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**Individual Support and the Quality of Digital Education at ULPGL-Goma,
Democratic Republic of the Congo (DRC)**

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ABSTRACT

This research explores the perceptions of lecturers at the Université Libre des Pays des Grands Lacs (ULPGL) in Goma, Democratic Republic of the Congo, regarding individual support for learners in a digital learning context. Faced with major structural challenges, such as a surge in student numbers and limited infrastructure, the study seeks to

understand how lecturers conceptualise, implement and perceive the effectiveness of this personalised digital support.

A qualitative methodology, based on semi-structured interviews with three lecturers from different disciplines and on thematic content analysis, was employed. The findings are organised around three main themes. Firstly, lecturers view digitalised individual support as a profound transformation of their teaching practice, shifting from transmissive methods to

active and inclusive approaches, and redefining their role as that of a facilitator. Secondly, they perceive its contribution as highly positive, noting improved student engagement, more effective feedback and the development of digital skills, thanks to a resilient hybrid pedagogy. Thirdly, major obstacles persist, notably critical infrastructure constraints (power cuts, poor connectivity) and a lack of training for both teachers and students.

The study concludes that whilst the potential of individualised digital support is widely recognised and experienced by teachers, its optimal implementation is hampered by systemic barriers. It therefore calls for a strengthened institutional approach, combining investment in infrastructure, tailored training programmes and the promotion of resilient teaching strategies, in order to realise the promise of inclusive, high-quality digital education in resource-constrained contexts.

Keywords: Individualised support, digital education, teachers' perceptions.

1. Introduction

Context and Research Question

The digitalisation of higher education represents a major transformation of education systems worldwide, offering unprecedented opportunities in terms of accessibility, innovation and personalised learning (UNESCO, 2023). Indeed, the United Nations Educational, Scientific and Cultural Organisation (UNESCO, 2023) emphasises the role of digital technology as a key driver for achieving the Sustainable Development Goals (SDGs) related to education. In this section, I will discuss the context and issues relating to this topic at the international and African levels, followed by the DRC and, more specifically, ULPGL-Goma.

At the international level, the digitalisation of education is seen as a strategic lever for improving access, equity and the quality of learning, particularly in developing regions. However, this transformation goes beyond the mere adoption of technological tools and involves a reconfiguration of teaching practices and learner support systems (Selwyn, 2023). Consequently, digital inequalities persist between regions, limiting the effectiveness of personalised learning programmes (Czerniewicz, 2022).

Furthermore, in Africa, there is a move away from the direct transposition of Western models, with calls for contextual adaptations (Assié-Lumumba, 2020). Consequently, UNESCO's reports 'Digital Learning for Every Child' (2023) and the 'Global Education Monitoring Report' (2022) confirm that digitalised individual support can enhance learners'

inclusion and autonomy, but only if sustainable investment is made in infrastructure, teacher training and appropriate teaching resources. These studies highlight the urgent need for systemic approaches to reconcile technological innovations with local realities. Consequently, the digitalisation of education represents both an opportunity to bridge the educational gap and a major structural challenge. Digital tools are often used unevenly in these contexts, exacerbating educational divides rather than bridging them, reflecting the weakness of infrastructure and the lack of pedagogical training that limit the impact of technological innovations (Selwyn, 2023; Czerniewicz, 2022). This is why digital educational models must, as a matter of necessity, take into account local socio-cultural and economic realities in order to be effective (Assié-Lumumba, 2020). Furthermore, whilst individualised digital support can enhance learners' autonomy and the quality of teaching, its roll-out faces persistent obstacles: intermittent connectivity, inadequate equipment, and low levels of digital skills among teachers (UNESCO, 2023; Education in Post-COVID Africa, 2022). These findings call for tailored strategies combining low-tech and high-tech approaches, such as the use of offline platforms or educational radio programmes to complement digital tools.

In specific contexts, such as that of the Democratic Republic of the Congo (DRC), this digital transition is accompanied by significant structural and pedagogical challenges (Kabuya, 2022), as the effective integration of technology is a major challenge where infrastructure is fragile.

At the heart of this modernisation lies the concept of individual support, defined as personalised guidance centred on the learner's specific needs. This support is universally recognised as a key indicator of educational quality (Durand, 2021; OECD, 2018). Its integration into a digitalised environment raises specific issues, particularly in terms of the development of digital skills, the availability of resources and the adaptation of teaching practices (Durand, 2021). Furthermore, the OECD (2018) highlights the importance of this support in reducing learning inequalities.

The Congolese education system adopted the bachelor's-master's-doctorate (LMD) system in 2022, a major reform aimed at pedagogical and structural modernisation (MINESU-DRC, 2018). The implementation of this reform, promoted by the Ministry of Higher and University Education (MINESU-DRC, 2018), requires a rethinking of pedagogical approaches and support mechanisms. However, this modernisation faces persistent challenges: a surge in student numbers and outdated infrastructure; the system is characterised by insufficient staff-to-student ratios (Kabuya, 2022). The staff-to-student ratio in the DRC averages 1 to 100, a situation that deviates

considerably from the 1 to 20 standards recommended by UNESCO for high-quality teaching (UNESCO, 2022). These structural constraints severely limit the ability of teachers to provide personalised support in face-to-face settings (UNESCO, 2022).

The integration of digital technology into higher education in the DRC is also widely seen as a means of modernising the sector and broadening access to services (UNESCO, 2023). However, its actual effectiveness depends on the quality of the infrastructure, the training of those involved and access to resources (Karsenti, 2020). Studies indicate that digital technology is often reduced to a mere tool for disseminating content, without bringing about any profound pedagogical transformation (Selwyn, 2023; Assié-Lumumba, 2020). This has led to a warning against the illusion of digitalisation without a change in practice, and a cautionary note regarding the impact of the digital divide on the African continent (Selwyn, 2023; Assié-Lumumba, 2020).

Faced with the challenges of massification, digitalised individualised support is seen as an emerging solution for adapting teaching to learners' specific needs, particularly in contexts with large class sizes (Meirieu, 2020). Consequently, there is a need to individualise learning pathways to ensure equity (Meirieu, 2020). Digitalised individualised support rests on three fundamental pillars (Hattie, 2012; UNESCO, 2014): assessment of knowledge; individualisation of tasks; and constructive feedback. Scientific literature highlights the power of feedback for learning and the personalisation of learning pathways through technology; however, its implementation remains limited in sub-Saharan Africa due to a lack of resources, adequate infrastructure and appropriate training for teachers (UNESCO, 2014; Hattie, 2012; Czerniewicz, 2022).

In the east of the Democratic Republic of the Congo, specifically at the Université Libre des Pays des Grands Lacs (ULPGL) in Goma, the digitisation of education is taking place against a backdrop of multiple challenges but also of remarkable adaptive innovations. Although faced with severe infrastructural constraints, ULPGL is attempting to integrate educational technologies into an environment where power cuts and intermittent internet connectivity are the norm (Kabuya, 2022). Nevertheless, teachers at ULPGL are developing strategies for educational resilience, combining basic digital tools such as WhatsApp and PowerPoint with traditional methods, thereby creating an effective hybrid approach (Bashige et al., 2021). Furthermore, the region's volatile geopolitical situation directly affects educational continuity, making the development of tailored digital solutions all the more crucial (Mukungu, 2022). The

UNESCO reports 'Digital Learning in Fragile Contexts' (2023) and 'Higher Education in the Democratic Republic of Congo' (2022) confirm that ULPGL represents a prime example of the challenges and potential of digital higher education in a context of infrastructure insecurity. These documents note that whilst the university has definite digital potential, with the growing use of platforms such as Google Classroom, OBS and Padlet, it still struggles to ensure the large-scale roll-out of individualised digital support, mainly due to a lack of systematic teacher training and limited access to digital equipment for students. This situation reflects the complexity of digital transformation in education at Congolese universities, where pedagogical innovation must contend with restrictive material and security constraints. This article is based on a study conducted amongst teachers at the Free University of the Great Lakes Region (ULPGL) in Goma, aiming to analyse their perceptions and experiences of individualised support within a digital teaching context. It addresses the following three specific questions:

- How do lecturers at ULPGL Goma understand individual support for learners in digital teaching?
- How do teachers perceive the contribution of individual support in a digital learning environment?
- What are the barriers to implementing effective individualised support for learners in digital education?

2. Methodology

This study adopts a qualitative approach to explore the perceptions and experiences of teachers at ULPGL-Goma. Three teachers from various disciplines (health sciences, psychology and education, and engineering), including one woman, were selected using purposive sampling (Creswell, 2014; Patton, 2015). Semi-structured interviews, lasting an average of 15 minutes, were conducted, recorded, transcribed and analysed using thematic content analysis (Bardin, 2013; Krippendorff, 2018). A coding system was developed to categorise the responses along three axes: understanding, contribution and barriers to individual support in digitalised teaching. Furthermore, the participants gave their informed consent. The data were anonymised (codes A, B, C) and stored securely (Paillé & Mucchielli, 2016).

For the content analysis, the initial codes were grouped into broader thematic categories, which enabled the codes to be directly linked to one another and the data to be structured. Thus, a thematic tree was gradually developed, ranging from the most specific codes to the more general categories, directly linked to the questions in the interview guide as well as the

objectives of the article. Finally, this framework was used as the basis for analysing and presenting the results.

Limitations of the study

Research often faces challenges, and this study was no exception during the data collection phase. One of the main issues was time management during the interviews with the teachers. Scheduling issues and the availability of one of the three participants prolonged the data collection phase (Miles, Huberman and Saldaña, 2018). However, this did not affect the number of teachers interviewed, which remained the same.

3. Research findings

This section presents the results of the qualitative study conducted with three teachers at ULPGL-Goma on their perceptions of individualised support in digital teaching. The data, analysed using content analysis, are organised into three main themes: understanding of the concept, its perceived contribution, and barriers to its implementation.

3.1. Understanding of individualised support in digital teaching

Teachers perceive digitalised individual support as a profound transformation of their practice, centred on inclusive teaching strategies, a redefinition of their role and the targeted integration of digital tools.

In terms of teaching strategies, teachers are moving away from transmissive methods towards active and inclusive approaches, supported by ICT. Interviewee A illustrates this shift: *'I don't just hand out handouts to the class; I create PowerPoint presentations to project, display images and show videos'* (Interviewee A, lines 14–15). This interactivity is also observed by Interviewee B, who notes that *"When I project images, everyone shares their thoughts"* (Interviewee B, lines 31–32), creating a participatory environment where students take an active role in their own learning. The use of platforms such as WhatsApp extends this interaction beyond the classroom, as Interviewee A explains: *"I require students to set up WhatsApp groups... they can make comments in a different way"* (Interviewee A, lines 21–22).

This change is accompanied by a redefinition of the teacher-student relationship. The teacher takes on the role of an accessible facilitator. Interviewee C illustrates this closeness through personalised face-to-face support: *'I also make a point of asking if anyone is stuck; I walk round the classroom too – I sometimes spend a lot of time walking round to each of them'* (Interviewee C, lines 31–32). This relationship is strengthened digitally, with Interviewee B stating: *"I'm now*

more involved in the students' lives than before, and the students are closer to me than before" (Interviewee B, lines 43–45), a closeness she attributes in part to the ability to contact one another and see each other via video.

Finally, the integration of specialised digital tools is seen as a means of enriching the learning environment. Interviewee C uses software to *'give students the opportunity to go beyond what we do in class'* (Interviewee C, lines 19–22). He also values content creation tools, such as *"whiteboard software that turns my screen into a whiteboard; the advantage is that I can retrieve what I'd written previously and share it with the students"* (Interviewee C, lines 92–94). This ability to archive and share digital resources is a key feature of their understanding of an enriched learning environment.

3.2. Perceptions of the contribution of individualised digital support

Teachers identify several positive contributions, ranging from improvements in teaching methods to the development of specific skills among learners. A major contribution lies in the complementarity between digital and traditional tools, creating a hybrid and resilient teaching approach. Interviewee A described this synergy: *'Apart from using PowerPoint in my lessons, often at the start of the course... when I set the tasks... they were grouped together, they worked on tasks in groups... and when we'd finished, it was written by hand on paper'* (Interviewee A, lines 17–21). This hybrid approach allows for adaptation to unforeseen events, as the same teacher noted when faced with a power cut: *"I stopped, I waited... I told the students to think about something..."* (Interviewee A, lines 113–115).

Formative assessment and feedback are perceived as having improved considerably. Interviewee A uses regular assessments for ongoing diagnosis: *"I often organise assessments... normally there's an assessment every 15 hours... I mark them with the students... I ask them who scored at least how many marks... what difficulties they're having"* * (Interviewee A, lines 53–57). Interviewee B highlights the immediacy of digital feedback: *"the student gets the feedback straight away; they can see their mistakes"* (Interviewee B, line 125), thereby resolving the delays inherent in traditional systems.

Teachers have observed increased student engagement and the development of digital skills. Interviewee B notes that *'the students treat it like a game... we look at the images, we watch the video'* (Interviewee B, lines 35–37). This engagement goes hand in hand with the acquisition of practical skills. Interviewee A encourages online research: *'You pick up your*

phone, you go online... they've looked for information to enrich the real-life case studies' (Interviewee A, lines 28–30). Communication and collaboration are also enhanced through tools such as WhatsApp and Classroom, whilst Interviewee C emphasises problem-solving via simulation software that allows students to *'test different solutions to a problem'* without *'spending a lot of money'* (Interviewee C, lines 58–61).

3.3. Barriers to the implementation of digitalised individual support

Despite their willingness to innovate, teachers face major structural obstacles that hinder the effectiveness of digitalised individual support.

Infrastructural and equipment-related constraints are the most frequently cited. Interviewee A sums up the situation: *'We may have the ambition; I can prepare the material, but when I get to the lecture theatre, there are many challenges, such as the electricity supply, for example. I've planned everything with the computer, but there's no power, no internet connection'* (Interviewee A, lines 102–105). The lack of equipment amongst students is also a hindrance, forcing them to use their mobile phones and limiting their ability to work at home, as interviewee C notes: *"If there's an assignment they haven't finished in class, they don't have the chance to go home and finish it"* (Interviewee C, lines 47–48).

The challenge of training, for both teachers and students, is crucial. Interviewee B candidly expresses her need for training: *'I still need more training... I still have a great many gaps in my knowledge of how to use it'* (Interviewee B, line 103), and sometimes feels *'inadequate, helpless (yes), frustrated'* (Interviewee B, lines 108–109) when faced with more advanced students. She also highlights the lack of basic skills among some students: *'students who come from elsewhere who have never even seen a — what's it called? — a computer, a projector'* (Interviewee B, lines 135–136), and suggests, *'We should first train the students in a few basic concepts'* (Interviewee B, lines 138–139).

Faced with these obstacles, teachers' motivation and their ability to find alternative solutions are put to the test. Interviewee A calls for better preparation for crisis situations: *'we also need to be equipped with techniques and strategies, so we know how to proceed in environments where there are difficulties'* (Interviewee A, lines 110–111). Despite everything, they demonstrate resilience by developing local strategies, such as using free versions of software or combining digital and non-digital tools, showing a remarkable ability to adapt within a constrained context.

4. Discussion

This study aimed to explore the perceptions of teachers at ULPGL-Goma regarding individualised support within a digital teaching context. The results reveal a strong conceptual commitment among teachers to the principles of digitalised individualised support, a recognition of its significant contributions, but also a confrontation with systemic barriers that limit its full realisation.

Teachers' understanding of digitalised individual support goes far beyond a simple substitution of tools. It forms part of a profound pedagogical transformation, in line with the observations of Selwyn (2023) and Meirieu (2020), where digital technology acts as a catalyst for active, collaborative and learner-centred approaches. The use of tools such as PowerPoint, WhatsApp and specialised '' software is not seen as an end in itself, but as a means of creating an interactive and inclusive learning environment. This vision is consistent with the theoretical framework, which places the individualisation of tasks and feedback at the heart of effective learning (Hattie, 2012; UNESCO, 2014). Furthermore, the redefinition of the teacher's role – who becomes an accessible and approachable facilitator, even through digital means – is a strong indicator of this shift in pedagogical attitudes.

The positive perception of digital technology's contribution to individual support is also noteworthy. Teachers report a tangible improvement in student engagement, the development of their digital skills and the effectiveness of formative assessment. The strategy of combining digital and traditional tools, mentioned by several interviewees, constitutes a form of pedagogical resilience. This 'low-tech/high-tech' hybridisation echoes UNESCO's (2023) recommendations for fragile contexts, demonstrating a remarkable capacity for innovation and adaptation in the face of constraints.

However, this discussion must be qualified in light of the obstacles identified. Infrastructure constraints (power cuts, poor connectivity) and the lack of equipment among students – extensively documented by Kabuya (2022) and in UNESCO reports (2022) – are confirmed as the main hindrance. Indeed, they create a disconnect between teachers' pedagogical ambitions and operational realities, a phenomenon that Czerniewicz (2022) observed across sub-Saharan Africa. Furthermore, the lack of training, for both teachers and students, raises a crucial issue. The sense of frustration and helplessness expressed by a teacher in the face of her own shortcomings or those of her students corroborates the warnings of Assié-Lumumba (Assié-Lumumba? 2020; Selwyn, 2023) regarding the risks of a digital divide

compounded by an educational divide. Consequently, without massive investment in skills development, individualised digital support risks remaining a privilege for a minority and may reproduce, or even exacerbate, existing inequalities.

5. Conclusion and Recommendations

This section presents a summary of the work as well as a number of recommendations for universities, teachers and future research.

5.1. Conclusion

This qualitative research conducted at ULPGL-Goma highlights the complexity of integrating digitalised individual support within an African university context characterised by structural challenges. Lecturers demonstrate a sophisticated understanding and a clear willingness to innovate for the benefit of their students. They perceive digital technology not merely as a tool for disseminating information, but as a catalyst for more interactive, personalised and inclusive teaching. Their experiences demonstrate positive impacts on learner engagement and improved feedback.

However, the potential of digitalised individual support cannot be fully realised without a systemic and coordinated approach to overcoming obstacles. The resilience and alternative strategies developed by lecturers, whilst admirable, are not sufficient to compensate for profound infrastructural and training shortcomings.

In conclusion, the digitalisation of individual support at ULPGL-Goma – and likely at other Congolese universities with similar profiles – stands at a crossroads. It is driven by a promising pedagogical dynamic but hampered by persistent material and human resource constraints. The future of this transformation lies in the ability of institutions and decision-makers to support this innovation through sustainable and targeted investment.

5.2. Recommendations

For higher education institutions, we recommend investing in basic infrastructure: generators, dedicated rooms with reliable equipment, and improved internet connectivity; to introduce compulsory, context-specific continuing professional development programmes for teaching staff, focusing on digital pedagogy and the use of low-tech/offline tools; and to develop a digital literacy programme for new students to bridge the skills gap.

For lecturers, it will be important to continue sharing experiences and best practices within communities of practice

to pool solutions to common challenges and to continue exploring and formalising resilient hybrid teaching strategies that effectively combine digital and non-digital approaches.

For future research, the study should be extended to a larger and more representative sample across the various faculties of ULPGL and other universities in the region; the students' perspective should be included to provide a comprehensive and triangulated view of the perceived effectiveness of individualised digital support; and longitudinal studies should be conducted to assess the impact of this support on long-term academic success.

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Appendices

Table 1 : Summary of results

Main Theme	Category	Key Points
1. Understanding Digitalised Individual Support	Pedagogical Transformation	- Adoption of active and inclusive approaches. - Use of ICT (PowerPoint, videos) to encourage interactivity. - Extending interaction beyond the classroom through tools such as WhatsApp.
	Redefining the Teacher's Role	- The teacher becomes an accessible facilitator. - Individualised support and closer relationships with students, enhanced by digital technology.
	Enriching the Learning Environment	- Use of specialised tools to go beyond face-to-face lessons. - Making the most of tools for creating and sharing content (digital whiteboard).
2. Perceived Contribution of Digital Support	Hybrid and Resilient Teaching	- Effective complementarity between digital tools and traditional methods. - Ability to adapt to unforeseen circumstances (e.g. power cuts).
	Improved Assessment and Feedback	- Regular formative assessments for ongoing assessment. - Immediate digital feedback, overcoming the delays associated with traditional systems.
	Engagement and Skills Development	- Increased student motivation and engagement (fun element). - Development of digital skills (online research, collaboration, problem-solving).
3. Barriers to Implementation	Infrastructure and Hardware Constraints	- Power cuts and an unstable internet connection. - Lack of suitable equipment among students, limiting their ability to work at home.
	Training Challenges	- A pressing need for ongoing training for teachers. - A lack of basic digital skills amongst many students.
	Impact on Motivation and Need for Solutions	- Feelings of frustration and helplessness amongst teachers. - Need for strategies and tools suited to resource-constrained environments.