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An academic's personal perspective on the integration of educational technology in higher education for teaching and learning

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Abstract: COVID-19 brought a drastic shift in the education sector, influencing how T&L and assessment is done as EduTech became prominent. This saw many academics grappling with pressure to adopt new technologies as formal education was in a traditional f2f format for years. Despite these challenges, there is a significant shift from traditional to modern T&L practices such as e-learning and blended instruction as the adoption of EduTech in HE became a topic of interest recently. However, while studies have made contributions to the adoption of EduTech, none has focused on real-life academic experiences with the use of EduTech. Therefore, the study aims to provide an academic's personal perspective on the integration of EduTech for T&L. The objective is to encourage and promote the use of EduTech, by highlighting the benefits of these technologies for academics in various disciplines. A scholarly personal narrative methodology is used to reflect the academic's personal experiences regarding the use of EduTech. Reflection on the use of Blackboard Learn LMS, SAM Cengage, MS Excel, and Kahoot! is provided. The LMS was effective for managing subject content, providing students with a centralized place for accessing learning material on SAM Cengage and grades. All student grades are easily exported from the gradebook to Excel, which is also used for electronically taking and managing class attendance. Kahoot! was utilized to keep students engaged in the classroom, providing a competitive, yet fun and relaxing learning environment. These tools are good to supplement and improve the T&L experience of students.

Keywords: Blackboard Learn LMS, Educational Technology (EduTech), Higher Education, Kahoot!, Microsoft Excel, SAM Cengage, Scholarly Personal Narrative (SPN), Teaching and Learning (T&L)

Introduction

Professors in higher education presently face challenges associated with the need to captivate a population of students (Generation Z) who differ from previous generations (Martin-Somer, et al., 2024). The unique characteristics associated with Generation Z - who have grown up in a digitally connected world where instant access to information is the norm - created new challenges for academics and professors as they are required to change their teaching methods to effectively engage, teach, and encourage the current generation (Martin-Somer, et al., 2024; Hashish, et al., 2024). Furthermore, the COVID-19 pandemic brought about a drastic shift around the globe in the education sector, specifically on how teaching, learning and assessment is done, as educational technologies (EduTech) became essential tools for teaching and learning (Ochieng et al., 2023). In addition, the COVID-19 pandemic also accelerated the adoption and use of EduTech into teaching and learning practice. This saw several academics grappling with the pressure to adopt new EduTechs in a short space of time, as for many years, formal education depended on the classroom model, necessitating the actual

presence of educators and pupils in a specified classroom (Chigbu et al., 2023). However, there is a significant transition from traditional teaching and learning practices to contemporary pedagogical models, such as e-learning, blended instruction, and various other educational methodologies (Chigbu et al., 2023).

Technology has evolved from a simple instrument for study and inquiry to a comprehensive strategy and integrated use in education (Tuma, 2021). Its adoption in higher education (HE) has been of interest recently, with numerous studies investigating various aspects of EduTech. In a study by Empaynado-Porto (2020), technology acceptance, organizational culture and attitudes were highlighted as influencing factors on the adoption of e-learning/EduTech at a university in the Philippines. A similar study on the adoption of e-learning by universities in Indonesia was conducted by Garaika (2020), who accentuates the importance internal factors have in influencing the adoption of e-learning. Furthermore, a study on the cultural context of Middle East higher educational institutions (HEI) by Khan and Qudrat-Ullah (2020) highlighted the importance of considering the influencing cultural factors when investigating the adoption of EduTech. Dangi (2021) highlighted the importance of institutional support towards influencing teachers' behaviour and acceptance of adopting EduTech. In addition, to predict students' intention to utilize technology enabled learning platforms such as the metaverse, Al-Adwan et al. (2023) emphasized adjustment of models to accommodate emerging technological advancements in education and suggested an extended Technology Acceptance Model (TAM).

The adoption of EduTech in HE is a complex phenomenon influenced by various factors such as organizational culture, technology acceptance, attitude, and cultural context. Studies have highlighted the importance of considering individual internal factors, institutional support, and theoretical frameworks in understanding and predicting the adoption of educational technology. While the above studies have made contributions on the adoption of educational technology and factors influencing the adoption in higher education, none of the studies has focused on real life experiences of academics on the use of EduTech and how they apply it. Thus, this study is unique in the sense that it provides real life examples and experiences of an academic. In light of this, the aim of the study is to provide an academic's personal perspective and real-life experiences on the integration of EduTech in T&L in HE. The rest of the paper is arranged as follows: methodology, context, reflection on the integration of educational technology, and conclusion.

Methodology

In this paper, the academic applies a scholarly personal narrative (SPN) research approach. This is a constructivist research methodology that acknowledges the researcher's personal experience as a viable subject of study (Heidelberger & Uecker, 2009). The inside-out methodology of SPN distinguishes it from other self-interrogation approaches, in that it begins with the scholar's narrative before shifting outward to help the writer and reader better understand the world outside of the scholar-storyteller (Camarao & Din, 2022). Swart (2018) defines SPNs as not only intellectual but also conveying the "storied lives" of professionals, presenting their own unique realities and provoking readers to question their own realities, and is thus a recognized research methodology that employs the author's experiences as a theoretical lens. Furthermore, Ng and Carney (2017) argue that including SPN could broaden the Scholarship of Teaching and Learning (SoTL) and deepen understanding of the complex circumstances and factors that shape educators, classrooms, and student experiences. It enables the academic as an information systems/technology (IS/IT) researcher to reach a larger audience and transcend the scientific language and purely objective perspective that all too often separate this research field from the rest of academia, practitioners, and the general public (Heidelberger & Uecker, 2009).

Context

As an academic in HE, especially in the IT field, I have been utilizing different EduTechs in my teaching, even before the COVID-19 pandemic. The integration of technology in my practice has provided me with an effective and efficient environment. Before I share with you my reflection on the technologies I use for T&L, let me provide you with a little bit of my context so you understand how everything ties together.

I worked in HE as a part-time lecturer in 2013, and 2015 – 2019. I became a permanent lecturer in 2020. As a part-time lecturer, I was responsible for teaching digital literacy subjects as a service subject to first-year students from other faculties within the university. The digital literacy content included Microsoft (MS) Word,

Excel, Outlook, and Computer Concepts. It provided students with the basics of MS applications, how they can utilize them, and how to navigate through the computer and the internet.

As a part-time lecturer, I was assigned a specific digital literacy subject to head and manage as each qualification in the university had a unique subject code and name referring to their digital literacy subject. For example, I was responsible for offering the subject (COM11AI which later changed to BDL11A) to all first-year students studying engineering qualifications (electrical, mechanical, and civil). This cohort of students was about 600 – 900+ per year. As a lecturer, part of my work still includes teaching digital literacy subjects to first-year students at the university.

Managing and teaching these massive classes required the use of EduTech, else I do not see how I would have managed to teach and assess these students effectively without integrating technology into my teaching. Despite having massive classes, the use of EduTech has made my work easier to manage and carry out. Below I provide my personal reflections on the technological tools I use for content management, T&L, and assessments for my digital literacy subjects.

Reflection on the integration of Educational Technology (EduTech)

This section of the paper provides the technological tools I utilize as an academic for managing subject content, T&L, and assessment for the digital literacy subjects I offer, which are: Blackboard Learn Learning Management System (LMS), Skills Assessment Manager (SAM Cengage), Microsoft Excel and Kahoot!. It outlines how I integrate each of these technologies into my practice, challenges, and feedback from students and peers providing a different yet relevant perspective on the use of these technologies.

Blackboard Learn LMS

Blackboard plays a major role in my practice as it provides a central platform for me to share content and engage with my students. My experience with Blackboard Learning Management System (LMS) has been multifaceted, blending both the advantages of digital teaching tools with the challenges of navigating technology in an educational context. At first when I started teaching, I only used Blackboard as an information repository and did not fully explore its features. However, as years went by, I started exploring more on the features I can use to help improve my subject. Blackboard has provided me with a comprehensive platform to manage my subject, engage with students, and integrate other third-party tools for teaching. I also restructured the content of the subject so that the students can easily flow with it. See Figure 1 below.

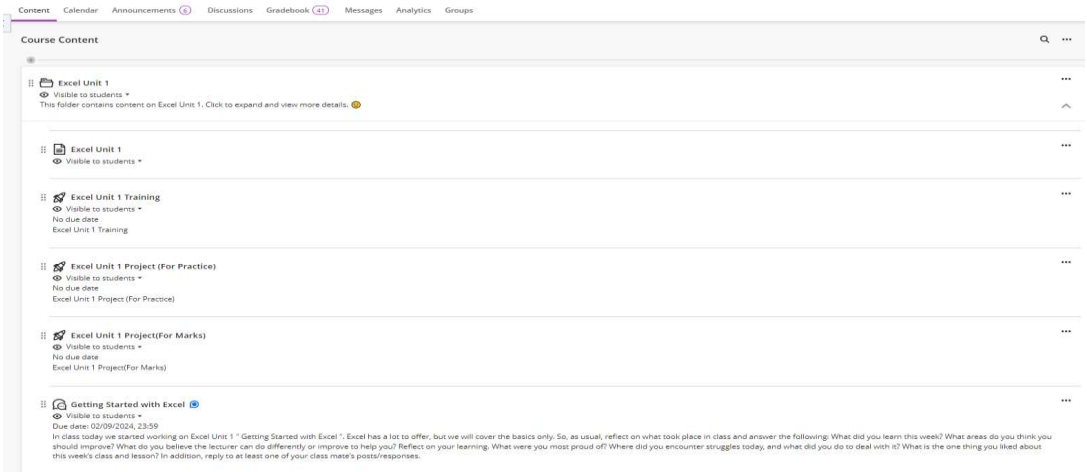

Figure 1: Blackboard LMS content

One of the key benefits I've appreciated about Blackboard is its ability to centralize all subject materials in a single, easily accessible location. This has allowed me to provide students with lecture notes, assignments, discussion forums, and grading feedback in one space (Toring et al., 2023). In higher education, where students often juggle multiple responsibilities, having everything in one place simplifies their learning experience. In addition, Blackboard's grade center feature has been helpful in providing timely feedback to students. The integration of SAM Cengage's Gradebook into the LMS has saved time and allowed for a quick

turnaround in grading. From an academic perspective, it also streamlines administrative tasks like grading and student activity tracking.

The availability of discussion boards and announcements within Blackboard has been useful for promoting a sense of community among students. I have used these tools to encourage dialogue beyond the classroom, allowing students to engage in peer discussions and share ideas. The discussions also provide a safe environment for my students to voice out any concerns they may have with regards to subject. Through this, I can improve my teaching through their critique, and they are also able to see which areas they need to improve as well on their side. Figure 2 below shows one of the discussions I provided to my students.

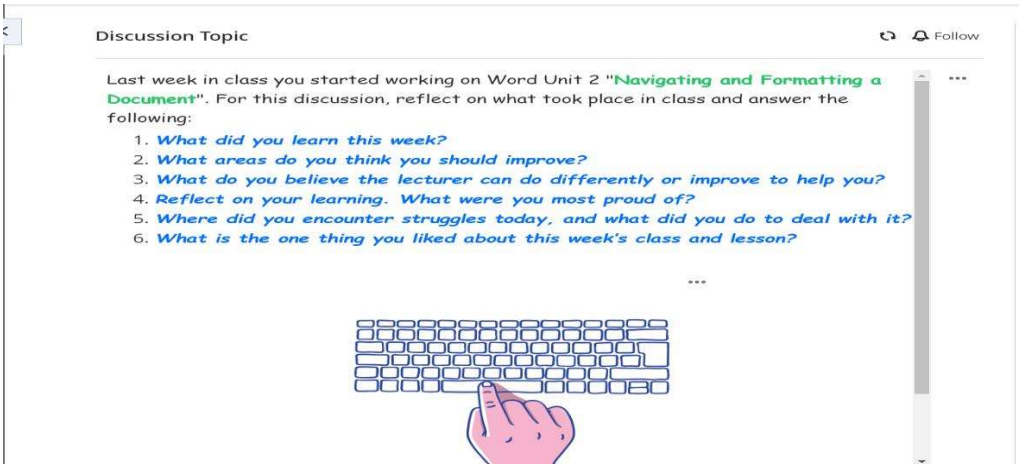

Figure 2: Discussion

However, Blackboard is not without its challenges. The previous version of Blackboard was its steep learning curve for both me and my students. Its interface came across as unfriendly and left students – especially those who are first time computer users – frustrated and overwhelmed. This challenge aligns with the findings of a study by Nguyen (2021), who perceived that users do not feel that it is too easy to use the LMS for the first time. Despite the challenges I faced with Blackboard, I have learnt to give myself time to understand how it operates. In addition, with the introduction of the new Blackboard Ultra, the new interface is easier to comprehend and navigate, making it easier to learn and work with the platform. In addition, the university (via the eLearning center under the Center for Innovation, Learning and Teaching) provides the eThuto101 and eThuto102 courses for academics to provide hands-on training on how to use the LMS. There are also weekly eThuto Talks held every week on Fridays to continuously engage with staff members on their experiences on the use of the LMS. The LMS has become a core part of my teaching toolkit and has fueled me to be intentional in my subject design and to continuously improve my teaching strategies. The eThuto101 & 102 courses, which I have completed successfully, have enriched my knowledge and improved my use of the LMS. I am incorporating the use of Blackboard Ultra not just as a storage repository as I did before, but as a tool to enhance T&L and student engagement.

In conclusion, the platform has empowered me to create a more organized and interactive learning experience, though there is still room for improvement, both in terms of the platform itself and my own practices as an academic. I look forward to continuing to explore its potential while also staying attuned to emerging EduTechs that may complement or enhance its use.

Skills Assessment Manager (SAM) Cengage

For my subjects, I do not utilize a textbook, I use SAM Cengage. It is an online learning environment (OLE) by Cengage, which provides us with content for my subjects and many other subjects. It provides simulated trainings and exams (assessments), and hands-on projects. Below I outline how the trainings, exam and projects work, then I provide my reflection on the use of SAM Cengage.

The trainings provide students with hands-on experience and interaction with MS applications. As shown in Figure 3, the trainings are structured in three modes (observe, practice and apply). During the observe mode, students learn from the simulation and observe how to carry out the task. The next mode is the practice mode. In this mode, students do the task with the guidance of the simulator. The last mode is the apply mode. In this

mode, students are provided with an instruction and must apply the steps to carry out the instruction on their own. These trainings are essential for students as they see how tasks are done, practice together with the simulation, and lastly, apply what they have learned.

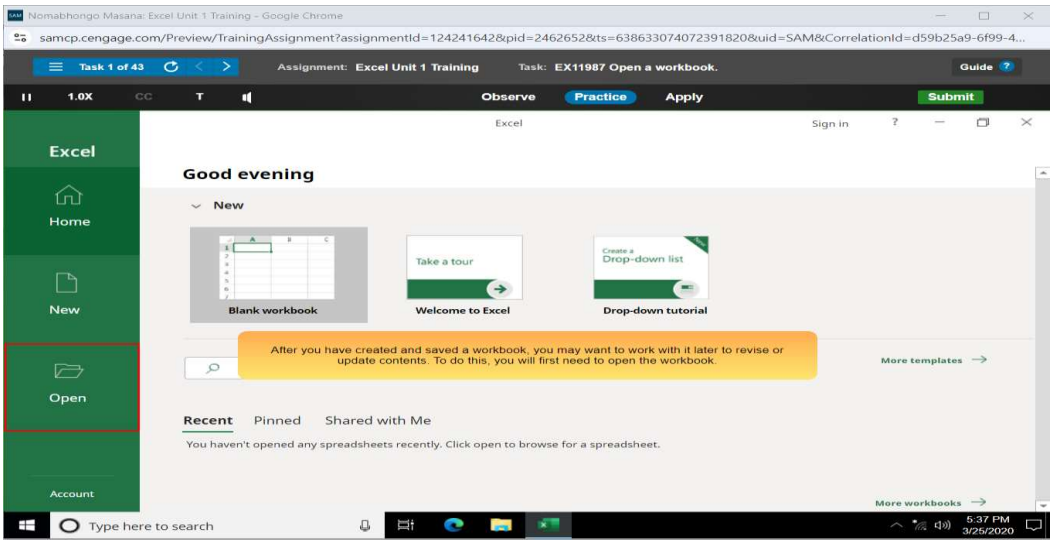

Figure 3: SAM Cengage Training

Regarding the SAM Cengage projects, I utilize them as part of continuously assessing students to ensure they are engaged with the content and for me to be able to see which areas they may be struggling with so I can assist them and have them better prepared for the assessments. The project is done in 3 steps: 1) Download Files; 2) Save Work to SAM; 3) Submit for Grade, as shown in Figure 4. The project files contain an instruction file, a start file and/or supporting files for units covered under MS Excel and Word. The instructions are on a Word document, the start file will either be a Word document for MS Word projects, or an Excel workbook for MS Excel projects. This is how I explain the project to my students, so they understand it better: "The instruction file is your question paper, and the start file is your answer sheet. You read the instructions on the instruction file and apply on the start file, the same way you would do with your question paper and answer sheet. Then when you are done, save, close the file and submit".

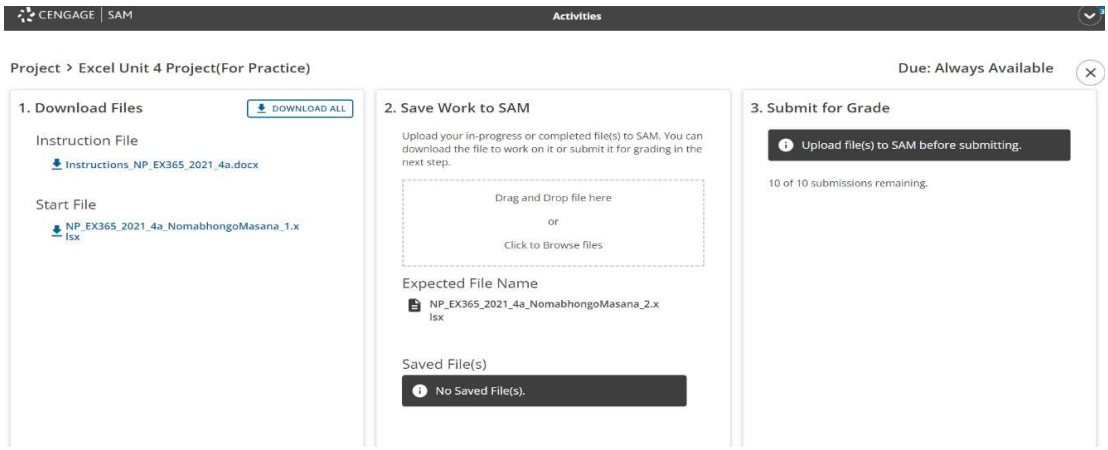

Figure 4: SAM Cengage Project

SAM Cengage assessments – referred to as Exams on the platform - are simulated. The students are provided with tasks they need to complete. For MS Word and Excel assessments, students are provided with 3 attempts to try out the task as shown on figure 5. Once the attempts are exhausted and the student did not get the task correct, they are marked incorrect for the task, and the simulation advances to the next task or tasks that still have attempts left. The assessment simulation is like the apply mode of the training simulation. Before the students take the assessment, I provide them with a Pre-Test, which shows them how the assessment

simulation works, more like providing students with previous question papers for them to see the style of the assessment.

My use of SAM (Skills Assessment Manager) Cengage as an integrated third-party tool in my subject has enriched both my teaching and learning experience. SAM's role in providing hands-on experience has been a valuable complement to the theoretical instruction provided in class. My experience with SAM has highlighted both its benefits in promoting student engagement and some of the challenges associated with integrating third-party tools.

One of the most notable benefits of SAM is its focus on practical, skill-based learning. The simulated environment provides real-world scenarios which enable students to engage with the content in a practical manner, allowing the learning to take place as students apply what they have learned.

One of the features I like, and I believe would be greatly appreciated, is SAM's automated marking/grading feature. Both the assessments and projects are automatically graded, saving me time, and providing students with instant feedback for improvement on their learning. This feature enhances student learning as it provides students with room to correct mistakes they made and to ask for assistance regarding concepts they may not comprehend. In addition, integrating SAM into Blackboard Ultra has proven to be an effective way of utilizing the LMS capabilities, as it provides a smooth transition between the two platforms, providing one central access to learning material and enhanced continuous use of the LMS. Furthermore, the integration enables me to effectively manage my subjects as grades from SAM can be synced automatically to Blackboard's gradebook, saving more time and reducing the risk of manual input errors.

However, with any other technology or platform, SAM is without challenges. Much as the platform offers training, some students who are new (especially first-year students) in using the platform, especially in the beginning of classes, tend to require more time to adapt to the system. Technical issues such as browser compatibility or system glitches can occasionally disrupt the learning experience. Despite these challenges, through the experience I have gained while using the system and technical support provided by Cengage, I have been able to overcome and resolve most of these challenges quickly.

The ability for students to repeatedly practice tasks until they achieve proficiency reinforces key concepts and caters to various learning styles. That said, the automated nature of SAM also means that, as an academic, I must balance it with more reflective and critical-thinking-based assessments.

While SAM is excellent for skill-building, it does not fully capture the nuances of analytical thinking or creativity that might emerge in open-ended projects or discussions. Thus, I utilize SAM as a supplement to my teaching rather than a replacement of traditional teaching methods, to ensure I engage with my students as they engage with the learning content.

In conclusion, SAM Cengage has been an effective and efficient tool for handling massive classes and providing my students with practical skills needed in this era we live in. Despite its challenges, its benefits such as its hands-on/real-live approach and automated grading and feedback highly outweigh these challenges.

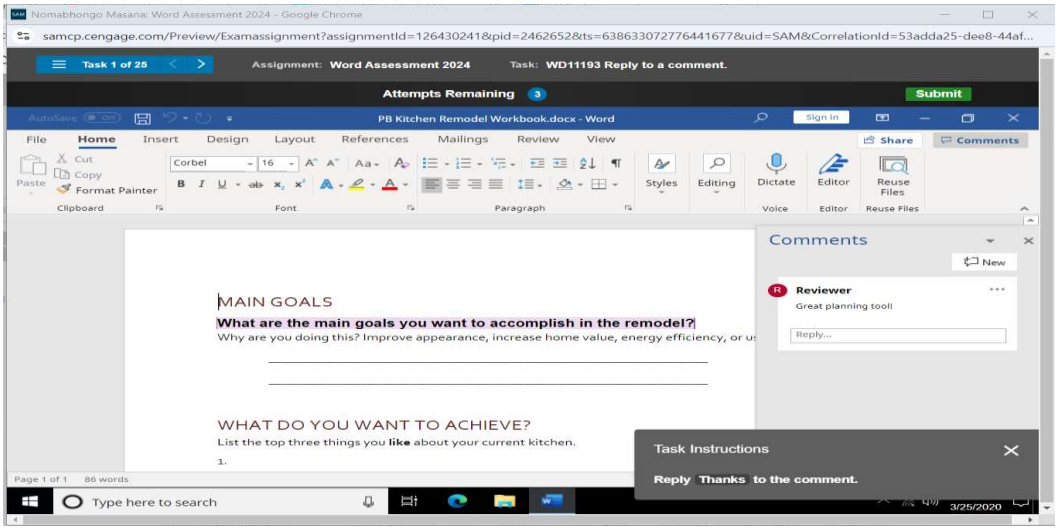

Figure 5: SAM Cengage Assessment

Microsoft Excel

Throughout my journey as an academic in HE, I have been using MS Excel as tool to store and manage my students' attendance and grades. I have found Excel to be easy to work with and customize to suit the needs of my subjects, such as setting my own formulas tailored specific to my subjects' diverse weights for discussions, projects, and assessments, which all contribute towards the final marks. Furthermore, collecting students' grades has been easier with the use of the Blackboard LMS, which provides me with an option to download all or some of the students' grades to a spreadsheet in seconds. By using Excel's conditional formatting, I can identify students who may be at risk of failure earlier in the semester, which helps me to apply intervention methods in time and makes students aware of the risk so they can improve to avoid failure.

As for the attendance, I use Excel to record attendance by scanning the students' student cards (which contains their student number) using a barcode scanner. Recording attendance this way minimizes the risk of having other students signing the attendance register on behalf of those who are absent. In addition, during assessments, I can correlate the attendance register with the number of students taking the assessment, to ensure the integrity of assessments and that no one who is not accounted for takes the assessment.

A feature I mostly appreciate about Excel is its ability to analyse data with ease. This feature has been useful to me when I have to provide an overall account of how students are performing, as well as to see how their attendance and participation affects their overall performance. This helps me to provide reports that are informed by data and informs my teaching practices and the students' learning. In addition, due to its flexibility and accessibility, I am able to share my spreadsheets with other colleagues who need to moderate the students' grades to ensure they are a true reflection of what took place. Despite all these benefits, the challenge with Microsoft's Excel Web version is that I am unable to scan student's attendance into the web spreadsheet, as it opens up a new tab every time I have to scan a student's student card. An alternative then to overcome this challenge and make use of the cloud, is to use Google Spreadsheet as it performs many functions which are not available in MS Excel web version, including managing student's grades and attendance online (Mansor, 2012). However, using Excel has enabled me to track and monitor my students' attendance and performance, and pick up trends and patterns I would otherwise have not been aware of if I was using paper.

Kahoot!

As mentioned in the introduction section of the paper, one of the challenges faced by professors and academics in HE is keeping students engaged in class and maintaining their attention. As an academic, I have faced this challenge previously during my classes, however, I approached this challenge by introducing elements of gamification in the classroom through Kahoot! to keep students engaged with the content and avoid them being bored in class. The gamified environment of Kahoot! provides students with an opportunity to engage in healthy competition with each other, while having fun and improving on their learning (Garza et al., 2023). The competitive element provides an inclusive, fun, relaxed, and engaging classroom environment (Martínez-Jiménez et al., 2021). In addition, I have observed that by introducing gamification in my classroom, students who are usually reserved and inactive in class become more active and interested in participating when using Kahoot!, as the platform gives students the confidence to engage in class without fear of being singled out.

During my classes, I have used Kahoot! to review and recap what I have covered in class, which also shows if students were paying attention in class or not. After each lecture, I allow students to answer a quiz on that challenges students to apply what they have just learned. I usually use this opportunity to allow them to work in groups to encourage teamwork among them. Working in teams gives them more confidence as they get to learn from each other as peers. The immediate feedback they receive, both in terms of correct answers and their standing on the leaderboard, motivates them to stay engaged and review any areas where they may be struggling. Kahoot's mobile accessibility has allowed my students to utilize their mobile devices (Martínez-Jiménez et al., 2021), and this lowers barriers to participation.

The platform's bright, colourful interface and use of music and visuals lighten the mood, turning learning into an experience that students genuinely look forward to. Figure 6 below provides the desktop view of Kahoot! I have found that this has a significant impact on classroom dynamics, see image below. Students are more likely to collaborate with their peers, share answers, and discuss the quiz topics afterward. This fosters a sense of community and shared learning that can often be missing in more rigid or formal academic settings.

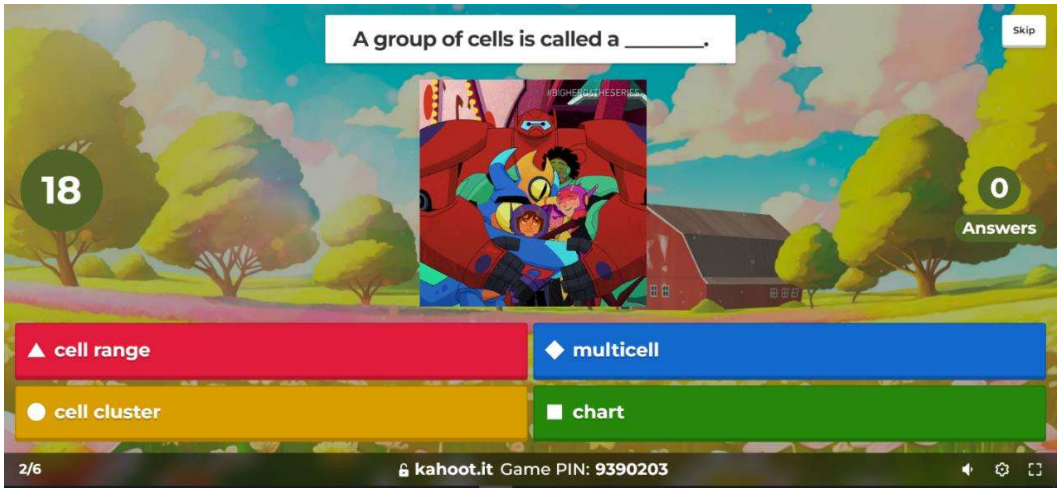

Figure 6: Kahoot! Quiz

Additionally, by introducing periodic Kahoot! quizzes throughout my lessons, I'm able to break up lengthy lectures and re-energize the classroom. Although Kahoot! is good for quick recall and close-ended questions, its fast-paced nature does not allow for assessing students' critical thinking and open-ended questions. In addition, Wang and Tahir (2020) outlined the inability to change answers after submission, less time to answer, and scores based on how fast students answer reduces student reflection resulting in some guessing answers without critically thinking, as some of the challenges linked with Kahoot!. Thus, in addressing this challenge, I make use of discussions and projects which assess students' critical thinking and require deeper understanding and application of key concepts.

Overall, Kahoot! has revived my classrooms turning them into a fun, engaging and inclusive environment. My classrooms are full of life, as the learning is enjoyable, leaving my students wanting to play more games in class.

Conclusion

Integrating educational technologies such as the Blackboard Ultra LMS, SAM Cengage, Microsoft Excel, and Kahoot! into my teaching practice has changed how I manage my subjects and engage with my students. Reflecting on my use of these technologies, I realized how each one has played a unique role in my teaching, and how they are all interconnected. Blackboard provided me with a central hub for content delivery, communication, and assessment, while SAM Cengage provides an interactive skills-based learning environment. The gamified environment provided by Kahoot! has revolutionized my classroom, providing a competitive, yet fun, relaxed, and engaging environment for my students. Moreover, with Microsoft Excel, managing student attendance and grades has never been this easy.

The EduTechs I have mentioned in this paper have fostered a learning environment that is dynamic, responsive, and tailored to the needs of today's students, who are increasingly accustomed to digital tools in their daily lives. Although technology enhances learning, it should be noted that its value is based much more on how it is applied, why it is applied, and where it is applied. We have heard the phrase, "Technology is only as good as the person using it." This is true in most cases, hence in my context, how I use technology may not necessarily be the same as how another person may use it. It is therefore up to you as an academic to explore and see which technology will best produce the results you desire in terms of improving your teaching, enhancing learning, and student engagement.

Despite the wonderful benefits outlined with the use of these EduTechs, the limitations associated with this study are that it provides my experiences alone as an academic, which may limit its generalizability to other contexts. In addition, the tools discussed in this study are only limited to the ones I use as an academic and do not explore other EduTechs. However, this provides an opportunity for research to be conducted on the perspectives of academics on the use of EduTech from various disciplines and contexts, the different innovative technologies and their application in HE by academics, feedback from students regarding the technologies used, as well as their impact on student learning and performance.

As I conclude this paper, these are my recommendations to other academics: 1) Embrace EduTech in your practice to transform the learning experience of your students, and to meet them where they are; 2) Although

learning something new may be daunting, we all started somewhere. I encourage you to start with just one tool that suits your classroom context, then expand your toolkit once you get the hang of it; 3) Lastly, keeping up to date with current trends in technology will keep us relevant to the evolving educational landscape, providing our students with the skills and knowledge they need to succeed in this modern world.

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