ENHANCING DIGITAL LEARNING: AGILE ASSESSMENT AND SUPPORT IN EXCEL EDUCATION

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Abstract. This study examines agile feedback and personalized support strategies in the online Excel Elective Course at Centro Universitário UNIFASE/FMP. The transition from in-person to online learning in 2019 required innovative approaches, including short instructional videos and structured feedback mechanisms. These methods enhance accessibility, engagement, and individualized learning experiences. By optimizing assessment processes and leveraging digital tools, the course ensures efficiency while maintaining academic rigor. This case study provides insights into effective online education strategies, contributing to the broader discussion on digital transformation in higher education.

Keywords: Online learning; agile feedback; personalized support; instructional videos; assessment strategies.

1 Introduction

In modern educational settings, ensuring the effectiveness of the teaching and learning process is a cornerstone of students' academic development. As education continues to evolve, there has been a growing interest in researching and applying innovative pedagogical techniques that enhance both instructional delivery and student engagement. Within this context, this study focuses on identifying and analyzing teaching strategies that optimize educators' efforts while simultaneously improving student learning experiences. Particular attention is given to the integration of short, targeted instructional videos and the implementation of efficient correction and feedback mechanisms, which together contribute to a more structured and interactive educational approach.

The Excel Elective Course at Centro Universitário UNIFASE/FMP (UNIFASE), the subject of this study, has a well-established history that dates back to its inception in the second semester of 2017. Originally designed as a traditional, in-person course, the course underwent a significant transformation to accommodate evolving educational demands, becoming fully online in the first semester of 2019. Since this transition, the course has continuously adapted, aligning itself with current pedagogical trends while preserving its core commitment to academic excellence and student-centered learning. The evolution of this course serves as an insightful case study of how digital education can be refined and enhanced to maintain rigorous instructional standards.

Modern pedagogical frameworks increasingly highlight the necessity of tailoring teaching methodologies to meet the diverse needs and learning preferences of students. In response to this, short, focused instructional videos have gained prominence as a powerful educational tool. By segmenting content into manageable units and presenting it in an engaging format, these videos help facilitate a deeper understanding of complex concepts, ultimately allowing students to process and retain information more efficiently. This approach not only supports self-paced learning but also enhances accessibility, enabling students to revisit material as needed.

Alongside the strategic use of instructional videos, the implementation of effective correction and feedback methodologies plays a vital role in fostering meaningful learning experiences and academic growth. Educators' ability to quickly and accurately identify common errors, while simultaneously

providing clear, constructive guidance, is essential in maximizing student progress. Structured feedback mechanisms help ensure that students receive timely, consistent, and actionable insights into their performance, ultimately strengthening their comprehension and problem-solving skills.

Given these considerations, this study aims to explore and assess pedagogical practices that contribute to both optimizing educators' workloads and improving student outcomes. By examining the benefits and challenges of these methodologies, this research aspires to enrich the field of education with practical insights that can enhance instructional quality. Furthermore, the findings offer valuable perspectives on how digital tools and structured feedback can be effectively leveraged to create a more engaging, adaptable, and student-centered learning environment.

2 The Excel Elective Course: Content, Methodology, and Assessment

The Excel Course plays a crucial role in the academic and professional development of students, equipping them with essential skills in data analysis, decision-making, and problem-solving. Throughout the course, students engage with practical applications that enhance their ability to manipulate and interpret data effectively. By the end of the program, they are expected to demonstrate proficiency in fundamental Microsoft Excel tools, explore and apply advanced features, and use their acquired knowledge to analyze and solve real-world problems. This structured approach ensures that students develop both technical expertise and analytical reasoning, preparing them for professional challenges across various fields.

2.1 Curriculum Content

The Excel Course offered at UNIFASE provides a comprehensive approach to the software, focusing on developing the skills necessary for its effective application across various professional fields. The curriculum is summarized in Table 1.

Table 1 – Excel Curriculum

Topic	Content
Excel Interface and Navigation	Introduction to the software interface, functionalities of different tabs, and navigation tools.
Fundamental Excel Concepts	Overview of cells, ranges, basic formulas, and functions.
Formatting and Layout	Application of cell formatting, alignment, borders, colors, and other layout aspects.
Formulas and Functions	Study of key Excel functions, including sum, average, max, min, among others.
Advanced Features	Exploration of advanced resources such as filters, tables, charts, and conditional formatting.
Data Analysis	Introduction to data analysis through pivot tables and data segmentation.
Automation with Macros and VBA	Basic concepts of macros, introduction to VBA programming language, and task automation.

Source: Author

2.2 Teaching Methodology

The teaching methodology adopted in the Excel Course follows a practical and participatory approach, emphasizing hands-on experimentation and the direct application of acquired knowledge. A key component of this methodology is the use of instructor-recorded tutorial videos, which present practical examples and real-world case studies to enhance students' comprehension and learning experience. These videos allow students to progress at their own pace while reinforcing essential

concepts. In addition to video-based instruction, the course incorporates collaborative activities and group discussions, fostering an interactive learning environment where students can engage in critical thinking, share experiences, and deepen their understanding through peer exchange.

2.3 Assessment

Student assessment in the Excel Course is conducted through a continuous and comprehensive evaluation process, ensuring a thorough measurement of their learning progress. Throughout the course, students are required to complete 14 practical assignments, allowing them to apply theoretical concepts in real-world scenarios and demonstrate their proficiency in Excel. In addition to these assignments, a mandatory in-person exam is administered, in compliance with Brazilian legal requirements. Each assessment component carries a specific weight, reflecting the significance of different skills and competencies developed during the course. This structured evaluation approach ensures a balanced assessment of both practical application and conceptual understanding.

3 Correlation with Learning Theories

3.1 Short Videos

The modern pedagogical approach underscores the importance of adapting teaching methods to meet the diverse needs and learning characteristics of students, fostering a dynamic and effective educational environment. In this context, the use of short, targeted instructional videos has emerged as a highly effective tool for delivering content in a more accessible and engaging manner. By presenting complex concepts in a concise and structured format, these videos help students absorb information more efficiently, enhancing their overall comprehension and retention.

According to Sweller's **Cognitive Load Theory** (Passos, 2020), the limitations of students' working memory must be taken into account when designing educational materials. The approach of creating short, focused videos for distance learning aligns with this theory, as it breaks down content into smaller, manageable units, thereby reducing cognitive overload. By simplifying the learning process, these videos enable students to focus on key concepts without being overwhelmed by excessive information at once.

The integration of short videos into distance learning offers several advantages. Firstly, by structuring content into smaller segments, these videos help to minimize cognitive overload, making it easier for students to understand and retain information. Additionally, they provide greater flexibility and autonomy in the learning process, allowing students to revisit the material as needed, adjust their learning pace, and reinforce their understanding according to their individual preferences (Müller, Eichler, 2024).

Despite these benefits, it is important to acknowledge the challenges associated with producing short instructional videos. Developing high-quality content requires significant time, technical resources, and expertise, which may not always be readily available to educators (Kheiry et al., 2017). Furthermore, ensuring accessibility for all students, regardless of their technological proficiency or access to digital resources, remains a crucial consideration in the implementation of video-based learning strategies (Edyburn, 2013).

3.2 Fast Task Correction and Feedback

The effectiveness of the fast task correction method, which allows for a swift and precise evaluation of students' work, aligns closely with the principles of **Feedback Efficiency Theory**. According to Hattie and Timperley (Silva, Carvalho, 2021), timely and specific feedback plays a crucial role in

enhancing student performance. By implementing a rapid yet detailed correction process, educators can quickly identify areas where students need improvement and provide clear, actionable guidance that supports their academic development.

To ensure consistency and fairness in assessments, a structured rubric-based approach was adopted. This methodology offers two primary advantages:

1. It enhances clarity and transparency in the evaluation process by making assessment criteria available to students before they complete their tasks, ensuring they understand expectations in advance, and
2. It streamlines the grading process by enabling the use of automated and standardized feedback, reducing manual workload while maintaining the quality and precision of evaluations. These strategies collectively contribute to a more efficient and student-centered assessment system, fostering both learning progression and academic success.

3.3 Teaching Based on Student Questions

Teaching driven by students' questions is closely aligned with **Vygotsky's Student-Centered Learning Theory** (2007), which emphasizes the critical role of teacher support in the learning process. This approach acknowledges that social interaction and guided knowledge mediation are essential for cognitive development, as students learn more effectively when they actively engage with content, receive targeted guidance, and participate in meaningful discussions with educators and peers.

In the Excel Course, a weekly discussion forum serves as a key platform for student engagement, enabling them to explore the week's content in greater depth and seek clarification on any aspects related to their current evaluation activities. This forum functions as one of the primary interaction channels between teachers and students, allowing for direct, personalized responses to individual queries. Additionally, the efficiency gained through the structured correction process using rubrics frees up valuable time for educators, enabling them to focus more on individualized student support. This combination of structured assessments and interactive discussions fosters a more dynamic and effective learning environment, where students receive timely, relevant feedback that enhances their overall academic experience.

4. Conclusion

The analysis of pedagogical practices in the Excel Course, particularly the integration of short instructional videos and efficient correction and feedback methods, highlights a promising approach to enhancing teaching and learning in modern education. The shift to a fully online format represents more than just a technological adaptation; it reflects an ongoing commitment to innovation, student engagement, and academic excellence.

By aligning pedagogical strategies with contemporary learning theories, educators can create a more dynamic, interactive, and student-centered learning environment. These approaches not only improve knowledge retention and skill development but also equip students with the adaptability and problem-solving abilities necessary to navigate the challenges of today's academic and professional landscapes.

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