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The role of Special Assistant Teacher (SET) in differentiated learning for students with Dysgraphia in Indonesia language subjects: Analysis of scaffolding in the Zone of Proximal Development (ZPD)

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ABSTRACT

The urgency of this study is aligned with the fourth goal of the Sustainable Development Goals (SDG) and the fourth mission of Asta Cita Indonesia, which emphasize inclusive and equitable quality education. This study aims to: (1) describe the role of the special assistant teacher (SET) in differentiated learning for dysgraphic students in Indonesian language subjects; (2) explain the function of SET in implementing differentiated learning; and (3) analyze the collaboration between the Indonesian language teacher and SET in supporting dysgraphic students' learning development. This qualitative study employed participatory observation in class 11 Social Studies at Al-Firdaus High School, Surakarta. Data were collected through classroom observation and interviews with the SET, the Indonesian language teacher, and dysgraphic students. Using scaffolding theory within the zone of proximal development (ZPD) as the analytical framework, the findings show that: (1) SET acts as a "more capable peer" by providing individual mentoring and simplifying instructions to enhance comprehension; (2) SET functions to maintain students' focus, reduce task complexity, and provide guided examples tailored to students' needs; and (3) effective collaboration includes joint planning, material and assessment adjustments, and coordinated assistance during learning. The study concludes that scaffolding within the ZPD supports dysgraphic students' participation and that structured collaboration between SET and subject teachers strengthens inclusive differentiated learning practices.

Introduction

Quality education, as stated in the 2030 agenda for Sustainable Development Goals (SDGs), is declared as the fourth of 17 development goals. Through the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations (UN) has mandated a new framework related to Education for Sustainable Development (ESD), which is an integral element of quality education and a key driver of sustainable development. The goal is to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. As stated in the SDGs, "no one is left behind" (United Nations, 2015; Vioreza et al., 2023). In addition, nationally, the right to inclusive education for persons with disabilities is also supported in the fourth mission of Asta Cita Indonesia, which focuses on human resource development through improving the quality of education, health, and access to technology. Furthermore, development is carried out by promoting gender equality and increasing the role of women, youth, and persons with disabilities in various development sectors (Subianto & Raka, 2024).

Quality and inclusive education can be implemented through differentiated learning, especially in Indonesian language subjects. Differentiated learning has one main goal, which is to create classes that adapt to the various needs of students, with teachers ensuring that each of these needs is met. These forms of differentiation can take the form of differentiation of content, process, product, or environment. Differentiated instruction in learning offers a variety of different methods so that students understand and can express themselves during the learning process. The various methods used in learning are considered to be effective in internalizing subject matter according to the theme. Therefore, it is important for teachers to strive to maximize learning by managing and utilizing various learning variables so that students achieve the predetermined learning objectives (Demir, 2021; SenoTaji & Sufanti, 2024; Tomlinson & Moon, 2013).

It should be noted that in Indonesian language classes, key language skills are required, namely listening, speaking, reading, and writing (Pamuji & Setyami, 2021). In the context of this study, literacy is an important focus because it is a basic literacy that every individual must have in order to understand and support other literacies (Dwijayati & Rahmawati, 2021). This is what then becomes the complexity in differentiated learning for students with dysgraphia.

Dysgraphia is a learning disorder resulting from a neurological condition that causes difficulty in writing properly, even though the person has received adequate instruction. In this case, people with dysgraphia may be too focused on how they write, so that their focus on what they are writing is neglected. The difficulty for students who experience writing barriers is that their writing is messy due to inconsistencies in letter size, spacing, capitalization, punctuation, and incomplete spelling of words in writing spelling, sentences, paragraphs, stories, and reports (Frierson et al., 2021; Rahmawati et al., 2022; Susanti & Ngatmini, 2024).

One strategy for implementing differentiated learning in Indonesian language classes in inclusive classrooms with dysgraphic students can be done by involving SET. Through the application of characteristics that are appropriate to the abilities of students with special needs, SET has a major role in setting learning objectives and providing individual support so that students have academic and social opportunities to obtain an adaptive learning environment (Aiyuda, et al., 2025).

Another statement says that there is no specific formula for dealing with learning difficulties in the education of students with special needs in schools. The guiding principle is the mindset that each student has different characteristics and learning difficulties, so the approach must also be through a problem-solving process. Steps that teachers can take in addressing learning difficulties in students with special needs are: (1) getting to know the student fully and comprehensively in terms of their interests, strengths, and learning difficulties; (2) understanding the various demands and obstacles that arise in certain subjects; and (3) considering effective implementation strategies to overcome students' obstacles to achieving success in learning (Wearmouth, 2023).

The process of differentiated learning in Indonesian language subjects using SET strategies can be carried out using Wood et al.'s scaffolding theory, which is rooted in Vygotsky's idea of the zone of proximal development (ZPD). Scaffolding is defined in detail by Wood et al. as a learning process that involves experts in controlling tasks so that they can be achieved in accordance with the competencies of the recipients. Scaffolding is related to the ZPD, which is a learning zone related to independent problem solving by adjusting the level of individual potential development through guidance from adults or collaboration with more capable peers (Vygotsky, 1978; Wood et al., 1976).

Furthermore, in their theory, Wood et al. (1976) state six functions of “more capable peers” in the scaffolding process. These functions are: (1) recruitment or inviting attention; (2) reduction in degrees of freedom or reducing complexity in assignments; (3) direction maintenance or keeping the learning process on track; (4) marking critical features or highlighting important parts of learning; (5) frustration control or stabilizing emotions; and (6) demonstration or providing examples of task completion.

This theory forms the basis that differentiated learning in Indonesian language subjects in inclusive classrooms involving SET support in assisting students with special needs (dysgraphia) is in line with the goals of inclusive education that are appropriate to the students' competency levels. This is also supported by previous research by Mais & Yaum (2025), which states that there is effectiveness in differentiated learning using Vygotsky's constructivism theory, particularly scaffolding in the ZPD. However, this research has not conducted an in-depth study of the strengthening of the role of SET and technological support as a form of effective inclusive learning. To fill this gap, this study describes the role of SET in the application of differentiated learning with the scaffolding model in the ZPD for students with dysgraphia.

Previous research related to topics similar to this article has also been described by Schnepel et al. (2025), Tilak et al. (2025), Chamdani et al. (2025), Myklebust (2023), also Hanaa & Evani (2022). These studies show that the success of inclusivity in education is influenced by the role and collaboration of teachers with professionals. Such collaborative practices have been proven to improve alignment with learning objectives and support students with special needs when done inclusively. However, these studies

still tend to conduct reviews that do not integrate collaboration between teacher, the role of SET, and the use of technology in inclusive education. Therefore, this study aims to fill the gap in previous research by providing recommendations based on the findings of the study related to the process and learning outcomes of students with special needs (dysgraphia).

Previous research related to topics similar to this article has also been described by Schnepel et al. (2025), Tilak et al. (2025), Chamdani et al. (2025), Gaitas et al. (2025), Woolfson (2025), Kreps et al. (2024), Ramlan et al. (2024), Shutaleva et al. (2023), Myklebust (2023), Kunhoth et al. (2023), Hanaa & Evani (2022), and Petersson-Bloom & Holmqvist (2022). These studies discuss inclusive education, adaptive learning, the concepts of scaffolding and ZPD, dysgraphia detection, and teacher collaboration with professionals in supporting the success of inclusive education. The above studies still discuss at the policy, conceptual, and general levels, and have not specifically discussed the role of SET and the analysis of differentiation practices in inclusive classrooms. Therefore, this study aims to fill the gap in previous studies by providing recommendations based on findings from a study of the role of SET in differentiated learning for dysgraphic students in inclusive high schools, analyzed using the scaffolding theory in ZPD. In addition, this study also includes a description of the form of collaboration between SET and Indonesian language teachers.

Differentiated learning for students with dysgraphia involving collaboration between special education teacher (SET) and Indonesian language teacher can be found at Al-Firdaus High School in Surakarta, particularly in Indonesian language classes. The inclusion system places regular students and students with special needs in the same classroom. Students with special needs, such as dysgraphia, are assisted by a special education teacher with a background in psychotherapy. This study aims to: (1) describe the role of special assistant teacher (SET) in differentiated learning for dysgraphic students in Indonesian language classes; (2) describe the function of SET in the implementation of differentiated learning in Indonesian language classes; and (3) describe the collaboration between Indonesian language subject teacher and SET as the core of dysgraphic students' learning development.

Method

This study is a qualitative study using a case study design to understand the roles, functions, and collaboration between special assistant teacher (SET) and Indonesian language subject teacher. The design used in this study was chosen because it focuses on contextual phenomena and scientific interactions that occur in inclusive classrooms in differentiated learning for dysgraphic students. This research was conducted in the 11th grade Social Studies class at Al-Firdaus High School with research subjects including SET, Indonesian language subject teacher, and dysgraphia students involved in the learning process.

The data collection techniques used in this study were participatory observation and semi-structured interviews during the pre- and post-research. Participatory observation was used in this study to obtain empirical data on the implementation of differentiated learning for dysgraphic students, focusing on: (1) the form of assistance provided by SET; (2) modification strategies in the implementation of differentiated learning; (3) the collaborative relationship between SET and Indonesian language subject teacher; and (4) the responses of dysgraphic students to the assistance they received during learning.

In addition, this study conducted semi-structured interviews to explore in depth the perspectives of the research subjects, focusing on the dimensions of the role and responsibilities of SET, the functions of SET, and the forms of collaboration between SET and GMP Indonesian. To ensure the credibility and depth of the findings, the data obtained from participatory observation and semi-structured interviews were analyzed through an interactive process involving data reduction, data display, and conclusion drawing. The researcher continuously compared observational notes with interview transcripts to identify recurring patterns related to the roles, functions, and collaborative practices between SET and the Indonesian language teacher. This systematic analytical procedure allowed the researcher to construct a comprehensive framework of the implementation of differentiated learning for dysgraphic students. The interviews conducted by the researcher were recorded using a device and then transcribed into text as a source of quotations and material for analysis, which was compiled descriptively in the results and discussion section can be seen in Figure 1.

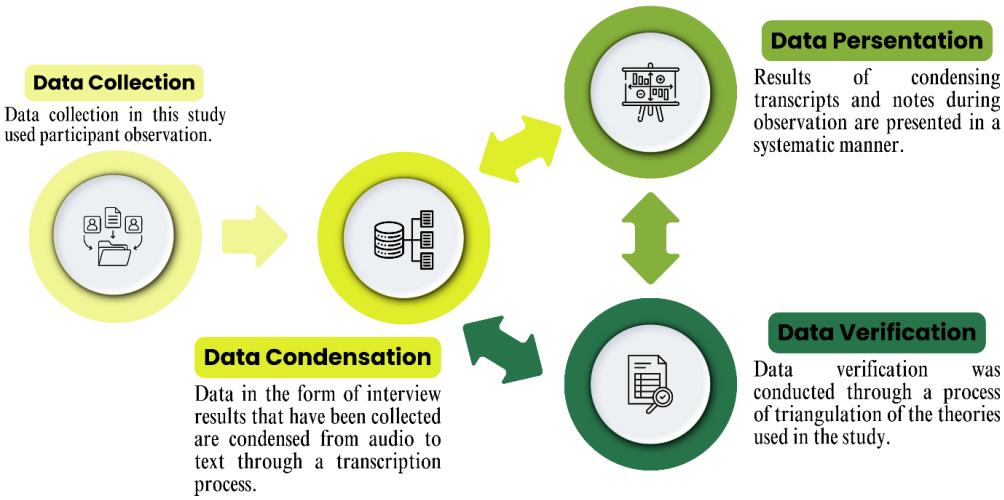


Fig. 1. Research Methods Diagram

This study uses data analysis based on the theory of Miles et al. (2014). In this theory, data analysis is carried out in three stages, namely condensation, presentation, and verification of data. Data condensation is carried out to transform the transcripts of interviews with Indonesian GMP, SET, and dysgraphia students, as well as other forms of field notes, into data coding. The results of the condensation of the transcripts and notes are then presented in a systematic form to identify patterns and relationships between the findings. After that, data verification is carried out through data interpretation linked to the scaffolding theory in the zone of proximal development (ZPD) to produce conclusions relevant to the focus of the study.

Results and Discussion

The Role of Special Education Teacher (SET) as 'More Capable Peers'

The involvement of adults or more capable peers in supporting the learning of students with dysgraphia constitutes a core process within the theory of the Zone of Proximal Development (ZPD). The characteristics of Indonesian language instruction, which encompasses four core language skills—listening, speaking, reading, and writing—necessitate enhanced support from Special Education Teacher (SET) as more capable peers. In this context, SET play a critical role in providing targeted assistance to students with dysgraphia in accordance with their proximal developmental competence.

According to the Special Education Teacher (identified by the initial H) who supports students with dysgraphia at SMA Al-Firdaus Surakarta, this role has been actively implemented in Indonesian language learning. The SET's involvement in applying the scaffolding method within the ZPD framework is manifested through the provision of in-depth explanations of instructional content that students have not yet fully understood, as illustrated in Data Excerpt 1.

Data 1

[01:33] Peneliti: "Apakah Anda sebagai GPK lebih banyak mendampingi siswa secara individu atau dalam kelompok kecil?" (Researcher: "Do you, as a Special Education Teacher, provide support to students primarily on an individual basis or in small groups?")

[01:44] Narasumber GPK (H): "Di kelas ini saya mendampingi satu siswa lain selain K (siswa disgrafia), yang merupakan siswa slow learner. *Biasanya, saya akan meminta para siswa yang saya dampingi untuk memperhatikan materi yang disampaikan oleh guru mata pelajaran, kemudian saya akan menjelaskan ulang jika ada hal-hal yang belum mereka pahami.* (SET Participant (H): "In this class, I support one other student in addition to K (a student with dysgraphia), who is identified as a slow learner. Typically, I ask the students I support to pay close attention to the material presented by the subject teacher, and I then re-explain any aspects they have not fully understood.")

In the implementation of differentiated instruction in Indonesian language learning at SMA Al-Firdaus Surakarta, as illustrated in Data Excerpt 1, students are supported by Special Education Teacher (SET) in reaching their proximal zone of competence in accordance with their learning profiles. In the case of students with dysgraphia, SET re-explain instructional material that is difficult for students to understand by using simplified language, as well as visual and audiovisual supports.

A similar pattern is also observed during task completion. Students with dysgraphia who experience difficulties in understanding the instructions provided by the Indonesian language subject teacher receive additional guidance from the Special Education Teacher. This finding is illustrated in Data Excerpt 2.

Data 2

[01:44] Narasumber GPK (H): "Di beberapa kesempatan, saya bahkan menjelaskan seluruh materi dari unit yang menurut mereka sulit dengan bahasa yang lebih mudah dipahami. Begitu pula dengan penugasan. Jika siswa telah paham apa yang disampaikan oleh guru mata pelajaran, mereka akan cenderung untuk langsung mengerjakan apa yang telah diarahkan. Namun jika belum (paham) dan bingung, siswa akan bertanya dan saya akan menjelaskan ulang bahkan memberi tahu letak jawabannya di dalam buku, 'Ini jawabannya dapat kamu temukan di sini, silakan untuk mencari sendiri terlebih dahulu'." (**SET Participant (H):** "On several occasions, I even re-explain the entire unit that students find difficult using more accessible language. The same approach applies to assignments. When students understand what the subject teacher has explained, they tend to proceed directly with the task. However, when they do not fully understand and feel confused, they ask questions, and I re-explain the material and sometimes indicate where the answer can be found in the textbook, such as saying, 'You can find the answer here; please try to locate it yourself first.'")

The data indicates that when students with dysgraphia are able to understand instruction while remaining seated in their original classroom position, they receive learning materials and assignments directly from the Indonesian language subject teacher in the same manner as regular students. However, when students with dysgraphia experience difficulties such that the instructional content and tasks exceed their current level of competence, they relocate to the back of the classroom to receive intensive support from the Special Education Teacher throughout the learning process. These findings provide empirical evidence of environmental differentiation occurring in Indonesian language learning for students with dysgraphia can be seen in Figure 2.

Fig. 2. A Dysgraphic Student Doing An Assignment from Their Indonesian Language Teacher

A similar statement was also expressed by the Indonesian language subject teacher (identified by the initial A) during the interview process, as presented in Data Excerpt 3.

Data 3

[00:30] Narasumber GMP Bahasa Indonesia (A): "... Siswa berkebutuhan khusus (disgrafia) didampingi oleh GPK yang membimbing mereka sesuai kemampuan. Modifikasi atau pembuatan soal juga dilakukan oleh GPK ... Dalam pembelajaran di kelas, siswa inklusi (disgrafia) tetap mengikuti pembelajaran formal dengan saya. Akan tetapi ketika ada tugas, saya berkoordinasi dengan GPK untuk menentukan apakah siswa mengikuti tugas yang sama (dengan siswa reguler) atau memerlukan penyesuaian? Jika perlu, GPK akan menyiapkan tugas yang sesuai kebutuhan siswa, namun saya tetap memantau pelaksanaannya agar tujuan pembelajaran tercapai." (Indonesian Language Subject Teacher Participant (A): "... Students with special educational needs (dysgraphia) are supported by a Special Education Teacher (SET) who guides them according to their abilities. The modification or development of assessment tasks is also carried out by the SET. During classroom instruction, students in inclusive settings (those with dysgraphia) continue to participate in formal learning activities with me. However, when assignments are given, I coordinate with the SET to determine whether the students should complete the same tasks as regular students or require adjustments. If adjustments are necessary, the SET prepares tasks tailored to the

students' needs, while I continue to monitor their implementation to ensure that the learning objectives are achieved.")

In relation to this, the student with dysgraphia (identified by the initial K) also provided validation regarding the role of the Special Education Teacher as a more capable peer in supporting their learning in the classroom, particularly in Indonesian language instruction. This is detailed in Data Excerpt 4 below.

Data 4

[05:20] Peneliti: "Bersama Bu H, apakah K sering dibantu saat pembelajaran bahasa Indonesia?" (Researcher: "When working with Ms. H, are you often provided with assistance during Indonesian language lessons?")

[05:30] Narasumber Siswa Disgrafia (K): Sering, Bu H sering mengarahkan (dalam pembelajaran). Caranya (mengarahkan) seperti 'Ini dikerjakan, ini dicatat materinya'." (Student with Dysgraphia Participant (K): "Often. Ms. H frequently provides guidance during the learning process, for example by saying, 'Work on this task' or 'Please write down this part of the material.'")

The role of SET in Indonesian language learning for dysgraphic students as "more capable peers" can be seen from how SET directly assists the learning process in inclusive classrooms. Through observation and interviews, SET helps students understand Indonesian language material by re-explaining material that dysgraphic students find difficult in language that is easier to understand and providing step-by-step guidance until dysgraphic students are able to find the answers to their assignments independently. These findings indicate the role of SET as a companion for students with dysgraphia with their learning abilities and potential. The temporary support provided by SET when students need their assistance is stated as a finding that is in line with the concept of scaffolding in ZPD.

Previous research on more capable peers within the scaffolding framework of the Zone of Proximal Development (ZPD) was conducted by Gou et al. (2025), who performed a meta-analysis of 32 studies. The findings indicate that scaffolding has been empirically validated as an effective instructional method for enhancing students' problem-solving abilities. Specifically, the gradual fading of instructional support and the type of subject matter taught were identified as factors that significantly influence the effectiveness of scaffolding. In contrast, other factors, such as the intended goals of scaffolding or grade level, were found to have no significant effect. From an interpretive perspective, the findings reported by Gou et al. substantively supports the results of the present study.

Findings related to the application of the Zone of Proximal Development (ZPD) and scaffolding have also been reported by Raslan (2024), whose study can be used as a reference for the development of differentiated learning programs for students with dysgraphia in the present research. The study revealed empirical evidence that the implementation of ZPD or scaffolding in school settings must maintain a balanced proportion of support. Insufficient assistance from capable peers may hinder students' mastery of targeted skills, whereas excessive support can create dependency and pose difficulties for students once the assistance is withdrawn. Moreover, Raslan emphasizes the importance of integrating more contemporary approaches, such as the use of technology, to promote greater learner independence and adaptability within the scaffolding process in the ZPD framework.

Last but not least, research by Montanero et al. (2025) states that peer mentoring programs can be a positive step in supporting inclusion, but are not sufficient when implemented alone. More comprehensive collaborative learning planning is needed to improve the quality of inclusion for students with special needs.

The Implementation of Differentiated Instruction through the Scaffolding Method within the Zone of Proximal Development (ZPD)

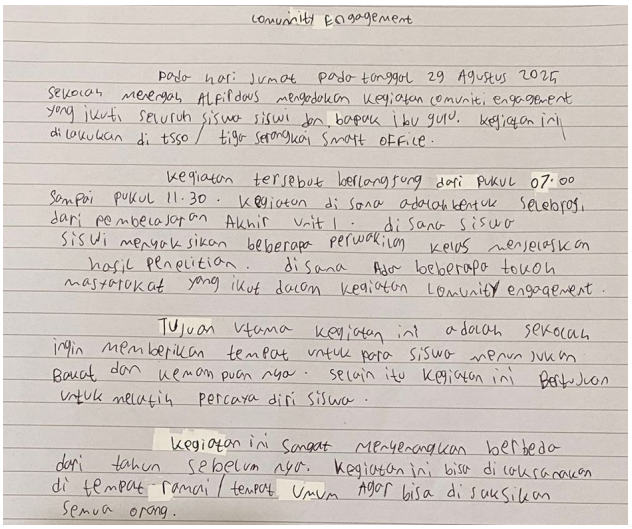
Based on the interview data obtained through participatory observations involving the Indonesian language subject teacher, the Special Education Teacher (SET), and students with dysgraphia, the findings reveal the manifestation of scaffolding within the Zone of Proximal Development (ZPD). According to Wood et al. (1976), six functions of more capable peers characterize the scaffolding process. Through data condensation and verification, all six functions were identified as being implemented in differentiated instruction at SMA Al-Firdaus Surakarta, namely: (1) recruitment; (2) reduction in degrees of freedom; (3) direction maintenance; (4) marking critical features; (4) frustration control; and (6) demonstration. These functions are represented in the following data excerpts.

Data 5

[03:38] Narasumber GPK (H): "Biasanya (jika siswa disgrafia kebingungan) saya akan mengarahkan untuk melihat di buku, di halaman sekian. Kemudian dia akan langsung mengerjakan." (SET Participant

(H): "Usually, when a student with dysgraphia becomes confused, I guide them to look at the textbook on a specific page. After that, they proceed directly with the task.")

The instructional process in which the Special Education Teacher (SET) encourages students with dysgraphia to focus on the material or tasks assigned by the Indonesian language subject teacher is carried out by directing students' attention to the specific textbook pages relevant to the lesson or assignment. This practice corresponds to the recruitment function of scaffolding, as the SET actively engages students and orients their attention toward learning resources that are directly related to the content they are required to study or complete can be seen in Figure 3.



Comunity Engagement

Pada hari Jumat pada tanggal 29 Agustus 2025 sekolah merenda ALFIdaus mengadakan kegiatan comunity engagement yang ikuti seluruh siswa siswi dan bapak ibu guru. kegiatan ini di lakukan di tsso / tiga serangkai Smart office.

kegiatan tersebut berlangsung dari pukul 07:00 sampai pukul 11.30. kegiatan di sana adalah kentuk selebrasi dari pembelajaran Akhir unit 1. di sana siswa siswi menyaksikan beberapa perwakilan kelas menjelaskan hasil penelitian. di sana ada beberapa tokoh masyarakat yang ikut dalam kegiatan Comunity engagement.

Tujuan utama kegiatan ini adalah sekolah ingin memberikan tempat untuk para siswa menunjukan Bakat dan kemampuan nya. selain itu kegiatan ini bertujuan untuk melatih percaya diri siswa.

kegiatan ini sangat menyenangkan berbeda dari tahun sebelum nya. kegiatan ini bisa di laksanakan di tempat ramai / tempat umum agar bisa di saksikan semua orang.

Fig. 3. An Example of A Dysgraphic Student's Handwriting when Writing A News Report

With regard to the reduction in degrees of freedom function, in addition to illustrating the role of the Special Education Teacher (SET) in scaffolding, the data also reveals a form of product differentiation in Indonesian language learning for students with dysgraphia. The relevant data excerpt is presented as follows.

Data 6

[05:30] Narasumber GPK (H): "Materi yang diajarkan di kelas memang sama antara siswa reguler dan siswa disgrafia. Namun dalam proses pengerjaan tugas, tingkat kesulitan untuk siswa disgrafia akan dibuat lebih rendah daripada teman-temannya yang reguler." (SET Participant (H): "The instructional content taught in the classroom is the same for both regular students and students with dysgraphia. However, during task completion, the level of difficulty for students with dysgraphia is designed to be lower than that assigned to their regular peers.")

The complexity of assignments in Indonesian language learning is regulated by the Special Education Teacher (SET) in accordance with the learning profiles and abilities of students with dysgraphia. Referring to the SET's statement in the data excerpt above, a reduction in task difficulty is evident, which constitutes a form of product differentiation. Within this framework, for example, in learning activities involving short story texts, regular students are instructed to produce a short story consisting of approximately 1,500–2,000 words. In contrast, students with dysgraphia are directed to write a short narrative based on personal experiences or short stories they have previously read. This adjustment enables students with dysgraphia to demonstrate learning outcomes that are aligned with the same instructional objectives while remaining within their zone of proximal development.

At another point, during a pre-research interview, the Special Education Teacher (SET) expressed a related perspective concerning the reduction of task complexity.

Data 7

[00:14] Peneliti: "Berarti setiap siswa itu sama-sama bisa dapat nilai, misalnya 100, namun dengan target tingkatan yang berbeda-beda? Jadi kalau siswa normal mendapatkan nilai '100' itu harus (mengerjakan) begini-begini, tapi untuk siswa disgrafia itu mendapatkan nilai '100' jika dapat mengerjakan apa yang diinstruksikan (sesuai target dari GPK)?" (Researcher: "So, does this mean that all students can achieve the same score—for example, a score of 100—but based on different performance targets? In other words, regular students obtain a score of 100 by completing tasks with certain requirements, whereas

students with dysgraphia achieve a score of 100 by completing the tasks assigned according to the targets set by the Special Education Teacher?")
[00:14] Narasumber GPK (H): "Iya, dan tanpa bantuan. Itu yang pasti. Misalnya mereka mengerjakan masih dengan bantuan, berarti sama saja bahwa kompetensinya belum sampai di situ. Jika mereka dapat mengerjakan secara mandiri dari apa yang telah saya instruksikan (sesuai target tingkatan mereka), berarti dia berhak mendapat nilai '100' itu tadi." (SET Participant (H): "Yes, and it must be completed without assistance. That is essential. If students still require support while completing the task, it indicates that their competence has not yet reached that level. However, if they are able to complete the task independently based on the instructions I have provided—according to their designated performance targets—then they are entitled to achieve a score of '100'.")

The third function, direction maintenance, is implemented at SMA Al-Firdaus Surakarta, particularly in the eleventh-grade social science class, as described below.

Data 8
[14:23] Narasumber GPK (H): "... di awal semester, kami (sebagai GPK) sudah menyusun yang namanya 'Smart Plan'. Itu semacam planning *untuk siswa (disgrafia) berupa target yang dilengkapi dengan rentang waktu. Misalnya, target capaian berupa 'di akhir semester, siswa dapat membaca dan menulis inti teks cerita yang telah dibaca'.* Planning *tersebut juga dilengkapi dengan evaluasi dan level apakah sudah tercapai targetnya atau belum. Jika sudah, maka semester selanjutnya akan dibuatkan 'Smart Plan' baru. Jika belum (tercapai) maka di semester selanjutnya akan diulangi lagi dengan target yang sama."* (SET Participant (H): "At the beginning of the semester, we—as Special Education Teacher—develop what is called a *Smart Plan*. It functions as a structured planning framework for students with dysgraphia, consisting of clearly defined targets accompanied by a specific timeline. For example, a target outcome may state that 'by the end of the semester, the student is able to read and write the main ideas of a narrative text that has been read.' The plan is also equipped with evaluation indicators and achievement levels to determine whether the target has been met. If the target is achieved, a new *Smart Plan* is developed for the following semester. If it is not achieved, the same target is continued and reinforced in the next semester.")

Direction maintenance refers to the scaffolding function performed by Special Education Teacher (SET) with the primary purpose of assisting students in sustaining learning direction and goals. Based on data collected at SMA Al-Firdaus Surakarta, the learning trajectory is structured by the SET through what is termed a Smart Plan. The effects of establishing such a learning pathway—regardless of its specific designation—are evident when students are able to maintain focus on instructional content and assigned tasks. These findings indicate that SET support in the form of direction maintenance facilitates continuous and sustained learning progress for students with dysgraphia.

Data Excerpt 8 also demonstrates a foundation for content differentiation. The Smart Plan developed by the Special Education Teacher (SET) at the beginning of the semester serves as the basis for content differentiation, as it specifies the competencies that students with dysgraphia are expected to achieve. The complexity of these target competencies is structured in accordance with students' needs and levels of competence. Consequently, instructional adaptations—such as the use of varied text forms, alternative media, and the simplification of learning materials—are frequently implemented in Indonesian language instruction for students with dysgraphia.

Data 9
[08:37] Narasumber GPK (H): "Untuk penggunaan teknologi berupa visual sudah dilakukan di sini (SMA Al-Firdaus Surakarta). Contohnya dalam pembelajaran teks deskripsi, siswa akan saya minta untuk melihat lewat ponsel bentuk gambar atau video dari materi atau tugas yang mereka dapatkan, 'contohnya seperti ini, silakan kalian buat dengan bahasa sendiri'. Karena jika tugasnya hanya dijelaskan secara angan-angan, siswa disgrafia akan cenderung kesulitan jika harus memahami instruksi secara abstrak." (SET Informant (H): "The use of technology in the form of visual support has already been implemented at SMA Al-Firdaus Surakarta. For example, in teaching descriptive texts, I ask students to view images or videos related to the material or task on their mobile phones. I usually say, 'This is an example—please create your own version using your own words.' This approach is applied because when instructions are delivered only in abstract or imaginative terms, students with dysgraphia tend to experience significant difficulties in understanding them.")

The use of visual or audiovisual media in Indonesian language learning for students with dysgraphia represents the implementation of the fourth scaffolding function, namely marking critical features. Through this function, the Special Education Teacher (SET) assists students in focusing on the essential elements of

the learning material or task being undertaken. The integration of visual or audiovisual technology also provides cognitive stimulation for students with dysgraphia, who tend to process and comprehend instructions more effectively through visual modalities. Furthermore, the visualizations employed by the SET serve as concrete referential cues, enabling learning activities to become more focused, meaningful, and contextually relevant.

Process differentiation is evident in the use of visual or audiovisual technology, as the Special Education Teacher (SET) modifies instructional delivery in accordance with the specific needs of students with dysgraphia during the learning process. In this context, process differentiation also functions as a representation of multimodal learning, aimed at reducing ambiguity in students' reception and interpretation of instructional information. Moreover, from a simultaneous perspective, the integration of visual or audiovisual technology in Indonesian language learning for students with dysgraphia is also associated with content differentiation, as the presentation of learning materials is delivered in varied formats and deliberately aligned with students' levels of competence.

In the frustration control function, the Special Education Teacher (SET) plays a role in stabilizing the emotional responses of students with dysgraphia. These emotional responses often manifest as defensiveness toward feedback and reluctance to acknowledge mistakes. In Indonesian language learning, the SET provides students with valid evidence to address misunderstandings or errors in their comprehension. As reported in Data Excerpt 10, students with dysgraphia may initially exhibit stubbornness before recognizing the validity of the correct answers related to the learning material or task. The SET consistently manages students' emotions while maintaining the learning trajectory, offering valid evidence to reduce defensiveness and facilitate continued engagement with instructional goals.

Data 10

[10:03] Peneliti: "Untuk dukungan secara emosional, bagaimana ibu sebagai GPK dalam mendampingi siswa disgrafia? (Researcher: "Regarding emotional support, how do you, as the Special Education Teacher (SET), assist students with dysgraphia?")

[10:14] Narasumber GPK (H): "Kalau dukungan emosional sebenarnya dia bukan tipe yang rewel orangnya. Tapi, terkadang ada waktu di mana ia selalu ingin keinginannya dituruti. Termasuk dalam pembelajaran, dia tidak akan mengalah sebelum kita mengarahkan fakta yang berseberangan dari apa yang dia yakini benar." (SET Participant (H): "In terms of emotional support, the student is not generally a fussy type. However, there are occasions when they want their preferences to be met. This includes learning situations, where the student will not yield until we provide evidence that contradicts what they believe to be correct.")

Finally, the last function, demonstration, is also represented in Data Excerpt 9. The Special Education Teacher (SET) provides examples for students with dysgraphia in Indonesian language learning using visual or audiovisual media. The use of technological devices for multimodal material delivery is fully supervised by the SET, as the devices are provided and controlled by the teacher. Similar to Data Excerpt 9, the demonstration function is also closely related to both process and content differentiation. The use of visual and audiovisual media in the demonstration function represents the provision of direct examples to students with dysgraphia. Providing concrete examples helps minimize miscommunication or misunderstandings when students attempt to abstract learning material in Indonesian language instruction. This function is considered effective in reducing learning difficulties and presenting instructional models that are appropriately aligned with the Zone of Proximal Development (ZPD) of students with dysgraphia.

The function of SET in differentiated learning for dysgraphic students found in this study can be seen from the way SET bridges the needs of dysgraphic students with Indonesian language learning outcomes in accordance with their competency levels. In practice, the role of SET in inclusive classrooms as a companion for dysgraphic students is to: (1) guide students to find answers independently; (2) adjust the level of complexity according to the learning competencies of dysgraphic students; (3) assist students so that they are able to complete tasks without direct assistance as an indicator of the achievement of individual learning competencies; (4) develop a smart plan as an individual learning plan containing achievement targets, time frames, and periodic evaluations to monitor the progress of dysgraphic students; (5) utilize media and technology to help students more easily understand abstract instructions; and (6) provide emotional support to dysgraphic students and correct misconceptions so that the learning process remains conducive.

In short, SET functions to adjust instructions by simplifying assignment commands from Indonesian language subject teacher and assisting students in the Indonesian language learning process. This practice serves to support an inclusive learning process and encourage student engagement in the classroom. The

function of SET in this study also refers to the pedagogical contribution of these activities to differentiated learning for dysgraphic students in Indonesian language subjects.

Research related to the six functions of scaffolding according to Wood et al. (1976) has been conducted by Maryam et al. (2020). In their research, there were findings related to a detailed description of the implementation of scaffolding using digital technology. The results showed that active teacher participation can improve student learning, especially when teachers use interactive whiteboards (IWB) in teaching. This research can serve as a basis for aligning perceptions regarding scaffolding theory. Although the research was only conducted in one early childhood education institution, the findings are still important because they describe how the role of teachers in the scaffolding method is to guide the use of digital technology in learning practices.

In addition, Ertugruloglu et al. (2023) also conducted research related to scaffolding in bilingual education. The study concluded that the purpose of scaffolding is not only to focus on language comprehension, but also on mastery of material and the development of academic literacy through a form of tiered support from teachers in helping students. Another finding stated in the study relates to the concept of scaffolding, which does not yet have a clear conceptual agreement.

In an experimental study of EFL students in Iran, YarAhmadi & Behbahani (2025) stated that the group that received instruction using the DA approach (using gradual assistance in accordance with ZPD) showed significant improvement in vocabulary mastery and memory, both in the short and long term. Meanwhile, the group that was taught using traditional methods (only direct translation) did not show as much improvement as the DA group.

Furthermore, research by Stenberg et al. (2024) found that collaborative skills develop gradually, from dependence on lecturers to independence with peer support. This is in line with Vygotsky's theory, which emphasizes that scaffolding needs to be adjusted to the developmental stage of learners. Thus, learning support must be adaptive in order to encourage independence and professional competence.

Collaboration between Subject Teacher and Special Education Teacher (SET) as the Core of Student Development

Scaffolding within the Zone of Proximal Development (ZPD) at SMA Al-Firdaus fosters cooperative learning, supported by collaboration between the Indonesian language subject teacher and the Special Education Teacher (SET) in promoting the development of students with dysgraphia. This collaboration serves as a central driver for the writing development of students with dysgraphia. The effectiveness of this collaboration arises from its reliance not solely on individual processes but on social interactions between students with dysgraphia, teacher, and peers within the school environment.

During pre-instruction at the beginning of the semester, the Special Education Teacher (SET) collaborates with the Indonesian language subject teacher to prepare a Smart Plan for students with dysgraphia, covering both the semester and the entire academic year.

Data 11

[04:07] Peneliti: "Pola kerja antara Bu (H) dan Pak (A) dalam mempersiapkan pembelajaran bagaimana Bu, apakah ada koordinasi rutin setiap sebelum mulai pembelajaran atau bagaimana?" (Researcher: "How do you coordinate the lesson preparation between you (Ms. H) and Mr. A? Is there a routine coordination before each lesson, or how is it carried out?")

[04:23] Narasumber GPK (H): "Biasanya koordinasi dilakukan saat sebelum tahun ajaran baru, koordinasinya disebut 'Smart Plan'." (SET Participant (H): "Coordination is usually conducted before the new academic year, and this coordination is referred to as a Smart Plan.")

At SMA Al-Firdaus Surakarta, the Smart Plan strategy is employed to plan learning objectives for students with special educational needs, such as those with dysgraphia. In the case of students with dysgraphia, the Smart Plan is detailed in Data Excerpt 8. The plan is developed specifically to evaluate students inclusive, particularly those with dysgraphia.

Data 12

[10:54] Narasumber GMP Bahasa Indonesia (A): "'Smart Plan' memang ada, namun lebih digunakan untuk evaluasi khusus ke siswa inklusi dari GPK-nya, bukan untuk kami sebagai guru mata pelajaran." (Indonesian Language Subject Teacher Participant (A): "The Smart Plan does exist, but it is primarily used for the evaluation of inclusive students by the Special Education Teacher (SET), rather than for us as subject.")

The form of collaboration between the Indonesian language subject teacher and the Special Education Teacher (SET) for students with dysgraphia, as observed in the implementation of differentiated instruction at the inclusive classroom of SMA Al-Firdaus Surakarta, is as follows.

Data 13

[05:30] Narasumber GPK (H): "Untuk materi memang tetap sama (antara siswa reguler dan disgrafia), namun tingkat kesulitannya dibedakan. Sebelum dimulai ajaran baru biasanya ada rapat antar GMP dan GPK untuk menjelaskan pelajaran per unit berikut tes sumatifnya... Untuk nilai akhir, akan tetap berkoordinasi kembali dengan guru mata pelajaran." (SET Participant (H): "The instructional material remains the same for both regular students and students with dysgraphia; however, the level of difficulty is differentiated. Before the start of a new academic year, there is usually a meeting between the subject teacher and the Special Education Teacher (SET) to discuss the lessons per unit along with the summative tests. For the final grades, coordination with the subject teacher is related again.")

Collaboration between Indonesian language subject teacher and Special Assistant Teacher (SET) is central to the development of dysgraphic students in inclusive classrooms. Coordination begins at the start of the semester to align perceptions regarding learning objectives, materials, methods, and assessments, enabling SET to tailor learning strategies to individual student abilities without altering curriculum standards. The Indonesian Language Subject Teacher is responsible for ensuring that the curriculum objectives are achieved, while the Special Assistant Teacher provides adaptive support and assistance through scaffolding, which gradually helps dysgraphic students move towards higher potential development, in accordance with the ZPD concept.

This collaboration is not only administrative in nature, but also a differentiation strategy that ensures students keep up with the same material as regular students. Through this strategy, learning becomes differentiated, inclusive, and focused on learning outcomes. In addition, the adaptive strategy of this collaboration also shows that the success of inclusive education depends on pedagogical cooperation between the Indonesian language subject teacher and SET in designing, implementing, and evaluating the learning process of dysgraphic students. These findings show that the collaboration between Indonesian language teacher and SET is not only administrative in nature, but also bridges the individual needs of dysgraphic students with the demands of the curriculum in inclusive learning at Al-Firdaus High School in Surakarta.

Research related to collaboration between classroom teachers and SET has been conducted by Ningsih et al. (2024). The findings of this study indicate that support for the planning, implementation, and evaluation of inclusive learning between classroom teachers and SET has produced good results. On the other hand, the challenges faced stem from limited resources and parents' understanding.

Another study was conducted by Alhossyan (2023), who conducted a systematic review to understand the impact of collaboration between Indonesian language subject teachers and SETs on support for students with disabilities. The findings stated that there was a positive impact of this collaboration on the academic achievement of students with special needs. The results of the study also emphasized the importance of the principal's role in making policies to overcome obstacles such as the need for professional training or time constraints in developing individualized education programs (IEPs) so that the inclusive learning process could be more optimal.

In addition to the two studies above, Kotilainen et al. (2025) stated in their study that the most common form of collaboration found in secondary schools in Finland in supporting the inclusive learning process is simple information exchange, while in-depth collaboration such as co-teaching is still limited due to time constraints and school structure. This study identifies four categories of collaboration, namely dysfunctional, uncertain, comfortable, and professional collaboration, which describe the level of development of cooperation between teachers.

In addition, other studies have reported similar findings. Mihajlovic (2024) stated that physical education teachers and special education teachers alike recognize the importance of collaboration in supporting students with disabilities, but obstacles are still encountered due to differences in implementation in each school. Special education teachers tend to feel primarily responsible for assisting students with disabilities, while physical education teachers focus more on mastering the subject matter. Collaboration also faces obstacles such as time constraints, lack of support in the classroom, and the absence of a shared vision regarding inclusive learning practices.

Finally, for this subchapter, research from Alsudairy (2024) states that structured and intensive professional training can significantly improve teachers' co-teaching abilities and collaboration skills in inclusive education. After participating in 14 training sessions, teachers showed a marked improvement in their understanding and practice of co-teaching, with special education teachers showing a more prominent improvement than general education teachers in this aspect. However, in terms of collaboration skills in general, no significant differences were found between the two groups of teachers. These findings indicate that targeted professional development is essential to strengthen collaborative practices in inclusive schools, while also indicating the need for more equitable and sustainable training designs.

Conclusion

The implementation of differentiated instruction can be carried out using various methods, depending on school policies and the strategies employed by teacher in the classroom. Within the inclusive education framework, differentiated instruction—particularly in Indonesian language learning—can be facilitated through the role of the Special Education Teacher (SET) in guiding inclusive students during daily lessons. The support provided by the SET is maximized when students with dysgraphia require assistance, representing a form of environmental differentiation. Providing examples and repeating instructions regarding learning materials and tasks constitute process and content differentiation, while reducing the complexity of assessments represents product differentiation. Through participatory classroom observations, the study also found evidence of scaffolding within the Zone of Proximal Development (ZPD) occurring in Indonesian language lessons for students with dysgraphia at SMA Al-Firdaus. The simultaneous processes of data condensation, presentation, and verification revealed alignment between the six scaffolding functions within the ZPD and the role of the SET in daily instructional practices.

In conclusion, the role and function of the Special Education Teacher (SET) for students with dysgraphia in inclusive classrooms represents a tangible contribution to differentiated instruction, particularly in Indonesian language learning. The SET acts as a facilitator, guiding instruction while adjusting planning and assessments according to the needs and competencies of students with dysgraphia. The application of scaffolding within the Zone of Proximal Development (ZPD) by the SET provides stepwise support to help students with dysgraphia develop writing skills within their proximal zone. Furthermore, the implementation of differentiated instruction offers students with dysgraphia opportunities to engage in learning that aligns with their readiness and individual learning profiles. Thus, the implementation of differentiated instruction, the integration of the roles and functions of the Special Education Teacher (SET), and the cooperative scaffolding strategies within the Zone of Proximal Development (ZPD) represent a positive approach to enhancing the learning abilities of students with dysgraphia in Indonesian language classrooms within inclusive settings. Moreover, this approach concretely supports students with dysgraphia in accessing inclusive, competency-oriented learning opportunities..

Declarations

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