The Impact of Online Distance Learning on Learning Skills Among University Students

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ABSTRACT

The outbreak of the COVID-19 pandemic heightened the need to explore the suitability of Online Distance Learning (ODL) as a primary mode of education, questioning whether ODL can adequately support the development of academic and core learning skills among Malaysian university students. While empirical research on the direct impact of ODL on specific sub-skills—particularly communication—in Malaysian public universities remains sparse, this study investigates the relationship between ODL effectiveness and key learning dimensions: knowledge application, communication skills, and time management. Focusing on final-year undergraduates at the Faculty of Administrative Science and Policy Studies (FSPPP), Universiti Teknologi MARA (UiTM) Seremban, this study adopted a quantitative, cross-sectional survey design.

A structured questionnaire was distributed to 212 respondents, and data were analyzed using descriptive statistics, Pearson correlation, and multiple regression analysis. The results revealed that learning sub-skills has a positive and statistically significant effect on ODL satisfaction and effectiveness, with knowledge application and time management serving as the strongest predictors. ODL successfully enables students to learn in a self-regulated manner and manage their time efficiently. However, no statistically significant relationship was found between ODL effectiveness and communication skills development, highlighting the limitations of online environments in fostering spontaneous interaction. The study suggests a pressing need for more interactive, synchronous, and collaborative pedagogical approaches in online higher education.

Keywords: Online Distance Learning, ODL, skill development, knowledge application, communication skills, time management, higher education, COVID-19 pandemic.

INTRODUCTION

The COVID-19 pandemic shifted Online Distance Learning (ODL) from an alternative format to the default mode of instruction across global higher education networks. This sudden transition raised critical questions regarding the overall effectiveness of ODL in cultivating essential skills and competencies required for academic and professional success (Dhawan, 2020). Like many higher education institutions in Malaysia, Universiti Teknologi MARA (UiTM) rapidly adopted online learning modalities, fundamentally altering how students acquire and apply knowledge.

While ODL offers distinct structural benefits—such as flexible learning schedules, enhanced digital literacy, and opportunities for self-paced, autonomous learning—concerns have emerged regarding its holistic efficacy. Specifically, educators worry that vital soft skills, including verbal communication, collaborative teamwork, interpersonal dynamics, and synchronous time management, are more difficult to develop and measure in virtual spaces (Gamage et al., 2023).

Undergraduate programs within the Faculty of Administrative Science and Policy Studies (FSPPP) at UiTM Seremban are traditionally anchored on highly interactive, discussion-based teaching and learning delivery. Consequently, transitioning to a full ODL model directly influences how these students acquire, apply, and

transfer their technical knowledge, analytical thinking, and communication capabilities (Adnan & Anwar, 2020). Compounding this issue, contemporary literature presents conflicting viewpoints: some studies claim that remote learning environments hinder spontaneous interaction and practical collaboration, while others argue it significantly sharpens cognitive self-regulation and technical proficiency (Almahasees et al., 2021).

The primary objective of this paper is to determine how core learning competencies—specifically knowledge application, communication, and time management—predict the perceived effectiveness of the ODL experience among final-year FSPPP undergraduates. Rather than offering speculative insights, this study provides empirical data on undergraduate skill readiness through a quantitative case study framework. Ultimately, these findings are intended to inform future pedagogical strategies, curriculum design, and institutional policy adaptations for blended and fully online academic environments.

LITERATURE REVIEW

Impact of Online Distance Learning on University Learning Skills

Learning skills comprise the interpersonal, cognitive, and self-regulatory competencies that allow students to efficiently acquire, process, and execute academic knowledge (European Commission, 2018). Within higher education ecosystems, these skills serve as foundational pillars for both ongoing academic achievement and long-term professional marketability. The institutional shift toward ODL has completely reshaped how these competencies are cultivated, structurally replacing traditional face-to-face classroom engagement with digital platforms (Kirkwood & Price, 2014).

According to Dhawan (2020), digital environments can accelerate digital fluency and self-directed learning, yet they simultaneously carry risks of reduced student engagement and social isolation. Gamage et al. (2023) observed that while asynchronous hybrid setups adequately support independent cognitive tasks, they face severe friction when developing active leadership, cooperative teamwork, and oral public speaking competencies. In the local context, the Malaysia Education Blueprint 2013–2025 explicitly mandates a holistic educational focus that balances academic excellence with robust soft skill development—a target that faces unique operational challenges in fully remote environments (Ministry of Education Malaysia, 2013).

Knowledge Application Skills

Knowledge application represents the cognitive ability to analyze, synthesize, and deploy theoretical information within practical contexts (Biggs & Tang, 2011). Within ODL frameworks, knowledge application is typically driven by multimedia modules, online digital assessments, and asynchronous learning objects. Baber (2020) asserted that interactive technological assets, such as active discussion forums and collaborative digital workspaces, can simulate deep learning loops and improve long-term information retention.

Conversely, the lack of immediate peer-to-peer feedback and hands-on laboratory or workshop practices can obstruct the seamless transfer of theoretical knowledge into real-world applications (Almahasees et al., 2021). Furthermore, while adaptive learning systems and AI-driven platforms offer personalized content streams to assist students (Huang et al., 2020), students in administrative and policy tracks inherently require heavy contextual debates and collaborative analysis to master their course materials—a dynamic that text-heavy or pre-recorded formats struggle to match.

Communication Skills

Communication skills encompass the verbal, non-verbal, visual, and written expressions needed to exchange information clearly and effectively (Keyton, 2011). Because ODL relies heavily on text-based channels such as discussion boards, official emails, and live chat features, it can drastically improve formal writing clarity. However, it simultaneously curtails opportunities for real-time verbal sparring, formal presentation delivery, and organic, spontaneous dialogue (Adedoyin & Soykan, 2020).

Garrison et al. (2000) established that "social presence"—the capacity of participants to project their personal characteristics and feel connected in digital spaces—is a prerequisite for meaningful educational interactions. A weak social presence during ODL routinely triggers contextual misunderstandings, dampens student collaboration, and diminishes interpersonal development. For FSPPP students, whose curricula rely heavily on mock debates, public policy negotiations, and public speaking exercises, remote formats place artificial caps on the refinement of these specific soft skills (Gamage et al., 2023).

Time Management Skills

Time management is defined as the behavioral ability to allocate, organize, and prioritize hours effectively to meet competing academic and personal goals (Claessens et al., 2007). ODL demands unprecedented levels of internal self-regulation, as students are forced to navigate open-ended schedules completely devoid of physical, fixed classroom routines (Broadbent & Poon, 2015). Zimmerman (2002) identified that highly successful online learners are characterized by distinct self-regulated learning strategies, including proactive goal setting, rigorous progress monitoring, and flexible, adaptive scheduling.

Nevertheless, operational research shows that a substantial portion of online learner's struggle with persistent procrastination, task underestimation, and severe fatigue from balancing home and academic responsibilities (Rasheed et al., 2020). For FSPPP undergraduates managing complex group projects alongside independent coursework, mastering digital time management is vital, yet it is rarely explicitly taught within standard online platforms.

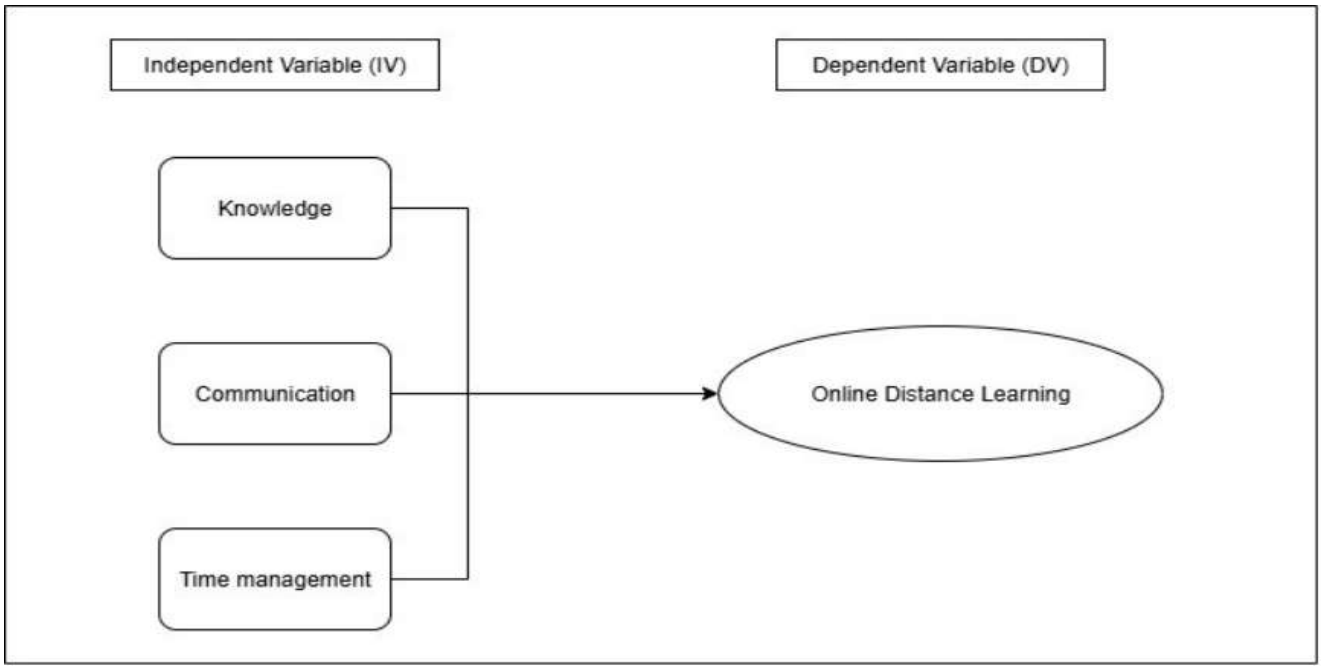
Based on the synthesis of the literature, the following hypotheses are proposed:

H1: There is a significant relationship between knowledge application skills and the perceived effectiveness of ODL among FSPPP students.

H2: There is a significant relationship between communication skills and the perceived effectiveness of ODL among FSPPP students.

H3: There is a significant relationship between time management skills and the perceived effectiveness of ODL among FSPPP students.

Figure 1: Conceptual Framework showing the Independent Variables (Knowledge Application, Communication, Time Management) pointing directly to the Dependent Variable (Online Distance Learning Effectiveness).



METHODOLOGY

This study targets final-year undergraduate students pursuing a Bachelor of Science in Administrative Studies at UiTM Seremban, drawing from an active departmental population of approximately 480 individuals. To isolate an accurate sample size representative of this group, the Krejcie and Morgan (1970) empirical table was utilized, which dictates a target baseline of 210 respondents. A non-probability convenience sampling strategy was chosen based on demographic accessibility and voluntary participation criteria, focusing strictly on students who completed substantial portions of their coursework via ODL modes. Data collection was executed using a structured English-language questionnaire deployed electronically via Google Forms across university student communication networks over a uniform four-week timeframe.

To protect data quality, scale reliability and internal consistency were verified using Cronbach's alpha coefficients, where values above 0.70 denote acceptable internal consistency and values above 0.90 signify excellent alignment (Anesthesia & Analgesia, 2021). Distribution normality was evaluated using skewness and kurtosis metrics, applying a conservative threshold of ±2 to confirm an approximately normal distribution (Hair et al., 2019). As outlined below in Table 1, all isolated constructs satisfied both the reliability and normality benchmarks. Statistical processing was executed using descriptive frequencies, Pearson correlation analysis, and multiple linear regression models.

FINDINGS

Demographic Profiles

A total of 212 valid responses were compiled. The demographic distribution shows that 134 participants (63.2%) were female and 78 (36.8%) were male. In terms of age distribution, the overwhelming majority clustered between 21 to 24 years old (67.0%), reflecting the standard undergraduate age track, followed by the 25 to 26 age bracket (21.7%), and the 18 to 20 age bracket (11.3%). All 212 respondents were actively enrolled as full-time bachelor's degree candidates. A detailed summary of academic profiles, hardware access, and connectivity variables.

Analysis of the Dependent Variable

Mean baseline tracking was applied to categorize student perceptions of ODL effectiveness into three distinct tiers: Low (1.00–2.00), Medium (2.01–3.00), and High (3.01–4.00). The specific descriptive items tracking student consensus are presented in Table 3.

Table 3: Perceived Levels of ODL Effectiveness

Items	Mean	Std. Deviation	Minimum	Maximum	Descriptive Level
B1. Overall Effectiveness of ODL	3.01	0.779	1.00	4.00	High
B2. User-Friendly Platforms	3.18	0.715	1.00	4.00	High
B3. Ability to Interact Actively	3.11	0.863	1.00	4.00	High
B4. Technical Trouble Management	3.27	0.796	1.00	4.00	High
B5. Skill Improvement via ODL	3.21	0.795	1.00	4.00	High
B6. Preference of ODL over F2F	2.93	0.973	1.00	4.00	Medium

Most metrics returned high mean scores, showing that students generally adapted well to online learning configurations. Technical trouble management (B4) registered the highest positive response (Mean = 3.27), indicating strong digital troubleshooting capabilities. However, item B6 ("Preference of ODL over F2F") returned a moderate mean score of 2.93. This signals that while undergraduates respect and navigate the technical realities of ODL well, they still retain a noticeable underlying preference for conventional face-to-face instruction.

Pearson Correlation Analysis

Pearson correlation coefficients were calculated to verify the direction, intensity, and statistical significance of the relationships connecting the independent skill constructs to ODL effectiveness. As summarized in Table 4, all three learning competencies exhibit strong, positive, and statistically significant associations with the dependent variable**.**

Knowledge application features the strongest linear relationship ($r = 0.766$, $p < 0.001$), followed closely by communication skills ($r = 0.678$, $p < 0.001$) and time management skills ($r = 0.673$, $p < 0.001$). This initial matrix confirms that elevations across these three individual skill categories match higher perceived ODL performance and adaptability.

Multiple Regression Analysis

A multiple linear regression analysis was executed to determine the simultaneous predictive power of knowledge application, communication, and time management skills on perceived ODL effectiveness. The combined regression model explained 62% of the total variance ($R^2 = 0.620$, Adjusted $R^2 = 0.614$). The remaining 38% is governed by external variables omitted from this structural model.

The overall model was highly significant ($F = 112.977$, $p < 0.001$). Collinearity diagnostics confirmed that multi-collinearity was not an issue, as all Variance Inflation Factors (VIF) fell well below the conservative ceiling of 10, and tolerance statistics remained safely above 0.01.

The regression metrics indicate that Knowledge Application Skills exert the most powerful influence on ODL effectiveness (beta = 0.479, $p < 0.001$), meaning that for every single-unit increase in knowledge application capacity, perceived ODL effectiveness expands by 0.479 units, holding all other variables constant. Time Management Skills also emerged as a statistically significant predictor ($\beta = 0.215$, $p = 0.003$). Interestingly, when evaluated simultaneously within the regression model, Communication Skills failed to reach statistical significance (beta = 0.092, $p = 0.257$).

DISCUSSION

This study examined the predictive relationship between key undergraduate learning sub-skills (knowledge application, communication, and time management) and the perceived effectiveness of Online Distance Learning (ODL) among final-year FSPPP undergraduates at UiTM Seremban. The empirical data show that ODL environments are highly compatible with knowledge application and time management functions. However, the model reveals that communication skills are not significant predictors of online learning effectiveness, exposing clear structural limits within online educational delivery.

The high mean scores for technical adaptability, platform usage, and generalized digital problem-solving match the findings of Dhawan (2020) and Gamage et al. (2023), confirming that remote platforms promote digital fluency, adaptive flexibility, and self-directed study traits. The high average score achieved for technical problem management indicates that university students have built strong functional resilience and digital troubleshooting skills out of operational necessity—a skill set that enhances post-graduation professional value within modern corporate ecosystems.

However, the empirical findings reveal an critical developmental disconnect regarding communication skills. While ODL platforms accommodate written interactions through asynchronous forums and structural chats, they severely reduce opportunities for spontaneous spoken exchanges, real-time public debates, and interpretation of vital non-verbal cues (Adedoyin & Soykan, 2020). This dynamic explains the regression results: unlike knowledge application and time management, communication skills did not significantly predict ODL success.

These findings emphasize the urgent need for pedagogical modifications that deliberately integrate structured synchronous elements—such as live presentations, virtual policy debates, and group problem-solving workshops—to safeguard interpersonal competencies. Furthermore, the persistent undergraduate preference for

traditional face-to-face environments highlights that full ODL lacks the natural social friction needed for collaborative group work. This supports the argument that blended or hybrid models offer a more sustainable path forward for policy and administrative training tracks where teamwork and interactive negotiation are core curriculum elements.

CONCLUSION

In conclusion, the empirical findings indicate that ODL serves as an effective learning method for final-year FSPPP students at UiTM Seremban, specifically supporting automated knowledge application pathways and self-regulated time management systems. The structural nature of ODL successfully aligns with cognitive and self-regulatory learning processes, allowing students to develop independent study habits that are valuable for postgraduate pursuits and employment settings.

Conversely, the development of holistic communication skills is markedly less effective in isolated ODL setups. Despite the widespread use of written discussion forums, the lack of immediate verbal interaction remains a distinct limitation. Given that group negotiation, oral persuasion, and debate form the pedagogical core of administrative science programs, this represents a significant challenge for online-only formats.

Based on these outcomes, higher education institutions should implement more synchronous, collaborative learning elements within online courses, including live group presentations and interactive workshops. Blended learning frameworks should be prioritized to provide flexibility while preserving the social interaction needed to build communication skills. While this case study offers clear empirical evidence, its scope is limited to a single faculty using a cross-sectional approach. Future research should include larger, multi-campus samples and longitudinal designs to track how online delivery impacts long-term skill retention. Ultimately, while ODL remains a viable educational tool, ongoing pedagogical adaptations are necessary to ensure the balanced development of all student learning competencies.

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