# Swimming with the "Current": An Access-Informed Exploration of Envisioned Blended Learning at Tishreen University in Syria

**Dima Moain Dayoub**
**Associate professor of Educational Technology and ELT, The Higher Institute of Languages, Tishreen University, Syria**
ddima@hotmail.com

**Abstract**: Today, Tishreen university in Syria is translating its emergency response to crises-prompted disruptions into an intentional blended learning model through the official inception of *Moodle*. The present study adopts a holistic approach to explore faculty's perceptions of this transition at the Higher Institute of languages. To this end, four pilot interviews, the researcher's lived experience and the literature were used to design a web-based questionnaire. The questionnaire, completed by 23 teachers, elicited comparative reflections on teachers' access to *Moodle* as opposed to their other digitally mediated informal experiences of access, mainly to *YouTube*. Analysis was largely informed by the digital divide layers: physical-material, instrumental (tool-related), substantial (content-related), motivational, and usage-related. The article argues that re-thinking academic structure and infrastructure is irreducibly grounded in formal-informal networked experiences. Although access divide models have evolved vertically into layers or generations, the current study suggests the need for a horizontal expansion. Firstly, current access divide models do not lucidly reflect distinctions between formal and informal access. Since the digital landscape we increasingly inhabit is not monthlithic in terms of its affordances, structure, modality or genre of information; formal and informal access outcomes are necessarily diverse, yet dynamically intersecting. Secondly, despite accentuating the role of digital proficiency theoretically, access research only tangentially differentiates between the consumption versus production dimensions of substantial content-related skills access. Questions regarding the impact of access on effective blended learning models in general and on academic knowledge in particular, emerge from the data. It is hoped that future research will fathom these distinctions and the relationships between them more profoundly to empower similar initiatives of transition. This is particularly impactful in a country like Syria where an added political-economic affordability layer engulfs the existing physical divide, resulting in mounting boundaries to digital academic and professional knowledge.

**Keywords**: informal digital platforms, blended learning, access, contemporary digital proficiency, academic knowledge, adoption, *Moodle*, *YouTube*

## 1. Contextual background

Present-day universities world-wide are responding to the profound impact of fast-paced radical changes (Remenyi, Grant and Singh, 2020); the Syrian universities are no exception. Oscillating between the urge for mobilization to counteract pandemic-prompted and conflict-inflicted crises and the need for innovation to keep up with substantial technological strides; long-standing higher education structures have become increasingly precarious.

During the initial phase of Covid-19-induced campus closure at Tishreen university (14 March-31 May 2020), the concern was to maintain a sense of learning continuity and to ensure the circulation of course-related material required for exams. Endeavours were remedial, fragmented, self-initiated and disorganized. However, since the resumption of regular onsite meetings, the learning management system *Moodle* has been launched with the expectation of a more systematic and more planned transition to digital delivery. Training in *Moodle* use has been provided to representatives from all departments. That is, the lockdown underscored the need to revisit the notion of knowledge management (KM) in general, and academic knowledge management in particular. To address the emerging KM gaps, the university recognised the importance of structuring and mediating digital knowledge delivery. The conclusion that technology is an enabler of transparency and effectiveness in KM processes materialised in integrating *Moodle*.

The institutionalisation of *Moodle* is an unprecedented step in a context where the concept of distance learning has, to date, been simply synonymous with no-obligation-to-attend. Nearly two decades ago, the Syrian higher education context witnessed the pioneering establishment of the Syrian Virtual University, an accredited fully-fledged completely virtual university. Since then until the 2020 pandemic disruptions however, no other versions of formal online modality have emerged. Online and traditional instructional models existed in mutual exclusiveness, as dichotomies that were only informally blurred. The introduction of *Moodle* has given rise to a



Reference this paper: Dayoub, D. M., 2022. Swimming with the "Current": An Access-Informed Exploration of Envisioned Blended Learning at Tishreen University in Syria. *The Electronic Journal of Knowledge Management,* 20(1), pp. 36-51, available online at www.ejkm.com

number of questions. Firstly, given the abundance of open-source high-quality digital resources, what would make *Moodle* content, as opposed to other types of digital content, a competing or compelling option? Secondly, given the currently frail national infrastructure, i.e. prolonged power cuts and costly Internet packages, would *Moodle* be more accessible or preferred over other platforms, especially since its use is neither a marked nor a compulsory activity? Thirdly, with mounting teachers' workload, what are the envisioned dynamics of meaningful interaction online? These reflections, based on lived experience, sparked this research interest. Change was inevitable; translating change into a meaningful sustainable transformation is the ultimate objective.

Ideally, blended learning technologies can be collaborative spaces to model processes of knowledge construction through filtering, organizing, accessing, co-creating and re-generating information. This research proposes that for a competent KM model to be implemented, blended learning infrastructures should further reflect the interconnectedness of individually acquired (informal) and collectively harnessed (organisational) forms of knowledge. In digital domains where information, misinformation and knowledge opportunities abound outside the formal boundaries of institutions, KM takes on new dimensions where knowledge is seen as the outcome of cross-platform engagement. Only in this sense can a blended learning model become an empowering knowledge management system with the capacity to unlock intellectual capital potential more fully and to ensure sustainable development more profoundly.

### 1.1 The research questions and significance

Given the above realities, the main research question of the present study is: what are teachers' perceptions of the ideal blended learning technologies at Tishreen university?

This broad research question subsumes the following sub-questions:

1. What are teachers' experiences of motivational access to *Moodle* and *YouTube*? Specifically, what are their perceptions of digital content on these platforms in terms of multimodality, adaptability and interactivity?
2. What are teachers' perceptions of physical access to either platform?
3. What are teachers' perceptions of skills access to either platform? What are the digital competencies they demonstrate or lack?

To answer these questions, the present study elicits context-sensitive comparative reflections on access to formal and informal platforms. Juxtaposing *Moodle* and *YouTube* is not meant to rule out the potential of other digital forums: the teachers were openly invited to suggest any platforms they deemed integral to successful blended learning. The aim is to promote a viable version of blended higher education in Syria – one that does not steer away from, but keeps pace with, emerging notions of learning and other digitally mediated forms of knowledge. The magnitude of informal learning opportunities makes it impossible to disentangle emerging and established forms of learning or to demarcate lifelong and "life-wide" knowledge acquisition (Meyers, Erickson and Small, 2013, p. 356).

## 2. Theoretical Framework

Although the literature is replete with research on utilizing informal digital venues in higher education, the bulk of existing studies is mainly concerned with learners' experiences. What remains under-researched is the impact of informal learning on formal instructional design (Czerkawski, 2016, p. 144). This gap is underscored with paticular reference to the new generation. It is echoed in the call to "activate proposals for reducing the distance between formal educational environments and the extremely active 'digital lives' of teens in social media and online environments" (Scolari, et al., 2018, p. 801). Even when the interplay of informal and formal digital participation has recently become the focus of growing academic interest, limited attention is given to university teachers' experiences. Secondly, there is a dearth of adoption studies "comparing a variety of digital tools in higher education" (Martin, et al., 2020, p.73). The general tendency is to evaluate the potential of digital media platforms in isolation from each other, as self-contained tools. This study diverts from this trend and aims to respond to the call for holistic research: providing insight into "the strengths and weaknesses" of novel technologies in the course of their integration into formal conventional environments (Kaur, 2013, p. 617). Finally, the present study offers a new approach to understanding adoption as access-informed and argues that a more refined expansion of access layers is complex, yet crucial to fathoming the uptake of educational technologies.

### 2.1 The notion of access

Despite the early polarization of the digital divide in terms of the most tangible hindrance, the physical access, there is growing scholarly awareness that the divide is much "deeper." It is an "aggregate of many divides, with local barriers to be overcome" (Chakravorti, 2021). This recognition is articulated in terms of "generations" (Hargittai, 2003; Van Dijk, 2017; Van Deursen and Van Dijk, 2019) as contemporary discourse on the digital divide increasingly captures multi-layered disparities.

The conceptualisation of access has transcended the binary physical divide to also include skills (Hargittai, 2003), motivational and usage access (Van Dijk, 2017). The role of motivation – social, cultural, and psychological -- in access and acceptance is pronounced in a number of theories. According to the Technology Acceptance Model (TAM), the initial and continued intention to accept technology is driven by motivation-related determinants of perceived ease of use and perceived usefulness (Venkatesh, 2000; Venkatesh and Davis, 2000). Computer playfulness (intrinsic motivation) and computer anxiety are anchors of the intention to accept technology. Perceived usefulness is also "an instrumental belief that is conceptually similar to extrinsic motivation and is a cognition (as opposed to emotion) regarding the benefits of using a system" (Venkatesh and Bala, 2008, pp. 278,281). Similarly, research into Gratification Theory has highlighted the centrality of motivational access, including access to information or "content gratification" -- gratification attained through engagement with data conveyed via a medium (Balakrishnan and Griffiths, 2017, p. 366).

The second layer of skills access is divided into operational (instrumental or medium-related) and substantial (content-related). Digital skills are classified into discipline and content knowledge, personal-ethical (maintaining personal safety and data security in the digital realm) and personal-professional (including information literacy and the disposition to engage in development to adapt to the ever-changing emerging technologies) (Falloon., pp. 2460-2462). Although substantial skills encompass "information retrieval, communication and content creation" (Van Dijk, 2017, pp. 6-7) with an emphasis on the "prosumer" (producer and consumer) role as a key transmedia skill (Scolari, et al., 2018, p. 810), access divide studies that address the consumption-production distinction are limited. More scholarly attention is directed to which type of proficiency predominates: content-related or medium-related. For example, the "techno optimist" approach to closing access gaps is criticised for falling short of distinguishing shallow from fruitful engagement in the digital realm (Helsper, 2021, p. 74). Research on young learners also warns that the prevalent pre-occupation with developing technical skills at the expense of "critical or evaluation aspects of digital skills" is counterproductive. Conversely, fostering information skills among young people is associated with positive outcomes (Livingstone, Mascheroni and Stoilova, 2021, p. 22). Similarly, in the field of teacher education, calls for a shift from the "overly technical" digital skills to contemporary digital proficiency have proliferated (Falloon, 2020, p. 2451). While the above concerns are valid and impactful, they do not present a complete refined picture of digital skills. Importantly, a holistic approach to digital proficiency should bring to the fore the importance of the formal and informal spaces in which competencies are acquired or applied by considering them "components of a knowledge ecosystem" (Meyers, Erickson and Small, 2013, p. 357).

Usage access is the "last stage of access and its primary goal." It refers to the breadth and depth of online activities and how active or creative usage is. This type of access includes "information seeking, news, personal development (education), leisure, commerce and transactions, social interaction and networking, and gaming" (Van Dijk, 2017, p. 7-8). In other words, usage access may be considered as outcomes-based.

This fuller picture of access disparities should not, however, overshadow the profound impact of the first-generation physical access. The material divide is a renewed challenge due to the rapid pace of advancements in technological devices and their constantly upgraded and diverse technical capacities. Specifically, the material divide comprises (1) disparities in device opportunities, or replacement of a device with others that have different technical capabilities, (2) differences in the "diversity of devices and peripherals" and (3) differences in the "maintenance costs" of devices and peripherals such as subscriptions (Van Deursen and Van Dijk, 2019, pp. 357, 371).

To highlight the notion of access further, some paradoxes of access to *YouTube* and *Moodle* have been identified in the literature and will be outlined in what follows, threaded with some contextual reflections.

 

## 2.2 Access paradoxes

### *2.2.1 Paradoxes of physical access versus multimodality and open access versus credibility*

The pivotal role of *YouTube* in informal and non-formal (higher) education has recently attracted growing attention (Dughera, Bordignon and Azzara, 2021; Helsper, 2021; Maynard, 2021). Additionally, the surge of "*YouTube* scholarship" – published academic articles related to *YouTube* – as early as 2011 (Snelson, 2011, pp. 59-60) and the emergence of terms such as "edutubers" or "creators of educational content" (Dughera, Bordignon and Azzara, 2021 p. 3) reflect the intersection of *YouTube* with academia in a more formal sense.

The importance of *YouTube*'s multimodal content can best be understood in a contextual light: visualization is marginal and animation of complex and abstract concepts is largely a mental activity in Syrian universities where the predominant style of instruction is theoretical and highly textual. Arguably, students' gravitation towards the audiovisual content of edutubers is a compensatory practice that flags gaps in formal learning settings (Dughera, Bordignon and Azzara, 2021, p. 7). *YouTube* videos offer engaging authentic resources for users to reinforce understanding of an academic topic, elaborate on existing content knowledge (Kim and Kim, 2011; Fleck, 2014) and improve memory recall in relation to course material (Fleck, 2014, p. 33). The role of the mnemonic power of images in fostering learning and recall through activating verbal-nonverbal mental associations, is one of the basic tenets of Dual Coding Theory (Paivio, 1986). Informally, instructional *YouTube* videos have "mass appeal" for promoting self-development and the acquisition of new skills and knowledge: the most academic such as "hard-core coding" or the most casual such as "professional make-up" (Helsper, 2021, p. 71). In addition to enabling access to information, the forum promotes a participatory culture of content creation and sharing, being a "dedicated video-sharing application" (Balakrishnan and Griffiths, 2017, p. 363). Another strand of debate, however, highlights the power relations underpinning *YouTube*'s seemingly emancipatory structure (Caplan and Gillspie, 2020). While *YouTube* content is intensely audio-visual, other platforms, including *Moodle*, allow the upload of learning resources in their multiple modalities (audio, visual, text-based) and support the import of videos from external sites. Research on *Moodle* has shown that "interspersing course materials with related *YouTube* videos, graphic interfaces and website links" was conducive to out-of-class active engagement and exploration of learning materials (Amandu, Muliira and Fronda, 2013, p.681).

Despite the advantages, digital divide considerations shape the extent of incorporating media-rich materials into formal learning experiences. Inequitable access is reportedly related to the affordability of modern digital resources (Van Deursen and Van Dijk, 2019; Mpungose, 2020). The provision of on-campus connected computers might facilitate physical access, but it compromises the rationale of overcoming geographical boundaries and the anytime-anywhere access motto upheld by providers of online learning. Remote physical access is especially important in the case of campus closures and emergency immobilisation. At the other end of the device continuum, mobile-only access is described as a "second-class" compromised experience due to the restricted functionality and usability of mobile devices (Napoli and Opar, 2014, p.330). Indeed, mobile devices are deemed a "valuable complement in a broader device ecosystem" (Newlands and Lutz, 2021, p.1355). This contention is endorsed in other studies stressing that cross-gadget engagement is vital for higher-quality participation and diverse outcomes-focused learning experiences. Smart phones and tablets afford continuous communication, portability, second-screening, video-streaming, entertainment and compatibility; desktop and laptop computers support deeper information seeking and "immersive Internet work" (Van Deursen and Van Dijk, 2019, pp. 357-371, Newlands and Lutz, 2021, p.1355).

Another significant paradox of access to academic knowledge lies in Open Access Movements. Open-access journals have diminished the material access inequalities typical of the more established academic publications. Cost is considered "an inhibitor to knowledge creation and development." On the other hand, the movement was inundated with predatory journals (those that do not conform to academic standards) and counterfeit journals, tempting career academics who are under pressure to publish (Singh and Remenyi, 2016, pp. 50-54).

### *2.2.2 Paradoxes of interaction versus workload on Moodle, and interaction versus audience on YouTube*

In order to approximate blended learning dynamism to in-person learning, it is proposed that *Moodle* should not be reduced to a depository of static information but rather be linked to familiar social media platforms such as *YouTube*, *Zoom* and *FaceBook*, among others (Mpungose, 2020). Other scholars argue that *Moodle* is intrinsically participatory: "the organization of *Moodle* makes prominent the learning task, not the learning tools" (Cole and Foster, 2008, p. 5). Cole and Foster further contend that *Moodle* does not support a linear transmission of information but rather provides users with the tools necessary for discussion, exchange of

artefacts and the construction of knowledge. Despite being inherently interactive, the extent of deploying its collaborative functions vary widely. In some contexts, *Moodle* was approached as a "repository platform" for exchanging course-related material such as lecture slides while its interactive features such as chat and forums were not fully exploited (El-Bahsh and Daoud, 2016, p. 5). In others, *Moodle* has proved effective in fostering a collaborative culture and heightened participation pre- and post-class times (Amandu, Muliira and Fronda, 2013, p. 683).

*Moodle* at Tishreen university runs in parallel with the regular in-person delivery mode, not as a substitute for some modules or parts of them. Additionally, the economic consequences of Coronavirus in a country rising from a 10-year conflict, the economic sanctions imposed on Syria and the accompanying wave of internal and external brain drain -- all have placed considerable pressure on many academics to work overtime. Given the realities of teachers' workload, perceptions of out-of-class interaction is a question worth exploring. To increase the uptake of *Moodle* by faculty members, some studies propose exerting "positive social influence" by making *Moodle* use a pre-requisite for academic promotion or contract renewal (Saleem, Al-Saqri and Ahmad, 2016, p. 22). Arguably, employment rewards (or penalties) seem to align with instrumental motivation and do not account for continued use after promotion. Counter to this proposal, it is concluded that faculty "re-appointment, promotion, and tenure" played the least significant part in technology adoption (Martin, et al., 2020, p. 81). It is further contended that technological innovations should serve to "augment the role of the teacher" and free time to enhance their engagement in tasks that require human attributes such as personalised feedback and student support. An alternative to offering employment-related incentives as an accelerator of adoption is "reducing on-ground time" and modelling blended learning through faculty development programmes (Dziuban, et al., 2018, pp. 3,8). Along the same lines and according to TAM, it is the social processes of internalisation and identification, rather than compliance, that make the subjective norm a positive mediator of adoption. Internalisation is the assimilation of a referent's beliefs into one's personal system; identification is perceived elevation of social status within a referent group for matching their expectations (Venkatesh and Bala, 2008, p. 277).

In so far as *YouTube* is concerned, the forum is recognised for offering "social gratification" through engagement: liking, sharing, commenting, uploading "original and/or repeated content." Further, social gratification is seen to be intimately linked with both the activities of content creation and content viewing (Balakrishnan and Griffiths, 2017, pp. 366,386). Interaction on *YouTube* is also described in terms of maintaining "managed connectedness" rather than "managed distance" between content makers and subscribers (Hou, 2019: 551). Like *FaceBook* and other open social media forums, *YouTube* attracts "known and unknown" -- targeted and unintended -- audience, which is a double-edged feature. On one hand, open platforms might compromise or inhibit self-disclosure. Unlike formal forums that require the use of genuine identities for registration, informal open platforms are more prone to the use of pseudonyms which are sometimes misused for cyber-bullying and harassment. This has been found to be an interaction deterrent for faculty members deploying social networks to support learning (Ghounani, 2020, p.35). On the other hand, posting publicly to a broader global audience is a powerful branding tool as users tend to "manifest themselves online to emphasise their skills and proficiency, hence attracting contacts, contracts, customers, or employers" (Van Dijck, 2013, p. 203). Beyond branding, content creation can also simply be a "passionate activity" or "an enhanced function of user engagement" promoting not only social gratification but also the more intrinsic "personal gratification" (Balakrishnan and Griffiths, 2017, p. 373).

### *2.2.3 The paradox of customization versus cross-cultural learning*

Irrespective of the platform, the relevance of the technology-supported content to students' academic needs is frequently given prominence in previous research. Perceived pedagogical pertinence is reported to be the main drive for using *Moodle* (El-Bash and Daoud, 2016; Al-Kindi and Al-Suqri, 2017; Deepak, 2017). According to Deepak, *Moodle* features that enable the delivery of course material, obtaining feedback, creating quizzes and workshops ranked as the most valuable by instructors (2017, p.128). In the same vein, clear progression towards meeting course objectives was one of the decisive qualities that defined an excellent rating of a blended learning experience (Dziuban, et al., 2018, p.11). Similarly, only those *YouTube* videos that sparked course-related discussions and offered edutainment rather than pure entertainment were regarded as meaningful (Fleck, et al., 2014, p.32). However, the added value of *YouTube* content is its capacity to develop cross-cultural competence through nurturing cultural sensitivity and embracing multicultural and linguistic diversity. As such, it intensifies the sense of belonging to a wider community (Kim and Kim, 2021, p.11) and facilitates establishing connections with external experts (Fleck, et al., 2014, p.33).

 

## 3. Methodology

This small-scale study is qualitative interpretive: it conducted from an emic perspective, as the researcher is an insider, a faculty member and head of department, experiencing the same access conditions as the participants. In other words, interpretations were contextualised further through ethnographic observations, the lived experience of the researcher and informal conversations with colleagues at the department.

### 3.1 The research context

The study takes place at the Higher Institute of Languages at Tishreen University, one of Syria's seven public universities. Specifically, the study is set in the English Language Teaching (ELT) department. The department runs two Masters programmes and is responsible for the provision of English language tuition to all the university's faculties. Five professors teach at two MA programmes open to limited numbers of top graduates; 12 permanently employed lecturers teach English language across all the universities' faculties. To meet the demand for teaching, current MA research students and temporary teaching staff are allocated hourly English language teaching assignments when needed. Despite the variation in contracts, the adoption of *Moodle* was a general expectation. All the participants will be referred to as teachers hereafter.

### 3.2 Data collection

At the outset and in line with the exploratory nature of my enquiry, interview questions were distributed through the department's *WhatsApp* groups, originally created by the dean. The target participants were permanent staff and MA student-teachers at the ELT department. Their total number was 36 at the time of the study. Only four responses were returned. Piloting the interview resulted in altering the data collection tool itself rather than modifying the interview questions. A questionnaire seemed to reduce the teachers' burden in two ways. Firstly, a set of multiple-choice/predetermined categories served as prompts leading to the option "other." Closed questions similarly functioned as a brainstorming exercise leading to the final open-ended question where participants were invited to suggest their vision of an ideal formal blended learning version at Tishreen university. Secondly, participants could access a web-based questionnaire easier than typing responses to the interview using their mobile devices: reliance on mobile devices was notably higher in view of the instability of electricity. The link to the questionnaire created as a *Google* document was posted on the same groups: 23 out of the target 32 teachers completed the questionnaire (the four teachers who answered the interview were excluded from completing the questionnaire). Converting to a web-based questionnaire increased the response rate and yielded sufficient qualitative data. The questionnaire was organised into three sections: the first revolves around *YouTube* use and perceptions of its content; the second around *Moodle* use and perceptions of its content. The final sections invited teachers to suggest their perceptions of the ideal blended learning tools for higher education in Syria.

### 3.3 Data analysis

The study employed the framework approach to thematic analysis: creating a matrix that synthesizes core themes and subthemes. This approach is believed to take thematic analysis a step further by being more transparent in describing and analysing participants' views and linking the various stages of analysis (Smith and Firth, 2011). A theme is defined as an analyst-generated category that draws on the codes discerned in the transcript and shows close relevance to the research questions (Bryman, 2012, pp. 579-580). The themes were identified using both an "inductive approach" and a "priori approach". In the first, themes are derived from the data; in the latter, from the researcher's prior knowledge including their personal experiences and values, the existing literature and common-sense local constructs (Ryan and Bernard, 2003, p. 88). The data was analysed in terms of the access layers discussed in section 2.1. Under every access theme, *Moodle* was assigned one row, *YouTube* another, and other forums a third. The columns were divided into positive and negative comments and initially included verbatim extracts of participants' words.

## 4. Findings and discussion

### 4.1 Perceived characteristics of the *YouTube* and *Moodle* content

To answer the first research sub-question, which is related to motivational access as shaped by attributes of the content of the forums under study, the sub-themes of multimodality, adaptability and interaction were investigated.

### *4.1.1 Multimodality*

Teachers emphasised that the main perceived advantage of *YouTube* content over *Moodle* was compensatory: bridging gaps in the Syrian higher education curricula. High-quality academic videos, expert-generated audiovisual content for students in need of discipline-specific knowledge (e.g. medical animations) and authentic international and cultural videos – are all examples of content provided by *YouTube* that would not be accessible otherwise. This is plausible given that the multimodality of *YouTube* content is reportedly conducive to high levels of content gratification (Balakrishnan and Griffiths, 2017, p. 366). *Moodle* was seen on par with *YouTube* in terms of enhancing "*neglected areas*" of teaching: "*Both are modern and effective ways to enhance neglected areas when teaching the language. They may be used to enhance interaction, engagement, interest and many other aspects*." Audio-visual content was also underlined as more inclusive of students with visual learning styles: "*Audio-visual materials are good learning materials, par[ticularly] for learners with audio-visual memory. A good blend would be to provide links to relevant YouTube videos inside the Moodle app*." These excerpts show appreciation of how digital resources can be effectively utilised to resolve identified knowledge and information gaps, which is an aspect of information literacy (Meyer, Erickson and Small, 2013, p.358).

Another important finding was that due to physical access constraints, teachers resorted to reduced modalities (e.g. audio-only narrated explanations with supporting pdf files and static visuals): "*In my opinion, uploading recording audios and aids is enough in our situation since some students and teachers don't have good interent access… If teachers upload PDF files with a record explaining the files in addition to some pictures if needed, the students will be able to understand.*" In contexts with unreliable digital infrastructure, the provision of both high-tech and low-tech alternatives is considered an inclusive practice (UNICEF, 2021, pp. 14-15). Digital literacy involves decision making about what technologies to use or not to use to attain positive outcomes for oneself and others (Helsper, 2021, p. 77). As such, self-tailoring resources to address contextual limitations emerged as another example of digital literacy.

Overall, the data contained evidence of "curriculum competency," or the discipline and content knowledge defined as the ability to make "informed and beneficial decisions about digital resource use" (Falloon, 2020, p. 2460). This was mostly manifested in so far as information consumption is concerned. Although fine-tuning online resources to local technological capacity is an important re-production skill, content-related skills in the data were largely consumption-related. Making *Moodle* materials engaging was mainly seen through embedding ready-made videos: only one teacher highlighted the need to create a *YouTube* channel for uploading academic content -- "*full lectures*" -- which would especially benefit students who struggle to physically attend. This did not, however, resonate with the general attitude: only 8.7% of (n=2 out of 23) teachers reported posting, as opposed to accessing, content on *YouTube*. Annual reports of academic research at the ELT department similarly point towards limited publications of academic articles. It is likely that accessing the digital domain through mobile devices has played a role in compromising academic knowledge production. Mobile devices are found to be specifically restraining for "data-intensive tasks" and inputting information (Newlands and Lutz, 2021, p. 1355), which are essential to academic research.

One teacher pronounced the need for modalities of information other than video such as "*exam simulations, worksheets, and academic papers*;" re-directing the response to multi-faceted role of teachers, not only as content creators, but also as content evaluators and researchers. Shifts and transitions in the topic in the course of a reply are significant indicators of themes (Ryan and Bernard, 2003, p.90). Videos were also de-prioritized as a non-academic genre of presentation: "*I don't think that videos are as academic as research papers*." Such data indicates a gapping divide between the modalities used to create academic knowledge and the more current multimodal presentations of other information. Academic content is expected to be static rather than animated, textual-visual rather than audiovisual. This disconnect is deepened in some scholarly debate contending that the pandemic-prompted move to flipped classroom delivery has led to unrealistic expectations of the role of an academic: "we act as content aggregator, not creator. Creation is done when we have our researcher hats on, not our teaching hats" (Kellermann, 2021). Other scholars call for more contemporary modalities of academic output: faculty-generated *YouTube* videos with metrics that are not related to revenue or watch-time, but rather to authenticity and passion. The major impact of such videos would be mobilizing academic knowledge and empowering casual learners (Maynard, 2021).

 

*4.1.2 Adaptability*

*Moodle* was seen as a mediating space where informal and formal learning venues intersect. Most teachers were aware of the forum's capacity to back up different genres of information, including audio-visual material. Content was, moreover, perceived as more attuned to local needs. This was evident in teachers' use of the following phrases to describe potential *Moodle* content: selected "*purposefully to relate to students' needs*," "*topic related videos*," "*more effective as it is always relevant to our modules*," and "*relevant YouTube videos*." This lends support to the existing literature which gives precedence to curriculum-based content as an advantage of *Moodle* (Al-Kindi and Al-Suqri, 2017; Deepak, 2017; Dziuban, 2018). It may also be the case that after the initial emergency response that took on the form of scattered initiatives, there was a need for structured transitions. The perceived reliability of *Moodle* was reiterated using the comparative adjectives: "*more formal*," "*safe and more trusted*," "*more professional*," "*more academic*," and "*more specialized.*"

In a sense, *Moodle* was perceived as a middle ground for re-framing and re-appropriating the "most current, authentic, and diverse knowledge and skills" offered by informal platforms, thus narrowing the gap between two spheres (Czerkawski, 2016, p. 149). *Moodle*'s mediating role in scaffolding informal learning processes was pointed out in the data. The forum was perceived as a space for "*offering support and guidance for students involved in informal and individual learning processes*." In the digital realm where information and misinformation -- even at the academic level -- are easily accessible (Singh and Remenyi, 2016; Maynard, 2021; Kohler and Dietrich, 2021), the mediation of collective professional knowledge within a formal setting becomes central. Information retrieval or incidental learning "in the wild" (Reinhardt & Sykes, 2012, p. 38) is labor-intensive; however, in the fast-changing landscape of higher education, formal content knowledge is no longer adequate: equipping students with higher-order skills is a requirement for future-proof employment. Teachers' views were in support of such collaboration as they maintained the importance of "*inviting students to share articles, videos or any material that they find of importance and initiating discussions about such materials*." As such, *Moodle* can become the space to collectively mediate sound academic practice and scaffold informal development.

*4.1.3 Interactivity*

*Moodle* is described by developers of Tishreen university video tutorials as inherently dynamic. The perceptions of all teachers in the MA programmes were analogous: *Moodle* afforded content such as "*interactive videos for students to engage with*," "*web-conferencing tools*," "*built-in forums*" for sharing and discussions, "*feedback*," "*live discussion sessions with instructors*." At the same time, *Moodle* was perceived as an appropriate platform to promote "*autonomy and creativity on the part of the students*" and to encourage some form of independent collaboration: "*students may have access to a discussion room to help them do group/pair work with or without instructor's supervision*." A less optimistic view was expressed by one teacher who actually used *Moodle* at an undergraduate level: "*No student interaction. Students only care about homework and materials for the exam. They don't want any extras even for enriching the subject*". This discrepancy is in line with the finding that collaborative digital tools were rated higher by faculty teaching postgraduates than by those teaching undergraduates (Martin, et al., 2020, p. 82). This is justifiable in view of the large numbers of students in some faculties (the overall number reaching 79203, as the university's website statistics reveal) and the extra workload implied in managing online interaction with students. One proposed solution was enhancing engagement on *Moodle* through assigning "*graded extracurricular activities*" while leaving interaction to face-to-face meetings. Indeed, the deep-seated exam-oriented mindset and fossilized culture of easy access to information can compromise the interactive potential of *Moodle*. Using *Moodle* was therefore viewed as a marginal activity.

As far as *YouTube* is concerned, there was consensus among teachers that *YouTube* is not a platform for meaningful social networking: no one opted the option "*to interact with others*" as a reason for using *YouTube*. This was attributed by one teacher to the fact that "*YouTube is accessible for all people. Teachers maybe overworking by answering hundreds of comments of people who are not their students.*" Paradoxically however, 65.2% (n= 15 out of 23) respondents selected the option "*YouTube strengthens my belonging to a wider/international community. "* It may be the case that interaction on *YouTube* is more content-centred than user-centred. The social information generated in comments might have been considered secondary to author-generated original content. It is also possible that being able to have cross-platform identities has made teachers inclined to associate certain tasks with certain platforms. Enhanced engagement through "multi-platform

representation" or "multiple media presences" is approached more synergistically in the literature and is facilitated by convenient access from mobile devices (Hou, 2019, p. 549).

To answer the second research sub-question regarding the impact of physical access on adoption, the data was searched for subthemes of affordance and material access.

## 4.2 Physical access

Physical access was reportedly hampered by prolonged power cuts, unreliable or costly Internet connection and lack of equipment. Asymmetrical access, described by one teacher as "*inability to make the learning platform available to students who cannot afford having the technology needed*," was also brought up as an aspect of physical access disparity. In addition to issues of connectivity, the monetized nature of some *YouTube* videos and cost implications of access were highlighted in the data: "*some academic YouTube videos take a lot of time to explain something which one can read in less than one minute. For example, I watched a video about the glottal stop sound, which takes 9 minutes, but then I read the script in less than one min and both gave me the same benefit*." Unnecessarily long videos may be a source of higher revenue, although educational value is attached to shorter bite-sized segmented videos as they reduce the working memory cognitive load (Clark and Mayer, 2008, p.184). Resorting to the textual version of the video demonstrates "awareness of the value of traditional tools in conjunction with networked media and social networks", which is an important digital literacy (Koltay, 2011, p. 216). Another reference to the monetized nature of *YouTube* underlined that original updated content is sometimes copyrighted and not open-source: "*YouTube needs money for some videos. Some materials are outdated in terms of information*."

On the other hand, in a context with a destroyed power infrastructure, access from mobile phone devices has become the norm: mobile device batteries are more durable and users can connect using pre-paid Internet data bundles. Previous research has shown that mobile device users are more in favour of accessing applications such as *YouTube* than Web-based *Moodle*. The application's adaptability makes informal learning experiences, including the download of content, seamless (Al-Kindi and Al-Suqri, 2017, pp.79, 82). The compatibility of other high-tech content with the device programmes remains a cause of concern for students with older mobile devices. This brings the discussion back to the role of traditional physical resources and "low–tech or no-tech modalities" such as printed textbooks in attaining equitable blended learning (e.g. Mpungose, 2021; UNICEF, 2021) which, at least partly, explains Syrian students' inclination to buy lecture notes despite their availability in digital formats. By doing so, they take advantage of "peripheral diversity" (printers in this case) even if printers are not privately owned. Printed resources are accessible regardless of electricity and connectivity and are, therefore, more trusted. This conclusion validates the significance of the "device opportunity" and "device and peripheral diversity" aspects of the material divide. It also corroborates the finding that relying on mobile devices only compromises potential participation in versatile outcomes-based digital activities (Van Deursen and Van Dijk, 2019, pp. 355, 357, 370).

To answer the third research sub-question, the data was analysed in search for the skills that teachers showed or lacked and their impact on adoption. The study does not claim measuring the complex construct of digital proficiency of teachers. The participants were not asked to rate their skills, so the confidence bias (Helsper, 2021, p.78) was largely eliminated. Instead, implicit references to skills surfaced in the responses, as will be next discussed.

## 4.3 Skills access

### *4.3.1 Operational (medium-related) access*

While all respondents reportedly used *YouTub*e, only 26.1% (no= 6 out of 23) used *Moodle*. Although *Moodle* at Tishreen university is relatively in the early phases of adoption, usernames were activated 3 months prior to the study. Because "a non-event can also be data" (Remenyi, 2012, p. 34), teachers were asked to choose or add their reasons for abandoning *Moodle*. One of the most salient challenges was related to operational or tool-related access, namely the perceived need for training and navigational issues, as figure 1 illustrates.

 

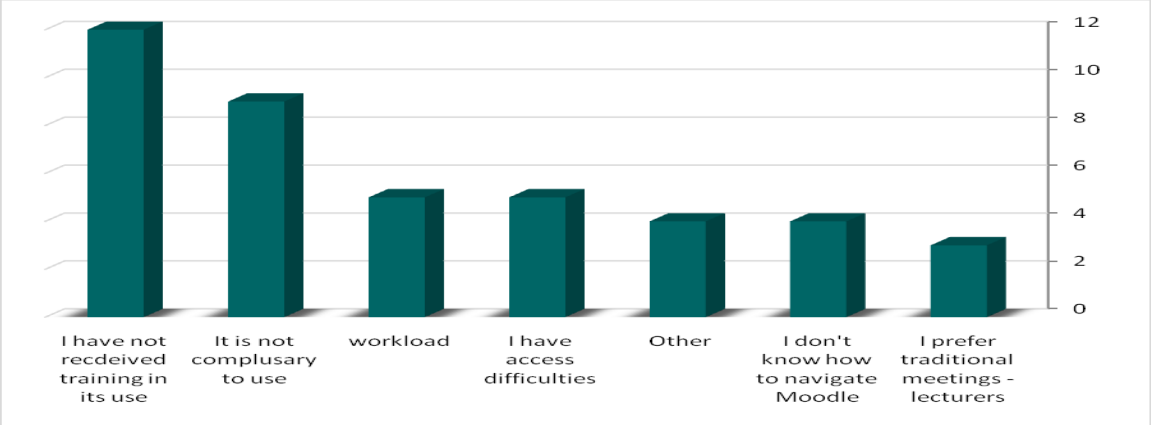


**Figure 1:** *Moodle* use: perceived challenges

These obstacles are related to *control* beliefs: perceived computer self-efficacy or *control* beliefs about individual ability to use a system, and perceptions of external control or "facilitating conditions" such as beliefs about organisational resources and support structure (Venkatesh and Bala, 2008, p. 278). Under "other," navigational issues were re-phrased as invisibility of *Moodle* to search engines. As one teacher elaborated, *Moodle* is embedded into the university's website whose interface was not user-friendly and was undergoing upgrade. This made *Moodle* hard to locate and created the impression that it was equally unwieldy.

Perceptions and actual use yielded different descriptions of navigation experiences as those who actually experimented with the platform found it "*easy to navigate but time-consuming*." Evidence from TAM research indicates that even with hands-on experience, perceived self-efficacy and facilitating conditions remain strong determinants of system acceptance that are anchored to general beliefs. (Venkatesh, 2000, pp. 357, 360). This might explain this disparity as the beliefs of teachers with prior experience are likely to have accumulated into positive perceptions of self-efficacy. Video tutorials modelling *Moodle* functions were created by the university's IT professionals. Making them available to all staff might mitigate unfamiliarity and increase teachers' confidence, i.e. alter perceived self-efficacy early in implementation. Other factors for abandoning *Moodle* included voluntariness of use, workload and preference for traditional styles. Physical access difficulties and occasional access difficulties were added as comments. The fact that non-mandatory use was opted by 9 out of 23 participants also supports TAM2 finding that the subjective norm has no influence on intended usage in voluntary contexts (Venkatesh and Davis, 2000, p. 198).

Finally, despite abandoning *Moodle*, most teachers were aware of its potential and the learning opportunities it can create, as discussed previously. This supports the scholarly debate that "knowledge, access, and skills are not identical" (Helsper, 2021, p. 78).

#### *4.3.2 Substantial (content-related) access*

Provided with a multiple-choice question gleaned from the literature, the participants were asked to select descriptions of *YouTube* content. Figure 2 sums up the responses.

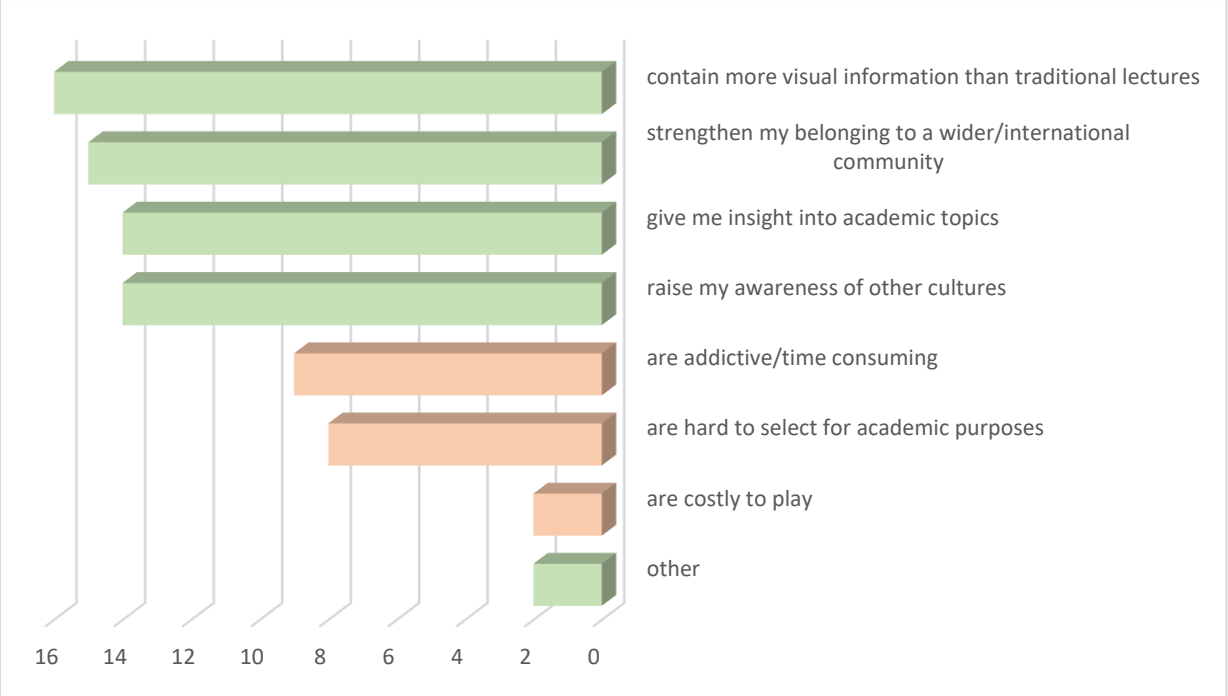


**Figure 2:** Perceived attributes of *YouTube* videos

In the "other" category, two teachers who chose the option "*YouTube videos are hard to select for academic purposes*" further explained that such videos "*maybe misleading because the content is not always true, authentic, or trusted*," and that they "*aren't always reliable. They may not be provided by experts*." The algorithms underpinning *YouTube* were also flagged for diverting users from their learning intentions, consolidating thereby the image of *YouTube* as an entertainment, rather than an educational, tool. Following the continuous streaming of suggestions made by *YouTube*, the user might end up watching irrelevant content, as one teacher explained: "*I think YouTube can be too distracting because it's mostly linked to entertainment purposes in the minds of most users. There is always the risk of heading to YouTube for learning purposes and then going down a rabbit hole of suggested videos that are more appealing to users*. These reflections exemplify an array of substantial skills including information literacy and the identification of "negative digitally-mediated behaviour" such as addiction, the latter is a crucial personal-ethical aspect of contemporary digital competencies (Falloon, 2020, p. 2460). Indeed, *YouTube*'s evolving tools such as the recommendation filtering algorithm for suggesting content and the creation of channels do not simply re-define the platform technologically speaking, but rather reshape its users' interactions and practices within the platform (Pires, Masanet and Scolari, 2021).

Substantial skills also relate to the previous discussion of content perceptions where awareness of the commercial nature of the platform surfaced. This revenue-driven nature of *YouTube* is well documented in recent literature: it is evident in "smoothing links between commercials and contents" (Hou, 2019, p. 538), in imposing strict copyright policy on original content and in demonetization of created content (Caplan and Gillspie, 2020). Not infrequently, the message "this content is not available in your country" pops up as reminder of the reality that access is a matter of economic and political considerations.

On the other hand, as figure 2 reveals, perceptions of the attributes of *YouTube* content as positive outweighed negative associations. Advantages were mainly academic and cultural knowledge-related. This was corroborated in the reported purposes for *YouTube* use (table 1).

**Table 1:** Reported reasons for using *YouTube*

| Reasons for using *YouTube* | number |
|---|---|
| To select audiovisual content for an academic lecture | 17 |
| To watch films or listen to songs (for entertainment only) | 17 |
| To deepen my understanding of an academic topic | 20 |
| To interact with others | 0 |
| Other: To search for new skills/ To educate myself about a topic | 2 |

 

In this question, respondents were invited to check as many options as applicable; therefore, responses were re-grouped as follows:

**Table 2:** Reasons for using *YouTube* classified

| Reasons for using *YouTube* | percentage | Number |
|---|---|---|
| For entertainment purposes only | 8.6% | 2 |
| For academic purposes only | 26.08% | 6 |
| For both entertainment and academic purposes | 65.21% | 15 |

Despite questioning the credibility, quality and distribution equity of some *YouTube* content and despite ruling out the importance of this platform as a destination for social networking, the majority of respondents reported utilizing *YouTube* content for either academic only purposes, or for academic and entertainment purposes alike. Only two found its value purely entertaining.

This suggests that the participants might have been able to distinguish the user-generated from the professionally-generated videos flooding open platforms. The user-generated content characteristic of open platforms nurtures higher-order skills such as information literacy and critical evaluation of message quality (Snelson 2011, p. 167); the professionally-generated content brings up issues of copyrighted content, commercialisation of *YouTube* and access equity. It is also likely that the participants' familiarity with informal technologies has matured long before the introduction of formal tools, which has made them more receptive to *YouTube*'s integration.

### 4.4 Preferred blended modality

The inclination to favour the incorporation of *YouTube* into a blended learning model either partially or completely was pronounced in the responses to the concluding question inviting participants to propose their own preferred blend of digital tools. This is summarized in table 3.

**Table 3:** Teachers' preferences regarding formal blended learning technologies

| Preferred Formal Blended Learning platform | percentage | number |
|---|---|---|
| Both *YouTube* and *Moodle* | 50% | 10 |
| *YouTube* | 20% | 4 |
| *Moodle* | 5% | 1 |
| Other forums | 5% (*Zoom*) | 1 |
| | 5% (ready online courses like *Coursera*) | 1 |
| No answer | 13.04% | 3 |
| Open ended-answer | 13.04% | 3 |

The open-ended answers all conveyed uncertainty: two teachers ruled out *YouTube* as an official instruction platform for its addictive, informal and non-interactive nature, but they were not sure about the effectiveness *Moodle* either. One of the two teachers who left this question unanswered rephrased in his own words that he preferred a combination, the other reiterated uncertainty about *Moodle* and similarly excluded *YouTube* as a formal educational space.

Research shows a positive association between technology use for general purposes and its use for instructional purposes (Soomro, et al., 2020, pp. 14-15). Since *YouTube* is available as a mobile application, increased exposure and experimentation time might have accelerated its acceptance. Because of the crises-wrecked electricity infrastructure, Syrians have found in online sites in general and *YouTube* in particular a substitute for the more traditional media sources of information and entertainment like television and radio. Social applications were also the way to connect geographically dispersed families. In short, on-ground immobility at times of crises might have led to virtual mobility. Such extensive engagement with informal digital environments is positively approached in the literature. It is argued that informal landscapes provide "an alternate venue for skills instruction" where skills are recontextualised to accord with learners' interests (Meyer and Erickson, 2013, p.359). The findings support this line of thought where some skills were the byproduct of engagement in informal digital participation.

## 5. Summary and conclusions

This article has employed an access-informed approach to understanding perceptions of blended learning delivery in Syria. In the present study, the notion of adoption is positioned in the broader context of access with an emphasis on the impact of digital competencies and informal-formal digital engagement. The study argues that while the existing access divide research delves deep into layers of access, it only tangentially touches on significant distinctions. The main contribution of this study lies in proposing a horizontal expansion of the digital divide layers to reflect formal/informal access and creation-related/consumption-related aspects of substantial skills. Systematic research is needed to pinpoint and elucidate the impact of these dimensions on contemporary models of higher education and blended learning.

In the context of the present research, physical access impediments did not seem to hinder the growth of content-related skills in relation to consumption. The data manifested instances of knowledge assembly competencies (Koltay, 2011, p. 216), awareness of the commercial nature of some videos, and evaluation of the currency, credibility, origin and originality of multimodal messages. Actually, some physical access obstacles have occasionally sharpened Syrian teachers' content-related skills. Not having the luxury of extensive navigation and immersive engagement has made teachers more adept at critically seeking and evaluating information. Teachers were also sensitised to contextual limitations, which has prompted them to appropriate sophisticated technological resources to their immediate contexts. Although this is an important re-productive skill, physical access disparities have largely confined the scope of original knowledge production.

This negative impact was especially evident in the dearth of multimodal content creation and academic research. To establish a digital identity, academics need to become more prolific. Publishing multimodal information remains a more critical challenge, given the fiercely competitive videos produced with cutting-edge techniques. On the other hand, *YouTube*'s analytics are based on purely social metrics, as opposed to academic indications of the authenticity of videos, which gives content-creating knowledge experts the advantage of trustworthiness (Kohler and Dietrich, 2021). Whether faculty-generated informative videos are viable regardless of monetized metrics such as watch-time and numbers of subscribers (Maynard, 2021), or whether interdisciplinary collaboration in video production is needed -- remains to be seen. What is more certain is that involvement in video production/editing techniques, such as annotations and chunking, informs effective video evaluation (Snelson, 2011, p. 167). Additionally, how willing academic institutions are to invest in media production, given the politicised demonetization and increasingly confining governance rules on *YouTube*, is another question to be explored.

Findings also unveil an added layer of political-economic affordability access in Syria. That is, the economic sanctions have adversely impacted access to academic knowledge. Some digital bookstores are blocked, e-payments and international shipments of books are restricted. Subscriptions to unlock updated high-quality content and fees to publish in reputable academic journals (Singh and Remeneyi, 2016) have become disproportionate to professors' income.

Another main contribution of the present study lies in its recognition of cross-platform competencies in an academic context. The implication for policy makers and practitioners is that *Moodle* can be a mediating space for scaffolding informal academic engagement and promoting collective tasks that complement, not replicate, traditional learning – at least at times of no disruptions. Another implication is that *YouTube* may be the appropriate space for re-configuring the presentation of academic information to meet the knowledge demands of the casual and self-directed learner, to relate more closely to communities and to reinvigorate academic knowledge dissemination and visibility. Content creation and sharing on user-generated platforms is recognised as a key contemporary skill (Meyer, Erickson and Small, 2013, p. 358). Multimodal content creation and sharing across multiple platforms – digital and traditional, formal and informal -- may be a more elaborated definition of this aspect of digital proficiency.

Remarkably, academic referencing styles are increasingly inclusive of videos, blogs and even informal communications as credible sources of information. Despite this growing acceptance of multimodal academic information, authoritative text-based academic knowledge is still the most widely trusted. The genre and modality of academic knowledge remains a fertile ground for future research.

 

In the not-too-distant future, discussions of Web 2.0 technologies and user-generated content may even become obsolete and be replaced by 4.0 Artificial Intelligence technologies. The emerging Metaverse vision embodies how digital immersion might overwrite digital participation. In the meanwhile, to survive, blended learning in Syria needs to capitalise on the merits of formal and informal platforms and to deliver knowledge that *fits* into the standards of contemporary societies: it is a survival of the *fittest*.

## 6. Limitations and directions for future research

This study was limited to the ELT Department at Higher Institute of Languages where most permanent staff are MA or PhD graduates from British universities, which means that the participants have the advantage of English language command. This might have positively mediated their perceptions of *YouTube* and facilitated harnessing internationally produced content and re-appropriating it to their academic and teaching needs. Despite this limitation, the findings will provide a solid basis for comparing access divide and its impact on the adoption of blended learning. Future larger-scale research should be extended to other departments and study students' access disparities, perhaps at a more advanced stage of *Moodle* use so that perceptions are grounded in experimentation. This would also achieve a degree of triangulation and give interpretations more analytical rigour.

## References


Al-Kindi, S. S. and Al-Suqri, M. N., 2017. Mobilizing learning: using Moodle and online tools via smartphones. *International Journal of Knowledge Content Development and Technology*, 7 (3), pp. 67-86.

Amandu, G. M., Muliira, J. K. and Fronda, D. C., 2013. Using Moodle e-learning platform to foster student self-directed learning: experiences with utilization of the software in undergraduate nursing courses in a Middle Eastern University. *3rd World Conference on Learning, Teaching and Educational Leadership (WCLTA-2012)*. Brussels, Belgium, 25-28 October 2012. *Procedia – Social and Behavioural Sciences 93*, pp. 677-683.

Balakrishnan, J. and Griffiths, M. D., 2017. Social media addiction: what is the role of content in YouTube? *Journal of Behaviuoral Addictions*, 6 (3), pp. 364-377. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5700732/pdf/jba-06-03-058.pdf> [Accessed 29 July 2021].

Bryman, A., 2012. *Social research methods*. 4th ed. Oxford: Oxford University Press.

Caplan, R. and Gillespie, T., 2020. Tiered governance and demonetization: the shifting terms of labor and compensation in the platform economy. *Social Media & Society*, pp. 1-13. https://doi.org/10.1177/2056305120936636

Chakravorti, Bh., 2021. How to close the digital divide in the US. *Harvard Business Review*, [online] 20 July. Available at: <https://hbr.org/2021/07/how-to-close-the-digital-divide-in-the-u-s> [Accessed 16 November 2021].

Clark, R. C. and Mayer, R. E., 2008. *E-Learning and the science of instruction: proven guidelines for consumers and designers of multimedia learning*. 2nd ed. New Jersey: John Wiley & Sons.

Cole, J. and Foster. H. ed., 2008. *Using Moodle*. 2nd ed. CA: O'Reilly Media, Inc.

Czerkawski, B. C., 2016. Blending formal and informal learning networks for online learning. *International Review of Research in Open and Distributed Learning*, 17 (3), pp. 138-156. Available at: < https://files.eric.ed.gov/fulltext/EJ1102701.pdf> [Accessed 15 November 2021].

Deepak, K.C., 2017. Evaluation of Moodle features at Kajaani University of Applied Sciences – case study. *2nd International Conference on Computer Science and Computational Intelligence ICCSCI*. Indonesia: Bali, 13-14 October 2017. Finland: Kajaani.

Dughera, L., Bordignon, F. and Azzara, E., 2021. A literature review of the YouTube phenomenon and the teaching and learning practices. *Memorias del III Congreso Internacional de Tendencias en Innovación Educativa*. Lima, Perú. Universidad Continental: Fondo Editorial.

Dziuban, Ch., Graham, Ch. R., Moskal, P., Norberg, A. and Sicilia, N., 2018. Blended learning: the new normal and the emerging technologies. *International Journal of Educational Technology in Higher Education*, 15(3). Available at: <https://link.springer.com/article/10.1186/s41239-017-0087-5 > [Accessed 25 July 2021].

El-Bahsh, R. and Daoud, M., 2016. Evaluating the use of Moodle: a case study at the German Jordanian University. *Proceedings of the 35th Annual IEEE International Conference on Computer Communications*. San Fransisco, USA, 2016.

Falloon, G., 2020. From digital literacy to digital competence: the teacher digital competency (TDC) framework. *Educational Technology Research and Development*, (68), pp. 2449–2472. https://doi.org/10.1007/s11423-020-09767-4

Fleck, B., Beckman, L., Sterns, J. and Hussey, H., 2014. YouTube in the classroom: helpful tips and student perceptions. *The Journal of Effective Teaching*, [e-journal]14 (3), pp. 21-37. https://files.eric.ed.gov/fulltext/EJ1060489.pdf

Ghounani, N., 2020. Moodle or social networks: what alternative refuge is appropriate to Algerian EFL students to learn during Covid-19 pandemic. *Arab World English Journal*, [e-journal] 11 (3.2), pp. 21-41. https://dx.doi.org/10.24093/awej/vol11no3.2

Hargittai, E., 2003. The digital divide and what to do about it. In: D. C. Jones, ed. 2003. *New economy handbook*. San Diego, CA: Academic Press. Ch. 35, 821-839.

Helsper, E. J., 2021. *The digital disconnect: the social causes and consequences of digital inequalities*. London: Sage Publications Ltd.

Hodges, C., Moore, S., Lockee, B., Trust, T. and Bond, A., 2020. The difference between emergency remote teaching and online learning. *Educause Review*, [online] Available at: <https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning> [Accessed 08 August 2021].

Hou, M., 2019. Social media celebrity and the institutionalization of YouTube. *The International Journal of Research into New Media Technologies* [online] 25 (3), pp. 534-553. Available at: <https://journals.sagepub.com/doi/full/10.1177/1354856517750368> [Accessed 03 September 2021].

Kaur, M., 2013. Blended learning - its challenges and future*3rd World Conference on Learning, Teaching and Educational Leadership (WCLTA-2012)*. Brussels, Belgium, 25-28 October 2012. *Procedia- Social and Behavioural Sciences 93*, pp. 612-617. Available at: <https://www.sciencedirect.com/science/article/pii/S187704281303351X> [Accessed 7 August 2021].

Kellermann, D., 2021. Academics aren't content creators, and it's regressive to make them so. *The Times Higher Education*, [online] 8 March. Available at: <https://www.timeshighereducation.com/opinion/academics-arent-content-creators-and-its-regressive-make-them-so> [Accessed 3 September 2021].

Kim, S. and Kim, H.C., 2021. The benefits of YouTube in learning English as a second language: a qualitative investigation of Korean freshman students' experiences and perspectives in the U.S. *Sustainability*, [e-journal] 13(7365), pp. 1-16. https://doi.org/10.3390/su13137365.

Kohler, S. and Dietrich, T.C., 2021. Potentials and limitations of eucational videos on YouTube for science communication. *Frontiers in Communication* 6 (581302). Doi: 10.3389/fcomm.2021.581302

Koltay, T., 2011. The media and the literacies: media literacy, information literacy, digital literacy. *Media, Culture & Society,* 33(2), pp. 211-221.

Livingstone, S., Mascheroni, G. and Stoilova, M. 2021. The outcomes of gaining digital skills for young people's lives and wellbeing: A systematic evidence review. *New Media & Society*, pp., 1-27. DOI:10.1177/14614448211043189

Martin, F., Polly, D., Coles, Sh. and Wang, Ch., 2020. Examining higher education faculty use of current digital technologies: importance, competence, and motivation. *International Journal of Teaching and Learning in Higher Education*, 32 (1), pp. 73-86. Available at: <https://files.eric.ed.gov/fulltext/EJ1259547.pdf> [Accessed 15 November 2021].

Maynard, A. D., 2021. How to succeed as an academic on YouTube. *Frontiers of Communication* 5 (572181). https://doi.org/10.3389/fcomm.2020.572181

Meyers, E. M, Erickson, I. and Small, R. V., 2013. Digital literacy and informal learning environments: an introduction. *Learning, Media and Technology*, 38(4), pp. 355-367 DOI: 10.1080/17439884.2013.783597

Mpungose, C. B., 2020. Emergent transition from face-to-face to online learning in a South African University in the context of the Coronavirus pandemic. *HumanitSocSciCommun* 7(113), pp. 1-8. Available at: <https://doi.org/10.1057/s41599-020-00603-x> [Accessed 16 August 2021].

Napoli, P. M. and Obar, J. A., 2014. The emerging mobile Internet underclass: a critique of mobile internet access. *The Information Society*, 30 (5), pp. 323–334.

Newlands, G. and Lutz, Ch. 2021. Crowdwork and the mobile underclass: Barriers to participation in India and the United States. *New Media & Society*, 23 (6). pp. 1341–1361. https://doi.org/10.1177/1461444820901847

Paivio, A., 1986. *Mental representations: a dual coding approach*. Oxford: OUP.

Pires, F., Masanet, M. J. and Scolari, C. A., 2021. What are teens doing with YouTube? practices, uses and metaphors of the most popular audio-visual platform. *Information, Communication & Society*, 24 (9), pp. 1175-1191. https://doi.org/10.1080/1369118X.2019.1672766

Reinhardt, J. and Sykes, J. M., 2012. Conceptualizing digital game-mediated L2 learning and pedagogy: game-enhanced and game-based research and practice. In: H. Reinders, ed. 2012. *Digital games in language learning and teaching*. Hampshire: Palgrave Macmillan. Ch. 2, pp. 32-49.

Remenyi, D., 2012. *Case study research: the quick guide series*. Reading: Academic Conferences and Publishing International Limited.

Remenyi, D., Grant, K. A. and Singh, Sh. eds., 2020. *The university of the future: responding to COVID-19*. Reading: ACPIL.

Ryan, R. and Bernard, H. R., 2003. Techniques to identify themes. *Field Methods* 15 (1), pp. 85-109. Available at: <http://fmx.sagepub.com/cgi/content/refs/15/1/85 > [Accessed 28 July 2021].

Saleem, N.E., Al-Saqri, M. N. and Ahmad, S. E. A., 2016. Acceptance of Moodle as a teaching/learning tool by the faculty department of Information Studies at Sultan Qaboos University, Oman based on UTAUT. *International Journal of Knowledge Content Development and Technology*, 6 (2), pp. 5-27.

Scolari, C., Masanet, M. J., Guerrero-Pico, M. and Establés, M. J., 2018. Transmedia literacy in the new media ecology: Teens' transmedia skills and informal learning strategies. El Profesional de la Información, 27(4), pp. 801-812. https://doi.org/10.3145/epi.2018.jul.09.

Singh, S. and Remenyi, D., 2016. Researchers beware of predatory and counterfeit journals: are academic gullible? *The Electronic Journal of Business Research Methods*, 14 (1), pp. 50-59. Available at: < www.ejbrm.com> [Accessed 23 November 2021].

Smith, J. and Firth, J., 2011. Qualitative data analysis: application of the framework approach. *Nurse Research* 18 (2), pp. 52-62. Available at: < http://eprints.hud.ac.uk/id/eprint/18884/1/RepositoryFrameworkNResearcher.pdf> [Accessed 30 July 2021].

Snelson, Ch., 2011. YouTube across the disciplines: a review of the literature. *MERLOT Journal of Online Learning and Teaching* 7(1), pp. 159-169. Available at: https://jolt.merlot.org/vol7no1/snelson_0311.pdf [Accessed 02 August 2021].

Soomro, K. A., Kale, U., Curtis, R., Akcaoglu, M. and Bernstein, M., 2020. *International Journal of Educational Technology in Higher Education*, 17(21), pp. 1-16. https://doi.org/10.1186/s41239-020-00191-5

Tishreen University – Blended Learning. 2020. Available at: < http://lms.tishreen.edu.sy> [Accessed 2020-2021].

UNESCO. 2020. *COVID-19 and higher education: today and tomorrow: impact analysis, policy responses and recommendations*.[pdf]. Available at: <http://www.iesalc.unesco.org/en/wp-content/uploads/2020/04/COVID-19-EN-090420-2.pdf> [Accessed 15 June 2020].

UNICEF. 2021. *Practical guide to blended/remote learning and children with disabilities*.[pdf]. New York: UNICEF. Available at: <https://www.unicef.org/media/100986/file/PRACTICAL%20GUIDE%20To%20blended.pdf> [Accessed 1 August 2021].

Van Deursen, A. J. and Van Dijk, J., 2019. The first-level digital divide shifts from inequalities in physical access to inequalities in material access. *New Media and Society*, 21 (2), pp. 354-375. http://doi.org/10.1177/1461444818797082 [Accessed 17 November 2021].

Van Dijck, J., 2013. 'You have one identity': performing the self on FaceBook and LinkedIn. *Media, Culture and Society*, 35 (2), pp. 199-215.

Van Dijk, J., 2017. Digital divide: the impact of access. *The International Encyclopedia of Media Effects*. John Wiley & Sons, Inc. [online]. Available at: <https://www.utwente.nl/en/bms/vandijk/publications> [Accessed 31 August 2021].

Venkatesh, V. and Bala, H., 2008. Technology Acceptance Model 3 and a research agenda on interventions. *Decisions Science*, 39 (2), pp. 273-315.

Venkatesh, V. and Davis, F., 2000. A theoretical extension of the Technology Acceptance Model: four longitudinal field studies. *Management Science*, 46 (2), pp. 186–204.

Venkatesh, V., 2000. Determinants of perceived ease of use: integrating control, intrinsic motivation, and emotion into the Technology Acceptance Model. *Information Systems Research*, 11 (4), pp. 342-365.