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Future-Focused:
Educating in an Era of Continuous Change

Enhancing curriculum quality and academic readiness through Power BI and Automation

Khamsum Kinley, Karine Cosgrove, John Bourke, Steven Booten
Centre for Collaborative Educational Excellence, Griffith University

In today's data-rich educational environment, the ability to leverage institutional data effectively for course quality assurance and curriculum oversight is critical. Research indicates that automation of data has been a longstanding feature of the education sector. Bhardwaj and Kumar (2025) found that institutions have adopted Robotic Process Automation (RPA) to enhance operational efficiency. Shaulska et al. (2021) demonstrate how Power BI can be used on the University management system to monitor, analyse, and improve the university's value proposition through data visualization and business intelligence. Liu et al. (2023) argue that visualising Learning Management System (LMS) data helps educators better understand student engagement and learning behaviours and supports data-informed decision-making.

From a learning design support perspective, this paper outlines a scalable, automated solution project that integrates Power BI, Python, Power Automate, and various data platforms to enable efficient and insightful academic decision-making. Drawing on data from institutional sources—including Canvas LMS, PeopleSoft, and Microsoft suites—this approach generates interactive dashboards that streamline course reviews and site management. Custom Python scripts (similar to Vashisht et al., 2021) retrieve and process LMS data, while Power Automate facilitates real-time data collection from Microsoft Forms and other sources. This data is processed and visualised in Power BI to support curriculum and learning design operations.

Two key outputs are presented:
1. Course Review Dashboard – Captures feedback and audits course quality via forms that automatically feed into Power BI. It draws on data from Canvas and PeopleSoft to present a view of course readiness. The automation and its dashboard iterations were intended to help Group-based leadership track course preparation for the upcoming period.
2. Course Site Overview Dashboard – Supports pre-term preparations by monitoring course site setup status, including homepage configuration, staff pages, announcements, rubrics, and learning material customisation. This tool enables teaching and learning teams in ensuring course sites meet institutional standards before they are published.

Automated notifications are sent to stakeholders through email triggers based on course readiness, missing elements, or quality issues. This reduces manual monitoring and allows targeted support to convenors and teaching staff, improving progress efficiency (Varun et al., 2024), with a focus on the student experience. The dashboards also support evidence-based decisions for curriculum improvements and staff development.

Our approach illustrates system architecture, automation workflows, and real-world use cases in an Australian university, demonstrating how the adoption of an integrated digital ecosystem can lead to more informed, timely, efficient, and insightful academic decision-making and effective learning design practices. This automation is currently being adopted across three of four Academic Groups. Future directions include expanding university-wide and researching its application across all Academic Groups.

Overall, our approach highlights the potential of low-code/no-code automation and Power BI tools in higher education to address administrative challenges, foster proactive teaching quality engagement, and streamline cross-team collaboration through data transparency.
Sharing this approach can benefit learning designers, academic leaders, and ed-tech specialists in building sustainable and efficient systems for curriculum quality and academic readiness using

existing institutional tools.

Keywords: Automation, Power BI, Data visualisation, learning management system, learning design

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