Learning Analytics and Canvas LMS

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LTEC 5703: Artificial Intelligence Technologies for Learning and Performance

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Case Study 3: Learning Analytics and Canvas LMS

Background

In this case study, I explore how learning analytics in education uses the collection and analysis of student data to enhance learning outcomes. Using learning analytics entails tracking key metrics such as grades, attendance, material engagement, and class participation. With this data, learning analytics systems are capable of forecasting student performance, enabling educators to tailor support and interventions more effectively. The integration of artificial intelligence (AI) with learning analytics takes this personalization a step further. AI amplifies the capabilities of these tools, not only by uncovering valuable insights into student learning preferences and challenges but also by providing these insights in real-time. This collaboration between AI and learning analytics offers significant benefits, making education more adaptable and responsive to the needs of both students and educators.

In this case study, I explored how Canvas LMS uses AI to analyze student data that is gathered by the platform to increase the learning outcomes of students. In Canvas, learning analytics are used to track grades, attendance, time spent on the course, and engagement in the course. With all of the data that is available on the platform, the system can predict student performance which allows educators to

Introduction

In this case study, I will examine Canvas, a leading learning management system embraced by both higher education institutions and K-12 classrooms for its user-centric design. It equips students and educators with a diverse array of tools aimed at enhancing engagement and facilitating learning, regardless of the physical classroom setting. A notable feature of Canvas is its implementation of learning analytics powered by AI. The system is rich with student data, including grades, the amount of time dedicated to assignments and overall course participation, as well as submission records. Using this information, Canvas can provide valuable insights into student achievements and identify potential challenges. This enables educators to effectively discern and meet the specific needs of their students.

Case Evaluation

Learning analytics is on the rise, it is an effective way to obtain data and use it to improve learning experiences. Despite this movement, there is still a lack of adoption in practice. Studies report the top 5 barriers to adoption in higher education are cost, proper use of data, regulations requiring the use of data, not knowing how to make decisions with data, and having inaccurate data (Hui, B., & Farvolden, S.,2017). This is important because it shows that even though we have more student data than ever, we still cannot put it to good use. How can we change that?

Learning Analytics in Canvas

Canvas is an excellent platform for both online and in-person learning. As a Chemistry teacher, I use Canvas every day in my classroom. It provides me with a variety of tools that I need to manage my class effectively. My students can easily submit their assignments, access previous assignments, take quizzes and tests, and participate in discussions. They can also earn badges for their achievements.

One of the most impressive features of Canvas is its learning analytics. I can use it to analyze my students' performance and engagement. In Figure 1, I can compare the participation and views of whole sections. It helps me to determine the level of engagement of my entire class. In Figure 2, I can analyze individual students and get insights with just a click of a button. In Figure 3, I can see their grades by assignment, and in Figure 4, I can see their activity and page views.

With all this data, I can adjust my teaching strategies and materials and even have warm conversations with students to address any personal issues they may be struggling with and get them the right support. Canvas is truly an all-in-one platform that has made my job as a teacher much easier and more efficient.

Figure 1





Figure 2

Canvas Analytics: Individual Student Overview

Grades	New Analytics		
98.58% Grade	2 Missing	1 Late	
Last 10 Graded Items			
	100/	100/100	
	100/100		
	100/100		
	92.9/100		
	100/100		
	50/100		
	100/100		
	25/100		
	83.3/100		
	<u>10/1</u>	.0	
Activity Compared to Class			
Participation	Page Views		
★★★ High	★★★ High		

Figure 3

Canvas Analytics: Individual Student Grades





Canvas Analytics: Individual Student Participation Vs Views

Future Implications

The way that I see these types of analytics being used is by students themselves. Sometimes it is underestimated how much students like to see data about themselves. They are already used to seeing data about themselves in video games and even weekly reports they get from their social media platforms. If they could get a weekly report or even just be taught how to look at their individual overviews, it could motivate them to succeed in the course. I would be interested in seeing my analytics for my current courses.

Proposed Improvement

One of the proposed improvements is to allow students to have access to some of their analytics. If they could have access to something like what I showed in Figure 2, it could significantly improve student engagement. I would go as far as to add a leaderboard that students can opt into.

Conclusion

This study highlights how smart tools like learning analytics can change education for the better, especially when combined with artificial intelligence. By looking at Canvas, we learned how these tools can give teachers and students a clearer picture of learning progress and challenges. However, the study also points out that not enough schools are using these tools yet, mainly because of concerns about costs and understanding the data. If students can start using these tools themselves, similar to how they track their progress in video games and on social media, it could have a positive impact to their engagement in the classroom. This study suggests making learning more personalized and engaging in Canvas by letting students and teachers see and use analytics to help everyone learn better and make school more enjoyable.

References

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