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UDL for inclusive higher education—What makes group work effective for diverse international students in UK?

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ABSTRACT

International students face many challenges transitioning to post-graduate study in UK institutions. Students often need to adapt to a range of cultural practices and curricular norms, often without the differences between UK and their home countries being made explicit. Building on Vygotskian concepts of scaffolded learning and the importance that group interaction plays within learning, this research reports on an initiative to embed Universal Design for Learning (UDL) principles through group work to develop research skills within a research methods module on an international Masters in Education programme. This small-scale case study across two campuses, with 11 survey respondents and nine focus group participants, analyses questionnaires and focus group interviews and yields important theoretical insights into the interaction of UDL components. The three UDL principles of multiple choices of learning materials, learning activities, and expression of learning outcomes each impacted on the other. The study also provides significant findings about hybrid learning at a crucial point in its development post COVID-19. Technology played an enabling role as students used a range of modalities to negotiate social and cultural diversity. However, the study indicates that on campus learning time is indispensable for students to fully access the power of digital technology. This paper contributes to advancing the understandings of international education and its interactional challenges and opportunities.

1. Introduction

Inclusive education is a process of removing barriers from the existing institutional systems in order for all students to participate meaningfully and equally as valuable members of the learning community (UNESCO, 2020). It is reaffirmed as a basic human right (UN, 2006), promoted as a fourth Sustainable Development Goals (UNESCO, 2015), and regarded as an ethical approach to a fair and equitable society (Reindal, 2016; Qu, 2022). The aim is to improve the effectiveness and quality of educational services for all learners where diversity is celebrated, a sense of belonging and community is fostered, and learners with a wide range of talents can all flourish. In this article we pay particular attention to how Universal Design for Learning (UDL) can be applied to classes with a higher proportion of international students.

UDL has been used by educators across the globe to promote effective learning and greater inclusivity inside classrooms (CAST, 2018). Based on Universal Design in architecture, neuroscience research, and latest advancement in digital technology, UDL suggests three key principles of multiple means to represent learning materials, multiple means to check student learning progress, and multiple

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means to stimulate student engagement in learning to build in accessibility (ibid.). The goal is to anticipate and meet diverse learner needs starting from the planning stage, instead of plastering on ad hoc adjustments for individual learners later on when support needs are identified. UDL can be a viable and sustainable approach to create more inclusive learning for diverse international students in higher education (Bracken & Novak, 2019; Fovet, 2020). In particular, UDL offers nine guidelines and 31 checkpoints that support educators in incorporating the UDL framework in their practice (CAST, 2018).

Group work is among the core UDL practices (Katz, 2013). Through interacting with others in group-based tasks, students not only learn skills and knowledge from each other, but also develop a sense of self and community that fosters a more productive and inclusive learning environment. Often interchangeable with ‘collaborative learning’ or ‘cooperative learning’, group work can be referred to as “a learning phenomenon where individuals in a social constellation within a physical and/or virtual environment, interact on the same or different aspects of a shared task to accomplish implicit or explicit shared and individual learning” (Strijbos, 2016, 203). International students face multiple challenges transitioning to studying abroad for higher education, such as academic pressure, language barriers, cultural shock, and financial issues (Chen & Zhou, 2019; Elliot & Makara, 2021; Zhou et al., 2017). Group work provides international students with a forum in which they can compare how they are coping with differences and the adaptations they are making.

The three key UDL principles can be seen as embedded within group work. Firstly, providing well designed group tasks can address the principle of multiple means of engagement aims to encourage purposeful and motivated learners by offering options of different tasks and grouping structures that help to promote self-regulation, autonomy, sustained effort, persistence, and interest (CAST, 2018). Group interactions where key aspects of the Vygotskian concept of scaffolded learning (Bruner, 1996) are fostered, offer different forms of engagement than individual or whole class approaches. This enables a means to address the UDL guideline of providing options for sustaining effort and persistence, which includes fostering collaboration and communication as students work in groups through collaborative interactions (CAST, 2018, checkpoint 8.3). Secondly, the UDL principle of multiple means of action and expression cultivates strategic and goal-directed learners by offering options of assessment and feedback within the group tasks (CAST, 2018). Instead of traditional individual assessment such as exams or essays, group work can mobilise self, peer, and group-based project assessment (Donia et al., 2018). This aligns with the UDL guideline of offering options for executive functions, including facilitating the management of information and resources, as students in group work coordinate and manage their contributions to the project (ibid, checkpoint 6.3). Thirdly, the UDL principle of multiple means of representation fosters resourceful and knowledgeable learners by offering options of the ways learning materials are perceived, communicated, and comprehended (ibid.). Group work provides different ways for group members to produce, access and engage with the material. The diversity in the group enhances the representation of information, allowing students to see and understand concepts from various angles, while the materials produced during the collaborative process in turn provides various ways of representing information, catering to different learning preferences within the group. This aligns with the UDL guideline of offering options for perceptions, including alternatives for visual information and customising how information is displayed, allowing students to access and engage with the content in ways that are most meaningful to them (ibid, checkpoints 1.1 & 1.3).

This study is based in a UK university where the Masters in Education programme has a cohort of 33 students from the London and Scottish campuses for the 2021/2022 academic year, with 97 % of the student body being international students, representing seven countries across three continents. Due to the COVID-19 pandemic at the time, the delivery mode on the programme was hybrid including both face-to-face and online teaching. The researchers used a UDL-informed (ibid.) group work approach in their face-to-face and online delivery of one research methods module, with the aim to improve learning experiences, active problem solving and student awareness of their agency within learning. Firstly, the UDL principle of multiple means of engagement (ibid.) informed module learning modes that consists of whole class tutorials, group work, and weekly independent study tasks. For example, one group member may be responsible for creating visual posters to present the material, others may lead an oral debate, or engage in an online forum discussion in the module Virtual Learning Environment (VLE). These diversified means of engagement were designed to stimulate interests as well as encourage autonomy among students, which aligns with the UDL guideline of providing options for recruiting interest by optimising individual choice and autonomy (ibid, checkpoint 7.1). Secondly, UDL principle of multiple means of action and expression (ibid.) was enacted through online forum discussions in the module VLE, weekly group poster creation and verbal presentations of posters in class. Making and presenting posters followed by group discussions was used as a reflexive process that helped students to consolidate knowledge, check learning progress, and apply tutor feedback. Institutional quality assurance structures limited the extent to which we could offer choices, but our assessment strategy offered both formative group work opportunities as well as a final summative assessment. This aligns with the UDL guideline of providing options for expression and communication via using multiple media for communication and using various tools for construction and composition (ibid, checkpoints 5.1 & 5.2). Thirdly, the UDL principle of multiple means of representation (ibid.) underpinned the use of extended presentational, reading and video learning materials designed to be more interesting and accessible for students. Artefacts produced through group-based projects such as posters, multi-media presentations, and reflexive forum posts became part of learning resources, providing alternatives for processing and visualising information for learners. This aligns with the UDL guideline of providing options for perception to cater to different learning needs and preferences (ibid, checkpoints 1.1 & 1.3).

This paper reports on the survey and focus group findings from students who completed the module, and explores how the group work approach informed by UDL may enable a more inclusive and effective intellectual and social environment for diverse international students. We draw on UDL reporting criteria to analyse consideration of learner variability and environment, proactive and intentional design, and implementation and outcomes (Rao et al., 2020). Although it has been argued before that UDL can support more inclusive learning in higher education for international students, the use of group work as a specific UDL tool in a hybrid delivery model has not been widely examined. We argue that an UDL approach not only can anticipate and address diverse needs, but it can also

help to reveal hidden tensions and issues within students' diverse learning experiences. Such insights offer important contribution to advancing the understandings of international education and its interactional challenges and opportunities.

2. Literature review

While international students bring strengths to higher education institutions with their diverse perspectives and contribution to intercultural understanding (Markey et al., 2023), they may experience 'cultural shock'. Cultural beliefs and values can also influence expectations about classroom behaviours and academic norms. For example, for Chinese students, teachers are often seen as authority figures who impart knowledge and are rarely questioned or challenged - a tradition rooted in Confucian thought (Bao, 2019). Consequently, it has been observed that Eastern classrooms often have greater structural support such as giving direct explanations and summaries for problem-solving tasks (Liu & Elicker, 2005). In Japan, Mineshima and Chino (2013) similarly find that much greater emphasis in English textbooks has been put on direct information access and retrieval skills, while opportunities for learners to respond as critical and individual thinkers are limited. In contrast, Western education systems, such as the UK and the US, often value a constructivist approach where teachers can be more of a facilitator to promote learner autonomy and criticality (Zhou et al., 2008). In this regard, Atkinson (1997) was among the first to problematise the teaching of critical thinking in an international context, positing that the emphasis on contextualisation in Asian cultures clashes with the linear analytical standard in the West, and that teaching critical thinking might thus impose values that do not align with international learner's own cultural norms. This does not mean students from Asian cultures cannot be critical thinkers. Rather, the unique ways of thinking as contextualised in their diverse cultures need to be recognised. Thus, for diverse international students, differences in academic cultures can serve as barriers to learning if not addressed. Recognising this, scholars (Hutchison & McAlister-Shields, 2020; Mak & Kennedy, 2012; Markey et al., 2023) increasingly call for culturally responsive pedagogies with more carefully, sensitively, and proactively designed learning and teaching to make international higher education more inclusive.

UDL has gained significant interest in higher education over the last decade (CAST, 2019). Such an interest goes beyond responding to impairment and disability, and instead aims to benefit all learners (Chita-Tegmark et al., 2012; Tobin, 2019). A meta-analysis based on 18 peer-reviewed papers between 2013 and 2016 concludes that UDL can be an effective pedagogical approach for improving the learning experiences for all students from kindergarten to higher education (Capp, 2017). A more recent meta-analysis conducted by Almeqdad et al. (2023) based on 13 empirical studies in K-12 or higher education between 2015 and 2021 similarly reports that UDL is beneficial and improves teaching and learning experiences not just for students but also for teachers. Both studies stress the importance of using all three UDL principles together to maximise its effectiveness.

An emerging body of research examines the pedagogical implications of applying UDL in higher education to benefit all students. He (2014) surveyed 24 undergraduate and postgraduate teacher candidates' experiences of a UDL-guided online course and found increased student confidence and self-efficacy because of the multiple options built into the course organisation, instructions, and feedback. Dean et al. (2017) designed and implemented a UDL-informed learning environment in a large university lecture classroom where options for content representation, learner engagement, and learning expression were offered, and found, through survey ($n = 928$) and online analytics data of actual student engagement in class, that both self-perceived and actual learning outcomes had improved, supporting UDL's efficacy as an pedagogical tool. Further, a qualitative study with five US higher education instructors based on workshop, questionnaire and focus group data reveals that educators recognise the need to promote inclusive education and invest in UDL professional development in order to improve student engagement, accessibility and to build collegiality, shedding light on how UDL training may be effectively designed to improve student learning experiences (Xie & Rice, 2021). In short, incorporating UDL principles in pedagogical design, practices, and training are increasingly being recognised as important to promote inclusive education and to foster a motivating, engaging, and accessible learning environment for all (Almumen, 2020; Florian, 2015).

As a core UDL practice (Katz, 2013), group work is also a common teaching and learning strategy in higher education (Poort, Jansen & Hofman, 2022; Spencer-Oatey & Dauber, 2017). This strategy when employed for groups of culturally diverse students can encourage intercultural communication and collaborative learning with a global mindset (Cotton, George & Joyner, 2013; Liang & Schartner, 2022). For example, a quantitative survey with 1025 undergraduate students across six universities in the Netherlands and Canada, Poort, Jansen and Hofman (2022) report that greater perceived cultural diversity within group work has an overall positive effect on students' behavioural and cognitive engagement as cultural diversity increases the exchange, evaluation, and integration of different ideas within group tasks, to the extent that it can outweigh the potential challenges posed by communication and linguistic difficulties that have previously been identified in the literature (Moore & Hampton, 2015; Osmond & Roed, 2010). Similarly, Spencer-Oatey and Dauber (2017) find with 2000 undergraduate and postgraduate students from a UK university, through a mixed-method questionnaire, that multi-cultural group work is perceived to be more enriching than challenging, and more important than multi-cultural friendship in developing students' intercultural skills. This study highlights the need for universities to consider teaching and learning in multi-cultural contexts more carefully and move beyond simply promoting social integration. Thus, it is clear, that group work for culturally diverse students can help to enhance learning experiences, underscoring the importance for pedagogical efforts in this direction.

However, using a group work design in learning is not without challenges. Students may lack the necessary collaboration skills or commitment for effective group work (Li & Campbell, 2008), and the unequal individual participation in group tasks can be counter-productive and demotivating (Freeman & Greenacre, 2010). For teachers, challenges may also arise regarding how group work activities can be best organised in terms of suitable group task design, group composition, and class time management (Gillies & Boyle, 2010). Encouraging and monitoring productive collaborative learning also requires sensitivity to group needs, and adept skills including diagnosing, giving explanatory inputs, monitoring students' social activities, providing feedback, managing multiple small

groups, and being flexible (Van Leeuwen et al., 2013). These challenges are interlinked and likely to impact one another. Thus, our study's focus is crucial for teachers to understand students' group work experience in order to inform more effective and inclusive learning design.

The growing scale of international students in the UK higher education (HESA, 2018, 2022) means that supporting and catering for learner diversity needs to be among the central concerns for further developing the UK international education provision. Expanding the presence of international students in the UK higher education is among the government's key international education strategies (DfE, 2019). However, the policy discourse surrounding international students has been predominantly economic, focusing on how much income they have generated for the UK (around £20 billion per year) and on setting future income generation target (£35 billion per year by 2030) (ibid.), while no clear or systematic guidance on accommodating and celebrating diverse, international classrooms has been offered as part of that strategy. Thus, UK higher education institutions need to see beyond the tuition fees and respond more deeply to the growing student diversity to create a more inclusive learning environment that welcomes and caters for diverse learner needs. For this reason we chose to examine more closely how group work was experienced by international students in order to understand what benefits embedding it as a UDL strategy may hold.

In short, research on international students in higher education often report on mobility, transition, or general experiences (Beech, 2018; Bista, 2019; Veerasamy & Ammigan, 2022), while this study has the specific focus on group work learning experiences. Furthermore, the evidence for success of the UDL approach in higher education has focussed on supporting students with disabilities (Cumming & Rose, 2022; Schreffler et al., 2019). The present study, instead, contributes to a growing evidence base of UDL approaches for international students. Therefore, situated at the intersection of UDL, international students, and higher education, this study seeks to address the research question of: "what makes UDL-informed group work effective for diverse international students in the UK higher education?", aiming to offer much-needed insights into how teachers from UK universities could respond to the growing diversity of international students.

3. Methods

The focus of this study is on analysing how the UDL-informed group work approach was understood by students and the active sense-making they did whilst engaging with it. This involves exploring the intricacies of social phenomena in open systems (Lemke & Sabelli, 2008). We took an interpretivist perspective that stresses in-depth qualitative understanding of the particularity of educational encounters and is exploratory, open-ended, data-driven and inductive (Taber, 2012). Qualitative analysis offered valuable insights into participants' lived experiences and unique perspectives (Corbin & Strauss, 2008). A case study approach provided "a means of understanding complex human situations and human encounters" in the round (Simon, 1996, 226), which was chosen for its strengths in richness of detail in allowing for an in-depth exploration of complex phenomena, in contextual understanding of students' natural learning experiences, and for the holistic perspectives the various data collection methods made it possible to consider, including multiple variables and their interrelationships (Njie & Soaib, 2014). It informs our data collection through the use of multiple data sources (questionnaire and focus group), data analysis in conducting thematic analysis, and findings in generating evidence-based insights.

As part of our commitment to ethics and informed consent, approved by the University's ethics board, we wanted to give students both an anonymous way to evaluate the UDL design they experienced as well as the opportunity to expand on their views in person. We emphasised to students that there was no obligation to participate. As a result, out of a possible 33 students enrolled on the module, 11 survey respondents and nine focus group participants based on campuses in London and Scotland gave informed consent to participate in the study and shared their views on group work experience and its effect on their developing understanding of international education. Participating students come from India, Pakistan, China and Ghana, and were studying in the UK for the first time. There were no campus-specific differences across the two diverse student focus groups. As we prioritised students' learning experiences on the module, participant recruitment took place after the module ended, hence whilst observation and familiarity with class materials could not help but inform the perspectives from which we conducted and analysed data, they were not materials we explicitly cite.

Two face-to-face focus groups were conducted and audio recorded in May 2022 after marking was completed, one conducted by the London-based researcher with five London campus students, and the other one conducted by the Scotland-based researcher with four Scottish campus students. The focus groups were approximately one hour each. The researchers agreed on and used a list of questions to guide the focus group discussion, including understanding students' general learning experience at the university, their particular experience with group work on the researched module, and their suggestions and feedback for future improvement.

The audio recordings were transcribed for thematic analysis along with survey results (Braun & Clarke, 2006). Following the six stages of thematic analysis (ibid.), we familiarised ourselves with the data by carefully reading the transcripts several times to draw out initial codes, then identified recurring patterns of meanings to generate initial themes, and reviewed themes to define and name main themes before writing up the findings section using selective quotes from the focus group as illustrative examples. We gave all participants code names to correspond to their campus LS1 to LS5, for London campus students, PS1 to PS4 for Scottish campus students.

To ensure trustworthiness, emerging themes from open ended survey questions and focus group transcripts were compared across the two campus settings (Patton, 2014). Data collected on the two campuses were first independently analysed by the two researchers who are based on the respective campus. Throughout the data analysis process, we regularly discussed the codes and themes. This member checking process helped ensure that participants' voices were accurately represented. A data validation meeting (Given, 2008) was held after data analysis was complete to discuss the codes and themes and to reflect on the contrasting responses and agree on common findings.

4. Findings and discussions

Our study shows that all three aspects of UDL have a bearing on the experience of group work. Communication barriers and issues around choice of commitment from group members were cited as the common reasons for students' average or unsatisfactory experience. This suggests that the range of modalities of class resources needs to be fully technologically supported, for if they are not, communication barriers impede meaningful choice of engagement.

Three major themes arose from data analysis and will be unpacked in the following section: accessibility, learner motivation, and managing intersectionality.

4.1. Accessibility

Diverse international students who are used to different sets of technologies may find the digital tools used in the UK new or alienating.

"All international students have not known the use of the Google translator before, because some countries . . . there technology is not very high. So when we come to the UK there are many technologies that are new for us." (PS1)

As this quote attests, teachers cannot assume that all students are necessarily used to virtual technologies or can switch to online learning easily without additional guidance. Support is needed in order to develop a greater proficiency in the types of digital technologies that are used in their studies (e.g., VLE platforms, MicroSoft Teams). Teachers can support students in resolving some technical issues only to a certain degree. Peer support such as group work can be useful resources. Crucial to educators and student peers being able to address technical problems was the face-to-face component of the class, where one could see not only each other's screen but how students were interacting with it and the affordances of their particular hardware (CAST, 2018, checkpoint 4.2). Furthermore, students reported engagement in class and group activities comes more naturally in face-to-face settings:

"While you are in the online class, like, you cannot feel it, like experiences.... But when you are in the actual class, you can feel, and you can act accordingly. . . . Many students, they are not even present when they're online." (LS3)

This suggests that in online classes, students might have a harder time connecting with the learning experience because they cannot fully immerse themselves in it and may not feel as engaged as they do in physical classrooms. The rise of virtual learning and digital technology in education, especially during the COVID-19, has led to the increased adoption of hybrid or blended modes of learning across higher educational institutions globally (Zhang et al., 2022). However, this does not mean the traditional face-to-face learning is outdated. As the above students said, the in-person "feeling" or "experience" of the human connections, and tangible relationships with others through social interactions in a physical setting are important to learning. Survey results shows a similar preference for more on campus group activities. Thus, face-to-face learning still plays a key role in modern higher education, as it continues to help to create a sense of community and belonging, so that emotional engagement and social interactions among students can contribute to active participation in the learning process and improve student experience (CAST, 2018, checkpoint 7.2).

A UDL approach can facilitate this by including both virtual learning with its benefits (Haleem et al., 2022; Gabriel et al., 2022) and in-person learning design. A focus of these different delivery modes needs to consider the learning as well as social and emotional needs of students. UDL supports hybrid learning with its emphasis on flexibility, inclusivity, and the incorporation of multiple means of engagement, representation, and action and expression (CAST, 2018). For example, we used virtual resources such as pre-recorded videos, readings, and interactive online activities to provide necessary background information before an in-person class (ibid, checkpoints 2.5, 3.1 & 7.1), and further online activities such as discussion forum, group work, poster making, and formative written tasks after the in-person class continued to give our students different ways to engage with the materials and demonstrating their understanding (ibid, checkpoints 4.1, 5.1, 6.3 & 9.3).

Further, not only did face-to-face delivery help students and teachers refine support and learning, but it also enabled students to help each other learn about technology's affordances and uses while working in groups. Firstly, being able to look over each other's shoulders to see how to construct effective search queries and access the associated articles unleashed powerful knowledge tools, some students would not have managed alone. Secondly, students used translation and communication apps whilst sitting with each other to increase their capacity to understand English in a range of quite varied inflections. Thus, it is not either face-to-face or digital technology but the use of them together that enabled choice, agency, understanding and learning.

"Because sometime we can't understand what my colleague is saying, so we request him. "What are you saying? Can you write for me?" So they write and give me hint. And it was good for understanding." (PS1)

When asked for further clarification, students emphasised the moment to moment negotiation that built momentum in their transmodal efforts:

"Yes. Because now it's like a clue has already been given in our writing, so it makes you pay that much more attention now to the person. Yes, it brought us to understand that we need to pay attention, and we see now, much attention should be taken to attend to the group. If you pay that attention, there's no accent that cannot be understood." (PS2)

These comments came as the group reflected that at the beginning of the module there was a strong sense that accents from other regions of the world could not be understood, and so represents quite a dramatic change in attitudes, that might go unrealised without supported group work activities. This highlights the importance of the ongoing attention, negotiation and interaction among group

members which can lead to better mutual understanding, regardless of language barriers (ibid, checkpoints 2.4 & 3.4).

Aware of these challenges, as classes returned to some capacity to meet in person, we built in ice breakers to beginning of classes. The student above refers to one of these activities. It highlights that class begins before the focus on tasks. An important part of that was academic staff modelling respect, curiosity, and an attitude that built trust. Humour and signalling a willingness to consider every contribution as valuable played a key role in this. There is a growing awareness that mental health is a key component of postgraduate study (Österlined, Denicolo & Apelgren, 2022; Rugg & Petre, 2020) that cannot be ignored, which we see the students highlighting also in their comments. International students in the UK are found to be less likely to receive support for mental health and wellbeing compared to domestic students, despite that international students often reporting a heightened sense of anxiety compared to UK-domestic students (Student Minds, 2022). In this regard, a UDL design may help to enhance students' inclusive and equitable learning experiences, as the framework emphasises the importance of optimising relevance, value, and authenticity and minimising threats and distractions during learning (CAST, 2018, checkpoints 7.2 & 7.3), as well as fostering collaboration and community such as through group work in our study (ibid, checkpoint 8.3).

4.2. Learner motivation

Students voiced concern that some of the group members had not taken the group work seriously or contributed equally. Survey results show that one thing students dislike about group work is that "people's commitment varies in it". They suggested that this might be because group work was not summatively assessed and it did not contribute to the module credits, so there were no external consequences even if they did not engage with the group tasks. For example, one student said that:

"You know, people like to be pushed. If you give credits to the group activity, the group that doesn't perform properly, they will be pushed to perform. They are target driven." (LS1)

This seems to suggest that students are orientated to extrinsic motivations for learning which may overshadow the intrinsic value of the group work tasks and the actual skills and knowledge acquired, as one student straightforwardly put it: "... because we are all here for numbers, the majority of us" (LS2). A UDL approach that promotes inclusive and intrinsic motivations for learning appears to be confronted by the tradition of teaching to the test and a measurement culture in education, which still remains the norm in many contexts across the globe (Biesta, 2009). Adapting to different academic expectations can be challenging for diverse international students who are new to the UK system and may be more used to an education tradition where rote learning has been a proven skill for their academic success to date (Tan, 2011). International students may have varying expectations of participation, assessment and feedback. For example, McLeay and Wesson (2014) examined the collectivist and individualist culture and suggest that Chinese students who are culturally committed to in-groups may be more receptive to group-based feedback, while UK students from an individualistic culture can be more apprehensive about peer assessment due to a more private and inward inclination. International students in the UK may also find the seminar activities and assessment strategies problematic (Smailes & Gannon-Leary, 2008), as seminars were found to be an area of anxiety for international students who may shy away from speaking up as they do not wish to disrupt the class 'harmony' (Ouyang, 2006), while plagiarism can be a major stressor within written assessment where international students do not understand its terms or what they can be done to avoid it, due to a lack of experience in Western academic writing (Fatemi & Saito, 2020).

Thus, educators cannot assume that all students automatically share the same understanding or motivation for the value of the learning tasks assigned. The links between the learning tasks and their purposes and intended outcomes need to be made more explicit. In other words, educators need to make 'credits' for what students do more visible and create a mutual understanding early on that any tasks for which there are no quantitatively measured credits, do support learning and eventually the credits that will be measured. This also aligns with the UDL engagement principle which specifies checkpoints on promoting student expectations and beliefs to optimise motivation (CAST, 2018, checkpoint 9.1), heightening salience of goals and objectives (ibid., checkpoint 8.1), and optimising relevance, value and authenticity of the learning tasks (ibid., checkpoint 7.2).

However, some students did acknowledge that test scores and the degree certificate are not everything that matters. Internally acquired skills and knowledge are equally important to the externally measured achievements (i.e. assessment scores or degree certificates), if not more. One student who talked about the importance of getting credit reflected that, as a result of the module, their views had changed:

"By the end of the day. When you leave here, you should leave here better equipped. And we shouldn't just pass through. We shouldn't leave here just taking the certificate and leaving." (PS2)

This reflects an intrinsic motivation for learning – one learns to acquire genuine skills, not just assessment scores or certificates. We had hypothesised that by encouraging students to take control of their own learning through dialogues, this possibility of student autonomy, independence, and perhaps more importantly, intrinsic motivations for learning can be promoted. That students reported that our UDL-informed module design did support their transition as diverse international students to adapt into the new academic environment was encouraging feedback.

A further dimension of motivational dynamics that students shared is the importance they gave to a shared group identity and responsibilities, which in turn serve as motivation for individual team members to contribute. For example, students said that:

"Sometimes a few are not ready to work and we push the other person, no, you have to work, because this is your job to do it." (LS2)

“We need to answer people, because ... it’s a group work, but not my personal thing, so if I don’t perform my duties to them... my inactivity is going to pull them down as well. So this kind of shared responsibility comes when it’s a group.” (LS1)

It is clear that group work not only can foster a supportive and safe learning environment, but it can also help to promote accountability and foster a sense of collective responsibility among team members, thus motivating learning. Survey results similarly indicate that students feel a heightened need to “prepare well before the meeting” when they know they have to participate in discussions with others in a group. All survey respondents agree that group work can help to develop their research skills and academic study skills, which are among the key foci of the researched module.

It is worth noting that teachers also have a role to play in motivating group work, as students pointed out that the rapport they build with teachers should not be overlooked:

“You know, (we can be) intimidated but when teachers make a little bit of fun and little bit of a break like you give, then we feel more fresh.” (PS1).

Trust and rapport between teachers and students as well as among students helped to motivate learning. To do so, it was also pointed out that teachers need to remember what it is like to be students themselves: “If the teacher thinks he actually is a student, he can make a design better for the module.” (PS1)

Existing literature argues for the importance of sharing group identities and responsibilities in collaborative learning and the positive interdependence this encourages (Bächtold, Roca & De Checchi, 2023; Herrera-Pavo; 2021). To strengthen such positive interdependence, learning tasks can be designed to encourage students to proactively share resources, roles and group goals. As individual group members work toward a shared goal and strive for group success, they effectively work together to maximise each other’s learning as well as their own. A UDL approach that aims at an inclusive learning experience for all can tap into such positive interdependence within group work and use it as a key motivator for student success. For example, the UDL engagement principle supports providing options for sustaining effort and persistence through fostering collaboration and community as well enhancing self-regulation via promoting expectations and beliefs that optimise motivation (CAST, 2018, checkpoints 8.3 & 9.1). In this study, we designed group work to enable students to make different kinds of contributions through collaborative work that would allow different strengths or aptitudes to be recognised. This promotes a sense of mutual support, responsibility and understanding where group members are motivated to work towards a common goal. As the students said, they are pushing each other to succeed. In short, students feel that our UDL-informed group work can help motivate their learning because they felt responsible for their groupmates.

4.3. Managing intersectionality

Students recognised the great cultural and linguistic diversity within their cohort (students coming from seven countries across three continents) and the difficulties this may present. Through group work, however, students highlighted that the collaborative learning process had helped them understand and learn more about different cultures and create opportunities for them to work together for success. For example, students said that:

“I was telling somebody that it would have been very difficult for me expressing myself differently. I was explaining because I lack the confidence, but I think group work, through group work, I’m learning. Overall group work is good thing.” (PS2)

“In terms of diversity, I feel like it’s really amazing, because you have different challenges...like everyone has like opportunity to learn from each other.” (LS3)

“I would love to work with people when I do not have their understandings...thinking, or the work style, and then you push and work together, then that helps you to learn more, because then you step out of your comfort zone.” (LS2)

These remarks highlight the transformative impact of group work on learning experiences. Engaging in group work has provided a platform for growth and enabled students to become more confident through mutual learning where individuals bring unique perspectives that foster deeper understanding.

International students bring a wealth of cultural perspectives and experiences to the classroom and enrich the learning experience for all students, but there may also be communication challenges. Culturally and linguistically diverse international students may find different accents and ways of expressions inside the classrooms difficult to understand (Mak & Kennedy, 2012). Admittedly, language skills can be improved over time with exposure, but the lexical choices that speakers make or the way sentences are structured syntactically can be deeply cultural and embedded within the cultural identity of self (Zhu, 2013). Studies (Strauss, Mackey & Young, 2011; Wang et al., 2010) similarly find that international students, especially those from collectivistic cultures, may have a higher level of communication anxieties in individualistic cultures due to intercultural sensitivity as well as language proficiency.

For example, a student wrote in the survey that despite enjoying contributing to group work tasks, he thought that some group members tried to “override the ideas of others pushing through with their ideas and being kind of discriminatory in choosing whose voice matter.” Another survey response shows that communication with group members can be difficult as “some classmates’ accent was not clear”. Group work allows for the sharing and exchange of cultural perspectives and experiences, but it also comes with challenges if diversity is not managed carefully. Nonetheless, the vast majority of participating students (nine out of 11) rated their group work experiences in the survey as ‘wonderful’ (five) and ‘good’ (four), and appreciated group work as opportunities to promote mutual understanding and respect across cultural backgrounds. Existing research evidence also show that group work can increase intercultural communication and collaboration, which can lead to the development of intercultural competencies (Jacobi, 2020). Thus, by sharing their cultural perspectives and experiences with one another through group work, students from different cultural

backgrounds may develop greater mutual understanding and feel valued and respected. This is also in line with the UDL design framework, particularly in sustaining effort and persistence through fostering collaboration and community (CAST, 2018, checkpoint, 8.3), but also in providing options for comprehension including activating background knowledge, as students from diverse cultural backgrounds contribute their unique perspectives to group discussions and projects, the process of which promotes mutual understanding and respect across cultural backgrounds (ibid, checkpoint 3.1).

The intersectionality of students' experience needs to be examined. Students highlighted that difficulties arose from social diversity, as some students have caring responsibilities or need to work part-time jobs in order to pay the hefty fee. As international students living overseas in a new environment, they often have to manage these competing priorities on their own without the support from the extended families that domestic students may be able to draw on. It thus could be challenging for students to commit to group work outside the usual class hours. For example, some students said that:

"I call you and say we want to do this, and you say my little baby is not feeling well. What can you do? ...We had so many arguments, like no, no, no, this and this and this. ...No one has the exact time, like we could discuss at this exact time, and every person they have excuses." (LS4)

This highlights the need for educators to particularly consider the design of 'time'. Survey findings show that students thought "time is the main problem like every person has a different time for discussion in the group", and as part of the module structure "it would be great if we are having more group activity time on campus". Thus, for diverse international students, group work can be a useful pedagogical tool if time is built in for on campus activities as part of the module design. Expecting students to "find" the time themselves relies on normative assumptions that UK home students may find this easier to accommodate. In this, the UDL Engagement guidelines of self-regulation and recruiting interest similarly highlight the needs for educators to pay closer attention to facilitating students' personal coping skills and strategies as well as minimising threats and distractions in learning (CAST, 2018, checkpoints 7.3 & 9.3). The UDL action and expression guidelines of executive functions also offer tools to support students' planning and strategy development (ibid, checkpoint 6.2). This is where we again see other components of UDL helping to address this learning challenge. When group work is challenged by other demanding priorities in students' lives, being in a group that is characterised by positive interdependence becomes an opportunity to enhance the time-management and problem-solving skills for everyone in the group, since members are supported to prioritise tasks and develop strategies for managing their responsibilities (Gaunt & Westerlund, 2016).

5. Conclusion

To understand more deeply what make UDL-informed group work effective for diverse international students in UK higher education, it is now clear that the key factors are: offering greater accessibility to technology and to timely and in-person contact with staff, designing learning activities that align with and encourage learner motivation, and creating opportunities for students to become more confident in managing cultural and social diversity. In this paper we have highlighted specific UDL checkpoints that support student learning experiences. Central to all this is the need for scaffolding and structured support that is sensitive to and mindful of diverse international students' experience of transitioning to a different learning tradition, and consideration of how to make students from different backgrounds feel valued and respected for what they can bring with them, rather than being expected to immediately 'fit in' to an alienating environment and keep up.

Survey and focus group data yielded congruent findings that students appreciated the UDL affordances of the group work activities where different strengths and interests can be valued. Following this, students report to be interested in engaging in group work across all modules. The three UDL principles of multiple choices, learning materials, learning activities, and expression of learning outcomes played varying roles at the two campuses in creating an inclusive and supportive learning space for diverse international students. Face-to-face group work activities were preferred to group work online with students using a range of modalities to negotiate social and cultural diversity. Students' reported motivations for engaging (or not engaging) with group work also reveals a clash between the learning traditions that many international students may be used to and the different academic expectations in the UK. This suggests a need for the host institutions to understand the intrinsic or extrinsic motivations for learning among their diverse students and be willing to discuss and negotiate accordingly. The findings thus contribute to literature by adding evidence to highlight key areas for UK higher education institutions to act upon in order to improve learning experiences for the rapidly growing presence of diverse international students.

Our qualitative case study is firstly limited by the small sample size, making the findings not generalisable to larger populations or other contexts. Nonetheless, this study values individual students' unique experiences and voices, which may shed light on how other similar contexts may borrow from the findings of this study in developing strategies to better support diverse international students. A follow up study with a larger sample size in our future studies could help to further substantiate findings and conclusions as well as to strengthen recommendations. Secondly, there could be selection bias in the sample, as students who are already keen on group work might be more interested in participating in the study. We take care to critically examine and compare the data collected and we do not claim that the findings represent the whole cohort in any way. Thirdly, focus group as a data collection method may limit the data collected, as certain types of socially acceptable opinions may emerge and more vocal students may dominate the discussions. We consciously promote equal participation by providing a survey option as well as within the group during data collection, with the use of the list of discussion questions to guide our conversations. Lastly, power differentials between the researchers and the participants can also affect what students tell us and how we interpret the findings. To address this, our work adopts an ethos of care (Ellis, 2017) by reaffirming the boundaries, checking out issues of confidentiality and working balance commitments during the research process. Further, throughout module delivery prior to data collection, the researchers had built trust and rapport with students. This facilitated

a deeper understanding of their reported perspectives and experiences as it was a continuing dialogue that was building on shared experiences and respect. The researchers remained reflexive about our own values and beliefs throughout the research process. We evidence this through presenting participants' quotes, comparing findings across data sources, and maintaining transparency of our practices to minimise potential bias and enhance credibility of our study.

Going forward, we suggest the following strategies for the fuller integration of UDL (CAST, 2018). In the immediate term, the focus can be on continuing to encourage different roles and a range of mediums within group work tasks. The second phase then moves on to expand the range of group work activities and map them to learning outcomes and assessment criteria. This phase also aims to enable students to choose the mediums through which they submit their assessments, promoting greater optionality, accessibility and inclusivity. Ultimately, the aspiration is to engage with students in a co-production phase to module assessment development, where students are involved in the process. This will raise awareness of UDL and allow for further articulation of the theory with students. Through these efforts, the goal is to create a learning environment that is more inclusive, diverse, and equitable for all learners. Further research is recommended to explore the implementation or strategies for these phases.

Additionally, students described using many different modalities, devices and software applications to work together, but they also highlighted that incorporating digital technologies into working together necessitated being spatially located together to learn digital literacy skills from each other and agree working practices, rather than eliminating a need for face-to-face interaction. Future research is invited to further problematise digital literacies. Students' narration of evolving understandings of international education and its interactional challenges and opportunities also requires further exploration.

Declarations of Competing Interest

None.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.ijer.2023.102277](https://doi.org/10.1016/j.ijer.2023.102277).

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