

Implementing a practice-based approach to digital literacy at a South African university

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Abstract

This paper contributes to the conceptualisation of digital literacy as a social practice, which is informed by the New Literacies Studies' theoretical approach. The ideological approach adopted in this paper holds that literacy is about being able to participate in social practices and thus, a student who is capable of carrying out his/her disciplinary digital literacies is considered as being digitally literate. In other words, the higher education academic disciplines serve as contexts that determine the digital literacies - the discipline-specific digitally-mediated practices.

The digital literacies conceptualisation informed the adaptation of Ng's (2015) digital literacy framework to a digital literacy practices framework comprising the technical, cognitive and social-emotional dimensions. Using this framework, the study explored the digital literacy practices of a purposive sample of first year students from two extended degree programmes. One hundred and three students from the two disciplines (39 from Commerce and 64 from Humanities) completed the questionnaire. The data was analysed using Excel, and a Chi Square test was run to determine possible correlations between variables, where necessary. This paper thus interrogates findings from the questionnaire data which reveal that the discipline-specific learning and assessment activities instantiated students' digital literacy practices in the three dimensions. The paper discusses how these practices differ and/or overlap across the two disciplines. These findings suggest that integrating digital literacies into the course curricula by means of learning and assessment activities supports students in: (1) becoming digitally literate with respect to their respective disciplines; and (2) acquiring digital literacy practices deemed fit for learning and potential employability.

Keywords: Digital literacy, digital literacy practices, discipline, learning and assessment activity, higher education institution

Introduction

Both international and national higher education institutions (HEIs) are grappling to explicitly define digital literacy. There are currently two perspectives of digital literacy: (1) the autonomous approach that focuses on the mastering of digital skills and (2) the ideological approach, which acknowledges that skills are embedded within a practice and underscores the context-dependability of digital literacy (Cheryl Brown, Czerniewicz, Huang, & Mayisela, 2016). According to the ideological perspective, which has been adopted in this paper, one's recognition of being literate depends on the context and literacy practices of a particular community of practice or discipline. The New Media Consortium (NMC) Horizon Report produced from research conducted in the United States HEIs on students' and academics' digital literacies highlights the discourse around 'literacies across disciplines' (Alexander, Adams, & Cummins, 2016). According to these authors, the literacies across disciplines (referred to as discipline-specific digital literacies in this paper) focus on the integration of digital literacies into the curriculum. That being said, it is important to note that other literacies discussed in the report, such as the universal literacies - a baseline set of technical, information literacy and media literacy practices, and creative literacies - focus on the shift from consumption to production of digital content (Alexander et al., 2016) are equally essential and are part of the discipline-specific digital literacies. This perspective resonates with that of Lankshear and Knobel who recommend that digital literacy be perceived as "a framework for integrating various other literacies and skill-sets" (2008:28).

Our university has explored three approaches to fostering first-year students' acquisition of digital literacies for learning. These entail the professional development unit: 1) training students to develop universal literacies during the orientation period; 2) providing student access to self-training resources that are hosted on the university learning management system; and 3) supporting a few first-year course academics to integrate digital literacies into their curricula. The findings presented in this paper are digital literacy practices of students enrolled in two such academic courses that are based in the Commerce and Humanities disciplines. This paper provides a

description of the conceptualisation of digital literacy used in the study, a review of literature on how disciplines influence student digital literacy practices, and an overview of the empirical study, seminal findings, a discussion, key conclusion and recommendations.

Conceptualising digital literacy and literature review

Digital literacy in this research is premised on the understanding of literacy as a social practice. The social practice perspective is based on the notion that:

- a. Digital literacy involves not a set of universal abilities (skills) but aptness in social practices grounded in the digital domain.
- b. Practices associated with digital literacy are not “fixed,” nor do they occur in isolation; rather, they evolve in relation to the social, cultural, economic and political changes of a given context (Brown et al., 2016:3).

This implies that being digitally literate is about being able to participate in digitally saturated social practices. In the higher education context, the social practices are most likely, disciplinary knowledge production and textual practices (Lea & Jones, 2011; Lea, 2013). Therefore, this paper argues that digital literacy is about students’ aptness in socially evolved ways of participating in discipline-specific digitally mediated textual practices – the discipline-specific digital literacies.

Researchers in the New Literacies Studies, such as Lankshear and Knobel (2006), note that the ‘new’ digital literacies are generally “characterised by both the new technical stuff of digitization and the new ethos stuff of the second mindset and more specifically, a Web 2.0 orientation” (p.93). The technical stuff includes the functional use of hardware, software and applications such as creating hyperlinks, using emoticons in email, online chat space or in instant messaging, animation, uploading images and videos from a digital phone to a computer or to the Internet, to mention a few. Whereas the new ethos stuff includes literacies that are often participatory and collaborative (Lankshear & Knobel, 2006), such as creating websites, blogging, microblogging, contributing to wikis and digital media production (Mills, 2010). It is along these lines that Ng describes digital literacy in the educational context as being “a broader term that embraces technical, cognitive and social-emotional perspectives of learning with digital technologies, both online and offline” (2012:1066).

Building up on this description and drawing on the literacy practice perspective, students’ digital literacy practices in this paper are categorised into the technical, cognitive and social-emotional dimensions. The technical dimension encompasses practices such as accessing and using technological devices, the internet and software for learning. Cognitive practices include identifying the need for information, legally using and re-using learning resources (which involves understanding copyright and alternative mechanisms of licensing resources such as Creative Commons), evaluating information, synthesising and communicating information. The social-emotional dimension involves enacting responsible ways of communicating, socializing and learning using the internet. At the intersection of the technical and social-emotional dimensions are practices such as producing and using multimodal resources, finding online resources for studies, curating and managing, and making informed decisions when selecting appropriate digital technologies. The intersection of the cognitive and social-emotional dimensions involves working in collaborative digital spaces, as well as netiquette and cybersafety literacy practices. At the intersection of the technical and socio-emotional dimension are social networking practices.

Figure 1 below illustrates the adapted digital literacy practices framework with examples of digital literacy practices.

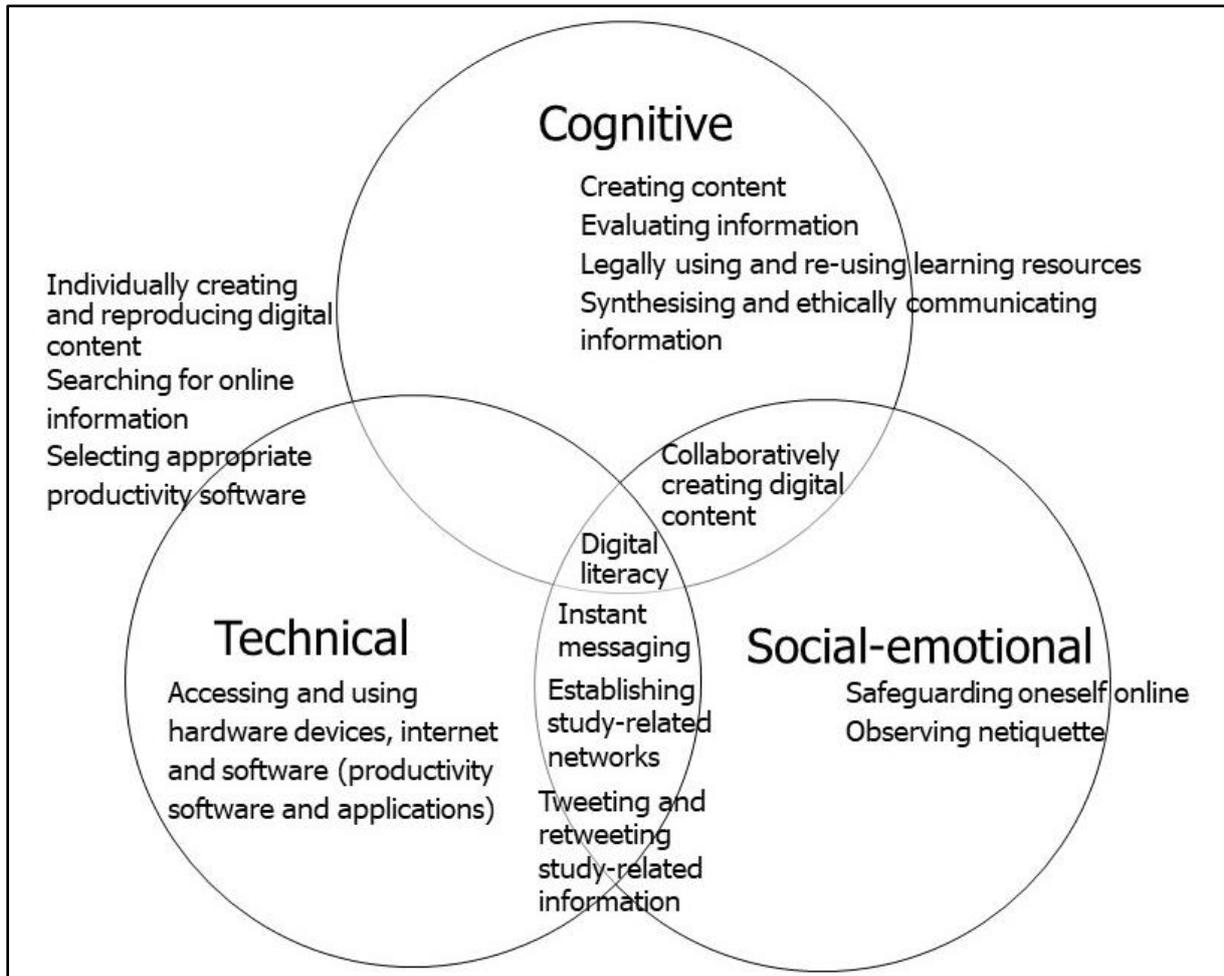


Figure 1: Digital literacy practices framework adapted from Ng (2015:130)

With the literacy practice perspective that acknowledges that literacy is a “family of practices – literacies – that include ... socially evolved and patterned activities” (Lankshear & Knobel, 2008:256), it is important to note that the dimensions are not progressive and that students can be more capable of carrying out practices in one dimension than another. However, in terms of the situatedness of practices, students may have to acquire the digital literacies of their disciplines. For instance, Toliver (2011) and Buzzard et al. (2011) relate how students acquire digital skills for learning in response to curriculum requirements. Ng (2012), on the other hand, concluded in her study that students tend to create digital content only when digital content creation activities are part of the curriculum.

In like manner Trowler, one of the distinguished researchers on cultures of academic disciplines, describes how disciplines may influence students’ practices:

Disciplines are reservoirs of ways of knowing which, in dynamic combination with other structural phenomena can condition behavioural practices, sets of discourses, ways of thinking, procedures, emotional responses and motivations (2014:6-7).

In the same vein, a number of empirical studies have shown how disciplines may influence students’ digital literacy practices. Brown and Czerniewicz (2008), who conducted research in six HEIs in South Africa, reported how the discipline-specific scaffolded learning activities and research-based e-learning activities in undergraduate and postgraduate studies respectively, influenced student use of web-based technologies (such as web searching and instant messaging). Likewise, a survey conducted with undergraduate students at UK universities revealed that disciplinary differences influenced the students’ use of the internet (Selwyn, 2008). Another study conducted by Margaryan, Littlejohn and Vojt (2011) with third year Social work and Engineering students at two UK

universities revealed that the nature of the discipline influenced how students engaged with information and communication technologies (ICTs). Another study conducted by Kim, Sin and Tsai (2014) with undergraduate students in the US found that Engineering students were more likely to use Wikipedia for finding solutions when compared to Humanities students, while more Humanities students than Engineering students tended to use YouTube to get updates/news and other people's opinions.

The study

The data presented in this paper is drawn from the quantitative data of a PhD study. The study followed a case study design that utilised a mixed methods approach. According to Easton, case research is "a research method that involves investigating one or a small number of social entities or situations about which data are collected using multiple sources of data and developing a holistic description through an iterative research process" (2010:119). This paper only examines findings from the questionnaire. The two first year extended programme courses researched in this study were based in Commerce and Humanities. Due to the nature of their disciplines, it is clear that these two courses had different learning activities. For instance, the Commerce course's learning and assessment activities included the creation of Excel spreadsheets, collaboratively creating a business concept document and a business website. Whereas the Humanities course activities required students to primarily write essays.

A purposive sample of 103 students from the two courses completed the questionnaire. The questionnaire was used to ascertain students' digital literacy practices in their courses. According to Maxwell (2008), deliberate selection of an appropriate setting or people is important as these "can provide information that cannot be gotten as well from other choices" (2008:235). The data was analysed using Excel pivot tables and a Chi Square test was run to determine possible correlations between variables, where necessary. The findings revealed that there were many socio-cultural factors influencing students' digital literacy practices, but for the purpose of this paper, only those student practices influenced by course disciplines and learning and assessment activities thereof, are highlighted.

Findings

The digital literacy practices that were influenced by the course disciplines are presented using the digital literacy practices dimensions inspired by Ng (2015).

Technical dimension

The digital literacy practices in this dimension include accessing and using devices, as well as the use of productivity software.

Accessing and using devices for learning

Participants were asked to indicate which devices (laptop, desktop, tablet, smartphone and iPad) they used most frequently to access the internet. Tablets and iPads were singled out because more than half of the class of the Humanities course had received tablets as part of the university personal mobile device project. The participants were however, allowed to tick more than one device.

Higher percentages of Commerce students used smartphones, laptops and iPads while higher percentages of Humanities students used desktops and tablets to access the internet (Figure 2).

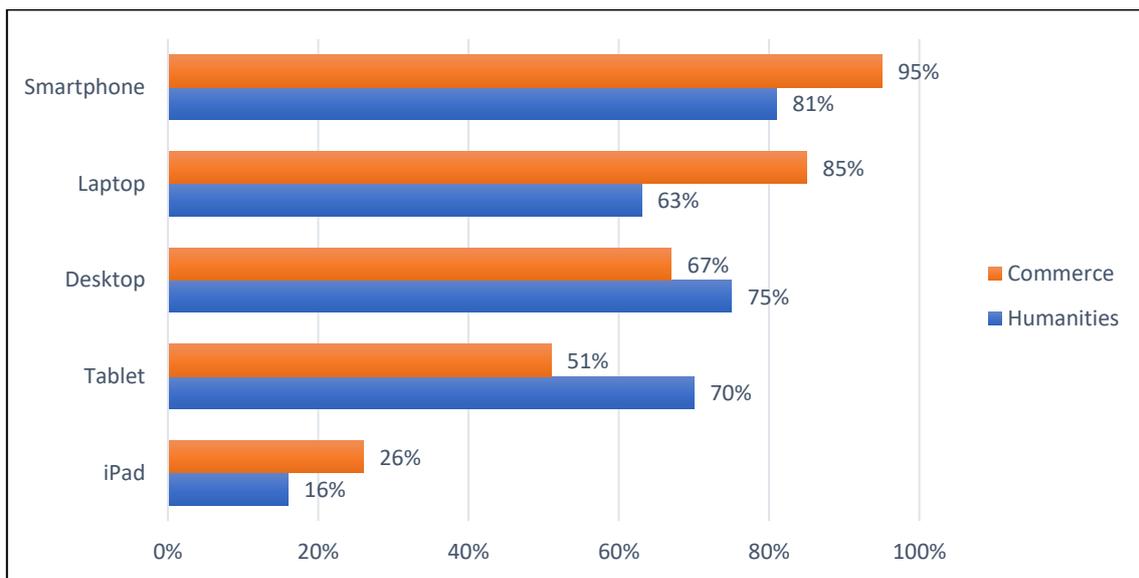


Figure 2: Device access and use in relation to disciplines

A Chi Square test confirmed a significant correlation between being a Commerce student, and accessing and using smartphones and laptops.

Creating, sharing and using word-processed documents, spreadsheets and presentations

Participants were asked to indicate what digital literacy practices they conducted using productivity software such as Microsoft Word, Excel spreadsheets and PowerPoint presentations. The students were given options, including creating their own resources, sharing their own resources, using other people’s resources ‘as is’ and sharing other people’s resources with their peers.

The responses demonstrated that students, across both courses, primarily created word-processed documents, presentations and spreadsheets, with larger percentages of creation undertaken by Commerce students (Figure 3).

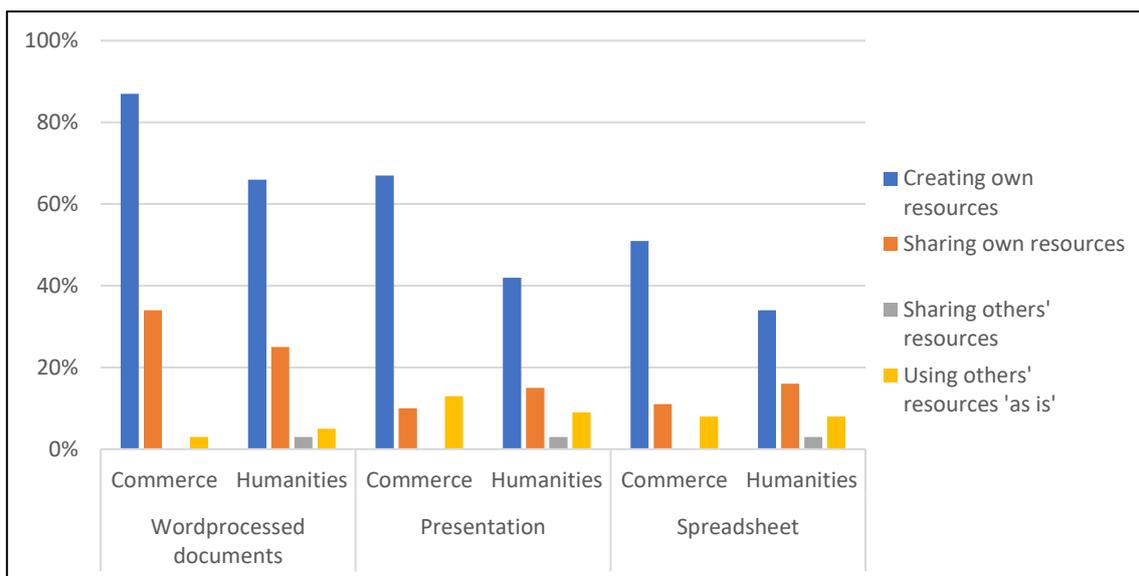


Figure 3: Disciplines and students’ use of productivity software

A correlation between the Commerce course and the creation of word-processed documents and presentations was found.

Techno-cognitive dimension

The digital literacy practices in this dimension include producing and using multimodal resources and searching for information.

Producing and using multimodal resources

Participants were asked to indicate what practices they conducted using media authoring and Web 2.0 technologies. They were allowed to choose all the options that applied to them, such as creating their own resources, sharing their own resources, using others' resources 'as is', and sharing others' resources with their peers. The media type options were images, videos, screencasts, podcasts, websites and Wikipedia.

In the respective order of the Commerce and Humanities courses, higher percentages of participants primarily created images (56% and 31%) and videos (38% and 23%) as compared to other practices (Figure 4).

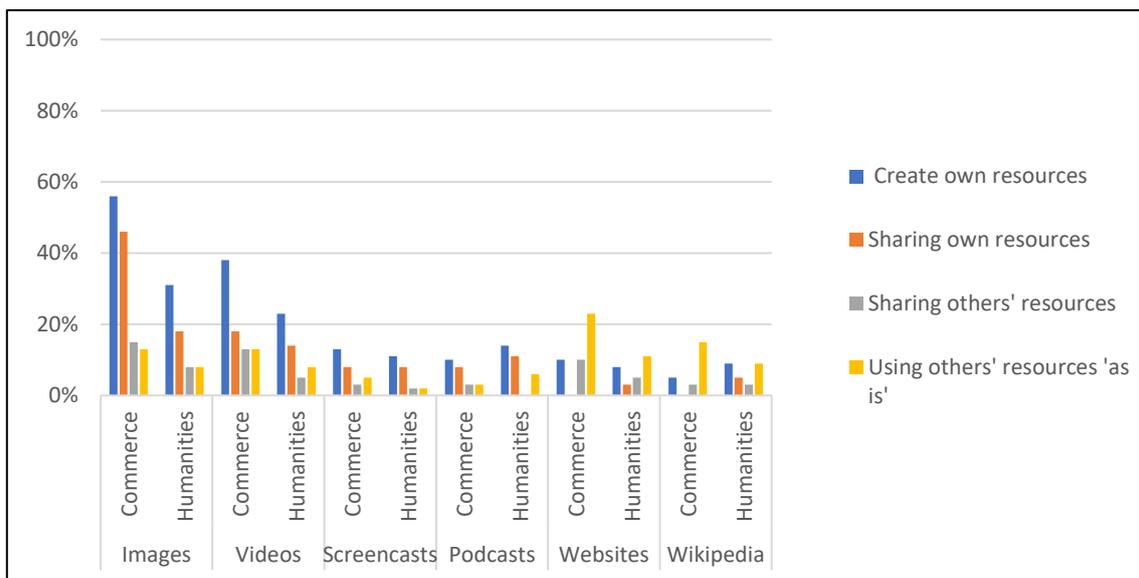


Figure 4: Disciplines and students' use of multimodal resources

When a Chi Square test was run between the two courses and creating resources, it was found that there was a correlation between being a Commerce student and creating and sharing images.

Searching for information

When students were asked to indicate the web tools they used for searching online resources for learning, in the respective order of the Commerce course and Humanities course, 90% and 81% of students primarily used search engines (Figure 5).

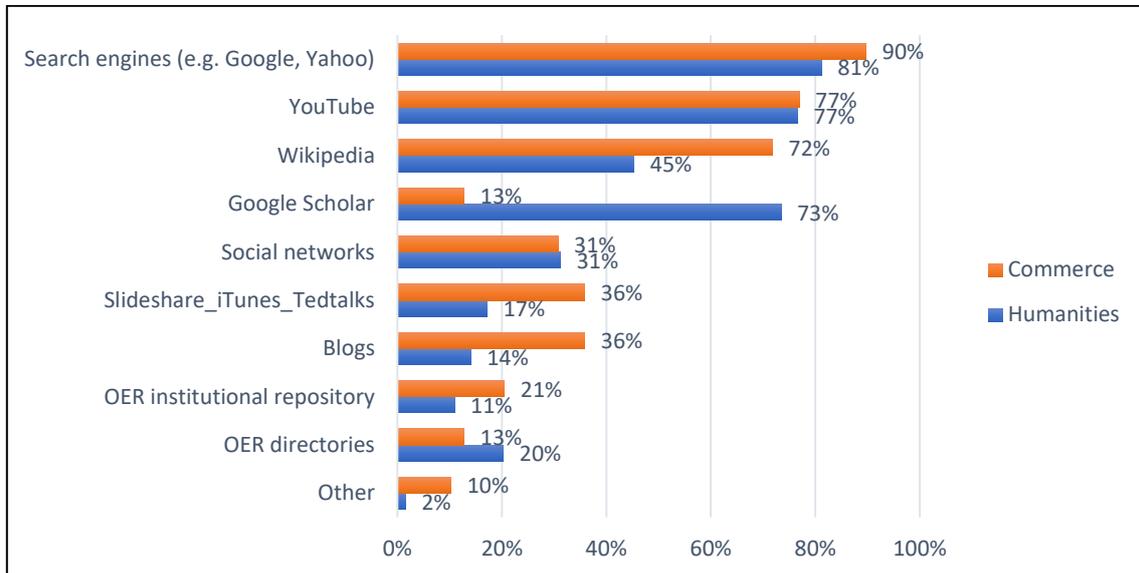


Figure 5: Disciplines and student search for online resources

There were no differences in student use of YouTube (77%) and social networks (31%) for both courses, while a Chi Square test confirmed a correlation between the Commerce course and use of Wikipedia and the Humanities course and use of Google Scholar.

Cognitive dimension

The key finding in this dimension is the frequency of student evaluation of information in relation to the two disciplines.

Evaluating online information

Participants were asked how frequently they evaluated (checked for the appropriateness of) the online information they used for their assignment or projects. Evaluation included checking for the credibility of authors of online information, and the currency, objectivity and reliability thereof. The data reveals that in descending order, participants always checked for reliability, objectivity, currency of information and credibility of authors.

With respect to disciplines, a larger percentage (63%) of Commerce students than Humanities students always checked for the reliability of information (Figure 6).

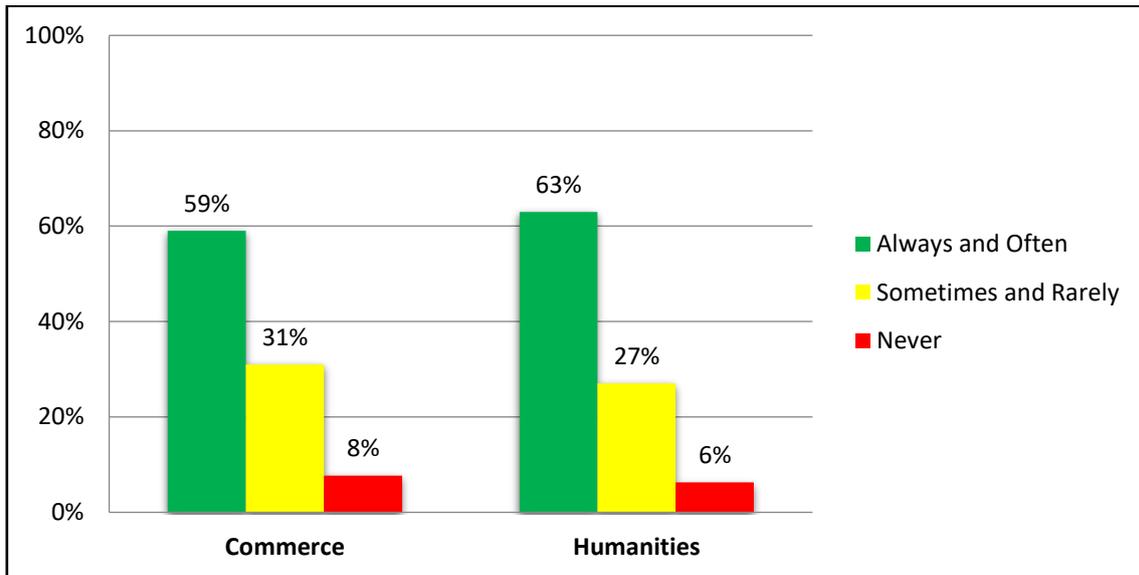


Figure 6: Disciplines and frequency of checking the reliability of information

There is no noticeable difference in terms of checking for the objectivity of online information. However, a larger percentage (21%) of Commerce students than Humanities students (8%) never checked for the objectivity of information (Figure 7).

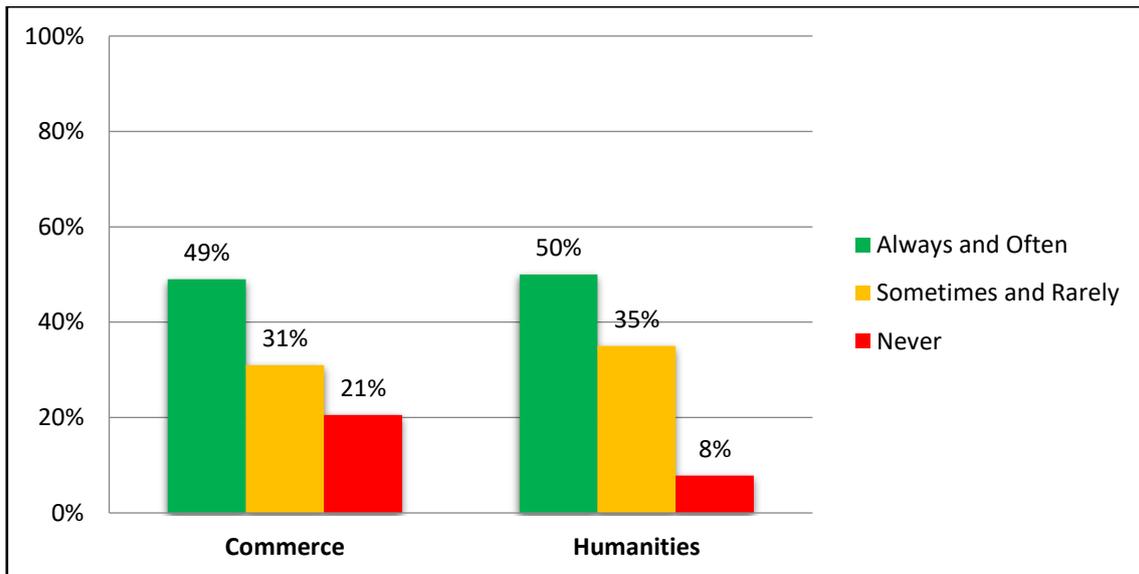


Figure 7: Disciplines and frequency of checking the objectivity of information

A larger percentage (52%) of Commerce students than Humanities students checked the currency of information. At the same time, a larger percentage of Commerce (15%) than those in Humanities never checked for currency (Figure 8).

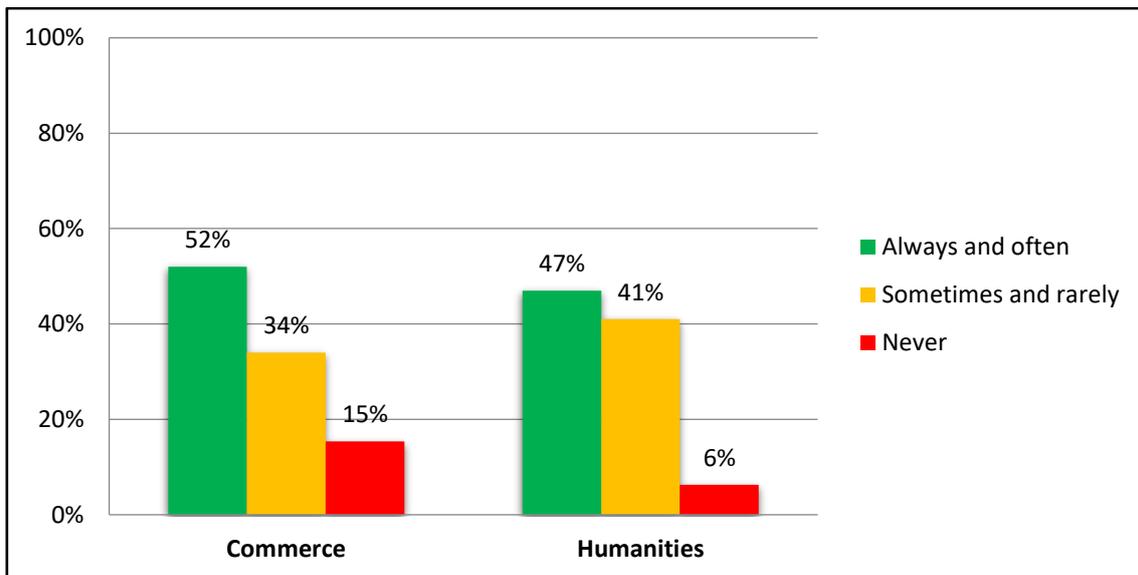


Figure 8: Disciplines and frequency of checking currency of information

There was a noticeable difference with respect to this criterion. A larger percentage (54%) of Humanities students than Commerce students (26%) checked for the credibility of authors. Also, a relatively large percentage (26%) of Commerce students never checked the credibility of authors (Figure 9).

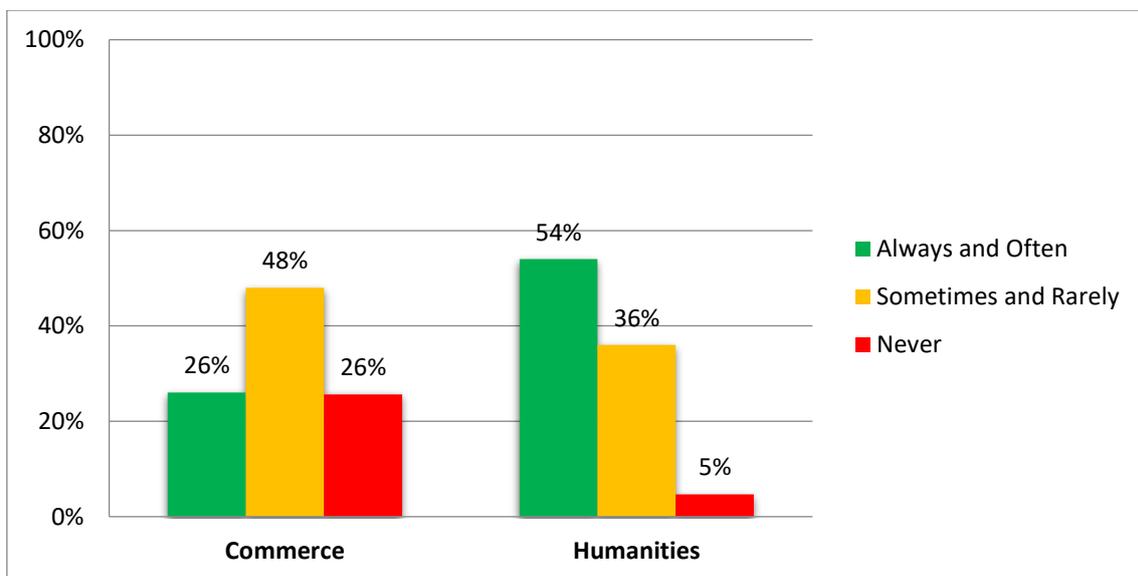


Figure 9: Disciplines and frequency of checking credibility of authors

Technical and social-emotional dimension

The seminal finding in this dimension is the high percentage of students who are instant messaging for both study and personal purposes. When students were asked what instant messaging tool (WhatsApp, Yahoo messenger and WeChat) they used to communicate with their peers, most students indicated that they used WhatsApp for both study and personal communication purposes.

Communicating using WhatsApp

The data demonstrated that in both courses, a large percentage of students communicated via WhatsApp for both study and personal purposes (74% in the Commerce course and 73% in the Humanities course) (Figure 10).

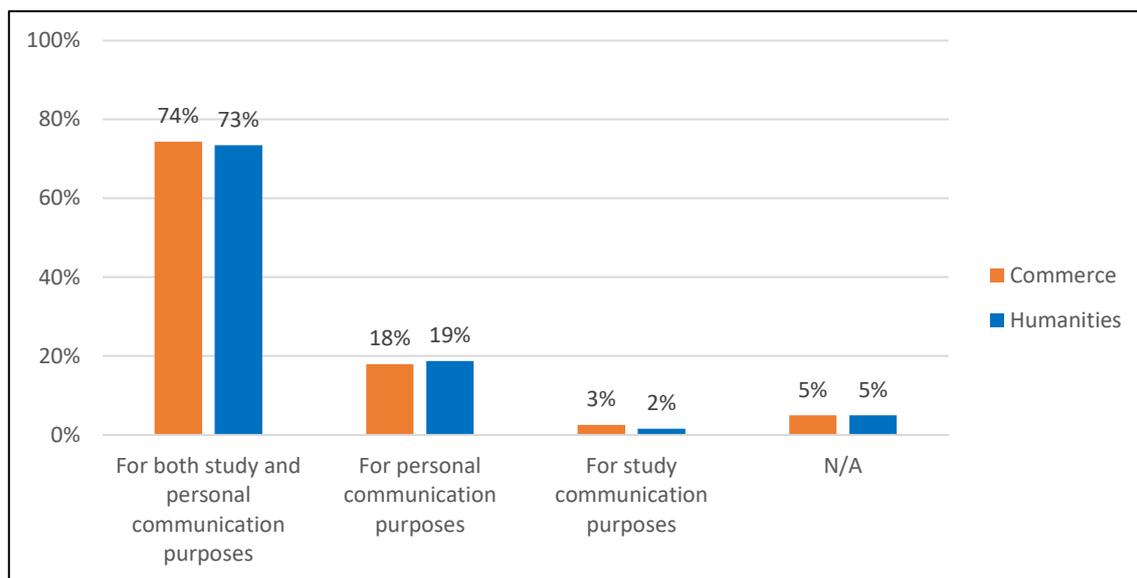


Figure 10: Disciplines and student instant messaging

Discussion and Conclusion

The findings reveal that students are likely to engage in digital literacy practices in response to the learning and assessment activities within their disciplines. Students engaged in technical practices, such as accessing the internet for their studies using different devices, and creating, sharing and using word-processed documents, spreadsheets and presentations. The extensive use of smartphones and laptops by Commerce students demonstrates that these students could engage in course activities on an anywhere, anytime basis as compared to the Humanities students who more frequently wrote their essays using university desktop computers. The influence of disciplines on student use of ICTs was reported elsewhere (Margayan et al, 2011). In the South African context, Commerce students usually have better access to bursaries and scholarships compared to Humanities students. Hence, Commerce students are likely to acquire expensive technological devices such as laptops and also data bundles. The Humanities students were issued tablets in an attempt to leverage the challenge of access to devices. Additionally, the creation of word-processed documents and presentations, as well as the production and sharing of images were more intensive in the Commerce course than in the Humanities course. Although it would have been expected that Humanities students might have created more word-processed documents (as they were writing essays using word-processing software), the findings reveal that the Commerce course's learning and assessment activities required them to primarily create word-processed documents. A related study by Brown and Czerniewicz (2008) also found that students used ICTs in response to course activities.

By the same token, the choice of online resources was influenced by the nature of the discipline, with the Commerce and Humanities students using Wikipedia and Google Scholar respectively. Kim et al. (2014) also noted that students from technical subjects tend to use Wikipedia to search for solutions whereas the Humanities students in this study used Google Scholar to find academic peer-reviewed articles. In contrast to Kim et al.'s (2014) findings, there was no difference in terms of YouTube use between the two courses in this study. Irrespective of the resources used, the Humanities students evaluated online information more frequently than the Commerce students. This could be linked to the nature of the activities as Humanities students were required to evaluate the appropriateness of the information that they used to develop arguments in constructing their essays. Furthermore, the student production and use of multimodal resources and instant messaging via WhatsApp for study purposes indicate that there is more potential for academics to tap into these spaces in both courses. For instances, Ng (2012) noted that students are more likely to produce multimedia resources in response to their course activity requirements. Overall, the above discussion reveals that courses are fertile grounds that foster student acquisition of digital literacies for their disciplines. A recommendation emanating from the findings of this study is that HEIs should consider using learning and assessment activities as a vehicle for integrating digital literacies into course curricula. Student aptness in discipline-specific digital literacies enhances their learning and thus hopefully increases their fitness for employability.

References

- Alexander, B., Adams, B. ., & Cummins, M. (2016). Digital Literacy An NMC Horizon Project Strategic Brief Digital Literacy, 33(33). Retrieved from <http://cdn.nmc.org/media/2016-nmc-horizon-strategic-brief-digital-literacy.pdf>
- Brown, C., & Czerniewicz, L. (2008). Trends in student use of ICTs in higher education in South Africa. In 10th Annual Conference of WWW Applications. Cape Town. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download;jsessionid=821574951E1479FADC425EB2747AD2A6?doi=10.1.1.549.660&rep=rep1&type=pdf>
- Brown, C., Czerniewicz, L., Huang, C.-W., & Mayisela, T. (2016). Curriculum for Digital Education Leadership : Curriculum for Digital Education Leadership : A Concept Paper. Commonwealth of Learning.
- Brown, C., Czerniewicz, L., Mayisela, T., & Huang, C.-W. (2016). A practice based approach to theorising digital education leadership. In Pan-Commonwealth Forum. Open University, Malaysia.
- Buzzard, C., Crittenden, V. L., Crittenden, W. F., & McCarty, P. (2011). The Use of Digital Technologies in the Classroom: A Teaching and Learning Perspective. *Journal of Marketing Education*, 33(2), 131–139. <https://doi.org/10.1177/0273475311410845>
- Easton, G. (2010). Critical realism in case study research. *Industrial Marketing Management*, 39(1), 118–128. <https://doi.org/10.1016/j.indmarman.2008.06.004>
- Kim, K.-S., Sin, S.-C. J., & Tsai, T.-I. (2014). Individual Differences in Social Media Use for Information Seeking. *The Journal of Academic Librarianship*, 40(2), 171–178. <https://doi.org/10.1016/j.acalib.2014.03.001>
- Lankshear, C., & Knobel, M. (2006). *New Literacies: Everyday practice & Classroom Learning*. London: Open University Press.
- Lankshear, C., & Knobel, M. (2008). Introduction: Digital Literacies—Concepts, Policies and Practices. In C. Lankshear & M. Knobel (Eds.), *Digital literacies and participation in online social networking spaces* (pp. 1–16). New York: Peter Lang.
- Lea, M. (2013). Reclaiming literacies: competing textual practices in a digital higher education, 18(1), 106–119. <https://doi.org/10.1080/13562517.2012.756465>
- Lea, M. R., & Jones, S. (2011). Digital literacies in higher education: exploring textual and technological practice, 36(4), 377–393. <https://doi.org/10.1080/03075071003664021>
- Margaryan, A., Littlejohn, A., & Vojt, G. (2011). Are digital natives a myth or reality? University students' use of digital technologies. *Computers & Education*, 56(2), 429–440. <https://doi.org/10.1016/j.compedu.2010.09.004>
- Maxwell, J. A. (2008). Designing a Qualitative Study. In L. Bickman & D. . Rog (Eds.), *The Sage Handbook of Applied Social Research Methods* (pp. 214–253). London: Sage Publications.
- Mills, K. A. (2010). A Review of the “Digital Turn” in the New Literacy Studies. *Review of Educational Research*, 80(2), 246–271. <https://doi.org/10.3102/0034654310364401>
- Ng, W. (2012). Can we teach digital natives digital literacy? *Computers and Education*, 59(3), 1065–1078. <https://doi.org/10.1016/j.compedu.2012.04.016>
- Ng, W. (2015). Digital Literacy: The Overarching Element for Successful Technology Integration. In *New Digital Technology in Education* (pp. 125–145). Switzerland: Springer International Publishing. https://doi.org/10.1007/978-3-319-05822-1_6
- Selwyn, N. (2008). An investigation of differences in undergraduates' academic use of the internet. *Active Learning in Higher Education*, 9(1), 11–22. <https://doi.org/10.1177/1469787407086744>
- Toliver, F. (2011). My students will Facebook me but won ' t keep up with my online course : The challenges of online instruction. *American Communication Journal*, 13(1), 59–82.
- Trowler, P. R. (2014). Academic Tribes and Territories. *Osterreichische Zeitschrift Fur Geschichtswissenschaften*, 25(3), 1–8. <https://doi.org/10.1306/74D70B87-2B21-11D7-8648000102C1865D>