E-learning Approach to Analysis Using Social Media During Online Learning

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ABSTRACT

The integration of social media into higher education has transitioned from basic peer to peer entertainment into a foundational infrastructure for digital literacy, analytical skill acquisition, and personal branding. While traditional distance learning models frequently struggle to achieve active student participation, modern Web 2.0 architectures specifically dynamic, short video platforms like TikTok offer interactive tools that bridge the gap between contemporary pedagogy and real-world application. This paper examines online learning activities through the lens of modern communication technologies, employing an e-learning approach to analyze how students utilize digital media platforms to develop core business competencies. Moving beyond traditional Learning Management Systems (LMS), this study presents nationwide empirical survey findings from Sri Lankan university undergraduate students. The data evaluates the relationship between social media consumption, student driven data modeling challenges, and the professionalization of content creation through the "5 Cs" framework (Communication, Collaboration, Creativity, Community, and Convergence). Ultimately, the paper provides structural and strategic insights into turning casual social media engagement into a rigorous academic methodology for digital identity formulation.

Keywords—Social Media, LMS, Online Learning, Personal Branding

INTRODUCTION

A. Background of the Study

Nowadays, digital exploration and internet driven connectivity have become vital, non-negotiable requirements in the daily lives of individuals across all generational spectrums. The systemic disruptions caused by the recent global pandemic accelerated this reality, causing e-education and e-commerce to rapidly invade standard institutional platforms and establish themselves as dominant global trends. Concurrently, the physical infrastructure of traditional knowledge has undergone a radical decentralized shift, libraries have evolved from stationary brick and mortar book repositories into dynamic informational hubs housing digital media, eBooks, and cloud based content. Traditional print journalism has faced a parallel obsolescence; as live updating social feeds provide immediate multimedia coverage that outpaces conventional news cycles.

This technological convergence has consolidated computing, photography, and telecommunication into singular mobile devices, fundamentally disrupting organizations that failed to adapt. Today, individuals naturally utilize these converged spaces to handle daily tasks ranging from entertainment and commercial transactions to academic collaborations. Over the past two decades, this expansion of e-platforms has blurred the boundaries between the academic and commercial spheres. Students and entrepreneurs alike leverage technological ecosystems to satisfy public market demands and achieve personal objectives. Empirically, the strategic adoption of these e-platforms has been shown to support institutional performance metrics, directly increasing student retention and assessment success.

According to Jones and Leverenz (2017), e-platforms serve as motivational spaces where users showcase independent work, allowing external audiences to evaluate their performance outputs and raise market demand

for their products. Within this digital context, three interconnected phenomena have accumulated significant scholarly attention such as digital identity, personal branding, and digital storytelling. Digital identity functions as the mediated performance of an individual before an audience, building sustained interaction within a social ecosystem. Digital storytelling translates personal experiences into meaningful, structured digital narratives designed to entertain, educate, and establish thematic connections between real world incidents. Finally, personal branding operates as a calculated marketing process through which individuals cultivate, experience, and critique professional reputations across distinct operational fields.

B. Problem Statement

At present, social media networks have become the standard environment for cultivating personal brands and presenting distinct talents, qualities, and professional identities to the global market. Regardless of structural generation gaps, modern learners are heavily immersed in social media spaces, creating a tactical channel to reach specific, niche audiences segmented by personal interests. Unlike traditional mass media, which positions consumers as passive recipients, modern social media models allow users to actively explore and manipulate information based on immediate desires. This active search paradigm shifts how authority is constructed, as audiences willfully align behind specific influencers and domain experts.

Among these competing ecosystems, TikTok has emerged as a globally disruptive platform, achieving rapid saturation and user acquisition within an accelerated timeframe. The platform has proven uniquely successful for personal brand building due to its highly intuitive, user friendly creation tools and the low cost barrier to entry for content dissemination. However, within regional higher education settings, there remains a critical research gap regarding how these informal content creation skills can be academically analyzed and systematically utilized as formal e-learning tools. Consequently, this research study focuses on evaluating how the TikTok platform impacts student competencies as a deliberate tool for analysis and personal brand establishment within the local Sri Lankan context.

C. Need of the Study

While mature networks such as Instagram, Facebook, Twitter, and YouTube have established well documented paths for commercial endorsement and celebrity driven branding, empirical research assessing TikTok's structural role within higher education and professional analytics remains underdeveloped. In a developing economic context like Sri Lanka, TikTok represents an unmapped frontier for student led personal branding, offering high consumer friendliness and organic audience reach without heavy capital investments. The cultural emergence of the formalized "TikToker" archetype serves as a foundational metric indicating the platform's shift toward professional legitimacy. Therefore, this study provides an underlying baseline intended to help educators, curriculum designers, and researchers transition TikTok from an informal entertainment application into a structured, professionalized media framework for academic analysis and brand management.

D. Aims and Objectives of the Study

The overarching aim of this study is to investigate how social media platforms function as practical e-learning tools for analysis and personal brand development. This research aim is operationalized through the following specific objectives:

- To identify and synthesize current empirical literature governing social media usage across higher education contexts.
- To establish the key analytical and operational variables that dictate engagement within modern digital platforms.
- To systematically investigate and assess the pedagogical contribution of interactive social media spaces over traditional learning frameworks.
- To determine the explicit digital media strategies employed by higher education institutions as alternative, resilient methods for delivering formal course components.
- To evaluate the coping mechanisms through which university students deploy social networks to mitigate academic losses during crisis-driven disruptions.

- To assess the structural impact of utilizing informal social channels to disseminate, contextualize, and critique traditional academic knowledge.
- To explore the reflective outcomes and systemic challenges linked to the mass institutional migration toward online learning environments.

E. Hypothesis

This study operates under a two-part hypothesis,

H1: Social media platforms enable users to establish and capture digital marketplaces in a highly productive and efficient manner.

H2: The baseline duration of time an individual dedicates to social networking engagement depends significantly on their chronological age.

THEORETICAL FRAMEWORK: SOCIAL MEDIA AND ONLINE LEARNING

High quality online learning interprets the core tenets of effective face to face instruction by demanding active, continuous student participation. Within this paradigm, students reject the role of passive information receptacles instead, they function as co-creators of the collaborative learning environment alongside the instructor. Dynamic communication forms the baseline of this pedagogy, replacing one way instructional monologues with balanced, many to many dialogues that encourage peer to peer knowledge transfer. Empirical data confirms that blogs, podcasts, social networks, and immersive virtual environments are the most frequently integrated social media tools within modern higher education. When structurally applied within advanced information systems curricula, these technologies map cleanly onto the "5 Cs" Technology Framework.

1. Communication: Online education fundamentally relies on digital communication paths. While legacy e-learning approaches depend on static communication channels such as email distribution, flat PDF lecture notes, or standard asynchronous discussion boards modern Web technologies evolve this interaction. Active communication is realized through student-driven blogs, collaborative class wikis, live micro-blogging discussions, user-generated YouTube presentations, and interactive engagements within virtual worlds like Second Life.

2. Collaboration: Thriving within a highly competitive knowledge economy requires students to build advanced interpersonal skills and collaborative dexterity. While traditional institutional objectives prioritize individual testing parameters such as rote mathematical reasoning or isolated critical thinking they frequently omit structured collaboration. Because modern industries require teams to work interdependently, social media technologies provide a crucial, low-cost training ground where students practice remote group problem solving and cross functional coordination.

3. Creativity: As emphasized by contemporary theorists, traditional informational era skills focused strictly on logical, left brain computing are no longer sufficient to sustain professional competitive advantages (Pink, 2006). The current conceptual era places a premium on creative synthesis, empathy, and intuitive meaning-making. Rather than acting as trivial distractions, interactive media and simulation spaces such as educational gamification and virtual environments used by medical fields and defense forces train students to dynamically connect separate data concepts and execute complex decisions under pressure.

4. Community: Isolated critical thinking is limited without a supportive social community to refine it. While digital natives display deep comfort using online platforms for informal socialization, building deliberate learning communities introduces a different operational dynamic. Bernard et al. (2009) demonstrate that distance education success relies on three distinct interaction treatments such as student to student, student to teacher, and student to content. Social media tools facilitate student to student interaction via collaborative group projects. Student to teacher lines are maintained through instant messaging, direct video conferencing, and open forums, while student to content interactions are driven by the active curation, synthesis, and evaluation of digital video and media. Importantly, the efficacy of these digital communities varies by user

demographic, younger students free from complex domestic responsibilities lean heavily into social learning spaces, whereas older, employed students balancing families may favor highly structured, independent delivery formats.

5. Convergence: Institutional survival requires structural flexibility. By integrating social media platforms into conventional course shells, educators execute a convergence of knowledge generation tools. This synthesis finds its peak expression in the hybrid learning model, which seamlessly blends the interpersonal value of face to face instruction with the scalability and data rich environment of online delivery.

LITERATURE REVIEW

A. Perspectives on Personal Branding and Digital ID

According to Jones et al. (2017), personal branding is a strategic configuration combining human, social, and capital development. A personal brand acts as a mediated representation of an individual's core ethics, competencies, and value propositions. It demands calculated brand positioning rooted in authenticity, clarity, and structural consistency. To gain visibility among external public audiences, modern brand builders deploy self-branding tactics, including the systematic curation of social networking profiles, dedicated Search Engine Optimization (SEO), and personal blogs. As summarized by Zabojnik (2018), a brand is an outward projection of an individual's unique strengths. Because personal brands exist in direct relation to external social contexts, creators cannot operate in an isolated vacuum, their long-term visibility is entirely dependent on user responses, impressions, and continuous relationship updates.

From a marketing perspective, personal branding uses structured visual media (including custom web designs, photography, and short-form video content) to achieve targeted goals like capital enhancement, market recognition, and potential revenue growth. Zabojnik (2018) identifies three core attributes that govern successful personal brand deployment such as clarity, uniqueness, and finality. These traits allow audiences to immediately comprehend what makes an individual's performance special and authentic.

B. Strategic Deployment via Internet Platforms

Building an authentic personal brand requires a structured progression, often modeled around tools like the Personal Brand Canvas. This methodology mandates a deep analysis across four key distinct levels, the product, the organization, the person, and the overall ambition. Once these baseline goals are formulated, creators establish a definitive brand identity to serve as their main communicative strategy. Sociological frameworks suggest that individuals are inherent performers who strategically navigate distinct roles depending on their immediate social setting (Goffman, 1959). In the digital sphere, the core challenge centers on maintaining message retention across diverse communication channels while minimizing reputational failures (Rangarajan et al., 2017). Competency in this domain is measured by balancing strength versus warmth, or cleverness versus kindness, anchored by continuous updates and the strategic development of professional alliances.

The ongoing migration from physical marketplaces to visualized internet platforms has repositioned social networks as the primary engines for identity generation. Kaplan (2015) defines social media as a group of internet based applications constructed on the ideological and technological foundations of Web 2.0. Data shows that between 2012 and 2019, global internet users averaged 144 minutes per day on social channels, with some regional demographics exceeding 12 hours of daily engagement. Modern consumers do not digest this information passively, instead, they actively produce, share, and modify user-generated content. This active participation allows creators to market their identities in a highly cost-effective, agile manner. However, improper profile management—such as using a personal brand to spread hate speech or polarizing political content—can rapidly destabilize market capital.

C. The Evolution of TikTok as an Analytical Tool

Within the broader social media ecosystem, TikTok has disrupted traditional visual communication paradigms. Developed originally with distinct versions for the domestic Chinese market (Douyin) and international users

(TikTok), the platform has become a dominant global trend since its unified launch in 2018. While casual observers focus on its surface entertainment value, the platform hosts a complex mix of content spanning lifestyle, fashion, education, history, and comedy. The platform's defining constraint is its short video format, historically limiting clips to 15 to 60 seconds, which forces creators to use highly dense, impactful visual framing strategies.

The application experienced massive user acquisition during the pandemic, particularly among Gen Z and Millennial groups. By 2021, it had expanded its architecture to merge short form engagement with live e-commerce systems. TikTok's growth relies on a shift from traditional friend oriented networks toward algorithmically driven visual distribution. This environment amplifies the "Megaphone Effect," a phenomenon where a single creator can access mass audience distribution and shift consumer behavior without an established traditional media presence. As visual content introduces deep structural changes to human social systems, the deliberate performances of TikTok influencers offer a rich database for studying modern media effects and interactive data communication.

METHODOLOGY

A. Context and Population

This empirical study targeted undergraduate and postgraduate students enrolled across public and private higher education institutions in Sri Lanka, with primary localized data collection centered at a private university located at Jaffna. The participants were verified as daily users of core social networking applications, including Facebook, YouTube, WhatsApp, and Twitter.

B. Research Design

This research addresses a gap in the literature by analyzing social learning technologies as a bridging framework that aligns the pedagogical goals of online education with informal social media mechanics. The study deployed a mixed-methods approach combining qualitative case analysis with descriptive quantitative statistics. To examine the data-handling capacity of students within these environments, the research design incorporated a practical laboratory component requiring students to map the data architecture of a hypothetical social media system by generating Data Flow Diagrams (DFDs) and Entity Relationship Diagrams (ERDs).

C. Data Collection and Sample Size

Quantitative data collection was executed over the course of the academic year in August 2022, using a structured online questionnaire deployed via email and WhatsApp. Following sampling guidelines for expansive populations, a minimum sample size of 384 responses was required to ensure statistical validity (Krejcie & Morgan, 1970). To maximize reach, surveys were distributed through institutional teacher networks across multiple universities. A total of 500 completed responses were returned. Following data cleaning and validation, 431 questionnaires were confirmed as fully valid for analytical processing, representing an 86% active response rate.

The survey instrument used an option-selection design to minimize writing fatigue and maintain high data accuracy. To enrich the quantitative baseline, researchers conducted directed interviews with a 42-student sub-cohort, alongside a private, closed focus group containing postgraduate ICT students who completed practical content-creation assignments within isolated Facebook and WhatsApp research groups.

DATA ANALYSIS AND FINDINGS

A. Survey Results and Technical Data Compliance

The descriptive statistical analysis revealed clear behavioral trends across the student population. When questioned regarding platform preferences, an equal split was observed among the primary sub-cohort, with 40% favoring WhatsApp and 40% favoring Facebook for daily operations. Regarding operational utility, 52% of

respondents confirmed that these platforms actively facilitated necessary peer to peer communication and interpersonal connections.

However, distinct negative externalities and structural limitations were also highlighted by the participants. Specifically, 14% of students reported that social media platforms introduced significant cognitive distractions that disrupted their core study focus. Furthermore, 10% expressed a distinct dislike for executing complex, high-effort academic tasks through social channels, while an additional 10% remained completely unaware of the professional or pedagogical potential of these tools. Privacy concerns emerged as a notable barrier, with 7% of participants rejecting social learning integration due to a perceived lack of data privacy, and 5% stating that standard Facebook interfaces lacked the necessary organizational structure required to support academic instruction. Less than 1% of the population expressed a total aversion to social media usage in any capacity.

A major finding emerged when correlating social media literacy with advanced systems analysis competencies. While students demonstrated high comfort with front end communication and visual browsing, the vast majority struggled when tasked with analyzing the backend architectures of those same systems. Almost all participants identified the generation of a Data Flow Diagram (DFD) and an Entity-Relationship Diagram (ERD) as highly difficult assignments. Students faced significant challenges identifying discrete data entities and mapping structural relationships for a social media system module, revealing a gap between passive interface familiarity and active systems logic.

B. Interview and Focus Group Insights

The qualitative interviews and focus group sessions provided deep context to the quantitative trends. A thematic analysis revealed a clear correlation between user satisfaction and platform familiarity: students who reported high enjoyment of social platforms regularly used them to maintain cross-institutional peer networks. For example, heavy Facebook users viewed the platform's multi layered architecture such as instant messaging, image tagging, and video streaming as a direct benefit to their informal learning habits.

The qualitative data generally showed a balanced inverse relationship, users with highly positive viewpoints recorded very low negative associations, whereas a tiny percentage of objective users displayed high marks in both positive utility and negative critique, indicating a mature perspective on platform drawbacks.

In the focus group setting, the postgraduate ICT students actively engaged with the content creation experiment within private groups. The requirement to upload custom profile media and exchange comments generated a rich stream of interactive data. Because the group environment was strictly private, participants could collaborate openly without exposing their academic progress to external social circles, effectively mitigating privacy concerns. The primary advantage identified by observers was that the target demographic (aged 19 to 25) possessed a deep familiarity with mobile workflows, including mobile image uploading and live notifications. The integration of smartphones allowed students to submit content live from any location, reducing administrative friction and making the analytical coursework highly engaging.

Conversely, direct observation of the wider student group during the initial stages revealed an ambivalent attitude toward formal social media education. A small subset of students initially struggled to comprehend the academic relevance of the tools or claimed they lacked the technical skills to align social media outputs with professional benchmarks. However, after a series of structured training sessions, these same participants recorded a complete shift in perspective, embracing the platform's utility. The absolute baseline challenge remained the social aspect of the applications, which frequently triggered off topic interactions and distracted from core learning activities.

C. Scope and Limitations

The scope of this study was bounded by a specific evaluation model focusing on visual framing strategies used by top tier TikTok influencers across dominant content categories. Representative short-form video clips were evaluated by a selected group of media and telecommunication experts to map content metrics against student reactions. To ensure consistency and prevent respondent fatigue, the research design limited the evaluation set

to fifteen short clips. Demographic tracking focused explicitly on male and female gender classifications, omitting alternative gender options due to localized timeline constraints.

Regarding institutional limitations, the primary data was gathered from a single prominent university system, meaning the results may not map perfectly onto diverse socioeconomic student populations elsewhere. Additionally, future research is required to explore how these student centric patterns align with public sector governance frameworks and non-governmental education bodies.

DISCUSSION

Information and Communication Technologies (ICTs) play a central role in contemporary pedagogy due to their rapid adoption and positive impact on teaching and learning. Modern higher education institutions are continuously experimenting with Web 2.0 architectures such as YouTube, Facebook and TikTok to foster vibrant online learning communities that expand student engagement beyond the limits of traditional lecture halls. When properly integrated, these tools improve student performance by providing clear learning structures, boosting engagement, and facilitating collaborative group organization.

However, as shown in the data analysis, a digital literacy gap persists, university students effortlessly consume content and build front end personal brands, yet they experience significant difficulty analyzing the underlying data flows, system entities, and database relationships that govern those platforms. This confirms that interface familiarity does not automatically translate into systemic technical knowledge.

Furthermore, replacing a formal Learning Management System (LMS) with an informal social network like Facebook introduces structural risks. Social platforms lack native support for direct academic file hosting and organized comment nesting, and their open environments reduce student privacy. Effective social media education requires robust instructional design, an active teaching presence, and clear technical support to minimize social distractions and ensure safe data boundaries.

CONCLUSION

This research paper demonstrates that an e-learning approach to analysis using social media provides a possible pathway for merging student personal brand development with academic analysis. By examining platform mechanics through the lens of modern communication, the study concludes that TikTok content strategies depend on consistency, creative distinctiveness, and authenticity to establish credibility and ensure message retention among viewers.

The modern educational landscape faces a critical challenge, traditional rote instructional methods often fail to engage students, contributing to rising undergraduate attrition rates. Concurrently, independent evaluations reveal that up to 36% of college students show no significant improvement in critical reasoning, writing, or complex problem solving skills after four years of traditional study, despite steep increases in institutional tuition costs.

Because social media represents a central pillar of contemporary youth culture, using it thoughtfully can revitalize higher education, making courses more interactive, affordable, and aligned with the modern digital economy. Traditional "chalk and talk" instructional methodologies are facing obsolescence, mirroring the digital disruptions occurring across journalism, library sciences, and the film industry. Professors must embrace technology and use diverse pedagogical tools to provide lasting value to their institutions.

The Social Learning and Teaching (SLT) Framework proposed in this study offers a structured workaround. By relying on robust web tools and advanced e-learning systems, the SLT framework assesses group dynamics and facilitates collaborative communication while maintaining academic integrity within higher education.

A. Future Recommendations

Based on the empirical findings, curriculum planners and university administrators should optimize the message features and interactive tools of social networks within formal e-learning platforms to drive user adoption. Because communication technology is continually evolving, maintaining this framework requires an ongoing commitment to applied field research.

For platforms like TikTok, future researchers should expand the scope of study beyond the localized boundaries of this paper to explore larger sample populations. Scholars should continue to investigate the co-relation between systematic personal branding and formal higher education, encouraging creators and influencers to use social media networks as rigorous spaces for digital analysis, economic empowerment, and applied technical literacy.

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