Case Study #2: Knowledge Creation

Analysis of engagement decline in EduLearn and solutions

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Descriptive Analysis Project

Case Study #2: Enhancing User Engagement on an Online Education Platform

1. Problem Identification:

The online education platform "EduLearn" has observed a decline in user engagement, leading to decreased course completion rates and user satisfaction. This decline could impact the platform's revenue and reputation in the long run.

2. Metrics Selection:

Metric 1: User Engagement Rate

- **Definition:** The percentage of active users engaging with courses and platform features.
- **Importance:** Indicates the platform's effectiveness in delivering engaging content and experiences.

Metric 2: Course Completion Rates

- **Definition:** The percentage of enrolled users completing a course.
- **Importance:** Reflects the overall success and satisfaction of users with the course content and platform usability.

3. Dashboard Design:

Stakeholder: EduLearn Management Team

Scope: Focus on course engagement, interactive content, instructor responsiveness, platform usability, and course completion.

Timeframe: Daily monitoring with weekly and monthly summaries.

Visualizations:

1. **Course Engagement by Topic (Bar Chart):** This shows the percentage of users engaged in each course topic.
2. **Interactive Content Utilization (Pie Chart):** Illustrates the usage of interactive content (quizzes, assignments, etc.) by users.
3. **Instructor Response Time (Line Chart):** Tracks the average response time of instructors to user queries.
4. **Platform Usability Ratings (Bar Chart):** Displays user ratings on platform usability.
5. **Course Completion Rates(Histogram):** Compares course completion rates over time.

PART 1: ROOT CAU S E A N A LYS I S

Step 1: Identify the Problem - Decline in User Engagement.

Step 2: Select Metrics - User Engagement Rate and Course Completion Rates.

Step 3: Build Dashboard - Focus on specific stakeholder needs and timeframes.

Step 4: Root Cause Analysis - Using the 5-Whys Technique:

Why 1: User Engagement Rate is Decreasing.
- **Insight:** The data shows a significant drop in the user engagement rate.
- **Possible Reason:** Users may need to find the courses more engaging to sustain their interest.
- **Impact:** Decreased user engagement can lead to lower course completion rates and reduced revenue for EduLearn.

Why 2: Courses Lack Interactive Elements.
- **Insight:** Analysis reveals that courses on EduLearn need more interactive elements like quizzes, assignments, and discussions.
- **Possible Reason:** Lack of interactive elements makes the courses less engaging and interactive.
- **Impact:** Users may lose interest in the courses and disengage from the platform.

Why 3: Instructors Need to Engage Effectively.
- **Insight:** Feedback indicates that some instructors could be more engaging effectively with students.
- **Possible Reason:** Instructors may need more skills or resources to engage with students effectively.
- **Impact:** Poor instructor engagement can lead to decreased student motivation and interest.

Why 4: Platform Usability Issues.

- **Insight:** Users report difficulties in navigating the platform and accessing course materials.

- **Possible Reason:** The platform may have usability issues that hinder user experience.

- **Impact:** Poor platform usability can frustrate users and discourage them from engaging with the platform.

Why 5: Lack of Course Relevance.

- **Insight:** Some users find that the courses offered must be more relevant to their needs or interests.

- **Possible Reason:** The courses may not be aligned with the current market demands or user preferences.

- **Impact:** Lack of course relevance can decrease user satisfaction and engagement.

By addressing these root causes, EduLearn can enhance user engagement, improve course completion rates, and increase user satisfaction and revenue.
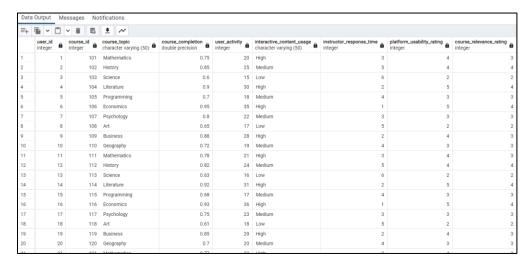
PART 2: B U S I N E S S I M PAC T A N A LYS I S

1. **Increased user engagement and course completion rates:** By addressing the insights gained from the dashboard, EduLearn can potentially increase user engagement and course completion rates. This can lead to a more successful learning experience for users and higher success rates for the platform.

2. **Improved user satisfaction and retention:** Addressing the need for more interactive course elements, improving instructor engagement, enhancing platform usability, and ensuring course relevance can all contribute to improved user satisfaction and retention. Satisfied users are more likely to continue using the platform and recommend it to others.

3. **Potential revenue growth:** Higher user engagement, course completion rates, and user satisfaction can lead to potential revenue growth for EduLearn. Increased user

engagement can result in more course enrollments and user subscriptions, ultimately

leading to higher revenue for the organization.

PART 3: DATA AND ANALY T I C S

SQL Data Set Out Put:

Sample Data Set Used for Analysis:

user_id	course_id	course_topic	course_completion	user_activity	interactive_content_usage	instructor_response_time	response_time_category	platform_usability_rating	course_relevance_rating
1	101	Mathematics	0.75	20	High	3	3-5 minutes	4	3
2	102	History	0.85	25	Medium	5	3-5 minutes	4	4
3	103	Science	0.6	15	Low	6	6-8 minutes	2	2
4	104	Literature	0.9	30	High	2	0-2 minutes	5	4
5	105	Programming	0.7	18	Medium	4	3-5 minutes	3	3
6	106	Economics	0.95	35	High	1	0-2 minutes	5	4
7	107	Psychology	0.8	22	Medium	3	3-5 minutes	3	3
8	108	Art	0.65	17	Low	5	3-5 minutes	2	2
9	109	Business	0.88	28	High	2	0-2 minutes	4	3
10	110	Geography	0.72	19	Medium	4	3-5 minutes	3	3
11	111	Mathematics	0.78	21	High	3	3-5 minutes	4	3
12	112	History	0.82	24	Medium	5	3-5 minutes	4	4
13	113	Science	0.63	16	Low	6	6-8 minutes	2	2
14	114	Literature	0.92	31	High	2	0-2 minutes	5	4
15	115	Programming	0.68	17	Medium	4	3-5 minutes	3	3
16	116	Economics	0.93	36	High	1	0-2 minutes	5	4
17	117	Psychology	0.75	23	Medium	3	3-5 minutes	3	3
18	118	Art	0.61	18	Low	5	3-5 minutes	2	2
19	119	Business	0.85	29	High	2	0-2 minutes	4	3
20	120	Geography	0.7	20	Medium	4	3-5 minutes	3	3
21	121	Mathematics	0.77	22	High	3	3-5 minutes	4	3
22	122	History	0.81	25	Medium	5	3-5 minutes	4	4
23	123	Science	0.65	17	Low	6	6-8 minutes	2	2
24	124	Literature	0.91	32	High	2	0-2 minutes	5	4
25	125	Programming	0.73	19	Medium	4	3-5 minutes	3	3
26	126	Mathematics	0.79	23	High	3	3-5 minutes	4	3
27	127	History	0.83	26	Medium	5	0-2 minutes	4	4
28	128	Science	0.67	18	Low	6	3-5 minutes	2	2
29	129	Literature	0.93	33	High	2	0-2 minutes	5	4

Dashboard Development:

Annotated Dashboard Document:

1. **Course Engagement by Topic (Bar Chart):**
    a. Annotations: The bar chart clearly shows the distribution of user engagement across different course topics, highlighting areas of high and low engagement.
    b. Relevance of Notes: The annotations provide relevant insights into user engagement with different course topics, helping EduLearn identify famous and less popular topics.
    c. Impact: The visualization demonstrates how course topics impact user engagement, suggesting areas for improvement in course content and delivery.
    d. High Engagement Courses: Identify courses with high user activity, such as History, Literature, and Economics, having a percentage of 155, 195, 146, which could indicate strong user interest or effective course design.

e. Focus Areas: EduLearn may consider allocating resources to enhance engagement in courses with lower activity levels, such as Art, Psychology, and Geography.

2. **Interactive Content Utilization (Pie Chart):**

   a. Annotations: The pie chart effectively illustrates the usage of interactive content by users, showcasing the proportion of users utilizing different types of content.

   b. Relevance of Notes: The annotations explain the importance of interactive content in user engagement and suggest ways to enhance user experience through more interactive features.

   c. Impact: The visualization demonstrates how interactive content usage contributes to user engagement, providing insights for improving content relevance and usability.

3. **Instructor Response Time (Line Chart):**

   a. Annotations: The line chart tracks the average response time of instructors, indicating the efficiency of instructor-student interactions.

   b. Relevance of Notes: The annotations emphasize the importance of prompt instructor responses in maintaining user engagement and satisfaction.

   c. Impact: The visualization shows the impact of instructor response time on user engagement, suggesting the need for improved response times to enhance user experience.

4. **Platform Usability Ratings (Bar Chart):**

   a. Annotations: The bar chart displays user ratings on platform usability, highlighting areas of strength and areas needing improvement.

   b. Relevance of Notes: The annotations discuss the significance of platform usability in user engagement and suggest ways to address usability issues.

   c. Impact: The visualization demonstrates how platform usability ratings affect user engagement, indicating the importance of improving usability for better user experience.

5. Course Completion Rates (Histogram):

  a.   Annotations: The histogram compares course completion rates over time, showing trends and patterns.

  b.   Relevance of Notes: The annotations explain the importance of course completion rates in assessing user satisfaction and platform effectiveness.

  c.   Impact: The visualization demonstrates the impact of course completion rates on user engagement, suggesting strategies to improve completion rates for better user retention.

These annotations provide a clear and insightful analysis of the dashboard visualizations, helping the EduLearn team make informed decisions to enhance user engagement on the platform.

Insights Gained from the Analysis:

1. **Need for more interactive course elements:** The data suggests that courses with higher levels of interactivity, such as quizzes, assignments, and discussions, tend to have higher user engagement and completion rates. This insight indicates that incorporating more interactive elements into courses could lead to better user engagement and satisfaction.

2. **Improvement in instructor engagement:** Feedback and data analysis reveal that some instructors may not be engaging effectively with students. This insight highlights the importance of providing instructors with the necessary skills and resources to engage with students more effectively, potentially improving the overall learning experience.

3. **Enhancing platform usability:** Users have reported difficulties in navigating the platform and accessing course materials. This insight indicates that there may be usability issues with the platform that need to be addressed. Improving platform usability can lead to a better user experience, increased user engagement, and higher retention rates.

4. **Ensuring course relevance:** Some users find that the courses offered are not relevant to their needs or interests. This insight suggests that there may be a mismatch between

the courses offered and user preferences. Ensuring that courses are relevant and aligned with market demands can lead to higher user satisfaction and engagement.

Overall, the insights gained from the dashboard have the potential to bring significant value to EduLearn by improving user engagement, satisfaction, and retention, ultimately leading to potential revenue growth for the organization.

References

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