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# Integrating DEI and Sustainable learning: A Conceptual Framework for EFL education in Norway

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## Abstract

Since the turn of the century, English as a foreign language (EFL) education has found itself having to grapple with a series of rapid global changes and consequently having to try and develop a forward-looking curriculum that must now consider complex pedagogical, ethical, and sustainability questions that shape contemporary language-teaching environments. One of the most notable challenges is the double-edged sword wielded by AI as it settles itself into the very fabric of the language classroom. This paper offers a conceptual and practical framework to support higher education (HE) EFL educators and their institutions, in Norway, in tackling these issues. Central to the framework is the positioning of Universal Design for Learning (UDL) with its guidelines, through which the broader principles of diversity, equity, and inclusion (DEI) can be meaningfully operationalized using AI technologies and multimodalities. Moreover, educators play a key role in fostering their students' critical thinking and critical multiliteracy skills to ensure the ethical use of AI that supports DEI. Finally, the framework situates UDL within a long-term sustainability perspective, encouraging educators to consider how pedagogical choices remain viable, adaptable, and meaningful across evolving technological and ecological landscapes. Taken together, the framework

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encourages a discussion on how EFL educators and their institutions can structure a future-oriented framework for an adaptable, diverse, inclusive and equitable educational EFL ecosystem.

**Keywords:** DEI, UDL, AI, multimodal pedagogy, critical thinking, critical multiliteracies, EFL, sustainable learning and education (SLE)

## Introduction

During the first quarter of the twenty-first century, English as a Foreign Language (EFL)[1] education has felt the full force of global shifts and undergone a series of significant transformations. Such changes were foreshadowed by Kress (2000) who, at the turn of the century, forewarned that "the previous era required an education for stability, the coming era requires an education for instability" (p. 133). Most notably are the innovations in digital technologies that have reshaped the educational landscape, described by Fukuyama (2017) as the *great disruptor* to modern social and moral institutions. The release of ChatGPT 3.0 in 2022, in particular, has heralded a new era (see Dwivedi et al., 2023). Accompanying these new technologies are notable shifts in literacy practices (Cope & Kalantzis, 2016; Kress, 2010; New London Group, 1996), learning modalities (Bezemer & Kress, 2016; Cappiali, 2023) and a more urgent call for critical thinking (CT) and multiliteracies (CM) (Davies, 2015; Kim et al. 2020; Liang & Fung, 2021). Amid these wider global changes, EFL classrooms, both physical and virtual, are findings themselves having to increasingly accommodate learners from diverse linguistic, cultural, and socio-economic backgrounds (Anis & Khan, 2023; Bloomberg, 2023). Studies suggest that traditional pedagogical models fall short in meeting these diverse learning needs (Buchs & Maradan, 2021; Markey et al., 2023) and scholars also point to a lack of empirical evidence to help with implementation of much needed inclusive teaching practices (Reraki, 2022). Although Norwegian universities recognize Diversity, Equity and Inclusion (DEI) as a strategic priority and some initiatives as well as research have been forthcoming (e.g. see Kottmann et al., 2020; Svendby, 2024; Øen et al., 2024), they are generally in want of a sustainable, clear, and actionable framework that integrates inclusive pedagogy with emerging AI technologies (Iniesto & Bossu, 2023) and adaptive learning platforms.

Therefore, educational institutions that have committed to advancing DEI now recognize the need to realise its actualization (Cappiali, 2023; Elias & Mansouri, 2023; Iniesto & Bossu, 2023), which is reinforced by the Universities and University College Act (Norwegian Ministry of Education and Research[2], 2024), stating that education establishments are obliged to ensure that the physical and digital learning environment is based on principles of universal design, enabling participation by the widest possible range of students without the need for individual adaptation (§ 10-2; author's translation). Additionally, there is a national expectation that EFL teaching promotes critical literacy, inclusion, and digital competence in Norwegian schools (Norwegian Directorate for Education and Research, 2019).

Another key consideration for education going forward is sustainability. UNESCO has clear intentions for both DEI and sustainability in education, the two being implicitly linked (UNEP, 2026; UNESCO, 2019; Weuffen et al., 2023). They describe education in sustainability as an education that "…empowers people with the knowledge, skills, values, attitudes and behaviors to live in a way that is good for the environment, economy, and society" UNESCO (2026). Recently, in response to many of the global challenges buffeting

1The generic EFL term is used in this article but note that L2 English is often used to denote English in Norway, referring to English as a "second or later language" ((Rindal and Brevik, 2019, p. 435) and others use EAL (e.g. Skulstad & Touileb, 2024).

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education, Hay and Reinders (2020) moved the conversation from the idea of education in sustainability to that of sustainable learning and education (SLE), where the learner "…builds and rebuilds her or his knowledge and skills base as circumstances change" (p. 30) and the curriculum is "…flexible and change-ready, open-minded, enquiring and more about possibility than certainty in design, delivery and outcome" (p. 32). In our minds, moving forward, such a philosophy should underpin any planning and design in EFL education.

EFL education is evidently in flux. Undoubtedly, changes are needed in how languages are taught and learned and a curriculum that is more critical, experiential, socially responsible, and capable of preparing students and educators to address global challenges in meaningful and transformative ways (Gregersen-Hermans, 2021; Hays & Reinders, 2020; Meyer et al. 2014). This paper argues that an effective means of achieving this is using Universal Design for Learning (UDL), which was developed in the 1990s by Anne Meyer, David Rose, and colleagues at The Center for Applied Special Technology (CAST), as a way of responding proactively to natural learner variability in the digital age (see Meyer & Rose, 2025). CAST (2026), more recently, is also embracing AI technologies, suggesting that AI and UDL work better together. Many other scholars also argue that UDL principles can be effectively implemented using multimodal and AI-based education (Anis & Khan, 2023; Kress, 2010; Midgette et al., 2025; Weng & Fu, 2025).

There is certainly evidence that AI technologies are becoming ubiquitous in EFL classrooms globally (e.g. Kundu & Bej, 2025; Wang, 2026), and in Norway (e.g. Skulstad & Touileb, 2024) and that they can help promote DEI (e.g. Weng & Fu, 2025). However, AI is proving to be a double-edged sword (see Section 2.4.2) with its discriminatory tendencies (e.g. Akgun & Greenhow, 2022; Ananya, 2024), threats to students' cognitive integrity (Cotton et al., 2024; Ledesma & González, 2026; Klimova & Pikhart, 2025; Nguyen & Goto, 2024) and environmental impacts (Nichols, 2025). As such, promoting AI technologies in education can feel like 'inviting the fox into the henhouse.' This presents a real dilemma for educational institutions, especially for EFL classrooms with language at their very core, but the reality is that AI is here to stay and educators need to harness its benefits and minimize its harm. With these AI technologies, such as ChatGPT 3.0, bursting on to the scene alongside social media, as mentioned previously there is recognition in the literature of a more pressing need to develop CT and CM (e.g. Davies, 2015; Habegger-Conti, 2015; Kim et al., 2020; Liang & Fung, 2021). This paper foregrounds the educator's role in developing these CT skills and dispositions in EFL classrooms, using UDL as a guide. As the US National Council for Social Studies (NCSS) bluntly tells us (as cited in Hobbs, 2011):

Whether we like it or not, this media culture is our students' culture. Our job is to prepare them to be able to critically participate as active citizens with the abilities to intelligently and compassionately shape democracy in this new millenium. (p. 6)

DEI and UDL are well represented in the literature, but despite this, there is no integrative framework addressing SLE, DEI, UDL, multimodality, CM and AI that has been proposed for Norwegian EFL education. The intention of this paper is threefold: firstly, to increase awareness of how Sustainable Learning and Education (SLE), Diversity–Equity–Inclusion (DEI), and Universal Design for Learning (UDL) complement one another in addressing the rapidly changing demands of contemporary EFL education. Secondly, to propose a conceptual framework that leverages multimodality and AI through UDL to support the practical realization of DEI within EFL contexts and thirdly, to discuss perhaps the most pressing challenge: the double-edged sword wielded by AI in promoting DEI and sustainability in the EFL classroom.

This paper is interested in the following research questions, which although focused on Norwegian Higher education EFL contexts, have implications for EFL more broadly:

1. How can DEI and sustainable learning be conceptualized and operationalized in EFL higher education in Norway?
2. How can educators and policy makers, in higher education in Norway, ensure that AI enhances rather than diminishes a sustainable, diverse, inclusive and equitable educational ecosystem in EFL classrooms?

## Key Considerations of a Conceptual Framework

### Sustainable Learning and Education (SLE)

The proposed framework in this paper is founded on the emergent forward-looking philosophy of SLE introduced by Hays and Reinders (2020), which calls for education to rethink and redesign and appears to be gaining traction in the research literature (e.g. Ben-Eliyahu, 2021; Ng & Lo, 2022). SLE is described by Hays and Reinders (2020, p. 35) as a "transformative concept designed to change the way people think about learning and education" in the context of higher, continuing and professional education. Principles of sustainability underpin its comprehensive set of 25 principles and guidelines, which view sustainability as an "imperative", rather than an option (p. 37). These principles are intended to be used by "… individuals and teams that design, deliver, administer, fund or evaluate educative and developmental courses, programmes and initiatives" (Hays & Reinders, 2020, p. 34). SLE responsibilities therefore lie at the faculty and institute level but can be carried down to classroom level too.

Hays and Reinders (2020) assert that truly sustainable education itself must operate as a flexible, evolving system, drawing on principles such as self-sufficiency, adaptability, anticipatory learning, and the capacity to unlearn outdated assumptions. At its core, SLE aims to develop individuals and organisations with the consciousness, resilience, and ethical orientation needed to thrive within and responsibly contribute to interconnected social–ecological systems. In the context of this paper, the term borrowed from Hays and Reinders (2020), encourages educators to consider a strategic and holistic approach that reimagines how EFL is taught, learned, and sustained across diverse contexts. SLE, inherently aligns with DEI because it views learning environments as complex, thriving communities that must be responsive to diverse learner needs and promote equitable participation. They identify the importance of resilience, responsibility, and the flourishing of all members within educational communities whilst doing minimal harm to the environment. Like UDL, SLE encourages an anticipatory approach to education (see Sanger, 2020) and an important aspect of SLE is a need to "… instil in people the skills and dispositions to thrive in complicated, challenging and ever-changing circumstances" (p. 29), which is discussed in Section 2.4.

### Diversity, Equity, and Inclusion (DEI)

Emerging from late-20$^{th}$-century social justice movements that sought to redress structural inequities, DEI has emerged as an ethical and organizational watchword within education (Weuffen et al. 2023). In contemporary pedagogical research, inclusive-education literature positions DEI as foundational for removing systemic and pedagogical barriers and ensuring fair access regardless of identities, abilities, or backgrounds (Iniesto & Bossu, 2023). Diversity refers to various identities and backgrounds (Liddicoat, 2022; Iniesto & Bossu, 2023; Sabela et al., 2023; Sanger, 2020), equity to having the necessary resources available for all students to succeed (Buchs & Maradan, 2021; Iniesto & Bossu, 2023), and inclusion ensures that everyone feels valued and engaged (Anis & Khan, 2023; Biju et al., 2023; Buchs & Maradan, 2021; Elias & Mansouri, 2023; Goriss-Hunter et al., 2023).

The obligation to implement DEI is clear from the 2017 European Council, European Parliament and European Commission's adoption of the Pillar of Social Rights, which underlines that "everyone has the right to quality and inclusive education, training and life-long learning in order to maintain and acquire skills that enable them to participate fully in society and manage successfully transitions in the labour market" (p. 11).

## Universal Design for Learning (UDL)

UDL is experiencing somewhat of a revival, as the post-pandemic widening of learning gaps, increased classroom diversity, and intensified equity demands have made it more essential than ever for contemporary educational systems (e.g. Kilpatrick et al., 2021). Drawing on insights from neurodiversity, architecture, and the learning sciences, UDL is built around three core principles – multiple means of representation, action and expression, and engagement – with the intention of reducing learning barriers (Meyer et al. 2014). These UDL principles were translated into a set of guidelines intended as an aid to teachers in their lesson planning (Levey, 2023).

In EFL contexts, where classrooms include diverse learners, UDL offers teachers a practical, decision-making framework by helping them plan more intentionally and encouraging them to use a variety of modes, adjust task formats, offer strategic scaffolding to language processing, and diversify the ways their students can demonstrate knowledge. UDL not only reduces barriers but also strengthens motivation, autonomy, and expert-learning capacities across entire classes, not only for those with identified needs (Meyer et al. 2014; Sanger, 2020; Sewell et al., 2022). In short, UDL functions as a "blueprint" for designing goals, methods, materials, and assessments that adjust to learner variability (Gordon, 2024; Losberg & Zwozdiak-Myers, 2021; Markey et al., 2023; Midgette et al., 2025; Sanger, 2020; Sewell et al., 2022). This approach benefits from both multimodality which provides diverse pathways for meaning-making, while AI enhances these pathways by adapting and personalizing multimodal content to meet learners' varied needs. They are effective tools for implementing DEI, through UDL.

## Multimodality, Critical Multiliteracies and AI

Critical thinking[3], multiliteracies, multimodality and AI are deeply entwined and embedded in EFL education in Norway and more broadly. This is becoming increasingly so, since students are engaging more readily with AI-mediated multimodal texts both in and outside of the EFL classroom (e.g. Rød & Calafato, 2024; Rød & Ørevik, 2026).

### Multimodality and Critical Multiliteracies.

Foundational work by Kress and van Leeuwen conceptualises communication as fundamentally multimodal and meaning is made through the interaction of multiple semiotic modes, such as linguistic, visual, auditory, gestural, and spatial resources (Kress & van Leeuwen, 2001). Building on this view, multimodal pedagogy emphasises that learners engage more deeply when information is presented through diverse channels, enabling different cognitive pathways and offering multiple points of entry into the learning process (Bezemer & Kress, 2016). Research findings suggest that use of multimodal resources enhances comprehension, supports memory, accommodates varied learning preferences, makes language learning more equitable and accessible for diverse learners, fosters social justice, promotes inclusive educational practices as well as facilitating learning and intercultural skills (Anis and Khan 2023; Kress & van Leeuwen, 2001; Midgette et al., 2025; Ørevik, 2024). From an online perspective, Bloomberg (2023) frames

3 For a discussion on the definitions of critical thinking, criticality, critical literacies and critical pedagogy see Davies (2015)

multimodal engagement as essential for building teaching presence, fostering community, and supporting learner autonomy in digital contexts and can help reduce isolation and sustain meaningful learning.

While multimodality extends beyond the EFL classroom, it is inextricably linked to multiliteracies, which are central to EFL pedagogy. Multiliteracies refer to multiple, overlapping literacy practices (which include media, digital and AI literacies) that are used to design and consume multimodal texts (New London Group, 1996). It emerged as a challenge to conventional classroom pedagogy and its focus on monomodal literacy learning. Kress (2003) describes this shift in literacy as a shift from "reading the world as told" to "reading the world as shown" (p. 17). In contemporary EFL education contexts, AI is integral to multimodality and multiliteracy since contemporary AI systems can process and generate multiple modes of communication, text, speech, images, and video, enabling learning environments that are rich in multimodal meaning-making processes. Being able to critically assess these multimodal texts is essential to ensure rational and ethical use of AI in EFL classrooms (e.g. Davies, 2015; Kim et al. 2020; Liang & Fung, 2021). The European Union (2026) recognizes that "understanding the constantly evolving media environment and critically assessing the sources of information are essential to participate in an open democratic debate" (p. 1). Kim et al. (2020, p. 56) underline the importance of "critical multiliteracies pedagogy (CMP)" in EFL classrooms, arguing that such an approach is needed because it respects students' different abilities, identities, and voices, in a highly mobile and connected transnational world (Kim et al., 2020). Through the CMP approach, Kim et al. (2020, p. 57) suggest that "teachers can increase students' potential to become critical readers, creative designers of varying texts, and active social agents for transformative changes."

## Artificial Intelligence Technologies

EFL learners and teachers may interact with a range of AI technologies such as automated writing evaluation systems (e.g. Grammarly), text-to-speech (TTS) browser extension (e.g. Read Aloud), machine translation applications (DeepL), adaptive learning platforms (e.g. Duolingo), and more recently data-driven large language models (LLMs). LLMs underpin applications such as OpenAI's GPT-3 and GPT-4, Microsoft Copilot, Anthropic Claude, and Meta LLaMA (see Bai et al., 2023; Grassini, 2025b). These AI technologies make learning more accessible and help EFL learners perform language tasks such as translating, paraphrasing, correcting grammar, learning new vocabulary and producing text. Besides offering functional language support, AI has also been shown to influence learner behaviour by increasing motivation and agency (Klimova & Pikhart, 2025; Renfeng et al., 2025; Weng & Fu, 2025) and enhancing foreign language enjoyment (FLE)(Lui et al., 2025). For promoting DEI, these technologies are particularly useful because of their flexible and adaptive responses (e.g. Klimova & Pikhart, 2025; Zhang et al., 2024) and researchers such as Babaci-Wilhite et al. (2025) view AI in education as a means of fostering equity and diversity, by supporting multilingualism, cultural identity, and emotional engagement. A study by Bu et al. (2026) involving 36 visually impaired participants concluded that AI navigation systems offer real-time environmental perception, personalized feedback, and adaptive interaction with participants who showed improvement across all five-performance metrics: navigation time, error rate, task completion rate, psychological burden, and cognitive load.

AI tools can also prove effective for educators by suggesting differentiated learning paths, providing targeted recommendations, and dealing with routine administrative tasks. This reduced administrative burden enables educators to devote more time to supporting individual learners (Klimova & Pikhart, 2025). Finally, AI technologies can be used to support mental health and emotional well-being, which can be especially

important for students in remote learning scenarios who are unable to attend classes due to physical or mental health issues (Klimova & Pikhart, 2025).

However, as mentioned previously, AI is a double-edged sword because of the many challenges it also presents. Nicoletti and Bass (2023), for instance, concluded that "humans are biased. Generative AI is even worse" (p. 1) based on findings that show the amplification of stereotypes about race and gender using the stable diffusion's text-to-image model. Since AI's technologies are heavily reliant on the data they are trained on, when these datasets lack diversity or are not fully representative, the resulting interactions may produce irrelevant, discriminatory or biased responses (e.g. Ananya, 2024; Sham et al., 2023). The presence of bias therefore in AI training data, can unintentionally reflect, reinforce or worse still exacerbate existing societal prejudices (Akgun & Greenhow, 2022), in effect marginalizing communities, and creating systems that exclude rather than promote DEI.

Studies have also shown that AI can lead to a loss of human empathy (Grassini, 2025b), generate incorrect or fake information (hallucinations) (Lo, 2023) and provide superficial and irrelevant feedback. As Grassini (2025b) highlights, "it cannot replicate the complex interpersonal interactions that characterize the context of education" (p. 112). A study of university graduates revealed that using AI can also heighten the risk of *Cognitive laziness* (Ledesma, & González, 2026), defining it as "a reduced need to engage their own cognitive processes, even in simple tasks" (p. 1). This may lead to students taking short cuts using AI instead of using their own cognitive efforts (Bai et al., 2023; Funa & Gabay, 2025; Klimova & Pikhart, 2025; Nguyen & Goto, 2024). Similarly, studies have also shown that students who regularly use AI for academic tasks may experience a decline in memory retention and CT skills as they become more dependent on the tool (Bai et al., 2023; Funa & Gabay, 2025). "By relying on AI to generate ideas and complete tasks, students may bypass the engagement steps necessary for understanding complex material, leading to more superficial learning outcomes" (Grassini, 2025b, p. 111).
From an institutional perspective, introducing AI technologies requires the update of syllabus policies and digital skills training for both educators and students (Cotton et.al., 2024; Dwivedi et al., 2023; Funa & Gabay, 2025; Gamlem et al., 2025). Introducing AI systems into educational settings therefore requires considerable financial and technical investment and smaller institutions may struggle to afford these expenses, limiting the widespread adoption of AI (Grassini, 2025b).

However, perhaps the most significant challenge that faces educators and their institutions is the energy and water consumption of resource-heavy AI models, which is leading to growing environmental concerns (Nichols, 2025; UNEP, 2026). According to Grassini (2025a) "even with the growing reliance on renewable energy, the rapid expansion of AI demand threatens to exceed the pace at which renewable capacity can meet the rising energy demand" (p. 9058). This dependence on resource-intensive infrastructures may also drive global inequalities in digital access (Nichols, 2025). Such concerns will undoubtedly lead to an increasing number of students who are ideologically opposed to the use of AI, particularly GenAI.

## Proposed Framework

The multilayered conceptual framework presented in Figure 1, is a theoretical and research-informed approach that brings together some of the key considerations in education planning (see Section 2), more especially EFL education in Norway. Its intention is to provide a visual representation of the role and relationships between important principles, and philosophies that underpin the framework and how they can be actualized by operationalizing DEI through UDL. The intention of this approach is to ensure a flexible, accessible, and personalized learning experience (Gordon, 2024; Meyer et al., 2014;

Sanger, 2020). UDL is positioned within a long-term sustainability perspective, emphasising the need for UDL not just at a given point in time, but to remain viable, responsive, and meaningful over time and across shifting educational contexts.

## Institutional Responsibilities

Educational institutions are tasked with implementing DEI whilst at the same time addressing issues such as bias, ethics, data privacy, academic integrity, fairness and the environmental impact of AI technologies. No easy task. For effective implementation, the SLE and DEI principles need to be embedded into institutional missions, strategic planning, and accreditation processes (Goriss-Hunter et al., 2023), rather than being an afterthought. The University of Bergen (UiB, 2026) for example has proposals for principles for sustainable procurement to help reduce their environmental and climate footprint and ethical guidelines for purchasing and supplier contact. Approaches such as "frugal computing," can also be adopted, which focuses on limiting AI applications to essential uses, to prevent unsustainable increases in global $CO_2$ (Rao, 2024). Institutions should also provide training for ethical AI use, UDL and DEI (Anis & Khan, 2023; Canale, 2019; Midgette. et al., 2025; Sahni, 2023) and establish clear policies for data privacy and algorithmic accountability (Dwivedi et al., 2023; Funa & Gabay, 2025). By embedding these safeguards into institutional strategy, higher education can harness AI's potential while minimizing harm. CAST (2026) believes that AI's true potential is realized when they are designed and implemented with UDL principles.

## Operationalising UDL

CAST (2024) stipulates that the goal of UDL is to promote "learner agency that is purposeful & reflective, resourceful & authentic, strategic & action-oriented" and their guidelines, version 3.0 (CAST, 2024), offers a set of concrete suggestions for applying the UDL framework. Their 9 guidelines and 36 associated considerations are organized vertically in accordance with their three main principles: engagement, representation and action and expression (see Section 2.3). The guidelines are also arranged horizontally into access, support and executive function. It is towards implementation of these guidelines that AI, multimodality and critical multiliteracies can play an important role. CAST (2024) encourages educators to consult the guidelines even if they regard themselves as being fully inclusive already. By doing so they may discover design choices that they had not previously considered.

This framework may be particularly useful for digitally immersed EFL learners, particularly Gen Alpha and Gen Z, who thrive in environments that support self-directed, adaptive learning, rather than passive information delivery. They benefit from opportunities to learn, unlearn, and collaborate (Bandara et al., 2024).

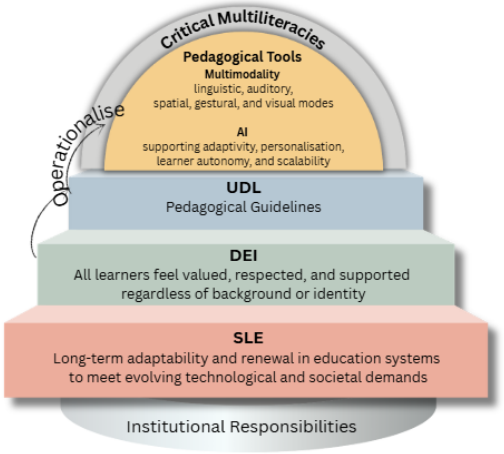


Figure 1. A multilayered conceptual framework for EFL education in Norway

## Discussion

### Applicability and Implementation in the EFL Classroom

Judicious use of AI technology guided by UDL can help support EFL education which is increasingly shaped by a diverse, multicultural, technology-infused, and dynamic multilingual learner population. UDL's *Action and Expression*, for example, stipulates the use of multiple modes of communication and use of multiple tools for construction, composition and creativity. See for example *consideration 5.1* in UDL's Guidelines (CAST, 2024). By incorporating multiple learning modes, enables educators to include students who might struggle with traditional printed text-based instruction. Instead, texts can be made available through videos, meme images, podcasts, audiobooks, graphic novels, comics, posters etc. many of which can be both analogue and digital, ensuring that all types of learning materials are accessible to all students (Anis & Khan, 2023; Canale, 2019; Iniesto & Bossu, 2023; Rød & Ørevik, 2026; Ørevik, 2024). Designing captions for videos, transcripts for audio content, and digital content that is compatible with screen readers such as 'Read Aloud' also makes texts more accessible. Existing or AI-generated texts can be tailored for individual students' needs by using language levels detailed in the Common European Framework of Reference for Languages (CERF) as part of the AI prompt. High quality audio-files using authentic sounding AI-voices can then be made, using tools such as Elevenlabs, and distributed to students. In addition, AI-powered applications can also generate videos with visuals, captions and movement to accompany texts such as podcasts. Such measures can also increase equitable participation in collaborative group work, discussions, and projects (Iniesto & Bossu, 2023).

AI-driven formative assessment provides real-time, individualized feedback on written and oral production (Babaci-Wilhite et al., 2025; Wang, 2026), which allows learners to progress at their own pace and reduces reliance on fixed proficiency norms (Weng & Fu, 2025). See for example *consideration 5.2* in UDL's Guidelines (CAST, 2024).
Incorporating materials and examples from a range of cultural backgrounds (Markey et al., 2023) supports intercultural competence, social justice, and inclusive education (Elias & Mansouri, 2023; Goriss-Hunter et al., 2023; Sanger, 2020; Weng & Fu, 2025). Hence, all students see themselves reflected in the curriculum, fostering a more engaging learning environment (Biju et al., 2023; Sanger, 2020), embracing UDL's *Representation Principle*. See for example *consideration 2.3* in UDL's Guidelines (CAST, 2024). Allowing students to express themselves, embedded in UDL's *Action and Expression principle,* can be facilitated

by allowing students to present their knowledge through role-play, drama, videos, memes, podcasts, posters and many other means (e.g. Lim & Unsworth, 2023; Rød & Ørevik, 2026).

The concept of critical thinking and multiliteracies, outlined briefly in Section 2.4.1, is of particular value for EFL teachers who work extensively with texts that require critical engagement within the socio-political contexts of English-speaking countries. EFL is also inherently intertwined with issues of power, oppression and discrimination since "English has gained global dominance as the language of prestige, power, and access to resources and opportunities around the world with implications such as an elevated social status or stigma for a lack of proficiency" (Kim et al. 2020, p. 56). The UDL *language and symbol* guidelines underline the need to disrupt any explicit or implicit messages of inferiority and therefore offering content through the use of multiple languages and symbols is crucial. See for example *consideration 2.4* in UDL's Guidelines (CAST, 2024). Technology using AI if used critically, can achieve this. Translation tools are very useful and are expanding their language repertoire continuously. AI-powered translation, text-to-speech, and speech-to-text tools lower participation barriers for multilingual students as well as learners with disabilities (e.g. Zhang et al., 2024). This means that lack of language knowledge is no longer a barrier for communication. These multilingual expansions, for example Google Translate, signal a growing commitment to linguistic inclusivity. Kim et al. (2020) point out that CMP can be implemented in ESL/EFL classrooms by "working with topics relevant to students' experiences, balancing activities between language learning and critical thinking/discussion, drawing from students' first language resources, and providing innovative technologies" (p. 4).

Developing students and educators' CT and CM skills helps foster UDL's *executive functions* (CAST, 2024). See for example *consideration 9.2* in UDL's Guidelines (CAST, 2024). Educators can emphasise to students the importance of hearing one's own voice in their written text, something that opting to use Generative AI will diminish. Frameworks such as A.C.T.I.V.E.[4] (Shin & Borup, 2026) can provide scaffolding for EFL students' critical analysis of multimodal texts, by raising awareness of biases and stereotypes in society. Also, EFL educators themselves have a responsibility to critically assess any images they show to their students, including those that they generate with AI, if they are to promote DEI in their classrooms. Frameworks such as F.A.I.R.[5] are useful for this (Shin & Borup, 2026). Emphasising the need for academic integrity and transparent use of AI is also crucial, going forward.

Previous research has shown that students who receive human interaction during their learning process outperform those relying solely on AI-based platforms, once again highlighting the key role of the educator (Grassini, 2025b; see also Klimova & Pikhart, 2025). Educators, for example, can model critical use of AI explicitly to their students and play a central role in guiding their writing. Rather than AI technologies reducing the need for educator expertise on the contrary they increase it. This may offer some comfort to the Norwegian pre-service teachers in Gamlem et al.'s, (2025) study who expressed concerns about the implication of AI for human-centred education.

Sustainability itself is already recognized as an essential literacy in the EFL classroom, but as mentioned, sustainability can be approached from the angle of Hays and Reinders (2020), where sustainability becomes an integral part of the classroom itself. For instance, SLE advocates for "conscious and intentional learning *in the moment,"* (p. 31, original emphasis). Students could therefore record multimodal language diaries of their English use outside of the classroom. The diaries could be handwritten, video/voice recorded, or made using images. Through the diary, the students reflect on their specific experiences,

4 Authors & Audiences; Content & Messages; Techniques & Formats; Intent & Economics; Viewpoints & Interpretation; Evaluation & Response

5 Focus; Add Context; Include Diversity; Review Output

challenges, identities, and linguistic journeys in EFL at that moment, which they can share with fellow students. SLE encourages "dynamic, continuous and renewable learning," (Hays & Reinders, 2020, p. 35), which refers to learning within the present context. Students can work on current global events, meaning that an EFL class is less reliant on linear and fixed curriculums but adapts and is continuous. SLE also argues that classrooms should foster autonomy and agency which can be achieved through autopoiesis, where learners create and sustain their own learning processes. Groups of students could be asked, for example, to choose a linguistic feature and make a multimodal task such as a video reel, poster, meme image, aimed at helping their fellow students understand a new concept. This could include comparisons with their own mother tongue and widen the scope to include individual linguistic identities. Self-sufficiency sits at the core of SLE and classrooms should aim to limit and to reuse resources as much as possible. Students could also create their own resource ecosystems. At the very least, 'sustainability' should be included as an interdisciplinary topic in the English curriculum in Norway, alongside Health and Life Skills and Democracy and Citizenship (Norwegian Ministry of Education and Research, 2019), instilling good understanding in students coming through to EFL courses at university.

### Limitations

There is full recognition that whilst principles and goals have been articulated in this paper, their implementation remains more challenging and empirical validation is needed across diverse institutional contexts. A combination of qualitative and quantitative indicators can be used to measure success and feasibility in various aspects of the framework. For instance, measurement of student satisfaction regarding the use of multimodal learning activities and AI-supported tools towards inclusivity or, assessing the feasibility and success of institutional and in-class sustainability goals. Other measures can include participation and completion rates, as well as intervention studies measuring improvement in academic performance across diverse learner profiles.

## Conclusion

This brief inquiry presents a conceptual framework integrating SLE, DEI, and UDL to address the complex and evolving demands of contemporary EFL education in Norway. By foregrounding UDL as the bridge through which DEI principles can be operationalised using multimodality and AI as implementation tools and critical multiliteracies as a pedagogical scaffold, the framework offers a structured and theoretically grounded approach for supporting diverse learner profiles in Norwegian EFL. Moreover, by situating pedagogical design within a long-term sustainability perspective, the model encourages educators to adopt practices that remain adaptable, inclusive, and pedagogically robust across shifting technological and educational landscapes. In particular, educators and policymakers have the challenge of ensuring that AI enhances, rather than diminishes, the core values of this adaptable and inclusive education ecosystem. It is hoped that this article makes a modest yet meaningful contribution towards ongoing discussions and encourages the exchange of ideas.

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## Author contribution statement

Alison J. Rød: conceptualization, model design, rewriting of the initial draft and

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