A Qualitative Investigation into the Use of Web 2.0 Technologies by Academics at a Higher Education Institution in Uganda

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DOI: https://dx.doi.org/10.47772/IJRISS.2025.905000383

Received: 14 May 2025; Accepted: 19 May 2025; Published: 18 June 2025

ABSTRACT

The visibility of Web 2.0 technologies in higher education has seen significant growth over the past decade, reflecting a trend of increasing sophistication and integration of digital tools within academic environments. Academics at higher education institutions (HEIs) are increasingly engaging with innovative instructional technologies in their quest to mediate and enhance student-centred learning experiences, which has been shown to foster greater engagement and interactivity in the learning process. This study purposed to investigate the utilization of Web 2.0 technologies by academics at a HEI in Uganda, focusing specifically on their pedagogical implications. Accordingly, this study adopted connectionism theory as a framework to explore the integration of Web 2.0 technologies within the teaching and learning processes at a HEI in Uganda. Employing a descriptive qualitative research design, this research involved a detailed case study that provided valuable insights into current practices. Data for this study was collected through a blend of qualitative methods that included observations, interviews, a researcher journal, and document reviews, ensuring a comprehensive approach to data gathering. Content and thematic analysis were utilized to interpret the data effectively, allowing for nuanced understanding of the findings. The primary participants in this investigation were faculty members at the HEI, and the study findings are presented under three major themes: social media as a tool for communication, promoting student engagement and learning, and challenges of web 2.0 integration. The study recommends the formalization of Web 2.0 technology usage for teaching and learning by establishing proper guidelines and policies to facilitate the effective integration of these tools within educational settings. Future investigations should explore additional dimensions of this integration process to further enhance educational practices in higher education.

Keywords*:* Web. 2.0 Technologies, Higher Education Institutions, Academics

INTRODUCTION

The rapid advancement of digital technologies has fundamentally transformed the landscape of higher education around the globe, with the emergence of Web 2.0 tools playing a significant role in shaping this evolving educational environment. Web 2.0 technologies, characterized by user-generated content, interoperability, and collaboration, have become increasingly integrated into the teaching and learning processes in higher education institutions, offering innovative opportunities for pedagogical enhancement [1]. Academics in Higher Education Institutions are actively exploring the multifaceted potential of these technologies in their pedagogical practices, thereby contributing to a shift in conventional educational methodologies. Although not primarily designed as educational applications, these Web 2.0 applications are gradually gaining acceptance and traction within the contemporary e-learning landscape, suggesting a redefinition of educational engagement. Unlike 'official' educational applications, these Web 2.0 tools are perceived as forming an important component of the digital landscape encountered by many learners, which exists decidedly outside the control of educational institutions, a concern highlighted by Kirkpatrick [2], who terms these aspects as "other, more flippant [educational] concerns" than the officially implemented and sanctioned e-learning applications. Yet, despite the flippant nature of their classification, many scholars are now contending that these Web 2.0 applications are of equal, if not greater, importance than formal educational

ICT applications in the 'real-life' educational conduct of contemporary learners [3], Furthermore, technologies such as Massive Open Online Courses (MOOCs) enable teachers to reorganize and produce educational content tailored to diverse teaching approaches, thus facilitating adaptable online education [4]. With the availability of these transformative technologies, one would logically expect academic staff to adopt the use of Web 2.0 technologies in their teaching and learning practices, particularly given that the current generation of students is notably more IT-savvy. Unfortunately, however, as is commonly observed in many higher education institutions in sub-Saharan Africa, the majority of lectures continue to be delivered using the traditional face-to-face method, thereby limiting the full potential of these modern pedagogical tools [5, 6]

In the context of Uganda, a developing country in Sub-Saharan Africa, the integration of Web 2.0 technologies in higher education has been a gradual process, characterized by varying levels of adoption and utilization by academics, which aligns with observations made by Ali, Buruga [7] and Muyinda, Lubega [8]. The COVID-19 pandemic marked a significant turning point [9] as universities rapidly transitioned to online and remote learning environments, which further necessitated the adoption of Web 2.0 technologies by academics to effectively bridge the educational gaps created by the COVID-19 lockdown. This shift has enhanced student engagement and facilitated collaborative learning, as institutions were eager to explore the transformative potential of Web 2.0 technologies in enriching the overall teaching and learning experience [10]. Moreover, the incorporation of these technologies into pedagogical practices is supported by their inherent capacity to foster active learning environments, personalize educational content, and promote the generation of content by both educators and learners [11]. Tools such as Facebook, YouTube, WhatsApp, and X (formerly Twitter) have been recognized as having the potential to significantly transform higher education in Africa [12-14]. Despite the ongoing infrastructural challenges that plague Sub-Saharan Africa, academics persist in experimenting with these technologies to enhance their pedagogical practices, as highlighted by Lwoga [10]. This study specifically investigated the use of Web 2.0 technologies by academics at a higher education institution in Uganda, seeking to establish faculty members' self-reported utilizations of these technologies in teaching and learning. Secondly, it aimed to explore faculty members perceptions regarding the benefits and contributions of Web 2.0 technologies to the overall effectiveness of the teaching and learning process, which further underscores the relevance of this inquiry in the current educational landscape.

LITERATURE REVIEW

The existing literature investigates the adoption and integration of various Web 2.0 tools and platforms within the higher education context, highlighting their significance for academic advancement. Numerous institutions are harnessing these interactive, collaborative, and user-centric technologies to improve teaching, learning, and knowledge-sharing practices among faculty and students [15, 16]. Notably, Web 2.0 technologies are recognized as emerging educational tools for faculty, particularly in sub-Saharan Africa, where the need for innovative pedagogical approaches is paramount [5, 17, 18]

The integration of Web 2.0 tools and platforms in higher education, especially within resource-constrained environments, presents a multifaceted opportunity to enhance pedagogical practices and foster learner engagement significantly. As educators navigate the challenges posed by limited financial and infrastructural resources, the deployment of collaborative online environments not only facilitates access to diverse educational content but also promotes a democratization of learning experiences, which is essential for student development [19, 20]. This transformative potential is further emphasized by ongoing advancements in technology, as illuminated by contemporary discussions surrounding generative AI, which have the capacity to revolutionize teaching methodologies and operational frameworks across various academic domains [21, 22]

In this study, Web 2.0 tools are defined as web-based technologies that enable interaction, collaboration, content sharing, and creation among faculty and students, encompassing a wide array of applications [23]. These tools include social networking sites (such as Facebook, Twitter, LinkedIn), blogs, wikis, media sharing sites (like YouTube, Flickr, Instagram), social bookmarking tools (for instance, Delicious and Diigo), and collaborative office suites. Furthermore, Web 2.0 technologies are characterized as the second generation of web-based services that prioritize online collaboration, sharing, and user-generated content, enhancing the educational landscape in diverse settings. The evolution and integration of digital tools in education have significantly altered traditional teaching and learning paradigms [24]. The shift towards online learning has

gained considerable momentum, especially with the increasing demand for university placements, particularly exacerbated by events such as the COVID-19 pandemic, which have further catalysed the adoption of innovative online educational strategies across the globe [25, 26]. Web 2.0 tools, in particular, have garnered significant attention within educational contexts, prompting extensive investigations into their pedagogical affordances and practical applications not only in developed economies but also in resource-limited settings such as Sub-Saharan Africa [10].

The effective implementation of these tools necessitates a critical examination of the underlying security and privacy concerns associated with immersive digital environments, including those posed by emerging paradigms like the metaverse [27]. Thus, exploring Web 2.0 applications in higher education addresses immediate logistical challenges while also requiring a robust dialogue about the ethical and technological implications that arise from their usage. Existing research has established the positive impact of Web 2.0 tools on fostering student engagement, collaboration, and knowledge construction [28]. Moreover, the advent of tools such as learning management systems has dramatically disrupted traditional teaching and learning models in higher education [29], playing a pivotal role by creating structured frameworks for content delivery and student interaction [30]. These platforms not only streamline administrative tasks and facilitate communication, but they also offer data-driven insights into student performance, thereby contributing to a more efficient and personalized learning experience. The increasing prevalence of Web 2.0 tools is reshaping educational experiences by providing both faculty and students with expanded learning opportunities, diverse learning modalities, and significantly greater autonomy over their educational pursuits [31]. In this context, the utilization of Web 2.0 tools offers faculty innovative approaches to engage their students and enhance the overall teaching and learning experience [32]. The integration of these technologies has led to the emergence of blended learning environments that combine traditional face-to-face teaching with electronically mediated learning approaches [33]. Additionally, the incorporation of advanced technologies, such as generative AI and immersive virtual environments, underscores the potential for deeper educational engagement through evolving digital methodologies that blend conventional and modern pedagogical approaches. The importance of these tools in resource-constrained settings cannot be overstated, as they provide innovative solutions for overcoming limitations in access to educational resources, thereby democratizing learning opportunities among diverse populations [19, 34]

The adoption of Web 2.0 tools, including those utilized in mathematics courses, has been examined, revealing that factors influencing their adoption in Uganda mirror those observed in other developing countries [35]. Multifaceted challenges such as a lack of formal training, and resistance to change have been identified as barriers to the widespread integration of these technologies in teaching and learning [36]. In East Africa, limited internet connectivity and the high costs to access it beyond campuses has been highlighted in a survey study in Kenya [30]. Another problem limiting technology adoption in Africa has been discovered as inadequate ICT infrastructure, particularly low bandwidth and unreliable networks [37]. Only 10% of the population in Sub-Saharan Africa has access to the Internet [38]. several studies [39-41] have also identified a lack of awareness, training, and technical support as key barriers to the adoption of Web 2.0 tools by academics. These challenges exacerbate existing educational disparities and limit the effectiveness of collaborative tools designed to enhance learning experiences [37]. Other studies [12] also offer valuable insights into the technological infrastructure and practices within the higher education sector in Uganda, encompassing e-learning platforms and security mechanisms employed by educational institutions across the country. The changes observed in the higher education landscape, marked by the transition to Education 2.0, signify a shift towards technology-enhanced, active, and collaborative learning experiences, moving away from traditional rote learning methods [42]. These transformative changes necessitate that educators demonstrate interdisciplinary expertise, embrace innovative pedagogical methodologies, and exhibit proficiency in the effective utilization of information and communication technologies, particularly through Web 2.0 platforms. Higher education institutions must radically renew their pedagogical practices and their ways of handling learning [43]. This shift towards digitally mediated learning necessitates the cultivation of advanced digital literacy skills for both educators and students, encompassing critical evaluation of online content, discerning credible sources from misinformation, and the ethical application of digital tools for academic purposes. Perez, Manca [1] affirm that emphasis must be placed on aligning the use of Web 2.0 tools in teaching and learning within higher education institutions with appropriate pedagogical frameworks.

Understanding how academics employ web 3.0 tools in their practice is key to integrating digital technologies more successfully in the higher educational environment

In summary, there is a strong body of research on the use of web 2.0 technologies in higher education, both globally and in the African context. While information and communication technologies are pivotal for creating sustainable higher education institutions, the focus has predominantly been on the students' perspective, often overlooking the opinions and experiences of university lecturers (Espinosa et al., 2021). Even though these studies provide valuable insights into the potential benefits and challenges of adopting these technologies, a comprehensive investigation into the use of Web 2.0 technologies by academics in HEIs in Uganda is essential to understand the multifaceted aspects of technology adoption in higher education settings

RESEARCH METHODOLOGY

This research adopted a descriptive qualitative research design of a case study that would enable the researchers gather in-depth data so as to understand the use of web 2.0 tools by faculty [44]. The unit of analysis was an institution of higher education in Uganda. Data for this study was collected through a blend of Qualitative methods that included Observations, interviews, researcher Journal as well as document review [45]. Purposive sampling was used to select participants from different faculties within the university. The target population comprised n-12 academic staff members, representing the four distinct schools within the institution, thus ensuring varied perspectives.

The choice of a qualitative approach allowed for a nuanced exploration of the experiences, perceptions, and practices of academics concerning Web 2.0 technologies [46]. The decision to employ semi-structured interviews provided a flexible framework for data collection, enabling the researchers to delve into specific areas of interest while also allowing participants to freely express their views and experiences [47]. Direct observation, an unobtrusive data collection technique, was employed to capture authentic, real-time interactions of academics with Web 2.0 technologies within their natural working environments.

Data collected were analysed using content and thematic analysis. Themes were arrived at by closely analysing the transcripts, observational notes, and document reviews, informed by the objectives of the study and key concepts from the literature review. Participants were informed of their role and granted voluntary consent to participate in the study.

The validity of this study hinges on the rigorous application of qualitative research principles, including triangulation, member checking, and reflexivity. Triangulation was achieved through the use of multiple data sources (interviews, observations, researcher journal and document analysis) which enhances the credibility and trustworthiness of the findings [48].

RESULTS AND DISCUSSION

A thematic analysis of the study findings revealed several key insights into the Web 2.0 technologies that were in use by academics and how they were being utilized at a Higher Education Institution in Uganda. The findings from this investigation are distinctly presented as multiple themes that emerged from comprehensive data analysis, highlighting the multifaceted nature of these technologies.

Table 1: Emerging Themes

Emerging Themes	
1	**Social media as a tool for communication**
2	**Promoting student engagement and learning**
3	**Challenges of Web 2.0 technology integration**

The first theme illustrates the manner in which academics leveraged Web 2.0 technologies for enhanced communication with their students, thereby facilitating an interactive educational environment that is increasingly recognized as vital for effective teaching and learning. The second theme elaborates on the application of Web 2.0 tools aimed at promoting student engagement and active learning experiences, which aligns with contemporary pedagogical approaches that emphasize collaborative learning processes. Meanwhile, the third theme underscores the various challenges encountered by academics in their efforts to effectively integrate Web 2.0 technologies into their teaching practices, including technological limitations and institutional barriers. These challenges reflect broader trends in higher education that necessitate a critical examination of the support systems available for educators navigating these innovations.

Social media as a tool for communication

The study findings indicate that academics at this HEI leveraged Web 2.0 technologies, particularly social media platforms, to facilitate class discussions, communications, answer questions, and provide feedback, fostering a more convenient interactive and engaging learning environment. Platforms such as WhatsApp, Facebook, email and streaming channels like YouTube were repeatedly mentioned as tools that created spaces where academics and students shared information beyond the confines of the classroom, enabling students to seek clarification, share ideas, and collaborate on projects more effectively. This is evidenced by participants reported uses of social media to share various teaching and learning resources with their students, thereby enriching the learning experience and promoting knowledge sharing beyond traditional approaches.

> "I use WhatsApp to share reading materials, discussion questions, and even announcements with my students. It's a convenient way to keep them informed and engaged." (Interviewee x)

> "Email, of course, remains a primary tool for formal communication, but social media adds a layer of informal interaction that can enhance the learning experience." (Interviewee Q)

Study findings also indicate that some academics made use of YouTube channels to upload course content in video format that students could refer to outside the designated class hours, these videos resources were made shorter and more engaging to improve student attention levels; these efforts reflect an attempt to address the evolving needs and preferences of digital native students, who often prefer visually rich and easily accessible content.

> “YouTube has been handy, I record videos of lessons and upload them, I try to make them as short as possible so the students do not lose attention. students find them very useful, especially when they are about to do coursework or preparing for exams” (Interviewee A)

> “YouTube has been very helpful as a video resource where I refer my students to watch different video clips on the subject at hand, the students like it especially where we have a few local illustrations” (Interviewee N)

These comments highlight the usefulness of platforms like YouTube in the delivery of educational content in a format that resonates with students and supports their learning endeavours. These efforts by academics highlight a deliberate pedagogical strategy to adapt to the digital era by leveraging web 2.0 tools that are readily available. Study participants also made use of the Facebook platform for communication and course material sharing as evidenced from their narratives:

> "I create a Facebook group for each of my courses where students can ask questions, share resources, and discuss assignments. (interviewee Q)

> “I use Facebook for sharing information with my students, posting announcements and class materials[...]It helps me to stay connected with them even outside of class.” (Interviewee M)

These verbatim quotes emphasize the perceived convenience and effectiveness of social media in enhancing communication, fostering engagement, and extending learning beyond the classroom. The use of WhatsApp

groups, as highlighted, enables academics to disseminate information and instructions efficiently, a finding that is corroborated by results from a study conducted by [49, 50].

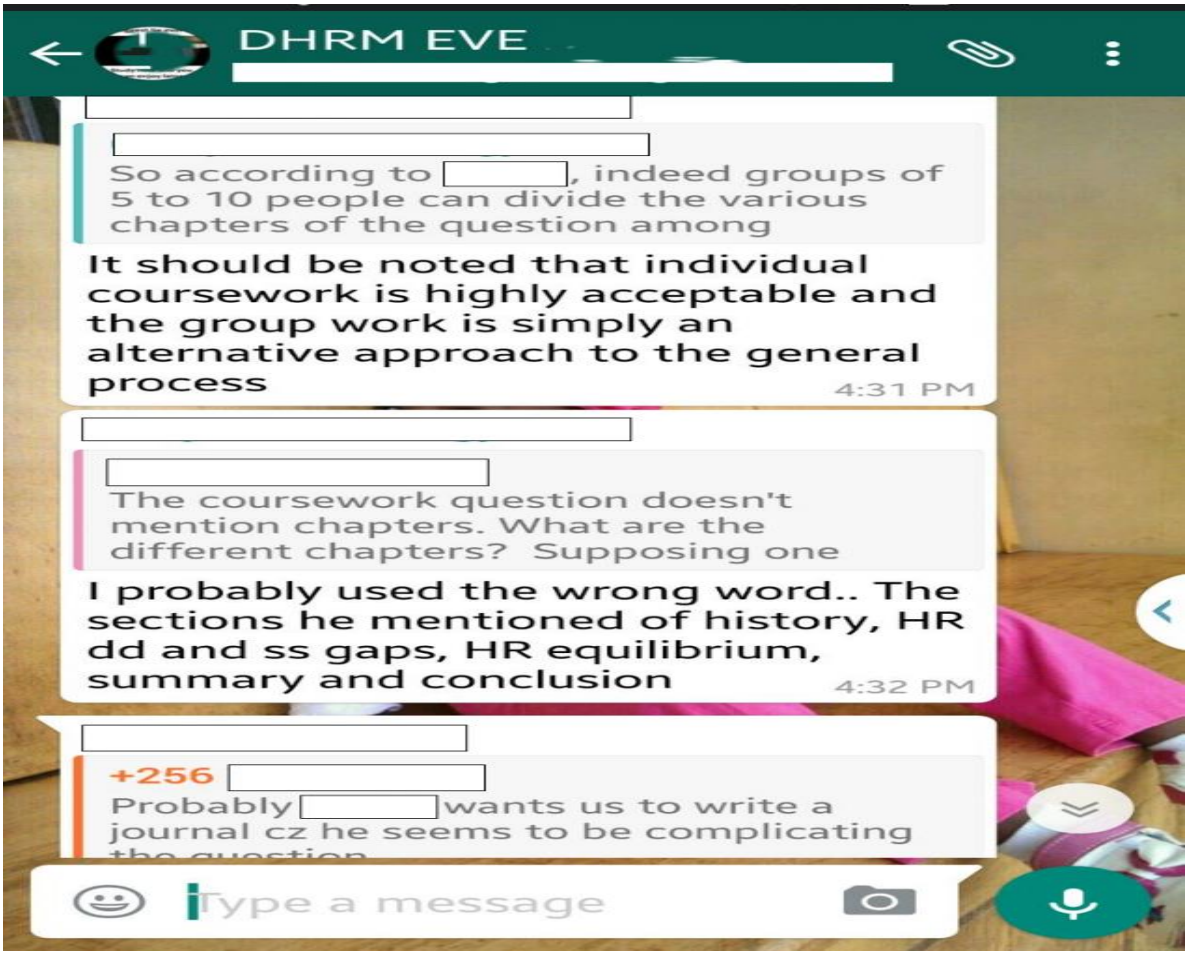

Fig 1 Screen capture showing WhatsApp group: Human Resource Management

These study findings show that Facebook was used informally for classroom communication and course material sharing. These findings are similar to what has been observed in other higher education contexts where Facebook was used as a supplementary communication tool by faculty [1]. Similarly, Chugh and Ruhi [13] have also noted the use of Facebook by academics for educational purposes. The use of YouTube for sharing learning resources and illustrations suggests an awareness among academics of the potential of multimedia platforms to cater to deliver information more conveniently and enhance understanding, echoing calls for the integration of multimedia tools into teaching practices to improve student engagement and knowledge retention. WhatsApp has become a common communication tool for both students and staff as observed in this study and other studies in the region [51, 52].

The use of these platforms reflects a shift towards more informal and accessible modes of communication in education, which can help bridge the gap between educators and students [53, 54]. Effective communication between educators and students has become more crucial, emphasizing the quality of communication between instructors and students, focusing on fostering effective two-way communication [55]. In particular, social media platforms served as conduits for academics to efficiently distribute course materials, instigate dynamic scholarly dialogues, and furnish students with immediate notifications and pertinent academic resources, thereby augmenting the overall educational experience [13].

The ubiquity and convenience of these web 2.0 tools makes them attractive for academic communication and collaboration in resource-constrained contexts like Uganda where access to official institutional communication channels may be limited. In the context of this study, the experiences of academics in using web 2.0 technologies for communication with students seemed to satisfy constructs of the connectivism theory that posits that learning is not confined to the individual but is instead a distributed process occurring across

networks, where the capacity to form connections, navigate digital landscapes, and leverage network resources becomes integral to knowledge acquisition and application.

a) Promoting student engagement and learning

Student engagement and learning emerged as a significant theme, with Web 2.0 tools facilitating interactive learning experiences beyond traditional face to face lectures. Beyond communication, some academics also reported using social media platforms to actively engage students in the learning process. Academics perceived these tools as instrumental in fostering active participation and collaborative knowledge construction among students. They embraced Web 2.0 technologies as a means of enhancing student engagement and creating a more dynamic learning environment Participants in this study believed that the traditional teaching and learning environment was not fully promoting student engagement and this prompted them to adopt the use of Web 2.0 technologies.

WhatsApp and Facebook groups were used by academics to promote discussions amongst students outside lecture times. Participants urged that social media platforms created opportunities for students to collaborate, discuss course materials, and receive timely feedback from course facilitators as evidenced by their responses below;

> "I often use WhatsApp group to post discussion questions and get students to interact and share their thoughts. It helps to get more participation from students who may not be as vocal in class." (interviewee Q)

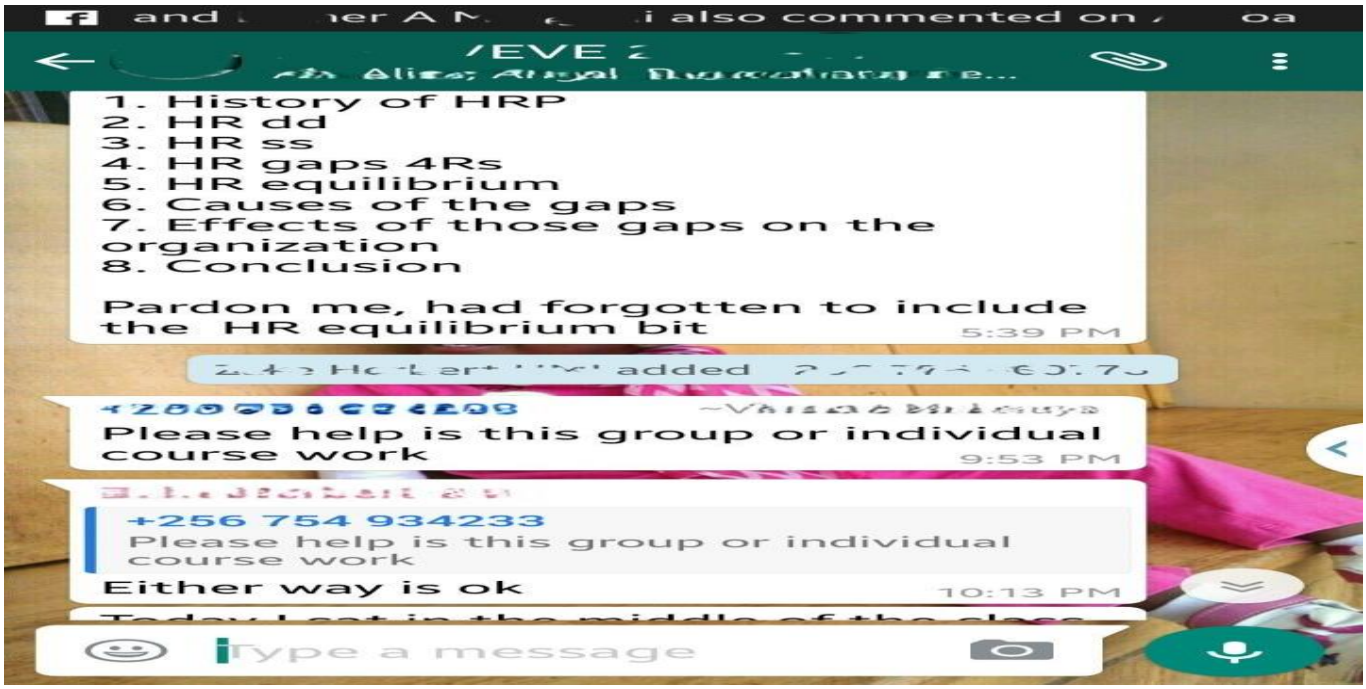

Fig 2 Screen capture showing WhatsApp group discussion: General management

Academics voices suggested that Facebook and WhatsApp groups were pivotal in cultivating an interactive learning atmosphere and facilitating seamless knowledge exchange. These platforms acted as catalysts for meaningful discourse and engagement between academics and their students beyond the confines of conventional classroom settings

> "I created a Facebook group for my class where I share additional reading materials and post questions for my students to discuss. It's a great way to keep them engaged with the course content in and outside of the classroom." (interviewee X)

> "I use WhatsApp to create study groups where students can discuss course topics, share ideas, and collaborate on assignments. It helps to foster peer-to-peer learning." (interviewee Y)

Even though Facebook has been around for considerably a longer time compared to WhatsApp, academics in this study had been reluctant in adopting the technology to promote teacher and student engagement. This investigation however revealed that academics were now creating Facebook closed groups, strictly for their students, where they would share learning materials, create discussions and get feedback from the students as evidenced by the study participants narratives

> "I have a Facebook group for my class where I post discussion questions and encourage students to engage with the content and with each other. (interviewee N)

Fig 3 Screen capture showing Facebook group: Information Technology

Some academics argued that it was much easier to get students to participate in class discussions or engage with course material if the assignment was shared using the online platforms. They noted that the use of instant messaging platforms like WhatsApp can lead to more engaged learning experiences, where students are more motivated to participate actively in discussions and find the platforms beneficial for pre- and post-lecture engagement

> "I found that students are more likely to participate in discussions and engage with the course material when they can do so through social media platforms, they are already familiar with, like WhatsApp and Facebook. (Interviewee Y)

This study's findings align with existing literature that underscores the potential of social media as an educational tool, highlighting their capacity to enhance student engagement and foster collaborative learning experiences [13, 56, 57]. Academics felt that Students were actively engaged in learning when Facebook groups were used as Instructional technologies. Similar findings by pardo & Delgado have highlighted the role of Online social learning in fostering collaborative discourse for internalization of knowledge beyond the physical classroom. [58, 59]

The strategic integration of social media platforms into teaching practices reflects a broader trend in higher education towards leveraging technology to create more dynamic and learner-centred educational environments [60]. The use of platforms like Facebook for educational purposes demonstrates a proactive approach by teachers to embracing digital tools to enhance teaching and learning experiences [61].

While the study did not delve into the specific pedagogical approaches employed by educators on these platforms, the findings suggest that Web 2.0 technologies can be valuable tools for promoting student

engagement and knowledge exchange. The immediacy and accessibility of these platforms fostered a sense of community and connectedness, encouraging greater student participation and knowledge sharing, which resulted in improved learning outcomes and satisfaction [51]. The experiences of academics in using web 2.0 technologies for student engagement and learning seemed to align with the principles of connectivism that recognize learning as a process of forming networks, where technology enables learners to connect with diverse information sources and build knowledge through collaboration [62, 63].

b) Challenges of Web 2.0 technology integration

This theme focuses on the challenges that academics encountered when integrating web 2.0 technologies into their teaching and research practices. While Web 2.0 technologies presented numerous opportunities, academics encountered notable challenges during their integration into teaching practices. This investigation uncovered significant challenges pertaining to digital literacy, encompassing both the proficiency of academics in effectively utilizing these novel technological tools and the preparedness of students to adeptly navigate digital learning platforms.

Academics argued that some of these tools required some training for both the academics and the students to improve effectiveness. Digital literacy among both academics emerged as a key concern, with some participants facing challenges in effectively utilising these novel technologies; academics expressed the need for targeted training to bridge this digital divide and ensure equitable access to Web 2.0 tools for both academics and their students

> “Some of these technologies require training, its hard for some of us to fully utilise the technologies if you have not been trained” (interviewee M)
>
> "I wish I knew how to properly use some of these technologies; it would make my work easier" (interviewee N)
>
> "Not all my students are very tech-savvy. Some struggle to even access the WhatsApp group I created for the class. (interviewee Y)
>
> "Many of my students don't know how to use social media beyond personal chatting. I have to spend time teaching them how to use it for academic purposes." (interviewee A)

The academic narratives highlighted the fact that both academic staff and the students required comprehensive training to fully harness the capabilities of Web 2.0 technologies for educational purposes. These comments underscore the critical need for robust professional development initiatives aimed at equipping academics with the requisite digital literacy skills to navigate the evolving digital landscape in education. One faculty member conveyed a sense of discouragement stemming from instances where students lacked the necessary proficiency to effectively utilise the technologies designed to facilitate their learning, which sometimes diminished their enthusiasm for integrating these tools into their pedagogy.

> “Sometimes the students do not know how to use these technologies, and that frustrates me, because I put in the effort, but they do not seem to appreciate it.” (interviewee A)

some academics argued that their age was a factor as they were less digitally fluent compared to students, these sentiments highlight the digital divide that exists within higher education institutions, with some academics feeling less equipped to navigate the digital landscape compared to their students.

Findings in this study highlight the importance of equipping both academics and students with the necessary digital skills to effectively utilize Web 2.0 tools. Digital competencies are essential for both educators and students to fully leverage the potential of technology in education [64]. Institutions should invest in comprehensive training programmes and accessible resources to enhance digital literacy among all stakeholders, thereby ensuring equitable access and effective utilization of these technologies [65, 66].

Academics also highlighted the lack of institutional support and policies as a limiting factor in their use of Web 2.0 tools, this is because the institution did not offer the support required, the absence of clear institutional guidelines on the use of social media for academic purposes created uncertainty around appropriate use and potential risks as evidenced in the excerpts from the study participants.

> "There are no clear policies or guidelines from the university on how we should be using social media for teaching and learning. We are kind of left to figure it out on our own." (interviewee X)

These challenges around lack of institutional support and student digital literacy constraints are consistent with findings from other studies on the adoption of educational technologies in resource-constrained contexts. [12, 67]. Overcoming these barriers requires a multi-faceted approach encompassing infrastructure development, capacity building, and policy reforms to create an enabling environment for the effective integration of Web 2.0 technologies in HEIs.

Furthermore, academics expressed apprehensions regarding the dependability and stability of internet connectivity, particularly in areas characterized by inadequate technological infrastructure. the slow and unreliable internet connectivity emerged as a substantial obstacle, impeding the seamless integration of Web 2.0 tools into teaching and learning activities.

> “Sometimes the internet is very slow, and this can really affect a lesson, its not every student that has good reliable internet and this affects even those who do” (interviewee H)

> “Sometimes the internet is unstable, so it makes it hard to use some of the tools such as YouTube” (interviewee M)

Academics voiced concerns about the potential distractions posed by Web 2.0 tools, suggesting that the presence of social media and other online platforms could divert students' attention away from their studies. Paradoxically, while Web 2.0 technologies offer expanded communication channels, their implementation in distance learning contexts can inadvertently lead to a perceived deficiency in effective communication and a failure to adequately address the complex communication requirements inherent in pedagogical interactions. The ready availability of social media and other distracting online platforms presented a significant challenge as students were often prone to distraction.

> “There are a lot of distractions online, it is hard to get the students to concentrate because they can easily switch to another app” (interviewee Q)

> “The students are always on social media, so it is hard to get them to concentrate on the lesson at times” (interviewee H)

In addition, the absence of face-to-face interaction and the reduction in in-person communication emerged as notable disadvantages of relying solely on Web 2.0 technologies for academic purposes. Academics highlighted the limitations of online interactions in replicating the nuanced dynamics of in-person communication, emphasizing the importance of non-verbal cues and spontaneous discussions for fostering a comprehensive learning experience [68].

> “I miss the face-to-face interaction with the students; you can’t really replicate that online” (interviewee Y)

> “It is important for the students to meet in person, they learn more when they can interact with each other face to face” (interviewee A)

The move to online platforms for learning has highlighted the need for both students and teachers to develop new skills in technology and interaction, leading to evolving roles within the educational landscape [69]. Students facing mobility issues find increased opportunities to engage in online courses, highlighting the potential for greater inclusivity, although educators must adapt their approaches to suit diverse subjects and age groups [70]. Adapting to online teaching requires augmenting technological infrastructure and expanding

teachers' pedagogical expertise to meet these emerging challenges [71]. Academic institutions may face substantial difficulties and pressures in providing academic services and support due to the transition to online platforms caused by events like the pandemic. It is clear that faculty members often replicated their in-person teaching methods online due to a lack of online education training or resources to develop various types of courses [72]. Effective online instruction necessitates modifications to teaching frameworks and resources, differing significantly from traditional face-to-face methods [73]. In adapting to digital education, instructors are increasingly focused on refining teaching approaches and creating supportive online environments [22, 74].

CONCLUSION

The data considered in this investigation is limited to one HEI and the experiences of using Web 2.0 technologies that are described in here should not be genialized to the whole population of academics across the HEI sector. However, narratives of academics in this investigation resonate with other investigations that have studied the use of emerging educational technologies and highlight the challenges associated with their use in HEI specifically in the context of sub-Saharan Africa [30, 38]. This study findings provides insights into the use of web 2.0 technologies, particularly social media by academics at a HEI in Uganda and provide HEIs with a basis for understanding the need for embracing emerging technologies and the potential pedagogical opportunities that can be derived from them [53]. The identified themes encapsulate the multifaceted role of Web 2.0 technologies in higher education institutions, highlighting both their potential benefits and inherent challenges [40].

This article demonstrates how Web 2.0 tools can add value to the academics' existing competencies within higher education and identifies significant elements that should be considered when deploying these technologies to maximize potential benefits [75]. As such, the present findings make a contribution to the body of knowledge in the field of educational technology specifically in the integration of Web 2.0 tools in resource-constrained contexts such as sub-Saharan Africa. The results indicate that academics leveraged platforms like WhatsApp, Facebook, YouTube and email to facilitate communication, collaboration, and student engagement in the learning process. Considering that e-learning has become a mainstream approach to teaching and learning in higher education, it is imperative to understand the experiences of academics as they integrate technology into their teaching practices [76]. The practical implications of this study can inform decision-making processes for HEI administrators, faculty members, and technology support staff in order to improve the integration of Web 2.0 technologies into academic practices. The policy implications of these findings suggest the need for developing clear guidelines and support structures for integrating Web 2.0 technologies in higher education institutions, ensuring that these technologies are used effectively and ethically to enhance teaching and learning outcomes.

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