Can Diversity, Equity, and Inclusion (DEI) Espouse Through Social Constructivism? A Dynamically-Designed Multimedia Content Creation Programme for High School Students in Japan

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Abstract: This article presents a nonformal learning programme implemented in a Japanese high school, focusing on exploring Diversity, Equity, and Inclusion (DEI) topics through a multimedia content creation project. The programme employs a dynamic module design, characterized by student-centred learning, a comprehensive feedback loop, and timely adjustments to tailor to students’ learning paces. This nonformal approach allows students to experience DEI concepts closely, diverging from traditional formal education methods. Student reflections indicate increased awareness and appreciation of diversity, enhanced empathy, cross-cultural understanding, and development of critical soft skills through DEI experiences and multimedia content creation. The findings suggest that high school students can effectively grasp abstract concepts like DEI experientially. The programme’s dynamic design offers a model for creating large-scale, learner-focused curricula. Additionally, the collaboration between a graduate school and a local high school demonstrates a potential role for higher education institutions in supporting community education initiatives.

1 INTRODUCTION
1.1 Constructing Knowledge of DEI

The notion of Diversity, Equity, and Inclusion (DEI) has nurtured researchers’ consideration in recent years as an imperative subject worldwide, Japan included (Wang et al., 2023). In Japan, whilst certain fundamentals of DEI are conversed in formal education through the facets of Sustainable Development Goals (SDGs), areas for enhancement remain (Hirata, 2023). One presently noticeable contextual constraint, though Japan has been welcoming additional foreigners in recent years, is the partially diverse representation in its communities (Hirata, 2023). This context provides limited interpersonal prospects for students to experience, which may be viewed as a foregone the opportunities for deepening understanding (Chan, 2023). Nevertheless, fostering cognizance of DEI amongst younger generations in Japan is vital, as it cultivates empathy, understanding, and appreciation of entities from diverse backgrounds.

Familiarizing youngsters with the core tenets of DEI holds immense value in shaping a tolerant and informed generation who is capable of navigating the diverse modern society. A recent study has raised lasting dialogue about whether formal education alone effectively distributes abstract concepts (Smith, 2021). Studies suggest intellectual sophistication is crucial in grasping abstract philosophies (Pexman et al., 2023; Pollarolo et al., 2023). Given that adolescence is a critical period for the development of the prefrontal cortex, which underpins the ability for abstract thinking, variations in this developmental stage can affect the understanding of DEI’s nuanced principles (Kolk and Rakic, 2022; Dumontheil, 2014). Therefore, constraining DEI education to formal learning settings only may overlook alternative routes in delivering these indispensable values.

1.2 Opportunity and Programme Goal

Cognitively acquiring knowledge differs from actively constructing personal understandings through real-life experiences. To address this dichotomy, it’s beneficial to move away from rigid teaching methods and instead implement dynamic, adaptive programmes that are tailored to individual learners’ developmental paths. This approach is particularly relevant in the context of DEI, which isn’t always a cen-
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2 STRUCTURE OF DISCUSSION

This paper aims to explore the education of DEI within formal high school settings in Japan, questioning whether such structured approaches adequately enable youngsters to fully grasp abstract concepts like DEI. Recognizing this gap, a dynamically designed, nonformal programme was initiated in 2023 for 150 female students at Fujimigaoka High School for Girls in Tokyo. Section 3 outlines specific strategies derived from grounding concepts, followed by practical procedures to foster involvement and interactions for students to experience DEI. Additionally, it discusses reflections on the proposed mechanism and outcomes, showcasing multimedia creation produced. The subsequent sections discuss the key success factors, and potential for adaptation, summarizing insights and factors for smooth implementation. Feedback from students shed light on the effectiveness, emphasizing the advantages of nonformal, active learning and interactive discussions in experiencing DEI concepts.

3 THE PROPOSED PROGRAMME

3.1 Key Actors

Implementing the proposed DEI programme involves the following key actors: students, facilitators, and programme designers. At the forefront are 150 Grade 10 female students from Fujimigaoka High School for Girls in Tokyo, Japan. The 150 students work on projects in a small-group collaborative learning way. They are randomly assigned to 26 groups with five to six students in each group. Another critical element of the programme includes the enthusiastic volunteer facilitators from Keio University Graduate School of Media Design (KMD), with a wide array of cultural, ethnic, and linguistic backgrounds. Coming from over 15 countries and spanning ages from 22 to 64, this diverse group embodies the commitment to inclusivity and diversity. The facilitators are assigned randomly and in rotation to ensure a dynamic and varied learning environment. This rotating cast enables students to encounter facilitators from various backgrounds in every session and brings a flow of fresh perspectives, stories, and interactions, sustaining student interest and engagement. To ensure consistency and reliability, facilitator briefing sessions held by programme designers were conducted to align session content and facilitation skills before each session.

3.2 Grounding Concepts

3.2.1 Nonformal Learning and Social Constructivism

The proposed programme has been designed based on a series of foundational concepts to create an engaging and effective learning environment. In this environment, students are encouraged to actively immerse themselves in experiencing DEI through various synchronized activities. This programme complements formal education and is grounded in the principles of
nonformal learning (UIS, 2012) and social constructivism (Vygotsky and Cole, 2018).

Social constructivism, in particular, emphasizes the importance of social interactions in the formation of knowledge and meaning. It explores how meanings emerge from collective processes, environments, and negotiations. Individuals draw on their previous experiences and knowledge to interpret meanings in a continuous process, constantly reviewing and updating their understanding (Vygotsky and Cole, 2018).

In line with this perspective, nonformal learning represents a departure from traditional educational settings, while social constructivism positions students as active contributors in the collaborative creation of shared knowledge (Chen et al., 2023b). Jointly, these foundational principles provide students with a dynamic and layered context to engage with intricate DEI matters. This approach fosters a deeper understanding of the relevance and importance of these issues in contemporary society.

### 3.2.2 Guided Participation and Zone of Proximal Development (ZPD)

This programme’s approach highlights learning through action, involving small group interactions, concrete elements, open inquiries, and peer teaching (Rogoff et al., 2003). In contrast, traditional educational practices often involve passive learners receiving information from external authorities. With the aim to extend to adult facilitators, the proposed programme enables them to reflect on their needs, develop solutions, and achieve success while incorporating community participation, organization, and evaluation. Collaboration is a crucial aspect of the proposed programme, entailing active, respectful cooperation among diverse groups and valuing both individual contributions and collective efforts, which is one of the 21st-century skills for the youth to develop (INEE, 2010). The proposed programme is based on these foundational ideas, aiming to foster collaboration in communal settings, enhance intrinsic motivation, and benefit from engaging social interactions among students and between students and facilitators. It draws inspiration from Rogoff’s “guided participation” and Lave and Wenger’s “legitimate peripheral participation,” suggesting that children’s development is enhanced through active participation in cultural networks, where learners and caregivers, in this case, facilitators, collectively develop the skills, values, and knowledge of their community (Rogoff et al., 1993; Rogoff, 2008; Lave and Wenger, 2001).

Incorporating Vygotsky’s theories, guided practice involves systematically structuring instructional frameworks by experts to help learners reach their learning milestones (Vygotsky and Cole, 1978). Positioned within the Zone of Proximal Development (ZPD), which is the gap between a learner’s current ability and their potential development with adequate support, the programme is designed to allow facilitators to adjust their level of intervention based on learners’ progress (Vygotsky and Cole, 1978; Chen et al., 2023b). As learners demonstrate increasing independence in completing tasks, experts gradually reduce support, thereby strengthening learners’ self-confidence and capabilities (Vygotsky and Cole, 1978; Clapper, 2015).

### 3.2.3 The Fan Model and Eastern Philosophies

The proposed programme integrates the Fan Model (Levy et al., 2018). This learner-centred programme is designed to foster social communication, reduce the hierarchical distance between facilitators and students, promote reciprocal learning, and nurture respectful communal connections across various ages and cultures. To effectively engage 150 students in DEI experiences, the programme employs a cascading implementation framework (programme designers – volunteer facilitators – students in each session) based on the Fan Model (Levy et al., 2018). This approach also aims to enhance the facilitators’ professional development through active participation in social interactions and reflective practices, aligning with the principles of social constructivism (Vygotsky and Cole, 2018).

In addition, the programme incorporates two Eastern philosophies. First, inspired by “Ichigo Ichie,” which emphasizes the uniqueness and value of each encounter, facilitators are rotated randomly for each session. This aspect of the programme encourages students to cherish moments with peers and facilitators, fostering appreciation and reflection on these interactions (Chen et al., 2023a). The second philosophy, “San Ren Xing Bi You Wo Shi,” suggests that one can learn from anyone in a group, regardless of social status or background (Chen et al., 2023a). The programme is designed to encourage interpersonal communication among students and facilitators, thereby breaking down traditional hierarchies. This socialization is intended to enhance relationship-building and motivate student learning, facilitating open dialogue with facilitators and developing social skills based on respect and empathy.
3.3 Programme Design

3.3.1 Creating the Learning Environment

Grounded on nonformal education, as previously defined in Section 1.2, the proposed programme integrates Project-Based Learning (PBL) to enhance the development of critical 21st-century skills, also known as soft skills, in students, going beyond the scope of traditional formal learning environments (Vogler et al., 2018; Sharma, 2016; Chen et al., 2023b). To ensure authenticity, the programme is deliberately designed to require students to engage with real-world scenarios, prompting them to undertake investigative and analytical tasks. Specifically, this learning environment is geared towards establishing a robust foundation in information literacy. Students are encouraged to delve deeply into topics of interest for thorough exploration, gather data from diverse sources to form their viewpoints, and then express their understanding through the creation of multimedia content.

3.3.2 Embedding the Social Interaction

Inspired by socio-emotional intelligence (Devis-Rozental et al., 2018), the proposed programme creates a cooperative atmosphere through various activities in each session, facilitating dialogue and collaboration. This approach solidifies understanding of DEI principles. Artistic activities like crafting, sculpting, and storytelling enhance participants’ creativity, reinforcing their memory of previous lessons and boosting engagement.

The curriculum is thoughtfully tailored to students’ cognitive stages, emphasizing learning through experiencing. The programme’s structure shown in Figure 1 comprises three distinct phases, each contributing to a deeper understanding that extends beyond the in-session interval:

1. Pre-Session. This stage introduces upcoming session themes and encourages students to explore related information independently. The goal is to spark curiosity and motivate self-directed learning.
2. Implement. Here, facilitators interact with students during sessions to discuss gathered information and explore session-specific activities. These interactions deepen intellectual understanding, with facilitators helping to clarify abstract concepts like cultural notions. Students then translate their findings into multimedia stories, choosing their preferred expression method. This phase fosters collaborative learning and communication, as participants actively share and listen to each other’s ideas.
3. Post-Session. This final phase focuses on encouraging students to continue interacting independently, with facilitators helping answer questions on the online platform. They apply their knowledge from the session to co-create and share content with peers, further developing skills in collaboration, communication, and independent learning.

Grounded in social constructivism principles (Vygotsky and Cole, 2018), these interconnected phases form a cycle that continually refines students’ understanding and experience with DEI principles. The programme shifts from a traditional lecture-based approach to an experiential, learner-centered one. This strategy promotes independent critical thinking, creativity, and emotional intelligence, aligning with essential 21st-century skills.

The foundation of this approach is the belief that knowledge is constructed through communal experiences and social interactions, rather than being simply transferred from an expert to a novice. As students move through these phases, they actively engage with information, transforming it into meaningful content and honing their soft skills. Facilitators guide activities and discussions, helping students develop their perspectives and collaboratively create multimedia content that reflects their unique views and experiences. The post-session phase allows students to collaborate without facilitator guidance, practising co-creation and sharing their work with peers. Overall, this educational approach aims to produce graduates who are adept in navigating modern challenges, skilled in DEI contexts, equipped with strong critical thinking skills, and capable of effective creation and collaboration.
3.3.3 “Ticket to Talk”: Multimedia Creation

The integration of multimedia content creation in the programme serves multiple purposes in cultivating an engaging and inclusive learning environment, particularly for Japanese students. Firstly, it encourages participatory learning, enabling students to learn from each other through sharing and teaching activities. Given Japan’s unique cultural context, the programme is designed to enhance interaction, encouraging students to explore new approaches to multimedia expression and experiment with innovative ideas. Additionally, the process of creating content serves as a “ticket to talk”, facilitating collaboration among students, especially those who may find it challenging to engage with new group members (Welsh et al., 2018).

The programme assigns students roles as representatives of various nations across the world, promoting in-depth cultural exploration and content production. Sharing and discussing diverse cultures broadens students’ perspectives and deepens their understanding of different worldviews. Drawing from Barbara Rogoff’s theories, the programme underscores the connection between individuals and their social contexts, focusing on the development of cognitive skills within explicit cultural environments (Rogoff, 2008). It incorporates Vygotsky’s ZPD (Vygotsky and Cole, 1978), where guided participation by skilled facilitators collaborates with students, transferring knowledge and skills through shared experiences. Key aspects of Rogoff’s approach, such as learning through observation, prioritizing student interests, and the facilitator’s role, inform the learning process.

At its core, the programme embraces the principles of DEI. Diversity is celebrated through interactions with facilitators from varied backgrounds, expertise, and ages, and through the exploration of different cultures, which cultivates respect and appreciation for differences. Equity is achieved in the programme’s dynamic design, tailored to align with students’ learning paces and allow facilitators to meet the unique needs of individual groups. Inclusion is realized by encouraging students to collaborate with diverse peers, familiarizing themselves with different abilities and backgrounds, and developing essential soft skills necessary for contemporary society.

3.3.4 Dynamic Module Design

The dynamic module design approach used in the programme is for catering to students’ diverse cognitive abilities and stimulating their curiosity, while simultaneously adapting to their learning pace. Unlike traditional education systems that rely on end-of-semester surveys for feedback, this programme employs a continuous two-stage feedback loop, involving programme designers, facilitators, and students. This process ensures timely modifications without waiting for the start of a new module or academic year.

As introduced in their article, the five-stage dynamic design process (Chen et al., 2023a) begins with a comprehensive consultation session among designers and facilitators. In the first half, facilitators engage as learners in hands-on activities, followed by detailed feedback and discussions in the second half. Based on this feedback, the content is refined in the second phase. The third stage involves the implementation of these adjustments, with facilitators interacting directly with students. Feedback from both students and facilitators is then collected and reflected upon for future sessions. This approach contrasts with traditional education where feedback is often delayed, limiting the opportunity for immediate adjustments. The dynamic design approach allows for quick responsiveness, ensuring the programme remains flexible, engaging, and empowering for students.

Throughout the programme series, this process allowed for adaptations to the original themes and activities. The first session, focused on ice-breaking activities and country selection, remained unchanged. The second session delved into cultural exploration, including celebrations and diversity calendar creation, supplemented with storytelling and storyboard exercises.

Sessions three and four originally centred on clothing and cuisine, were revised based on feedback. These sessions introduced video production and picturebook-making to maintain participant interest and learning. Feedback indicated varying learning paces and satisfaction levels among groups, leading to significant changes in later sessions. Sessions five to seven, initially dedicated to extracurricular activities, transportation, and unique professions, were condensed to focus on culturally unique professions only. This shift allowed students to engage deeply in exploring the profession, using stop-motion multimedia creation and emphasizing peer feedback.

The penultimate session transitioned to final exhibition preparation, integrating assessment, reflection, and ongoing preparations. The final session maintained its theme of presenting the exhibition, which was also an opportunity to engage students’ parents, school teachers, and junior high students. The exhibition served as a platform for interaction, whilst multimedia creation facilitated discussions. The dynamically designed process ensured that the programme was responsive to student needs, making it engag-
ing and effective. This adaptive approach created a conducive learning environment, accommodating the evolving interests and requirements of the students.

3.3.5 Role of Digital Means

Implementing the dynamically designed programme with a digital platform like Padlet enhances monitoring and reflection of students’ progress, thereby increasing confidence among all stakeholders involved. The use of Padlet provides transparency in addressing students’ needs and captures opportunities to foster enthusiasm for learning while allowing students to perceive the direct impact of their participation and the session content.

Within the framework of the proposed programme, Padlet serves multiple functions for programme designers, facilitators, and students. Primarily, Padlet acts as a diagnostic tool, enabling programme designers and facilitators to gauge students’ learning pace and interests. This is achieved by examining the quality of the outputs uploaded to Padlet and monitoring the frequency and quality of interactions within and among teams. This analysis provides valuable insights into students’ comprehension patterns and learning styles, informing potential adjustments to session content and facilitation methods.

Moreover, Padlet facilitates an integrated learning environment by promoting peer-to-peer knowledge sharing and collaboration. Students populate the platform with their team’s outputs, making it accessible for others to explore, evaluate, and learn from these shared works. This reciprocal exploration process fosters a sense of community and shared learning experience, increasing students’ enthusiasm and engagement throughout the programme.

Additionally, Padlet undertakes the role of an unpremeditated, open communication channel between facilitators and students outside the arranged session hours. This enduring contact permits facilitators to scaffold students’ learning by addressing uncertainties, illuminating ambiguities, and providing timely feedback. Such obstinate support contributes to nourishing students’ curiosity and buttressing their analytical skills, developing a favourable environment to experience the programme.

By harnessing Padlet’s proficiencies, the proposed programme intends to generate a dynamic and responsive learning cycle, effectively addressing students’ diverse cognitive understanding and facilitating the progression of essential soft skills for modern-day environments. The platform’s multifaceted efficacy boosts the general proficiency and efficacy of the programme, safeguarding a gratifying and enlightening experience for all stakeholders involved.

4 DISCUSSION

4.1 Success Factors

4.1.1 Learner-Centered Programme Dynamics

As the proposed programme commenced, several factors that were critical to the successful implementation emerged. Foremost among these was the adoption of a learner-centred approach, crucial not only in the design but also in the execution of the programme. By emphasizing learner-centred approaches, we adjust not only the content and delivery of our modules but also adapt to the diverse learning paces of our students. This flexibility ensures that all students can engage meaningfully with the material regardless of their starting point.

In the context of the in-person sessions, facilitators observed students’ learning conditions closely and communicated the conditions and any student concerns with other facilitators as well as programme designers after each session. This feedback loop allowed for the modification of the learning pace in subsequent sessions, ensuring a closer alignment with students’ requirements. Conversely, within the online platform Padlet, facilitators and programme designers monitored students’ interactions, such as posts and comments, to gauge the learning pace effectively. Despite the participation of 150 students, this attentive approach facilitated a tailored learning experience. The programme thus transcended a one-size-fits-all model, ensuring that students’ learning needs were consistently met and reflected in the evolving design of the dynamic modules.

4.1.2 Effective Communication

Effective communication with facilitators and the collaborating high school was another pivotal success factor for the proposed programme. The programme’s dynamic nature, including the rotating cast of facilitators, highlights the critical need for thorough facilitator preparation and clear communication. As outlined in Section 3, detailed briefing sessions before each programme session has been instrumental in ensuring continuity and effectiveness. Beyond facilitator engagement, establishing open lines of communication with the collaborating high school has proved equally crucial. Pre-programme discussions with the school facilitated the alignment of expectations and provided a platform for addressing any needs or concerns beforehand. Through these proactive engagements, the programme secured the trust and comprehensive support of the school, enabling a seamless programme implementation with minimal external intervention.
4.1.3 Detail-Oriented Activities

Last but not least, attention to detail in the activity design and implementation also played a critical role. A notable example was observed in the planning of the seventh session, which focused on student reflection. To facilitate comprehension and maintain engagement, the reflection questions were strategically segmented into five parts: overall experience, skills learned, most impressive experience, experience working with others, and personal growth. This division was designed to encourage students to shift their perspectives between sections, thereby preventing monotony and fostering deeper contemplation. Furthermore, this structured reflection activity served as a precursor to the subsequent final exhibition panel preparation, guiding students to thoughtfully consider and articulate their experiences throughout the workshop. Such attention to detail significantly contributed to the effectiveness of the programme’s implementation.

4.2 Reflections

4.2.1 Student Outputs and Experiences

Figure 2 presents a photo collage from the final exhibition session of the proposed programme, capturing moments where students showcased their projects and exchanged ideas with peers, facilitators, and visitors.

Figure 2: Students at the final exhibition session.

Figure 3 displays some of students’ multimedia content creation outputs. The first three photos feature picturebooks crafted by students. The last two images capture students in the process of producing stop-motion animations.

Figure 3: Students’ multimedia content creation outputs.

In total, the 150 students produced over 70 videos and over 50 picturebooks. Among these contributions, one group’s journey stood out due to the profound learning experienced during their picturebook creation. Their progress is exemplified in Figure 4, which compares the first and final versions of their work. The initial picturebook, “Swedish Food,” introduces the nation’s cuisine, while their concluding piece, “Finding a Job in Sweden,” explores a culturally unique profession, demonstrating the group’s development in storytelling skills. This remarkable progress not only illustrates the students’ growing expertise but also implies the effectiveness of the programme’s learner-centred, dynamic module design. As detailed in Section 3, accommodating the diverse learning paces and interests of the students necessitated continuous adjustments to the session plans. This flexibility allowed additional time to explore topics like culturally unique professions, allowing students to engage deeply in research, story development, and production.

Figure 4: Progress in students’ storytelling ability.

4.2.2 Reflections from Students

Table 1 presents students’ reflections on their experiences with DEI within the proposed programme. These reflections have been analyzed and categorized into three themes: students’ experiences with DEI, soft skills obtained in the nonformal learning environment, and their engagement in multimedia content creation. Each theme is further delineated into subthemes, accompanied by illustrative quotes from the students.

4.3 Our Position

The proposed programme revealed the potential for high school students to grasp abstract concepts like DEI by experiencing them. DEI education isn’t confined to formal learning settings; rather, it can be effectively integrated into the learning experiences of high school students, tailored to their specific developmental stages. The proposed programme showcases how DEI concepts can be internalized through hands-on activities and real-world engagements, leading to a profound and intuitive understanding. Although students may not initially be aware of the DEI frameworks they engage with, this active participation significantly broadens their viewpoints. This is especially apparent when students find themselves in environments lacking DEI, prompting them to recognize and value the diverse and inclusive experiences they’ve previously encountered. Such experiences instil a fundamental awareness of DEI, equipping students to identify and cherish diversity and inclusivity in various contexts.
### 4.4 Extendability and Future Directions

#### 4.4.1 Extendability

The proposed programme adopted a dynamic module design approach, providing an adaptable model for programme or curriculum development that caters to a large audience while still prioritizing a student-centred experience. This approach contrasts the typical one-size-fits-all methodology often encountered in settings with large audiences. Additionally, the programme’s collaborative structure is equally noteworthy. It builds a partnership between a postgraduate institute and a local high school, providing a platform where postgraduate students can significantly contribute to society and the local community and high school students can have meaningful interactions with international facilitators. By pushing the DEI concept to a broader audience, the programme showcases the university’s commitment to contributing positively to the local community, fostering a sense of shared responsibility and communal growth.

#### 4.4.2 Recommendations for Future Applications

Looking forward, it is advisable for future iterations of the programme to embrace an interdisciplinary approach. This strategy would ensure the programme’s diversity and inclusivity by integrating topics in various disciplines and fields. It also encourages the collaboration of facilitators and students from diverse backgrounds, fostering a rich learning environment. Such a multidisciplinary method is crucial in an era emphasizing developing soft skills, as it helps students link their studies to real-world applications and the skills necessary for college and career readiness. Furthermore, equity should be a fundamental aspect of the programme’s future development. This involves fostering collaborations between different areas, addressing disparities in student learning conditions, and assisting all students in realizing their full potential. Such efforts are key to providing equitable access to educational resources and opportunities. Through such collaborations, the programme may help address educational inequalities, transforming DEI principles from abstract concepts into concrete experiences within varied learning contexts.
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