**Title:** LMS Dashboard Analysis Report

**1. Introduction**

This report provides an analysis of employee learning engagement, training compliance, and performance trends using data visualized in Tableau. The dataset includes employee information such as role, location, enrollment dates, last access dates, SkillScore ratings, and device usage.  
The goal is to monitor compliance with mandatory training, identify overdue trends, measure time spent on courses, and evaluate performance indicators such as skill gaps and review scores.

**2. Compliance & Training Summary**

* **% of Completed Mandatory Courses**  
  We calculated completion percentages for each team and role by dividing completed mandatory courses by total mandatory courses.  
  **Key findings:**
  + IT team: **82.79%** completion
  + Facilities team: **81.52%**
  + Repairs: **79.55%**
* **Overdue Training Trends**  
  Trend analysis was performed on overdue completion status by enrollment date. This shows patterns over time and year-over-year changes.  
  **Highlights:**
  + Monthly: Peak in June with **9 overdue courses**
  + Year-over-Year: Highest overdue count in **2022 (62 employees)**

**3. Performance Analysis**

* **SkillScore Distribution Across Teams**  
  Three categories: Communication, Teamwork, Tech Efficiency  
  **Examples:**
  + Communication: Facilities team scored **3.11** (highest), Housing scored **2.92** (lowest).
  + Teamwork: IT scored **3.05**, Housing scored **2.94**.
  + Tech Efficiency: Finance scored **3.16** (highest), Support Specialist role scored **2.86** (lowest).
* **SkillScore by Roles**  
  Roles like **Customer Service Advisor scored 3.27** in Communication, while **Electricians scored 3.13** in Tech Efficiency.
* **Skill Gaps**  
  Identified through the Skill Gap Flag.
  + IT team had the highest flagged skill gap percentage at **17.55%**.
* **Average Review Scores**  
  Aggregated review ratings show variation across roles:
  + Electrician: **81.83** (highest)
  + Plumber: **78.82** (lowest)

**4. Engagement Patterns**

* **Access Trends (Enrollment vs Last Access)**  
  Created a dual-line chart to compare trends:
  + Enrollment peaked in **2024 with 189 employees**
  + Last Access peaked the same year with **179 employees**, indicating engagement consistency.
* **Device Usage Breakdown**  
  Visualized via Pie Chart:
  + Desktop: **56.11%**
  + Mobile: **51.93%**
  + Tablet: **51.83%**  
    (Percentages suggest multi-device access; Desktop still leads.)
* **Time Spent on Courses by Role**  
  Used Duration Minutes field to calculate average:
  + Highest: Lettings Coordinator (**78 mins**)
  + Lowest: Plumber (**70.2 mins**)
* **Time Spent on Courses by Location**
  + Northfield Office: **76.4 mins**
  + Trafford Branch: **73.2 mins**

**5. Statistical Analysis**

This section applies statistical modeling techniques to explore temporal patterns in training completions, evaluate the drivers of performance, and test for disparities across departments.

**5.1 Forecasting Training Completions**

To anticipate future training engagement, a Seasonal ARIMA (SARIMA) model was applied to quarterly completion data. This time-series forecasting approach accounts for trend and seasonal fluctuations in training behavior.

**Findings:**

* **Next Quarter Projection (Q3 2025):** The model forecasts 26.07 completions, a drop relative to previous quarters.
* **Next Three Quarters:**

| Quarter | Forecasted Completions |
| --- | --- |
| Q3 2025 | 26.07 |
| Q4 2025 | 36.49 |
| Q1 2026 | 14.85 |

**Interpretation**: The declining trend after Q4 may reflect seasonal disengagement or reduced training requirements. Targeted re-engagement strategies may be necessary.

**5.2 Regression Analysis: Impact of Training Characteristics**

A linear regression model was used to examine the impact of training duration and course frequency on employee performance, measured by the average of three skill scores (Communication, Technical Efficiency, Teamwork).

**Model Summary:**

* Intercept: 2.98
* Duration Coefficient: +0.0006
* Frequency Coefficient: –0.0209

**Interpretation:**

* Every additional minute of training correlates with a 0.0006-point increase in performance score, suggesting that longer sessions slightly enhance learning outcomes.
* Each additional course completed is associated with a 0.0209-point decline, potentially due to overtraining, low content quality, or learning fatigue.

**Recommendation**: Focus on training quality over quantity, and review course content to ensure effectiveness.

**5.3 ANOVA: Performance Differences Across Departments**

To determine whether average performance scores varied significantly across departments, a one-way ANOVA test was conducted.

**Results:**

* F-statistic: 0.5622
* P-value: 0.7290

**Interpretation:**  
No statistically significant differences were found in mean performance scores across teams. This suggests consistency in training outcomes across departments, reinforcing the equity of training program delivery.

**6. Insights & Recommendations**

* Improve completion rates for Repairs and Housing teams with additional reminders or incentives.
* Prioritize training for roles with flagged skill gaps (IT and Housing teams).
* Mobile access is significant; ensure course design is mobile-friendly.
* Roles like Plumber and Finance Analyst spend the least time; investigate if training is too brief or skipped.