TETFLE TEACHER EDUCATION THROUGH FLEXIBLE LEARNING IN AFRICA JOURNAL

Designing and Developing Self-Directed Learning Resources in Open Distance Learning (ODL) Contexts: A Ghanaian Case Study

Vol 7, 2025

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Published By

The Unit for Distance Education, Faculty of Education

University of Pretoria, Groenkloof Campus

Cnr of George Storrar and Leyds Street, Pretoria, South Africa

Web address: https://upjournals.up.ac.za/index.php/tetfle

Email address: tetflemanager@up.ac.za

ISSN 2788-6298 (Online)

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The Teacher Education through Flexible Learning in Africa (TETFLE) and other developing contexts online journal is a refereed, open-access e-journal that publishes original research on distance teacher education in Africa. TETFLE aims to create a platform for researchers and practitioners on glocal matters that relate to distance teacher education on the continent. Publications cover issues of content, pedagogical consideration, technology and management in distance education. Exemplar papers with rigour showing research evidence are most appreciated.

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Indexing

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Official publication of the Unit for Distance Education
Faculty of Education
University of Pretoria
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DOI: https://doi.org/10.35293/tetfle.v7i1.5184

ISSN 2788-6298

Abstract

The expansion of Open and Distance Learning (ODL) is critical for teacher education in Ghana. This study explores the on-the-ground reality of how educational resources are designed, developed, and used within a major Ghanaian university's ODL teacher education programme. Using qualitative case study design, semi-structured interviews were conducted with 15 participants, comprising curriculum developers, module authors/lecturers, and course tutors. Findings reveal a systematic approach centred on collaborative co-authoring to create interactive, self-directed print textbooks locally referred to as modules, which serve as primary learning materials. The design approach emphasises interactive self-study enabling learners to engage with content independently. However, significant challenges emerge from a systemic fragmentation between content creation and delivery. Tutors, who are at the forefront of implementation, have limited formal channels for providing feedback, leading to a disconnect between the intended and enacted curriculum. The current study highlights the need for greater pedagogical coherence and institutionalised feedback loops to enhance the quality and effectiveness of ODL resources in this context.

Keywords: Curriculum development; Ghana; Open and Distance Learning (ODL); resource design; teacher education

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Introduction

The expansion of Distance Learning (DL) in teacher education marks a significant and sustained shift across the African continent, with Ghana standing out as a key example (Addae-Kyeremeh et al, 2024; Senyametor et al., 2024). This growth responds to persistent challenges such as limited infrastructure in campus-based institutions and the increasing demand for qualified teachers (Addae-Kyeremeh & Boateng, 2024; Anamuah-Mensah & Cullen, 2013). This expansion is not only practical, but also policy driven. Continental frameworks such as the African Union's Agenda 2063 and the Continental Education Strategy for Africa (CESA 2016–2025) stress teacher development as central to achieving broader social and economic transformation (African Union Commission, 2015). DL programmes, typically delivered through a central university and a network of regional study centres, offer a flexible alternative to traditional face-to-face models, thereby widening access to professional development and initial teacher qualification for a more diverse population (Brenya, 2022). For instance, Zhang et al. (2021) highlight the University of Education, Winneba's network of 23 study centres across Ghana, noting that distance teacher education has enabled thousands of teachers to gain qualifications often with employment prospects making it a sustainable model for teacher training.

However, the flexibility of DL must not come at the expense of educational quality. As noted by the Commonwealth of Learning (Freeman, 2005), distance education often functions without a conventional classroom teacher, distributing instructional responsibilities between structured learning materials and tutors. These educational resources and materials must, therefore, be meticulously designed to perform multiple instructional roles: articulating learning objectives, delivering subject knowledge, illustrating key concepts, and maintaining learner engagement. They must be "well-written" and "self-contained" (Salifu et al., 2023, p. 2). This requires collaboration among academic authors, learning designers, editors, and media specialists to ensure pedagogical coherence, contextual relevance, and alignment with curriculum standards. Regardless of the delivery medium, print or online, design teams must carefully scope content structure, assessment types, and delivery methods to meet learning outcomes and ensure accessibility. Learner needs and behaviours are also considered, with materials incorporating opportunities for reflection, practice, and formative assessment that provide feedback without relying on constant tutor involvement (Sibomana, 2019).

While digital platforms are increasingly used to distribute materials, printed resources remain essential in contexts with limited technological infrastructure. In many African settings, including Ghana, print-based materials supplemented by occasional face-to-face contact continue to be the backbone of DL provision (Rennie et al., 2017). Hence, poorly designed resources can have serious consequences, including high student attrition, learner isolation, and the graduation of underprepared teachers (Angelino et al., 2007; Ewulley et al., 2023). Given the high cost of tutoring and the home-based nature of most learners, tutor interaction is often limited and episodic. Tutors are thus, more accurately described as "facilitators" (Andoh et al., 2020, p. 120), placing a significant pedagogical burden on the learning materials. The quality and relevance of these resources are particularly critical in Open and Distance Learning (ODL) teacher education, where the learning experience must model effective teaching practices and address the needs of a diverse student body (Khunou, 2021).

The current study explores the realities behind the development of such materials, focusing on the process, author practices, philosophies, and challenges involved in designing and delivering educational resources by addressing two key research questions:

1. How are educational resources for teacher education designed and developed within the ODL framework at a university in Ghana, and what factors influence this process?
2. What are the challenges in the design and development of educational resources in such low resource contexts?

Relevant literature

Theoretical foundations of ODL resource design

The design of effective ODL environments is not an intuitive act but is deeply informed by several foundational theories that seek to explain and guide the learning process when teachers and students are physically separated. Moore's (1993) seminal theory of transactional distance, for instance, provides a useful analytical lens. Moore (1993) posits that in any educational relationship, a psychological and communication gap, the 'transactional distance' exists between instructor and learner. The magnitude of this distance is determined by three key variables: dialogue (the extent of purposeful, constructive interaction); structure (the rigidity or flexibility of the course's design and

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objectives); and learner autonomy (Kandemir & Çakmak, 2021). Therefore, a primary goal of instructional design in ODL is to reduce this distance. This is achieved through resources that are intentionally designed and written to foster a sense of dialogue (e.g., through embedded reflective questions, self-assessment exercises, and a conversational tone) and a clear, supportive structure that guides the learner without being overly restrictive (Abreh, 2025; Anlimachie et al., 2025).

Building on this foundational concept, the Community of Inquiry (CoI) framework developed by Garrison et al. (1999) offers a more holistic, socio-cognitive blueprint for creating meaningful online and blended learning experiences. The CoI framework has become one of the most influential models in distance education research and practice, positing that deep and meaningful learning occurs through the dynamic interaction of three core, interdependent presences. Cognitive presence is the extent to which learners can construct and confirm meaning through sustained reflection and discourse. Social presence refers to the ability of participants to project their personal characteristics into the community, thereby presenting themselves as 'real people' and fostering a climate of trust and collaboration. Finally, teaching presence encompasses the design, facilitation, and direction of cognitive and social processes for the purpose of realising personally meaningful and educationally worthwhile learning outcomes. Each of these presences is heavily influenced by the architecture of the learning environment, particularly the design of its core educational resources and activities. Instructional techniques that foster an environment conducive to active learning, such as the use of collaborative tools, case-based learning, and structured discussions, are paramount (Dron & Anderson, 2014).

Furthermore, the principles of Vygotsky's (1978) social constructivism are profoundly relevant to the ODL model described in this study. Vygotsky argued that learning is a fundamentally social process, where individuals construct knowledge through interaction with others. His concept of the Zone of proximal development, the gap between what a learner can achieve independently and what they can achieve with guidance, is particularly salient. In this ODL context, the educational resource (the module) can be seen as a primary 'More Knowledgeable Other' (MKO), providing the structured knowledge and scaffolding needed for independent study. The course tutor then functions as a second, more dynamic MKO during face-to-face sessions, providing targeted support to help learners traverse the ZPD. This theoretical lens highlights the critical symbiotic relationship between the self-study materials

and the human facilitator. Similarly, Laurillard's (2012) conversational framework emphasises that learning is a process of iterative dialogue. This framework outlines a series of 'conversations' that must occur between the teacher and the learner, as well as between the learner and the concepts. For distance education, this implies that resources must be designed as a 'dialogue on paper', anticipating learner questions, providing feedback, and encouraging students to articulate and re-articulate their understanding.

Collectively, these theories highlight a unified vision for effective distance learning design, one in which meticulously structured resources and intentional facilitation converge to create a rich, interactive, and socially mediated learning environment. This study, therefore, draws on these interwoven perspectives to frame the educational resources not merely as content repositories, but as catalysts for dialogue, community, and guided intellectual growth, ultimately bridging the physical and pedagogical distance inherent in the ODL context.

Designing contextually relevant learning resources to support DL

In many Ghanaian and African contexts where Internet access is either expensive, unreliable, or unavailable, printed course materials remain the most equitable and robust cornerstone of ODL delivery (Rennie et al., 2017). This is not merely a concession to a lack of technology, but is also supported by cognitive science. Research suggests that reading long, linear texts on paper may lead to better comprehension and retention compared to screen-based reading, partly due to a reduced cognitive load and the tactile, spatial cues that paper provides (Mangen et al., 2013). Therefore, print modules are intentionally designed for deep, independent study, often using a modular format, clear learning outcomes, and a conversational tone to simulate a tutorial dialogue and reduce learner isolation (Lockwood, 2018). Their structure must be logical and carefully scaffolded, progressively building understanding and embedding activities that prompt reflection and application. The challenge, therefore, is not simply to produce a textbook, but to design a comprehensive, selfcontained learning experience that simulates the presence of a tutor.

However, this reliance on pre-designed materials creates a well-documented tension between the intended curriculum (as designed by the module authors) and the enacted curriculum (as experienced by learners and facilitated by tutors). This gap is a central problem in the study of educational implementation (Fullan, 2016). Tutors,

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who are at the front line of delivery, develop invaluable insights into which parts of the resources are effective and which parts are confusing or problematic for students. They are uniquely positioned to provide formative feedback for curriculum improvement. Yet, as literature suggests and the current study explores, they often have limited or no formal channels to influence the design and revision process (De Souza & Da Costa Polonia, 2015; Kılıç & Saygılı, 2022). Without robust, institutionalised mechanisms for dialogue between the central resource developers and the distributed network of facilitators, the curriculum risks becoming static, unresponsive, and progressively misaligned with the emergent needs of learners.

While print remains central, the global push towards integrating Information and Communication Technology (ICT) presents both profound opportunities and significant challenges. The proliferation of digital tools, Open Educational Resources (OER), and Massive Open Online Courses (MOOCs) have democratised access to a vast repository of high-quality materials (Shukla et al., 2022). OER are promoted based on the '5R' permissions articulated by Wiley (2014): the rights to retain, reuse, revise, remix, and redistribute. The ability to 'revise' and 'remix' is theoretically ideal for contextualising content for local needs. However, the practical application of this principle is often hindered by a lack of technical skills, institutional support, and time.

More fundamentally, many of these readily available digital resources are developed in, and for Western contexts. Their importation into African educational settings raises critical questions about their cultural relevance, linguistic suitability, and alignment with local curricula and pedagogical traditions (Arinto et al., 2017). As Ngimwa and Wilson (2012) argue, digital resources designed without adequate consideration of the African learner's context often fail to meet their pedagogical and motivational needs. The cultural assumptions embedded in case studies, the idiomatic expressions used, and the very structure of expected interactions can create a sense of alienation (Olaniran & Agnello, 2008). True contextualisation goes beyond a superficial substitution of names and places; it requires a deep re-engineering of the material to align with local epistemologies and lived realities.

This issue is compounded by the nature of the 'digital divide'. As van Dijk (2005) argues, this divide is not merely about access to hardware and Internet connectivity, it also encompasses motivational access (the desire to use technology), skills access (the competencies to use it effectively), and usage access (what people do with the technology). Principles like Universal Design for Learning (UDL), which advocate

for providing multiple means of representation, expression, and engagement (Meyer et al., 2014), offer a promising framework for creating more flexible and accessible resources. Yet, applying such principles effectively requires a granular understanding of the specific context, including learner characteristics, tutor capabilities, and institutional realities. This study addresses a critical gap by shifting the focus from the promise of imported technology to the reality of local practice, providing a detailed, empirical account of the resource design and development process in Ghana and offering insights into the factors that shape a curriculum striving to be both scalable and deeply contextualised.

Research design

To achieve the research objectives, a qualitative case study design was employed (Kekeya, 2021; Knapp, 2024). The current case study approach is well-suited for exploring a complex, contemporary phenomenon in-depth and within its real-life context (Ali et al., 2024). The 'case' under investigation was the ODL teacher education programme at a major Ghanaian university. It is considered an 'instrumental' case because the in-depth study of this specific programme was undertaken to illuminate the broader issue of ODL resource development in a Sub-Saharan African higher education setting. This design enabled a holistic and intensive examination of the interactions, decisions, and challenges that shape the creation and use of learning resources. Credibility was enhanced through the triangulation of data sources, whereby the perspectives of different participant groups (e.g., central curriculum developers versus remote course tutors) were compared to construct a more comprehensive and robust understanding of the phenomenon (Wa-Mbaleka & Rosario, 2022).

This institution represents a critical case due to its significant role in training teachers across the country through its network of a central campus and numerous regional study centres. To ensure a comprehensive view, the study was conducted at multiple sites. The university's main campus was the site for engaging with curriculum developers, module authors, and institutional leaders who oversee the resource design and policymaking processes. In addition, three regional study centres were purposefully selected as sites to gather data from course tutors, providing crucial perspectives from the point of curriculum delivery and enactment. This multi-site approach within a single-case design was essential for capturing the full lifecycle of ODL resources, from their conception to their practical implementation.

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Population and sampling

The study population included all professional staff involved in the design, development, and delivery of the university's ODL teacher education programme. A purposive sampling strategy was used to select information-rich participants who could offer deep insights into the research questions (Akkas & Meydan, 2024). The sample comprised key stakeholders directly involved in the ODL process such as senior academics and institutional leaders at the main campus responsible for curriculum policy and module development, lecturers who serve as module authors, and experienced course tutors who facilitate learning at the selected regional study centres. These individuals were chosen based on their roles, experience, and direct knowledge of the resource development process and its associated challenges, ensuring the data collected was highly relevant and detailed.

In total, the final sample for this study comprised 16 participants, drawn from the distinct stakeholder groups identified. These are: *three senior academics* and institutional leaders responsible for policy; *four lecturers* who serve as module authors; and *nine course tutors* from across the three selected study centres. A combination of criterion-based and snowball sampling strategies was employed to recruit these individuals. Initially, academics and module authors were identified through purposive criterion sampling, based on their direct involvement in the ODL teacher education curriculum and a minimum of five years' experience with the programme.

Following their interviews, the participants were asked to recommend experienced and articulate course tutors, a form of snowball sampling that helped identify information-rich participants at the point of delivery. While this sample of 16 is a subset of the total available personnel of approximately 12 institutional officials, 15 core module authors, and several dozen tutors, it is considered appropriate for the study's qualitative, interpretive goals.

In qualitative inquiry, the aim is not statistical generalisation, but to achieve informational richness and depth (Staller, 2021). The power of the sample lies in its ability to provide detailed and nuanced data. The principle of data saturation guided the selection, the point at which collecting further data no longer yields new insights or themes (Braun & Clarke, 2021a). By deliberately including participants with diverse roles and perspectives from high-level design to classroom implementation, the sample was strategically constructed to capture a comprehensive spectrum of experiences, ensuring that the collected data was sufficiently dense to achieve saturation and support a credible, in-depth thematic analysis.

Data collection, management, and analysis

Data was collected through semi-structured interviews with the selected participants. An interview guide was used to provide a consistent framework for inquiry, focusing on topics such as the module writing process, pedagogical design, institutional policies, and implementation challenges. The semi-structured format provided flexibility to explore emergent themes and allowed participants to elaborate on their unique experiences and perspectives in their own words (Price & Smith, 2021). All interviews were audio-recorded with explicit consent from the participants.

The interviews were transcribed verbatim to generate a detailed textual dataset, which was subsequently analysed using an iterative thematic analysis approach, following the guidelines established by Braun and Clarke (2021b). This systematic process involved familiarisation with the data through repeated reading of the transcripts; generating initial codes inductively from the data; organising codes into potential themes; reviewing, refining, and naming the themes; and producing the final analysis. The entire process was facilitated using NVivo, a qualitative data analysis software package, which assisted in organising the codes and themes efficiently.

Ethical considerations

The study adhered to strict ethical protocols to protect the rights and welfare of all participants. Formal ethical clearance was secured from the relevant institutional review boards at both the lead researcher's university and the participating Ghanaian university, prior to any research activities beginning. All individuals invited to participate were provided with an information sheet that clearly explained the study's purpose, the voluntary nature of participation, and their unconditional right to withdraw at any stage. Written informed consent was obtained from each participant prior to their interview. To preserve participant anonymity, data tags (e.g., 'Tutor K') have been used when reporting the findings.

Findings

This section presents key findings related to the design, development, and challenges of creating educational resources for ODL in a Ghanaian teacher education programme. Interview data revealed themes such as collaborative module writing, interactive self-study design, and the tutor's role as facilitator, which are presented below:

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Designing modules for DL

Self-directed learning as a cornerstone

The teacher education modules examined in this study are purposefully designed as self-directed learning texts, intended to guide students through content in a structured and accessible manner with minimal face-to-face instruction. Lecturers involved in developing these modules receive targeted training to ensure the materials are interactive and engaging for independent learners. As one academic leader explained:

> *…the people who wrote the modules were trained specifically to make them interactive. Each unit of a module typically opens with an introduction and learning objectives, and the content is written in a conversational tone as if the instructor is speaking directly to the student. The introduction of a unit is crafted such that "you will feel as if you have the lecturer in front of you talking. So, as you read, it's like you are conversing with somebody. It's highly interactive". This stylistic approach is intended to simulate a guided dialogue, anticipating student questions and encouraging them to think actively as they read.*

Because these modules must stand in for face-to-face teaching, they are written in very clear and accessible language. One of the academic authors/lecturers explained as follows:

> *The modules are written in such a way that… [it's] as if speaking to the student so that they should be able to read by themselves and understand most of what is in the module". The language used is simple and straightforward English, avoiding overly technical jargon, so that students of varying backgrounds can grasp the material through self-study. The expectation is that by reading the module independently, learners can acquire the core content on their own; any difficult points that remain can later be clarified during tutor-led sessions.*

In essence, the design philosophy is to empower students to learn at their own pace with the module as a "self-tutor", minimising the need for extensive lecturing by a teacher. These aspirations for the DL module design philosophy are echoed by TutorK, one of the tutors:

> *… Modules developed for my programme, it's quite good. Okay… the modules, have already been developed; [they made them] more interactive, self-explanatory; you'll read on your own. You'll need… some interaction with the TA, to explain but you can also learn on your own. So, looking at it, it's quite explanatory, interactive, wide on examples; then [it's] even developed around the, I'd say the outline… okay, yes… it has been made in such a*

way that … if I sit at home and you even sit on your own, you're left out by the tutors, you should be able to understand.

This suggests that the material is comprehensive and regularly updated, aligning closely with the course outline to cover necessary topics in a logical and student-friendly manner.

According to interviewees, each module is organised into sequential units that students can follow step by step. Importantly, the modules also encourage further exploration by including references and suggested readings at the end of each unit.

"At the end of every unit, we have reference materials – sources that you can consult", noted one interviewee, TutorB. The interviewee goes further to explain as follows:

These extended readings are provided to enrich understanding and allow motivated students to go beyond the core module content. The inclusion of such resources reflects an instructional design choice aimed at promoting deeper learning and research skills. In practice, however, not all students take advantage of these references.

The interviewee also mentioned that while *"students who are studious, those who are serious, they'll go beyond the modules and look for the extra material", many others "limit themselves to the… modules"* only. This suggests that the effectiveness of the module design (in terms of encouraging independent inquiry) can be influenced by student motivation and study habits.

Co-authoring for continuity and workload sharing

The development of DL course textbooks and main teaching resource, known as modules, has shifted from single authorship to a collaborative writing approach. Initially, each module was written by one lecturer, however, over time, the university adopted a co-authorship model for several reasons. One major factor was to ensure continuity of the course material if staff turnover occurs. One lecturer/author explained as follows:

… the policy now is to have two people or more to do the module writing so that if one leaves, the other can support or be there. This co-authoring approach also distributes the workload. Each module typically consists of six units, and when two authors collaborate, they divide the units between them—for example, one author might draft Units 1–3 and the other Units 4–6, sometimes alternating to balance the effort. This way, both contribute substantively to the content.

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Another lecturer/author described their experience as follows:

> *Yeah, the way we [did] this was… We've got a team of writers, who are lecturers here, in the university here, from various departments. So, in our case, the mathematics books are from both the Education – Faculty of Education – and then the Faculty of Science, that is, those from the Department of Mathematics and [Statistics]. So, we form teams and then we come together and look at the course outlines… And… if it is methods, we see the syllabuses that are being used at the level [for which] we are preparing [materials]. We have the Primary School one and then we have the JHS one; and I think, quite recently, I think they are working on the Senior Secondary School one – I am not involved in that. So, we take the syllabuses, you know, and base it [at] the levels they are going to… And… then we prepare the course outline and all of this… and based on that, you write the modules unit by unit, bearing in mind what the syllabus is … at the level they will be teaching it. Right, so we do that—experts. Then we give portions to members of the team to write.*
>
> > *Right. So, they write. After we have written, we come together again and the team will look through all, from first unit up to the sixth unit. There are six units. All of us will look through and then we bring our suggestions, corrections and so on and so forth. Right. … And it's after that that we send it to the administration and then they go about processing it; I mean, they have it typed very well and then it's done…. then it's sent to them and then they go print them. And we are expecting that when they bring it, we look at them again later on, and make sure we have this.*

The excerpts suggest a structured co-authoring process by faculty members, a process that begins with reviewing relevant syllabuses to create course outlines. Modules are then written unit by unit by assigned team members. After drafting, the entire team conducts a thorough peer review of all units, incorporating feedback, and corrections. The finalised content is submitted to the administration for formatting and printing, followed by a final quality check upon receiving the printed materials.

Use of existing expertise

The module authors are usually lecturers who have taught the subject in the regular campus-based programme, and they draw on their prior coursework materials. One lecturer/author noted:

> *I have been teaching these courses in the regular programme. So, it is my lecture notes that I transformed into the modules.*

This indicates that the content development leverages existing expertise and materials, adapting them into the self-contained module format suitable for distance learners. Co-authors coordinate to integrate their contributions into a coherent resource. One of the leaders explained that:

> *…alongside writing the modules, one of the co-authors typically serves as the chief examiner for that course, overseeing assessments and academic quality. The chief examiner responsibility is assigned to just one person per module, and the co-authoring model helps ensure this role is not too onerous. If two lecturers co-write a module, often the one not serving as chief examiner will take on that duty in a different module, preventing any single individual from being "saddled with so much work". This arrangement is designed to distribute responsibilities such as setting exam questions and marking schemes. It reflects an institutional decision to manage workload and maintain continuity: "they didn't want one person to be saddled with so much work, at least, so far as chief examiner duties are concerned".*

These show a collaborative module development process with multiple authors and clear role allocation is a deliberate strategy influenced by staffing considerations (existing expertise and workload management) to sustain the DL programme.

Separation of content creation and delivery

In this DL framework, the lecturers who write the modules are not the ones directly teaching most of students. Instead, *course tutors* at various study centres facilitate learning using the module as the primary content. This was explained as follows by one of the senior leaders:

> *Tuition and facilitation of learning is carried out by course tutors, not the lecturers who write the modules. These tutors meet with student cohorts periodically (often on weekends) to guide discussions, clarify difficult concepts, and support learners […] rather than to deliver lectures from scratch. The reason is that since the module contains the main "lecture notes" in written form, the role of the tutor is to facilitate an interactive learning experience around that content, rather than to teach it in a traditional way.*

Facilitation in this context refers to a learner-centred approach where the tutor's job is to stimulate and steer discussion, rather than present large amounts of new information. One lecturer/author described facilitation as *"purely a discussion session directed by the course tutor"* in which the tutor uses their expertise to pose questions and guide conversation.

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Another lecturer/author described this shared understanding as follows:

> *A tutor is expected to come to class with a "foreknowledge of the contents" and an understanding of key concepts, and then "open discussions" among the students. The discussion is "structured" and guided to ensure it stays on topic and covers the important issues at hand.*

In essence, the tutor acts as a moderator and mentor, helping students engage with the module material and each other, rather than lecturing at them. This mode of delivery aligns with adult education principles and the ODL philosophy of active, student-centred learning.

Most tutors interviewed emphasised the importance of their role as facilitators of learning. For instance, TutorY mentioned, *"… Rather than using the lecture method I believe in discussion"*. This approach they believe helps engage students actively, encourages critical thinking, and facilitates deeper understanding.

TutorK and TutorA, respectively, described the importance on drawing students' prior knowledge and experience to facilitate discussion based on the module content or other sources:

> *… for me I always want to start from points where they know. Rather than using the lecture method I believe in discussion shows the emphasis on interactive and inclusive teaching approaches.*

> *… Even if it is literature takes its source from the society; so, you bring what is in the society and bring it to bear on what is in the classroom what is in the textbook.*

However, the effectiveness of the facilitation model is highly dependent on students arriving prepared. Ideally, learners are supposed to read the module material prior to a face-to-face session. In the words of one lecturer/author who is a course leader:

> *… that is the ideal situation; that is what is expected of them. If students have worked through the module in advance, the tutor can then use the class time to clarify doubts, deepen understanding, and engage in collaborative activities—truly facilitating discussion around a shared base of knowledge.*

Tutors consistently noted that many students struggle to complete the required readings before attending tutorials. TutorT remarked *"the truth is that many of them are not able to do that"*. This lack of preparation often shifts the nature of the tutorial from a space for facilitated discussion to one of direct teaching, where tutors must summarise

or teach the content on the spot. A lecturer and course leader further explained that when students arrive unprepared, the tutor's workload increases significantly, transforming what should be a facilitative session into a more traditional teaching encounter. These perspectives are illustrated in the following excerpt:

> *… So, it is supposed that they would have studied the material, read the thing ahead; and then they have [the] face-to-face; and where they have problems and difficulties, then the tutors or facilitators help them through, by explaining. … It's not actually meant [for teaching] … you can get the details from the [module of] distance programme. It is not actually meant for them… for their lecturer to be there and then present the material like they would present it if they were in residence—I'm talking about these regular students. Yeah, they're [the distance students] supposed to study the material, where they have difficulty, then, they iron that out with […] I mean, at the face-to-face with the tutor. That is actually the intention. During some of our monitoring, we noticed that many of the students don't actually read the thing very well; they don't read ahead; so they go and they expect the lecturer to go and still teach them like he'd be teaching … In most cases, that is what we—I—noticed.*

Tutors often find themselves blending lecturing with facilitation reviewing foundational content before attempting to initiate discussion. This hybrid approach emerges out of necessity, frequently due to students arriving unprepared. As a result, some tutors struggle to cover the full scope of content within the limited time of weekend sessions. The intended facilitative model is, therefore, sometimes compromised by time constraints and students' limited engagement with pre-reading materials, significantly shaping how resources are used during a contact session.

Another factor influencing facilitation is the background of learners and the disciplinary context. One lecturer/author highlighted a noticeable difference in engagement between education students and those in other programmes, such as business studies. They observed that teacher education students, often already familiar with pedagogical methods, tend to participate more actively in interactive learning.

> *When it comes to education courses, we find that the interaction is there because these are people who have trained as teachers, but when it comes to the business programmes, we have problems … and that is a fact.*

What this means is the students' professional orientation and familiarity with pedagogical methods may make them more active participants in discussions. This suggests that ODL facilitation is influenced by the cohort's profile indicating that

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students in some disciplines might require different strategies or additional motivation to participate. Programme planners must be mindful of such differences as they design resources and tutor training, ensuring that facilitation approaches are adapted to the learners' needs.

Further, tutors face challenges in teaching content that traditionally relies on hands-on experience, however, there is an acknowledgement of the importance of demonstration, especially for disciplines that require practical understanding. To address this, tutors adapt by using demonstrations during live sessions or directing students to online resources, such as videos, to supplement their learning. Tutors bring *"… handy items; galvanometers, ammeters, voltmeters to the class…"* (TutorT) to demonstrate concepts, showing a commitment to bridging the gap between theoretical knowledge and practical application.

The institution has experimented with leveraging technology to enhance access to learning materials, which is another aspect of resource development. For example, in one cohort the university provided students with tablet devices pre-loaded with electronic resources and links to online materials. The intention was to modernise resource delivery and give students convenient access to a wider range of readings. However, this initiative was not fully sustained as explained by one of the leaders:

> *… we gave them these tablets and we gave them links … [but] unfortunately, our agenda could not be pursued [The interviewee chuckles]. The lack of materials is not the issue—the programme can supply ample content—but rather the real challenge is students finding the time and capacity to use those materials effectively. As they noted, students often struggle with "having the time to digest what is in the module and then [go] beyond the module to look for other sources". This time constraint is an important contextual factor influencing how the self-directed resources are utilised. It underscores that even a well-designed module with additional e-resources depends on learner commitment and available study time to achieve its full impact.*

Overall, the findings reveal that while the modules are designed for self-directed learning and interactive facilitation, student preparedness and disciplinary differences influence how these resources are used in practice. Tutors often adapt by combining teaching with facilitation, and learner engagement varies across programmes. A further insight is the separation between content creation and delivery where modules are typically written by faculty lecturers with subject expertise, however, those delivering the content may not have been involved in their development.

ISSN 2788-6298

Challenges in the design and development of educational resources (modules)

The design and development of educational materials for ODL, in the context under review, presents unique complexities that extend beyond traditional face-to-face curriculum design. Tutors' reflections reveal a range of design-related issues that may influence the coherence, accessibility, and pedagogical appropriateness of ODL modules. Central to these concerns is the need to balance theoretical depth with practical applicability, while ensuring materials are appropriately scaffolded to support independent learners in diverse contexts. This section explores key dimensions of these design and development concerns to illuminate how module construction aligns, or fails to align, with learner needs and pedagogical intent.

Content load of modules

One of the main challenges raised by a tutor (TutorC) relates to the density of module content. They noted that some modules are overloaded with information, including sections that may not be essential for students' practical understanding or immediate application. Certain ideas were described as overly philosophical or abstract, leading the tutor to question their value in the context of how students engage with the material.

> *… Well, maybe. Sometimes, from the content area, it may be too loaded. At least, there're instance where, sometimes, I think certain portions may not necessary… you know, be important, in terms of how they're thinking of the materials. Yes. Some ideas are so philosophical, […] so much that sometimes you might think they don't even need them; but they are there in the module.*

The tutor's reflections as mentioned above, point to misalignment between content design, learner context, and pedagogical intent. This disconnect highlights challenges in the design and development process, where the balance between theoretical complexity and practical relevance is not adequately calibrated to the needs of distance learners. Consequently, the modules risk either overwhelming students with abstract material or restricting pedagogical flexibility by enforcing a narrow focus on exam-driven content.

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Limited opportunities for tutors to provide feedback

Limited opportunities for tutors to provide feedback on course materials and assessment emerged as a recurring concern. While tutors play an important role in facilitating student learning during face-to-face sessions, many felt sidelined from module development and assessment processes. The lack of formal channels to communicate their observations and suggestions, despite being directly involved in teaching the modules, was seen as a missed opportunity to improve course content. As the following excerpts illustrate, TutorD, TutorE, and TutorF, respectively, expressed a strong desire for structured avenues to provide feedback and contribute meaningfully to the continuous improvement of the programme:

> *But I know, sometimes, they come around. But they concentrate more on the students but not the course tutors. But, I believe, if there were opportunities for them to ask me [about] some of those issues, I believe I would mention them. … Maybe, the recommendation will be that as they assess … the course tutors, there should be an opportunity for them to sit and talk to the course tutors. Because, our input will make a lot changes.*

> *Once we have problems, we have nowhere to channel those problems. For example … they use quizzes, for example; they set it; it goes back to university, okay; and they mark and there are problems with it, the marking. We are not involved; sometimes … previously, they made the attempt … When there were problems but, I think, you know, sometimes, the students complain of even the marking. Because, you have taught; you're expecting an outcome.*

> *… if you have a problem, where we even channel it … if at least we even have a common front where we can even channel some of the grievances, we all have as tutors … and then if we can have a common front where, I mean … Ideally, we just teach and then go away.*

Tutor assumptions of learner prior knowledge

One notable design-related challenge that emerged from the interview with lecturers/authors, is the assumed linear progression of knowledge across modules. Interview data reveal that they often embed assumptions about learners' prior engagement with and retention of earlier course content, structuring new modules as cumulative and sequentially dependent. As one tutor explained:

> *The way the modules are written, the assumption is that previous Maths courses that you do are used as [a basis]—as prerequisite—for the successive ones.*

This sequencing strategy reflects a curriculum design model premised on progressive knowledge-building. However, the challenge arises when this design logic is not supported by mechanisms within the materials themselves to reinforce or revisit prerequisite knowledge. Without clear prompts, scaffolding, or cross-referencing within the modules, the coherence of the learning trajectory becomes fragile.

The same interviewee went on to note that:

> *They think that after learning a particular course, in a particular semester, that is the end of it. So, there is no way that they ever go back to look at what is there.*

This reveals a breakdown in how the curriculum logic is encoded within the material design. While this does not necessarily mean that students are unwilling to engage in cumulative learning, it may indicate that the materials lack sufficient internal cues and do not incorporate design features that make continuity explicit or support conceptual links across modular content. For example, TutorE highlighted a critical issue in the way mathematics modules are approached: although the modules are designed to progressively build, with each course serving as a foundation for the next, many students treat them as isolated courses. This misunderstanding leads to significant learning gaps, particularly when advanced topics require knowledge from earlier courses. The tutor explained that students often do not revisit previous material, assuming that once a course is completed, it is no longer relevant.

> *… I would say that the way the modules are written, the assumption is that previous Maths courses that you do are used as [a basis]—as prerequisite—for the successive ones. But it appears most of these students are not aware of that. They think that after learning a particular course, in a particular semester, that is the end of it. So, there is no way that they ever go back to look at what is there. So, when you are going higher, then you get to certain topics and you want to use those ones they have done as previous knowledge, then you see that there is a vacuum. That means that we'll have to do, quickly, a remedial teaching for them, to bring them to that level. Then you'll continue with your normal teaching. That is another serious challenge.*

The responses highlight the need for ODL resource designers to integrate strategies such as spiral content structures, review prompts, and guided recall activities that make the interdependencies between modules more transparent. Without these, the intended curriculum coherence may not translate effectively into learner experience.

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Fragmented pedagogical responsibilities

Although lecturers and senior leaders spoke of collaborative module writing, the findings revealed a fragmentation of responsibilities between those who design the content and those who deliver it. Responsibilities for content creation, instruction, and assessment are often distributed among different staff, with limited collaboration or a shared pedagogical vision. Such fragmentation can compromise coherence in the learning experience, resulting in inconsistencies in how learning outcomes are interpreted and embedded across modules. One senior academic was critical and illustrated this disconnect, noting:

> *In the normal [programme], you know who is going to mark your script, but the distance is not like that … Because … I go for marking every six (6) months at the University and I mark all the scripts in all the regions. Meanwhile, [it's] a different facilitator who is teaching them and [a] different examiner who is setting the questions.*

This narrative illustrates how fragmentation within distance learning programmes can compromise the pedagogical coherence essential during the design and development phase, thereby, limiting the potential for integrated and context-responsive resource creation.

Discussion

The findings reveal that the design and development of educational resources at this institution are underpinned by a deliberate pedagogical philosophy tailored to the demands of a large-scale, distributed teacher education programme. Central to this approach is the creation of comprehensive, interactive, and self-directed print modules, conceptualised as a 'tutor-in-print'. These modules are not merely content repositories, they are carefully structured to simulate a guided learning experience, aligning with Moore's (1993) theory of transactional distance. According to Moore (1993), transactional distance is shaped by the interplay of dialogue, structure, and learner autonomy. The institution's modules reduce this distance by embedding a conversational tone and interactive elements, thereby simulating dialogue and guiding learners through complex content. The structured, yet flexible design supports learner autonomy, enabling students to engage with material independently while maintaining pedagogical coherence.

ISSN 2788-6298

This design philosophy is further enriched by the institution's collaborative co-authoring model, which aims to ensure consistency, leverage faculty expertise, and sustain resource production. The collaborative nature of content development also reflects the teaching presence described in the CoI framework by Garrison et al. (1999). Within this framework, the modules contribute to cognitive presence by fostering critical engagement with content, while the structured design and tutor facilitation embody teaching presence. Importantly, the programme does not rely solely on independent study. Students periodically participate in scheduled face-to-face sessions with tutors, which serve as critical touchpoints for reinforcing understanding and addressing conceptual difficulties. These sessions enhance social presence, another key element of the CoI model, by fostering interpersonal connections and collaborative learning. From a Vygotsky (1978) social constructivist perspective, these face-to-face interactions are essential for scaffolding learning within the ZPD. While the modules provide foundational knowledge and support independent exploration, tutors act as more knowledgeable others, guiding learners through challenges that may not be fully resolved through self-study alone. This dynamic interplay between self-directed learning and social interaction exemplifies Vygotsky's assertion that learning is fundamentally a social process.

Another key finding relates to how these resources are developed. Module co-authorship has become an institutional strategy for maintaining the quality, consistency, and sustainability of course materials. This collaborative approach reflects broader trends in ODL, where multiple authors help to reduce reliance on individual staff and draw on a range of pedagogical expertise (Diallo, et al., 2013; Lane, 2012; Okada & Ferreira, 2012). Co-authoring helps align content with curriculum expectations, fosters peer review and ensures the inclusion of multiple perspectives in instructional design. Nonetheless, tutors highlighted challenges in the way the curriculum is sequenced across modules. The modules are often written with an implicit assumption of linear progression. The expectation is for students to have mastered earlier content prior to progressing. This is a sound pedagogical principle (Biggs, 1996), however, it becomes problematic in a context where students do not achieve this. Without built-in scaffolding or prompts to review earlier content, learners may struggle to follow advanced material. This creates pressure on tutors during face-to-face sessions to bridge knowledge gaps that the modules do not address. As Laurillard (2013) and Lockwood (2018) suggest, effective distance education materials must anticipate learner needs, including the need to re-engage with foundational concepts.

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As mentioned earlier, the curriculum and teaching methods are mediated through the educational resources. In relation to this, the findings reveal that tutors, despite being the primary point of contact with students, have limited avenues for feedback into module development. Tutors frequently expressed concern that they were not consulted during module revisions or provided space to report on the challenges they encountered in teaching. As key intermediaries between educational resources and learners, tutors are well-placed to inform curriculum improvement. Without institutionalised mechanisms for ongoing dialogue between tutors and course developers/the module writing team, there is a risk that the intended curriculum, as reflected in the modules, may diverge from the enacted curriculum delivered in classrooms (De Souza & Da Costa Polonia, 2015; Kılıç, and Saygılı, 2022).

In our findings, technology was not a central focus in the delivery of distance education. The initiative, to modernise learning delivery, by providing students with tablets preloaded with digital materials, was not sustained. There was no integration of technology with broader curriculum or teaching strategies. This highlights a wider issue in aligning resources, technology, and pedagogy. The use of technology, when not accompanied by curriculum planning or pedagogical adaptation, tends to have a limited impact.

Limitations of the study

This research was conducted as a qualitative case study focused on a single public university in Ghana. Therefore, while the findings offer deep, contextualised insights, they are not intended to be generalisable to all ODL institutions across Ghana or the wider Sub-Saharan African region. The sample size, though information-rich and appropriate for the study's interpretive goals, is small. Furthermore, the study primarily captures the perspectives of institutional staff and facilitators; a more comprehensive understanding could be achieved by incorporating students' direct voices and experiences with the resources.

Conclusions and recommendations

Despite the strengths evident within the sample examined from the university's DL resource production process, the study's central conclusion is that significant systemic fragmentation impedes the overall quality and pedagogical coherence of the programme. A critical disconnect exists between the central teams that design

the modules and set assessments, and the regional tutors who enact the curriculum through tuition at study centres. This separation creates a one-way flow of information, where tutors, who possess invaluable on-the-ground insights into student difficulties and resource effectiveness, have limited mechanisms to feed their experiences back into the design and revision cycle. This structural gap undermines the principle of constructive alignment, as teaching activities, learning resources, and assessments are managed by different, non-communicating groups, risking a disjointed experience for the learner.

Consequently, the intended curriculum, meticulously engineered within the modules, often diverges from the enacted curriculum experienced in the tutorial sessions. Tutors are frequently forced to abandon the intended role of 'facilitator' and revert to remedial teaching to bridge knowledge gaps left unaddressed by the rigid module design, particularly where modules assume linear knowledge progression without providing the necessary scaffolding. The failure to sustain technology initiatives like the student tablet programme further illustrates that resource provision, without deep pedagogical and systemic integration, yields limited impact. Ultimately, while the institution excels at creating scalable resources, it faces profound challenges in fostering a responsive, adaptive, and coherent pedagogical ecosystem.

To address the critical gap between lecturers/authors and tutors, the university could institutionalise robust, formal feedback mechanisms. This can be achieved by establishing a biannual review cycle where course tutors from various study centres are invited to structured workshops with module authors and curriculum leaders. An alternative or complementary approach would be to create a dedicated online portal for tutors to submit ongoing, structured feedback on specific module units, highlighting areas of student difficulty, content irrelevance, or pedagogical ineffectiveness. Making this feedback loop a formal, credited part of the tutors' role would ensure the curriculum remains dynamic, responsive, and grounded in the reality of the learner experience.

Secondly, to overcome the challenge of fragmented pedagogical responsibilities, the institution could adopt a more integrated, team-based approach to manage the curriculum life cycle. This involves moving beyond siloed responsibilities for module writing, tutoring, and assessment. The formation of course teams for each subject area, comprising the lead module author(s), a representative group of experienced tutors, and the chief examiner, would enhance the programme. This team would

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be jointly responsible for reviewing learning outcomes, aligning module activities with assessment tasks, and collaboratively refining the curriculum based on student performance and tutor feedback. Such a structure would embed the principles of constructive alignment and foster a shared pedagogical vision across all facets of the course.

Finally, to mitigate the challenges arising from assumed prior knowledge and improve student learning progression, module design must become more internally scaffolded. Module authors should be trained and required to integrate features that support cumulative learning explicitly. This includes starting new modules with concise review sections that activate prerequisite knowledge from earlier courses, embedding self-assessment questions that prompt students to revisit foundational concepts, and using clear cross-referencing throughout the text to link current topics with previously studied material. By making the connections between courses explicit within the resources themselves, the cognitive load on students is reduced, and the pressure on tutors to conduct remedial teaching during limited face-to-face sessions is alleviated.

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