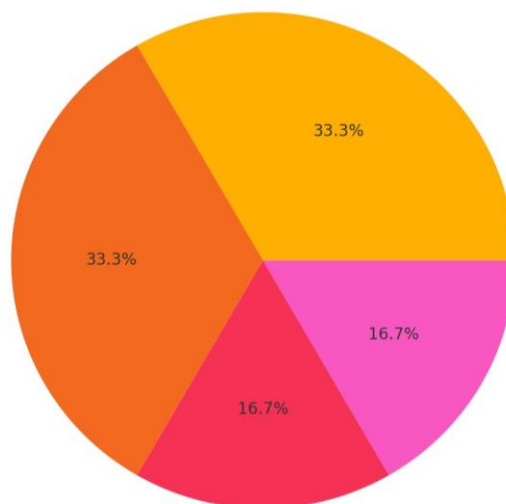


Figure 5: Distribution of Learning Difficulties

The pie chart presents the distribution of reported learning difficulties. Vocabulary and time management were the most frequently reported challenges, while some students reported no difficulties. This finding suggests that instructional interventions should prioritize language support and study-skills development.

The visual analyses from Figures 2–5 collectively demonstrate substantial individual differences among the 30 students in learning engagement, performance, and self-reflection. Pearson correlation analysis was conducted to examine the relationships among student engagement, self-score, and attendance. The results showed a positive relationship between engagement and self-score ( $r = 0.58, p < .01$ ). Attendance was also



positively correlated with engagement ( $r = 0.49$ ,  $p < .05$ ), indicating that students who attended classes regularly tended to participate more actively in learning activities. In Table 4, relationships among engagement, self-score, and attendance were analyzed using Pearson correlation coefficient.

**Table 4:** Relationships among Engagement, Self-Score, and Attendance

| Variables  | Engagement | Self-score | Attendance |
|------------|------------|------------|------------|
| Engagement | 1          | .58*       | .49*       |
| Self-score | .58*       | 1          | .46        |
| Attendance | .49*       | .46        | 1          |

Variations in daily engagement patterns (Figure 2) reveals inconsistent learning behaviors across the cohort, while instructor evaluations (Figure 3) highlighted uneven development across communication, professionalism, teamwork, and critical thinking. Self-assessment results (Figure 4) further confirmed differing levels of confidence and perceived understanding, and the reported learning difficulties (Figure 5) emphasized vocabulary and time management as the main challenges. Together, these findings indicate that effective instruction in English for Professional Purposes requires differentiated teaching strategies. The results show considerable variation in engagement levels among students., ongoing formative assessment, and targeted support systems to address learners' academic and behavioral needs, thereby enhancing overall learning outcomes.

### Academic Contribution

This study provides three contributions to the field of learning analytics and language education:

1. It proposes an integrated dashboard model combining engagement, self-assessment, and attendance data.
2. It demonstrates how learning analytics can support instructional decision-making in English for Professional Purposes courses.
3. It highlights the role of reflective learning data in understanding student engagement patterns.

### Conclusions and Discussion

This study confirms the effectiveness of using a Learning Analytics Dashboard to monitor student engagement, self-assessment, and attendance in English for Professional Purposes courses. The dashboard provided real-time insights that supported instructional



decision-making, differentiated teaching, and learner-centered interventions, aligning with recent systematic reviews showing dashboards positively impact achievement and participation (Saqr, 2024). These findings suggest that differentiated teaching strategies may be necessary to address diverse learning behaviors among students, as supported by meta-analyses confirming large effects on English proficiency (Nuraeni & Jufri, 2025).

The results indicate that student engagement, attendance, and self-assessment are closely related to learning performance in the English for Professional Purposes course, consistent with contemporary research on analytics in English language teaching (West et al., 2025).

The findings indicate that engagement patterns, timely submission behavior, and self-regulated learning skills substantially influence learning outcomes. Students who actively participated and demonstrated consistent learning behaviors tended to achieve higher evaluation scores and learning progress. These results extend Fredricks et al. (2004) by aligning with recent studies where higher engagement duration correlates with stronger outcomes via dashboard monitoring (Saqr, 2024).

The study contributes to applied linguistics and educational technology by demonstrating how integrated learning analytics can support pedagogical decision-making in professional English education, building on Siemens and Long (2011) with evidence from LA feedback enhancing self-regulated learning in EFL contexts (Wang et al., 2023).

The use of Exit Tickets helped identify learning difficulties, particularly in vocabulary usage and time management, enabling targeted instructional support, much like analytics-driven self-assessments linking behaviors to performance (Sedrakyan et al., 2023). In addition, instructor evaluations complemented digital analytics by offering qualitative insight into student performance.

Overall, the integrated dashboard model enhanced instructional efficiency, improved learner awareness, and provided actionable data for personalized support. The results suggest that educational institutions should adopt learning analytics systems to improve teaching quality and learner success in higher education (West et al., 2025).

The findings of this study demonstrate that learning behavior, engagement patterns, and self-assessment scores are closely related to students' learning performance in English for Professional Purposes. The dashboard visualizations revealed clear differences among the 30 students, particularly in engagement duration, submission behavior, and instructor evaluation scores. These findings support the concept of Learning Analytics, which emphasizes the use of digital learning data to inform instructional decisions (Siemens & Long, 2011), as echoed in recent LA applications for teacher support (Saqr, 2024).



These findings support the Student Engagement Theory proposed by Fredricks et al. (2004), which emphasizes the role of behavioral engagement in academic success. In this study, engagement was reflected through students' attendance, assignment submission, and learning activity in Google Classroom, with higher engagement associated with stronger learning outcomes. Similar results have been reported in learning analytics research, where dashboard visualizations help instructors monitor student activity and identify engagement patterns (Verbert et al., 2013), extended by recent K-12 English teacher dashboards. The present study extends this work by integrating engagement logs, self-assessment, and instructor evaluations into a single dashboard system.

The instructor evaluation heatmap indicated variability across competency domains, including communication, professionalism, teamwork, and critical thinking. Several students demonstrated consistently high performance across domains, while others showed uneven development. This aligns with the Student Engagement Theory, which suggests that behavioral and cognitive engagement significantly influence learning outcomes (Fredricks et al., 2004), and recent analytics confirming engagement's role in EFL satisfaction (Wang et al., 2023). Students who showed higher engagement duration and regular task submission were generally associated with higher evaluation scores.

Results from the Exit Ticket analysis further revealed that time management and vocabulary were the most frequently reported difficulties among learners. This finding supports Zimmerman's Self-Regulated Learning theory, highlighting that students' awareness of learning challenges plays a critical role in academic development (Zimmerman, 2002), as shown in analytics-based SRL improvements (Wang et al., 2023). Self-score variation reflects differences in learner confidence and perceived proficiency, reinforcing the importance of continuous reflective practice.

The trendline analysis of weekly engagement revealed that learning progress improved over time despite fluctuations. These results suggest that formative feedback and instructional interventions positively influenced student performance. This aligns with the formative assessment framework proposed by Black and Wiliam (1998), which emphasizes using ongoing assessment data to improve teaching strategies, and recent differentiated instruction reviews (Nuraeni & Jufri, 2025).

Overall, integrating Google Classroom data with Exit Ticket feedback and instructor evaluation provided a holistic view of students' learning behavior. The dashboard supported evidence-based teaching and enabled early intervention for at-risk learners, thereby enhancing instructional responsiveness and academic support (Saqr, 2024).



## Recommendations

Based on the findings of this study, several recommendations are proposed to enhance teaching effectiveness and student learning outcomes in English for Professional Purposes courses.

First, instructors should continue using learning analytics dashboards to monitor student engagement, attendance, and self-assessment data in real time. The integration of learning data supports evidence-based decision-making and enables early identification of students who require academic intervention.

Second, targeted instructional support should be provided, particularly for students who experience difficulties in vocabulary development and time management. Supplemental learning materials, vocabulary-building exercises, and time management workshops should be incorporated into instructional design.

Third, Exit Tickets should be systematically implemented as a formative assessment tool to encourage learner reflection and self-regulated learning. Students should be guided on how to reflect meaningfully on their learning experiences to promote awareness and responsibility.

Fourth, instructors should adopt differentiated teaching strategies by considering individual learning behaviors revealed through dashboard analytics. Personalized feedback and adaptive instructional methods can better support diverse learner needs.

Finally, institutional support is essential for sustaining learning analytics systems. Universities should provide professional development programs for instructors in data literacy and educational technology to maximize the benefits of dashboard implementation.

## References

- Black, P., & Wiliam, D. (1998). Assessment and classroom learning. *Assessment in Education: Principles, Policy & Practice*, 5(1), 7–74.  
<https://doi.org/10.1080/0969595980050102>
- Bodily, R., Verbert, K., & Verlinden, J. (2021). A critical review of learning analytics dashboard research. *Computers in Human Behavior*, 114, 106–120.
- Brookhart, S. M. (2008). *How to give effective feedback to your students*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, 74(1), 59–109. <https://doi.org/10.3102/00346543074001059>
- Hyland, K. (2006). *English for academic purposes: An advanced resource book*. London: Routledge.



- Jivet, I., Scheffel, M., Drachsler, H., & Specht, M. (2022). Awareness is not enough: Pitfalls of learning analytics dashboards. *Proceedings of the 12th Learning Analytics Conference*, 435–444.
- Matcha, W., Uzir, N. A., Gašević, D., & Pardo, A. (2020). A systematic review of learning analytics adoption in higher education. *Educational Technology Research and Development*, 68(6), 2935–2964.
- Nuraeni, N., & Jufri, J. (2025). A meta-analysis of the effects of differentiated instruction on English language proficiency. *Journal of English Education Studies*, 5(2), 123–140. <https://jees.umsida.ac.id/index.php/jees/article/view/1929>
- Saqr, M. (2024). Have learning analytics dashboards lived up to the hype? A systematic review of impact on students' achievement, motivation, participation and attitude. In *Proceedings of the 14th Learning Analytics and Knowledge Conference* (pp. 170–179). ACM. <https://doi.org/10.1145/3636555.3636884>
- Sedrakyan, G., Malmberg, J., Verbert, K., Järvenoja, H., & Kirschner, P. A. (2023). Investigating students' use of self-assessments in higher education using learning analytics. *Educational Technology Research and Development*, 71(1), 385–406. <https://eric.ed.gov/?id=EJ1362004>
- Siemens, G., & Long, P. (2011). Penetrating the fog: Analytics in learning and education. *EDUCAUSE Review*, 46(5), 30–40.
- Verbert, K., Duval, E., Klerkx, J., Govaerts, S., & Santos, J. L. (2013). Learning analytics dashboard applications. *American Behavioral Scientist*, 57(10), 1500–1509. <https://doi.org/10.1177/0002764213479363>
- Wang, X., Li, L., & Zhang, Y. (2023). Effects of learning analytics-based feedback on students' self-regulated learning and academic achievement in an undergraduate EFL course. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.4589867>
- West, D., Huijser, H., & Heath, D. (2025). The role of learning analytics in English language teaching. *Journal of Language Teaching and Research*, 16(3), 456–472. <https://journals.sagepub.com/doi/10.1177/14727978251337927>
- Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory Into Practice*, 41(2), 64–70. [https://doi.org/10.1207/s15430421tip4102\\_2](https://doi.org/10.1207/s15430421tip4102_2)