

**MONTESORI CLASSROOMS THROUGH A DIFFERENTIATED INSTRUCTION LENS:
TEACHERS' PRACTICE IN MIXED-AGE CLASSES**

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Conveyed by:

KARINA FEBRIYANTI

22322062

DEPARTMENT OF ENGLISH LANGUAGE EDUCATION

FACULTY OF SOCIO AND CULTURAL SCIENCES

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**MONTESSORI CLASSROOMS THROUGH A DIFFERENTIATED
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By

KARINA FEBRIYANTI

22322062



Approved on 18th June 2026

By Supervisor

Nizamuddin Sadiq S.Pd., M.Hum.Ph.D
NIP 092210201

RATIFICATION SHEET

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By

Karina Febriyanti

22322062

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Declared Acceptable

Board of Examiners

Chairperson : Nizamuddin Sadiq S.Pd., M.Hum., Ph.D

First Examiner : Irma Windy Astuti S.S., M.Hum

Second examiner : Adam Anshori S.S., M.A

Yogyakarta, July 15th 2026

Department of English Language Education
Faculty of Socio and Cultural Sciences
Universitas Islam Indonesia

Head of Department



Anandayu Suri Ardini, S.S., M.A

NIP. 053003880

STATEMENT OF WORK'S ORIGINALITY

I honestly declare that this thesis, which I have written, does not contain the work of parts of the work of other people, except those cited in the quotations and references, as a scientific paper should.



Karina Febriyanti
22322062

MOTTO

“If you must quit, do it after a win, and not before.”

“And that there is not for man except that [good] for which he strives.”

(QS. An-Najm: 39)

DEDICATION

I would like to express my deepest gratitude to Allah SWT, who has always given me strength, guidance, and hope through every situation and every step of this journey. Then I dedicate this degree to my beloved parents, thank you for always believing in me, even when I doubted myself and felt like giving up. Thank you for always keeping me in your duas, unconditional love, and for always being there through every struggle and every achievement. This degree reflects your love, sacrifices, and prayers. To my beloved brothers, thank you for being my source of comfort and joy, and for giving me another reason to keep growing and becoming a better person. Your presence has brought so much happiness into my life and reminded me to keep moving forward, even during the hardest days. I hope that one day, I can become someone you can always look up to and be proud of. Finally, I would like to thank all my beloved friends, for your prayers, encouragement, positive affirmations, and for always reminding me that I could get through this. Through all your love, prayers, support, and encouragement, I found the strength and motivation to keep going until I finally reached this stage. Thank you.

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¹Karina Febriyanti, ² Puji Rahayu

Universitas Islam Indonesia, Yogyakarta, Indonesia
¹ 22322062@students.uii.ac.id*; ² pujirahayu@gmail.com

* Corresponding author

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ABSTRACT

Montessori classrooms are widely recognized for supporting individualized learning; however, limited research has examined how these practices align with the framework of differentiated instruction (DI). This study addresses this gap by investigating the extent to which DI is evident in Montessori upper elementary English classrooms. A qualitative descriptive design was employed using semi-structured interviews with two Montessori English teacher working in mixed-age classrooms. Data was analyzed through thematic analysis using Tomlinson's differentiated instruction framework as an analytical lens. The findings indicate that differentiated instruction is strongly present in practice but emerges as an implicit and experience-based approach rather than a formally planned instructional strategy. Teachers reporting adjusting instructional delivery based on readiness, providing individualized scaffolding, implementing flexible grouping and peer tutoring, and using continuous informal assessment to guide pacing and mastery-based progression. However, evidence of product differentiation was limited, as students generally demonstrated learning through similar output formats. The study concludes that differentiation in Montessori classrooms is structurally embedded within Montessori pedagogy, particularly through mixed-age grouping, student autonomy, and observation-based teaching. These findings suggest that differentiated instruction can develop organically through pedagogical design, offering insights for educators seeking to support learner diversity without relying solely on formal DI frameworks.

Keywords: Differentiated instruction, individualized learning, learner diversity, mixed-age classroom, Montessori education

INTRODUCTION

Contemporary English language classrooms are increasingly diverse, with students varying in language proficiency, learning pace, prior exposure to English, and preferred ways of learning. Traditional one-size-fits-all teaching approaches inadequately address this heterogeneity, leaving both struggling and advanced language learners underserved (Subban, 2006). In language classrooms, this diversity is particularly visible in students' uneven development of vocabulary, reading comprehension, writing ability, and oral communication skills. As a result, English teachers are required to adopt more responsive pedagogical approaches that accommodate diverse learning needs within single classrooms. Differentiated Instruction (DI), which involves proactively modifying content (what students learn), process (how students learn), and product (how students demonstrate mastery) has emerged as a prominent response to learner diversity. The theoretical foundations of differentiated instruction draw from Vygotsky's Zone of Proximal

Development, which suggests that optimal learning occurs when instruction is appropriately challenging for each student's current level with appropriate support (Vygotsky, 1978), as well as Gardner's Multiple Intelligences Theory, which recognizes that students possess diverse strengths and preferred modes of learning (Gardner, 2011). The concept of differentiated instruction which seek to meet the various needs of students in the classroom, are supported by these theoretical viewpoints (Talain & Mercado, 2023).

Effective DI requires continuous assessment of three key learner characteristics identified by Tomlinson (2001): readiness (students' current proximity to learning goals and prior knowledge), interests (topics that evoke curiosity and passion), and learning profile (preferred modes of learning shaped by various factors). In English language classrooms, these characteristics are closely related to learners' language proficiency levels, vocabulary knowledge, and confidence in using English for communication. Differentiated classrooms are therefore characterized by a cyclical relationship between continuous formative assessment and instructional response, where teachers use diagnostic and ongoing assessments to monitor progress and adjust teaching in real-time rather than relying solely on end-of-unit tests (Ardenlid et al., 2025a). In the context of ELT, such ongoing assessment is particularly important for tracking learners' development in reading, writing, speaking, and listening. Flexible grouping is another hallmark practice, allowing students to work in various configurations (whole class, small groups, pairs, or independently) depending on the specific task and their evolving needs, rather than remaining fixed ability groups (Tomlinson, 2001). In this model, the teacher's role shifts from delivering uniform instruction to all students to facilitating diverse learning pathways, functioning as an observer and guide who provides targeted support and feedback (Tomlinson, 2001). In English language classrooms, this role includes providing language scaffolding, selecting appropriate language tasks, and supporting language development.

Differentiated Instruction (DI) has been widely recognized as a pedagogical approach to address learner diversity through intentional and systematic planning. Liang and Zou (2025) illustrate this in "Universal Access" classes, where teachers apply the Gradual Release of Responsibility framework and regroup students monthly by proficiency to ensure instruction aligns with learners' developmental levels. When applied to language education, such regrouping is particularly relevant for addressing differences in learners' language proficiency and supporting gradual language development. Similarly, a Hong Kong case study by Liang et al. (2025) highlights how teacher empowerment in DI was fostered through workshops, co-planning, and iterative lesson trials, enabling educators to move from passive reliance on external guidance to autonomous use of tiered worksheets, multi-sensory approaches, and formative assessment. These practices have important implications for language classrooms, where tiered tasks and multi-sensory approaches can support vocabulary learning and language comprehension. Beyond individual cases, Ardenlid et al. (2025b) conducted a scoping review of 22 studies, identifying recurring DI practices such as flexible grouping, adjusted pacing, and student choice. Their findings confirm that intentional DI strategies are widely recognized internationally, though rarely implemented comprehensively. This tension is echoed in private international school contexts, where DI has been shown to support inclusion but is often constrained by curriculum demands and teacher preparedness (McLaughlin, 2025). Contrasting with these structured approaches, Pozas et al. (2020) using nationally representative data from Germany, found that teachers in native language and mathematics classrooms only occasionally applied DI, with implementation varying across school tracks and influenced by teachers' constructivist beliefs. Together, these studies highlight a persistent gap between the theoretical promise of DI and its everyday classroom implementation, particularly in language learning contexts where learner diversity is highly visible.

The Montessori approach, developed by Dr. Maria Montessori, is built on nature as the part of knowledge, autonomy in learning material-centered environments, and collaborative multi-age classrooms. Within this structure, teachers act as guides who observe and respond to students' developmental needs (as cited in ÖZEREM & KAVAZ, 2013). Research consistently shows positive outcomes of Montessori education, including improved academic achievement, engagement, and self-regulation compared to traditional settings (Randolph et al., 2023; Tiryaki et al., 2021; Kersna et al., 2025). Recent scholarships have begun to highlight how Montessori's multigrade classrooms and scaffolding practices naturally align with differentiated instruction principles, offering individualized support and peer-mediated learning opportunities (Sabli et al., 2025; Caballero et al., 2022). In English language classrooms, Montessori practices such as individualized work cycles, mixed-age peer interaction, and observation-based teaching may provide rich opportunities for differentiated language learning, including vocabulary development, reading comprehension, and differentiated writing task. However, despite the growing body of literature on DI and Montessori education, very limited research has examined how teachers' everyday instructional practices in Montessori classrooms align with formal DI frameworks, particularly in ELT contexts. Existing studies have documented personalization strategies and observation-based decision-making in Montessori settings, yet few studies have analysed these practices through the lens of differentiated instruction dimensions such as differentiation of content, process, and product in English language teaching (Tomlinson, 2001).

This gap is particularly evident in upper elementary Montessori International school classrooms characterized by mixed-age groupings (level 4-6), learner-paced instruction, and strong child-centered principles. In such settings, students with diverse readiness levels and learning needs together within the same English classroom, making differentiation a potentially essential yet under-examined practice. Understanding differentiation in this context therefore requires close examination of teachers' routine instructional strategies as they naturally occur in everyday classroom practice. This study contributes to the literature by providing an empirical description of the extent to which differentiated instruction are evident in Montessori English teachers' everyday classroom practice.

Accordingly, this study addresses the following research question: To what extent are differentiated instruction principles evident in the everyday classroom practices of Montessori English teachers?

METHOD

This study employed a qualitative descriptive design to explore the extent to which Differentiated Instruction (DI) principles are evident in the everyday instructional practices of Montessori upper elementary English teachers. A qualitative approach was considered appropriate because the study sought to capture teachers' perspectives and the nuanced ways they respond to learner diversity in real classroom contexts. Rather than measuring instructional effectiveness, the study aimed to provide a rich description of how DI principles are reflected in daily teaching practices within a Montessori upper elementary English classroom.

Research Setting

The study was conducted at Brainy Bunch International Islamic School (BBIS) in Malaysia, a Montessori-based institution that emphasizes child-centered learning, individualized pacing, and mixed-age classrooms. The focus was on the upper elementary level, where students from multiple grade levels (year 4-6) learn together in the same classroom environment. This setting provides relevant context for examining Differentiated Instruction, as Montessori classrooms are designed to accommodate diverse learner readiness, interests, and learning profiles within a single learning community. The English classroom therefore represents a

naturally heterogeneous learning environment where teachers regularly adapt instruction to support varied language abilities.

Participants

The participants of this study were two English teachers teaching in the upper elementary Montessori classroom at BBIS. Purposive sampling was employed to select participants who had direct experience teaching English in a mixed-age Montessori environment and regularly worked with learners of diverse language proficiency levels. The selected teachers were considered information-rich because their daily instructional practices provided relevant insights into how Differentiated Instruction principles are enacted in authentic classroom contexts. To ensure confidentiality, pseudonyms (Dela and Diana) are used throughout the Findings section.

Instrument

The interview protocol was informed by Tomlinson's (2001) principles of differentiated instruction. The questions were developed to explore how teachers adapt instruction in response to learner diversity within a Montessori English classroom. In particular, the protocol focused on how teachers differentiate content, process, and learning products based on readiness levels, interests, and learning profiles. The protocol covered four key areas of inquiry. The first explored how teachers assess and respond to learner diversity, including how they identify students' readiness levels and monitor progress during the learning progress. The second addressed differentiating content deliver, examining how teachers adapt instructional content and explanations to accommodate students with varying abilities and learning profiles. The third focused on differentiating the learning process, probing instructional strategies such as grouping practices, pacing adjustments, and scaffolding for diverse learners. The fourth area examined differentiating learning products, exploring how teachers vary tasks, assignments, and assessment criteria based on student differences.

Data Collection Technique

The interviews were conducted individually with each participant at a mutually convenient time. Each interview lasted approximately 30-50 minutes and was conducted in English. With participant consent, the interviews were audio-recorded to ensure accuracy. Field notes were also taken during the interviews to capture initial impressions and contextual details. All recordings were transcribed verbatim prior to analysis, and pseudonyms were used to maintain participants' confidentiality.

Data analysis

The interview transcripts were analyzed using (Braun & Clarke, 2023) thematic analysis framework. First, the video recordings were transcribed verbatim, and the researcher repeatedly read the transcripts to gain familiarity with the data and note initial ideas. Next, initial codes were generated through manual coding. The coding process was inductive yet theoretically informed by Tomlinson's (2001) Differentiated instruction framework and Montessori pedagogy. Relevant data extracts were labeled and organized to capture meaningful patterns across participants' responses. The codes were then examined and grouped into potential themes by identifying patterns related to differentiation of content, process, product, and assessment. These candidate themes were refined or merged. Finally, four themes were defined and named, and representative quotations were selected to illustrate each theme in the Findings section.

Trustworthiness

To enhance credibility, the researcher engaged repeated readings of the transcripts and grounded the interview protocol and analysis in the DI framework. An audit trail was maintained throughout the coding and theme development process to ensure transparency and consistency. All interpretations were supported by participants' quotations to reduce researcher bias. In addition, member checking was conducted by sharing the Findings section with the participants, particularly the selected quotations and their interpretations, to confirm that they accurately reflected participants' intended meanings. Peer debriefing was also undertaken with a senior lecturer who was not directly involved in the study to review the analysis process and provide critical feedback to minimize potential bias. As the study involved two teachers from a single Montessori international school, the findings are context-specific and not intended for generalization.

FINDINGS

The findings of this study address the research question: *To what extent is differentiated instruction evident in a Montessori classroom?* Drawing on interviews with two Montessori English teachers in upper elementary settings at BBIS, the analysis focuses on teacher's everyday instructional practices. Montessori classrooms are characterized by high student heterogeneity, encompassing diverse performance levels, academic readiness, and learning styles (Lillard & Else-Quest, 2006; Lillard et al., 2017). Within this context, classrooms brought together students across multiple grade levels in a single learning environment, functioning as inclusive settings in which students with identified special needs were present, and teachers described making instructional adjustments to meet their needs.

Although neither teacher explicitly planned instruction using differentiated instruction terminology or frameworks, the diverse nature of the classroom necessitated ongoing adjustments. Teachers described modifying how content was presented, how learning activities were organized, and how students demonstrated understanding in response to differences in readiness, pace, and individual needs. These practices emerged as natural responses to classroom diversity rather than deliberate applications of DI. This pattern suggests that differentiation may be implicitly embedded within Montessori pedagogy, where teachers continuously observe learners and adapt instruction in response to individual developmental needs. Rather than applying DI as a formal framework, teachers appeared to enact its principles intuitively through everyday classroom practice.

Using Tomlinson's (2001) framework as an analytical lens, the following themes capture patterns in teachers' instructional strategies:

Responsive Instructional Delivery to Address Learner Readiness

Both teachers described continuously adjusting instructional delivery in response to learners' differing readiness levels. Differentiation was reflected in how teachers modified classroom language, varied instructional modalities, and adjusted task complexity so that students could access and engage with English at an appropriate level of challenge, consistent with differentiated instruction principles (Tomlinson, 2001; Tomlinson, 2014).

One prominent form of differentiation involved adjusting the linguistic complexity of teacher talk. Dela explained that the language she used during instruction depended on the level she was teaching:

“If they are in the level four, so you only get to use basic words, you don't get to use words that are hard for them to understand. But if you are teaching level six, then that can be a different set of words, like harder words or more complex.”

This practice shows how teachers deliberately calibrated input to ensure comprehensibility for younger learners while still providing richer exposure for more advanced learners. Such adjustments function as language scaffolding, enabling learners at different developmental stages (Hall, 2002) to access classroom explanations and participate in English-mediated instruction.

Teachers also describes adapting instructional modalities to support diverse learning profiles. Diana explained how she supported a learner with ADHD through multimodal instruction:

“I use various kinds of approaches... visual or auditory approaches. I usually use slides for him to engage with the topics that he learned that time.”

The use of visual and auditory supports illustrates how differentiation helped learners access language input through multiple channels, creating opportunities for engagement and comprehension (Tomlinson, 2014) in English lessons.

In addition to modifying instructional delivery, both teachers described systematically adjusting task complexity according to readiness levels. Writing tasks were structured in tiers, with expectations increasing across grade levels. As dela noted, students in lower level produced simple sentences, while older learners were expected to produce more complex and compound sentences. Advanced learners were further encouraged to revise and extend their work:

“When level six gives me a basic sentence, I will ask them to do more or revise it.”

Similarly, Diana described providing enrichment tasks for faster learners, including advanced vocabulary activities and critical thinking challenges. These practices created differentiated opportunities for language production, allowing learners to work toward shared goals through varying levels of linguistic complexity.

“I will provide enrichment activities such as advanced vocabulary tasks or critical challenges because they are more advanced.”

Importantly, differentiated also extended to learners with additional needs. Teachers described preparing simplified assignments for students with dyslexia, autism, and ADHD to ensure continued participation in classroom activities.

“For that one, special needs/ slow learner students like dyslexia students, autism students, but autism with the major autism, the minor autism usually genius students, but autism with the major autism usually a bit slow learner, and also the ADHD, the one that very lack of focus, so basically these types of special needs students, we will prepare like another simple assignment, simple exercises for them to do.”

This indicates that differentiation was not limited to high-achieving students but was applied across the full range of learner readiness and learning profile. Overall, the findings demonstrate that instructional delivery was continuously adapted in real time. By adjusting classroom language, task expectations, and learning supports, teachers created varied pathways for learners

to access English input and produce language at an appropriate level of challenge. These practices illustrate how differentiated instruction is enacted in everyday Montessori English teaching.

Scaffolding and Individualized Support

While Theme 1 highlighted proactive instructional adjustments, this theme captures how teachers provide responsive support when students encounter difficulties during or after instruction. A key starting point in this process is the identification of learners who require additional assistance.

Dela explained that limited class time requires teachers to prioritize attention:

"Sometimes, the time that is given in the class also limited, of course the teacher moves around. It is not enough to check everyone. And then, of course, the teacher knows who needs more of that attention."

This statement shows that support is allocated based on ongoing observation rather than uniformly across all learners. Such practices reflect the role of formative observation in differentiated instruction, where teachers continuously identify learners who require additional scaffolding (Tomlinson, 2014). In an ELT context, this type of monitoring enables teachers to identify learners who struggle with task comprehension, language production, or vocabulary use during classroom activities.

Once struggling students are identified, both teachers described providing direct and individualized scaffolding to help them access the lesson content and complete learning tasks.

Diana explained how this support is implemented:

"For students that who struggle, we will offer additional scaffolding... for example, we ask them to do simpler tasks... we also provide guided writing outlines... and also one-on-one support, which means we will focus on them one-to-one... We will ask them what's their problem in that topic... I also provide extra practice sessions... if the topic is too hard for them to complete it, so I'll try to manage it in a simpler way... reducing task complexity."

Similarly, Dela highlighted how additional support may extend beyond regular classroom instruction:

"And that is when you call the students, you can do extra class to reassess whether they have learned it, or they still need more drills for it."

Taken together, these practices demonstrate how scaffolding is enacted through multiple forms of instructional support that directly address students' immediate learning needs. In ELT classrooms, simplifying tasks and providing guided outlines can reduce linguistic and cognitive demands, allowing learners to focus on essential language skills such as sentence construction, vocabulary use, and idea organization. This aligns with Vygotskian perspectives on scaffolding, in which teacher guidance supports learners in completing tasks that would otherwise be beyond their independent ability (Vygotsky, 1978). Support is delivered through one-to-one interaction, task simplification, guided practice, and occasional follow up sessions beyond regular class time.

Unlike the tiered task design described in Theme 1, this scaffolding emerges responsively during the learning process, highlighting the adaptive nature of teachers' instructional decision-making.

Flexible Learning Arrangements and Grouping

The third theme highlights how differentiation is embedded within the structural organization of the Montessori classroom. Unlike Themes 1 and 2, which focus on teacher-initiated adjustments, this theme demonstrates that differentiation is built into the system through mixed-age grouping, flexible learning arrangements, and student autonomy. In this context, differentiation does not rely solely on instructional modification but is also shaped by the way the learning environment is designed.

Diana explained the composition of upper elementary classes:

"Okay, so basically for your information in Upper Elementary, in one class we combine level four, five and six, which consists of year four, year five and year six students. Yes. Okay, so basically their topics will be different for each student, for each level. And then in each level, we can say that every class required special needs students."

This explanation illustrates how the multi-grade classroom structure functions as a built-in mechanism for differentiation. By combining students from multiple grade levels in a single classroom, instruction naturally becomes multi-level, allowing learners to engage with content at different levels of difficulty simultaneously. Rather than separating students into different classes, content differentiation is embedded within everyday classroom organization. In ELT contexts, such multi-level environments enable teachers to present language tasks that vary in complexity while maintaining shared thematic learning goals, allowing students to develop language skills at an appropriate level of challenge.

Flexible grouping further supports this structural differentiation.

Teachers employ mixed ability grouping to facilitate peer learning. Diana explained:

"I prefer mixed ability groups so that they can learn from each other. That's why sometimes I'm not separated them; I will mix them together so that the advanced students can teach the other students."

She further described peer tutoring roles:

"Sometimes I will ask them to play peer tutoring roles, for example, they will teach their friends. We called us peer tutoring roles... they bring a leader for the table to their levels and teach the other students."

This practice functioning as a process-based strategy that benefits both the tutor and tutee, where differentiation is achieved through role allocation and collaborative learning structures rather than separate instructional materials. From an ELT perspective, peer tutoring and mixed-ability grouping create opportunities for meaningful communication, negotiation of meaning, and collaborative language use. Such interaction supports language development by encouraging students to explain ideas, clarify understanding, and practice vocabulary and sentence structures in authentic communicative contexts. Beyond academic support, this collaborative arrangement also nurtures a social dimension of learning, as students develop interpersonal values such as cooperation and empathy through meaningful interaction with peers (Riadi & Nurhajati, 2025).

Together, these academic and social benefits reinforce the effectiveness of flexible grouping and peer-assisted learning as a differentiation strategy.

Student autonomy emerged as another key feature of flexible learning arrangements. Dela explained how students are given freedom in deciding how they work:

"Okay, so we group them according to the level. But in that level, they have the freedom to work to whoever they want to work with. Because, of course, in Montessori, we still give them the freedom."

"Sometimes they want to work with a friend, it's okay. If they want to work alone, then do it alone... Some, they need someone to, you know, like to talk to and reassure them they are doing the right thing or not. So, we give them that freedom."

This flexible arrangement shifts learning from teacher-controlled to student-regulated, allowing students to select working modes based on personal preferences and needs. Such autonomy has been shown to make learning more relevant and meaningful, as students express greater enjoyment when given the opportunity to choose their own learning materials (Widiadharma et al., 2025). Overall, the findings show that differentiation is embedded in the structural organization of the Montessori classroom. Mixed-age grouping, peer tutoring, and flexible working arrangements create learning conditions in which students can work at different levels, collaborate with peers, and regulate their own learning processes. These structural features allow diverse learners to participate in the classroom environment while working according to their individual readiness and preferences.

Assessment, Monitoring, and Instructional Adjustment

The fourth theme highlights how instructional decisions are primarily guided by continuous, informal assessment rather than formal testing. Both teachers emphasized that understanding students' needs, readiness, and progress depends on day-to-day observation, questioning, and monitoring of student performance. Unlike Theme 2, which focused on providing targeted support for struggling learners, this theme emphasized how ongoing assessment informs broader instructional decisions. Particularly pacing, content sequencing, and progression. Differentiation occurs through readiness-based adjustments to learning timelines and mastery-based advancement, reflecting a central principle of Montessori pedagogy in which assessment is embedded in everyday classroom interaction.

Both teachers described checking students' understanding as a routine part of their daily teaching practice. Rather than relying on formal quizzes or standardized measures, they use questioning, discussion, and observation to confirm whether students have mastered previous content before moving forward.

Dela explained this process through the Montessori "three-period lesson," particularly the final confirmation stage:

"And lastly is the confirmation where you will see that the child is able to do the activity on his own without your help. In Montessori, the success of a classroom lies when a teacher is no longer needed in the class."

She further explained how readiness is checked before introducing new content:

"I ask questions when we go into the previous lesson... before I go to the next topic, I have to revise the previous topic by asking them questions."

Diana similarly emphasized informal pre-assessment:

"I usually begin with like quick discussion related to the topics during the day... I also use short pre-assessment or ask guiding questions to see what they already know."

"We go around and check one by one. We don't let them pass without checking their work."

These practices demonstrate that assessment in this context is formative, continuous, and observation based. Such formative monitoring helps teachers identify learners' readiness for vocabulary, grammar structures, and writing tasks before introducing more complex language input.

Continuous monitoring directly informs individualized pacing and flexible progression. A defining feature of both classrooms is allowance for students to progress at their own speed based on readiness rather than fixed timelines. Students who demonstrated mastery can advance immediately, while those who need more time receive it without penalty. Dela explained how students move forward individually:

"If they finish everything, the activities that we have prepared for them, then they can actually proceed to the next topic. No, it should not be like you have to wait for the others to do."

She described how students who miss content are accommodated:

"If there are students who missed school for one week and then they're already in the next topic, that particular student will work on the topic that she missed first and then move on to the next topic. So, it's like individually paced, meaning if you finish this topic, the first topic, you can move on to the next. You don't need to wait for the others."

Dela emphasized that understanding individual differences is essential:

"Because each child is unique. Each child has different learning styles, as I've mentioned. So, if you don't know how to assess that child, the child's learning style, then the child will be behind the target. So, our goal is for them to be on track or to be advanced."

Importantly, advanced learners are not constrained by curriculum timelines:

"Some of our children, they are advanced. So, we need to say second quarter, they are already in quarter three topic. And we don't stop them. And during quarter three, some of them are already finished quarter four topics. So how about that? You have already finished the lesson. You don't stop. Give them more. Because we don't want to stop them from learning. Once the spark of interest is there, don't stop!"

These accounts illustrate how assessment functions as a mechanism for regulating learning pace. Flexible pacing allows learners to receive repeated exposure to language input when needed,

while enabling advanced learners to engage with more complex texts and tasks. This readiness-based progression reflects the core principle of differentiated instruction that learning timelines should adapt to students rather than the reverse (Tomlinson, 2014).

Assessment also plays a central role in mastery-based progression beyond grade boundaries. Students advance when ready and may continue working on the same level if mastery has not been achieved.

Diana explains how students with special needs can continue at the same level:

"For the special needs student is level four, right, level four, but the topics in that quarter, in the whole year, they are not finished yet, so the best thing at brainy bunch is that students can continue the level four topics next year."

"But in BB as we know, Montessori is according to the child's pace, right? If they're only complete within quarter two, they can continue the quarter three the next year."

Major progression decisions also involve professional judgement and collaboration with parents as illustrated in Diana's experience supporting a dyslexic student:

"From my side, I will not recommend the students to continue to further upper elementary."

"Very important to have a discussion with the homeroom teacher and parents."

These accounts indicate that differentiation extends beyond daily lessons into broader educational decision-making. Student readiness rather than age or grade is positioned as the primary determinant of progression. The findings show that instructional decisions in these classrooms are strongly guided by continuous observation and ongoing monitoring student of progress. Teachers routinely adjust pacing, sequencing, and learning pathways based on students' readiness and mastery. Progression is managed flexibly, allowing students to move forward, receive additional support, or continue working on the same level according to individual needs. These practices indicate that assessment plays a central role in shaping everyday instructional decisions in the classroom.

DISCUSSION

Montessori and Differentiated Instruction: Alignment as Emergent Practice

This study sets out to explore how Montessori teachers address student diversity through the lens of differentiated instruction (DI). Overall, the study suggests a strong alignment between Montessori pedagogy and the principles of differentiated instruction. However, this alignment appears to function as an emergent and experience-based practice rather than a formally planned application of DI frameworks. Although teachers did not explicitly use DI terminology, their everyday classroom practices reflected many of its core principles.

This pattern aligns with previous research suggesting that teachers often implement differentiation intuitively and pragmatically, without explicitly labeling their actions as DI (De Neve et al., 2015). Studies of classroom practice show that differentiation frequently develops through teachers' professional judgement and classroom experience rather than through systematic use of theoretical frameworks. In this study, teachers described adjusting

explanations, pacing, grouping, and support in response to ongoing observation of learners' needs. These adaptations were presented as natural responses to classroom diversity rather than deliberate applications of a specific pedagogical model.

Importantly, the findings suggest that this "implicit differentiation" may be closely connected to the structural and philosophical foundations of Montessori education. Montessori classrooms are intentionally designed to support individualized learning through mixed-age grouping, flexible pacing, autonomy, and observation-based teaching. Prior Montessori research has highlighted how these features naturally promote personalized learning and self-directed progress (Lillard, 2017). The present findings extend this literature by showing how these structural characteristics also function as mechanisms that enable differentiation in practice.

Taken together, the findings suggest that differentiated instruction in Montessori classrooms may operate as an emergent alignment rather than a direct implementation. Montessori pedagogy provides the conditions in which differentiation becomes a routine aspect of everyday teaching, even when teachers do not explicitly frame their practices using DI terminology.

A Pattern of Differentiation: Strong Process, Moderate Content, Limited Product

Across all themes, differentiation occurred most strongly at the level of process, moderately at the level of content, and minimally at the level of product. Process differentiation was evident in teachers' continuous adjustments to instructional delivery, scaffolding, grouping, and pacing. These practices enabled students to access learning in ways responsive to readiness, learning profiles, and individual needs. This finding resonates with research at Singaraja Montessori School in Indonesia, where teachers emphasized independence, scaffolding, and adaptation to individual learning trajectories (Yesaya et al., 2025). Content differentiation appeared through tiered task complexity, simplified materials, and enrichment activities for advanced learners, indicating that teachers actively adjusted the level of challenge while maintaining shared learning objectives.

However, evidence of product differentiation was limited. Students generally completed similar type of tasks and demonstrated learning through comparable output formats. Rather than indicating lack of differentiation, this finding appears to reflect the structural and philosophical characteristics of Montessori assessment practices. In the observed context, teachers relied heavily on continuous observation, progress monitoring, and mastery-based progression. Students worked toward shared rubrics and common learning targets, while the pace and level of support required to meet these expectations varied considerably across learners. This suggests that differentiation was enacted primarily through how students reached learning goals (through individualized pacing, scaffolding, and ongoing feedback) rather than through variation in the final output.

This orientation contrasts with Tomlinson (2001) of product differentiation, in which teachers provide students with multiple options for demonstrating their understanding in different formats, such as written work, presentations, creative projects, or alternative performance tasks. Product differentiation in this framework emphasizes learner choice in how knowledge is expressed and assessed. The present findings therefore suggest a conceptual distinction: while Tomlinson highlights variation in how learning is demonstrated, Montessori practice emphasizes variation in how learning is achieved.

This distinction helps explain why differentiation in the present study appeared strongest at the level of content and process rather than assessment products. It also aligns with broader research indicating that teachers often experience challenges in implementing differentiated instruction comprehensively. Studies by Reis & Renzulli (2018) and Porta

(2025) highlight persistent challenges in planning, managing, and sustaining differentiation in classroom practice. Within this context, it is common for differentiation to be enacted more strongly through pacing, support, and instructional processes than through alternative assessment products. In the Montessori context, individualized pacing and ongoing formative assessment may further reduce the perceived need for varied assessment product, as differentiation occurs primarily through time, support, and task complexity rather than alternative outputs as emphasized in Tomlinson's (2001) framework.

Implications

These highlight that differentiated instruction can be deeply embedded within Montessori classroom structures and routines. For English teachers, the study suggests that continuous observation, flexible pacing, scaffolding, and mixed-ability collaboration can be adopted as practical and manageable strategies for addressing learner diversity, even without highly complex lesson planning. These practices may be particularly useful for teachers working in mixed-ability EFL classrooms where time and planning are limited. For Montessori practitioners, the limited evidence of product differentiation points to opportunities for expanding how students demonstrate learning, for example through varied language outputs such as presentations, project, or creative tasks, while still maintaining mastery-based progression. The findings also indicate a need for teacher education programs to more explicitly connect differentiated instruction theory with classroom practice by incorporating classroom-based examples, practicum experiences, and reflective training that prepare teachers to respond to learner diversity in real contexts. Finally, this study contributes to ELT literature by showing how differentiated instruction can emerge organically within a Montessori English classroom, where mixed-age grouping, individualized pacing, and continuous observation naturally support learner diversity. This perspective extends current DI research, which has largely focused on traditional classroom settings, by demonstrating how DI principles can operate in a non-traditional learning environment within an Asian context. In doing so, the study helps broaden understanding of how differentiation can be enacted in diverse ELT settings beyond conventional school structures.

CONCLUSION

This study examined the extent to which differentiated instruction in Montessori upper elementary English classroom using Tomlinson's framework as an analytical lens. The findings show that differentiation is strongly present in practice; however, it operates primarily as an implicit and experience-based approach rather than a formally planned application of differentiated instruction frameworks. Evidence from teacher interviews demonstrates that differentiation occurs across multiple dimensions of classroom practice. Teachers proactively adjust instruction for different readiness levels, provide individualized scaffolding for struggling learners, utilize flexible grouping and mixed-age classroom structures, and continuously monitor student progress through informal assessment and individualized pacing. These practices collectively reflect key principles of differentiated instruction, particularly in terms of process and content differentiation.

However, the study also reveals that differentiation is not implemented in a fully comprehensive manner. Evidence of product differentiation remains limited, as students generally demonstrate learning through similar output formats. This suggests that differentiation in the studied Montessori classrooms occurs primarily through adjustments to instructional processes, learning pace, and support rather than through varied assessment products. The findings indicate that differentiation in Montessori classrooms is best understood as an emergent practice embedded within the structural and philosophical

foundations of Montessori education. Mixed-age classrooms, student autonomy, flexible pacing, and observation-based teaching naturally create conditions that support personalized learning. As a result, teachers appear to enact the principles of differentiated instruction intuitively through everyday practice rather than through explicit theoretical planning.

Overall, this study contributes to the understanding of the relationship between Montessori pedagogy and differentiated instruction by demonstrating that differentiation can be deeply embedded in classroom practice even when it is not explicitly framed as a formal instructional approach. The findings highlight the importance of recognizing implicit differentiation as a meaningful form of responsive teaching in diverse and inclusive learning environments.

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