

Probing questions and feedback for learners with down syndrome in an inclusive classroom

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ABSTRACT

This study aims to investigate the practice of Assessment for Learning (AFL) in the context of inclusive classes focused on how teachers provide effective probing questions and feedback to Down Syndrome (DS) learners. This study involved two teachers from two inclusive elementary schools. The data was collected during the learning process and interviews with teachers and DS students. This research conducted qualitative research used on this study is descriptive qualitative that utters the teachers by using three considerations in providing effective probing questions and feedback for DS students. Those considerations are (1) the level of intelligence by giving direct, short, concrete questions; (2) social-emotional by giving feedback and reinforcement; and (3) limitations of other mental functions by using visual media and non-verbal language. The implications of this study show that the presence of learners with special needs is as important as normal children in an inclusive class. Thus, the teacher must be able to design the learning practice with the diversity of students. The training can be given to them as well. Along with that, the finding of this study can contribute to it. By giving them training, the teacher's confidence, and positive attitude toward teaching in the inclusive class are built up.



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INTRODUCTION

Learning disabilities involve a deficit in one or more aspects of learning. Diagnostic criteria most commonly require a significant discrepancy between educational achievement and intellectual potential. Associated dysfunctions include deficits in executive function, attention deficits, emotional lability, and social adjustment difficulties. Early identification by the pediatrician is important to provide appropriate educational interventions and behavioral therapy to optimize learning and prevent secondary emotional problems. Although the outcome is generally good, an individual retains learning deficits throughout life (Shapiro & Gallico, 1993).

The presence of students with special needs in public schools is a challenge for teachers in carrying out learning and assessment. Children with Down Syndrome (DS), for example, have difficulty following student-centered learning and assessment (Unesco, 2009). Meanwhile, national curricula in various countries Sayed & Ahmed (2015) including Indonesia with curriculum 2013 (Kementrian Pendidikan dan Kebudayaan Indonesia, 2019; Mulyana, 2018) instruct the student-centered approach to learning and assessment in public schools. Some literature also states that the AFL strategy, which can know the students' understanding quickly, is through question-answer and feedback (Tran et al., 2017; Murray et al., 2018; Leong et al., 2011). The following summaries of question-and-answer feedback reported by several research Attali & Powers (2010); Hahn et al., (2021); Millar et al., (2021); Molin et al., (2021); & Torsani (2019) can be seen in Table 1.



Table 1
Summary of Question-Answer Feedback

No	Form	Question and Answer Feedback
1	Information without action	Provides information
2	Part of formative assessment (or AfL)	Identifies deficit in performance
3	Socio-constructivist	Enables students to be involved by using feedback to close learning gaps
4	Structuring conditions for learning	Feedback has a central role in learning
5	Clarity of learning outcomes, identification of high-quality performance, integration of the development of self-assessment	informs the student on what to do to correct or revise their understanding
6	Socio-constructivist	Enables students to be involved by using feedback to close learning gaps
7	Directive	Guides students in developing their understanding
8	Facilitative	The feedback is based on a judgment of performance against objectives
9	Convergent	The feedback that focuses on an open and exploratory approach
10	Divergent	Giving rewards and punishments; expressing approval and disapproval
11	Evaluative	Giving rewards and punishments; expressing approval and disapproval
12	Descriptive	Tell learners they are right or wrong; describe why an answer is correct; tell learners what they have and have not achieved; specify or imply a better way of doing something, and get learners to suggest ways they can improve

The policy of accepting children with special needs in public schools has become a movement in many countries (Mackay, 2020). In Indonesia, for instance, DS children can enroll in public schools (Polat et al., 2021). With this policy, teachers feel that they are not ready to serve the learning of DS students who have a cognitive deficit (Boriak, 2015; Delphie, 2002). This condition causes DS students to find difficulties in grasping questions and feedback in the form of complex sentences, abstract words, and metaphorical expressions (Ferguson-Patrick, 2022). The training conducted by the Indonesian Ministry of Education and Culture is only related to the management of inclusive schools not reaching the professional development of how to implement AfL in inclusive classes yet (Astuty & Wulandari, 2019).

The early years of schooling for Down syndrome children are the focus of this study's attention. The study is focused on the early years of schooling to understand the importance of this phase for a child's education and the role that instructors play in educating students with Down syndrome at this time. The literature on teachers' experiences working with students who have Down syndrome in general education schools is scarce, and it is particularly less concentrated during the early years of schooling, as this review has shown. Even less material has been written about teachers' early-year classroom experiences with children with Down syndrome in the Indonesian context, investigating how teachers interact with students.

The basis of inclusive education appears to be the idea that all pupils, regardless of background, belong and are accepted. Our culture is incredibly diverse (Themane, 2017), therefore inclusive education emphasizes recognizing and celebrating difference and diversity. It is important to stress that variety and distinction do not serve as more justifications for a student's deficiencies that the instructor or institution must address but rather serve to celebrate the student for who they are (Branson & Miller, 2002). According to Slee (2001), inclusive education is giving everyone in a school community a voice and giving them the power to identify and eliminate real and prospective reasons for exclusion.

For teachers or educators to support people with DS properly we use inclusive strategies and interventions reflective of that profile that support specific needs. In-service development should include how the DS affects learning with the following.

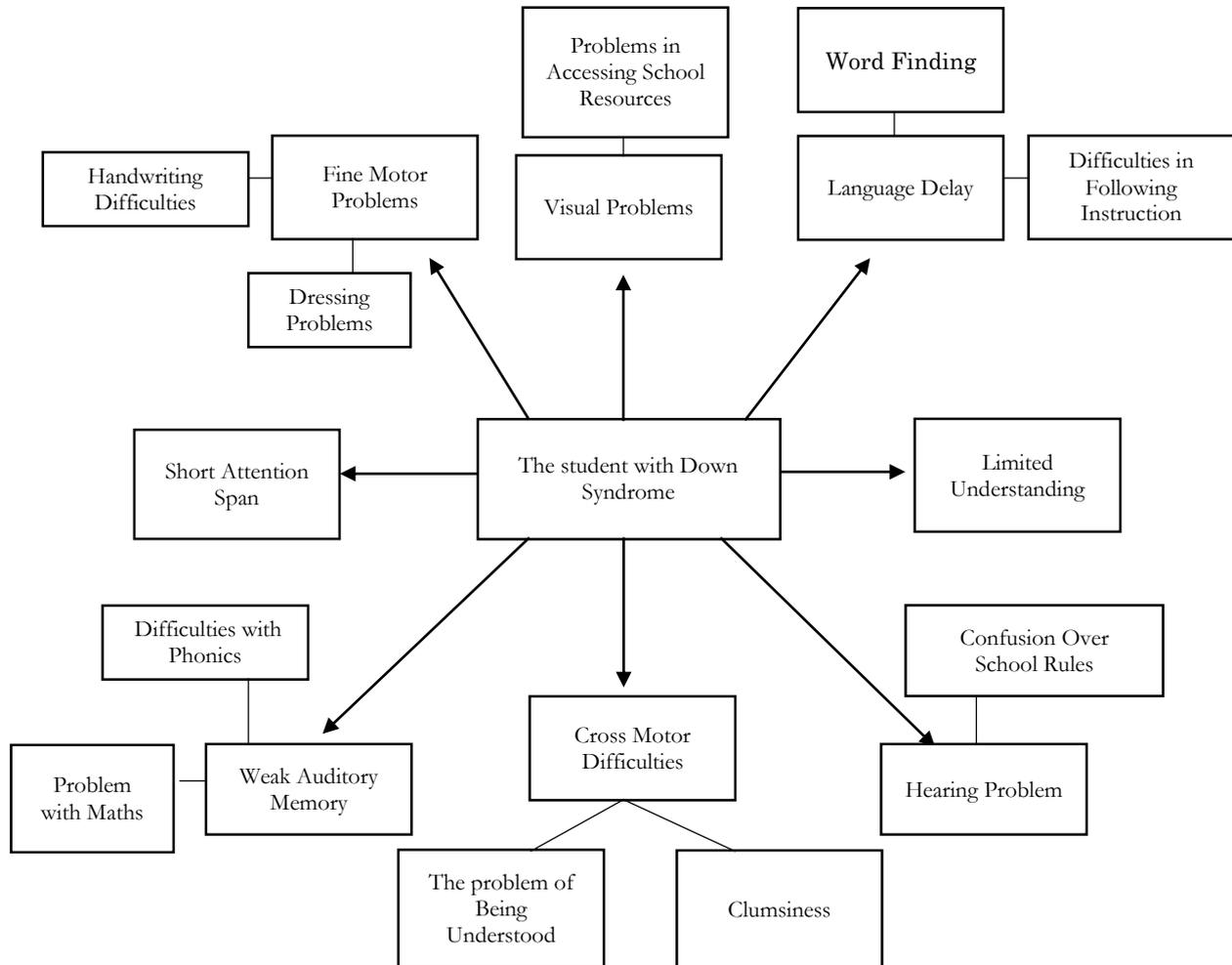


Figure 1. Schema of How Down Syndrome Affects Learning

The research about the probing question and feedback practice in inclusive classes with DS children in it has not been found yet. The suggestion was given by (Bartolo et al., 2021; Tay & Kee, 2019; Kam-yin Wu, 1993) to give longer waiting times for children with special needs. On that basis, an empirical study of the practice of using effective probing questions and effective teacher feedback for DS students needs to be done. The findings of this study contribute to teaching and training the teacher in designing learning using effective probing questions and feedback techniques for DS students in inclusive classes. Another contribution of this research is to provide a better understanding of AfL in inclusive classes and its implications in the classroom. As such, this study aims to overcome the gaps by gathering empirical evidence from teachers and DS students in the public class about the practice of exploring effective probing questions and teacher feedback. The two questions in this research are:

- (1) What types of questions and feedback do teachers use?
- (2) What considerations do teachers use in giving questions and feedback?



METHODS

This research conducted qualitative research used on this study is descriptive qualitative. The source of the data in this study was two teachers who taught at the Inclusive Elementary School that has DS students in Indonesia. The teachers selected with the following provisions: First, teachers who have attended inclusive school management training. Second, the teachers who are capable of teaching inclusive classes with DS students. Trained and experienced teachers are the sample of this research to obtain valid data (Dikli, 2006). Preliminary to learning practice, the guidance related to the implementation of the probing questions technique and teacher's feedback and interviews were given to teachers and DS students.

The steps in implementing probing questions and feedback were explained as follows: (1) the teachers submitted questions about the material designed according to the learning objectives, (2) the teachers gave two minutes for maximum waiting time, (3) randomly, the teacher chose students to answer, (4) if the answer was correct, the same question was asked to other students so that all students were actively involved. In vice versa, if the answer was wrong, the teachers asked a follow-up question by repeating or simplifying to lead students thinking toward the initial question, (5) the teachers asked the other students to give other examples or answers that support previous answers, and (6) the teacher provided feedback in the form of reinforcement and additional answers to ensure that students achieve the expected competence (Majid et al., 2020; Kam-yin Wu, 1993; Tay & Kee, 2019). A semi-structured interview was conducted in this study. The interview was about the teachers' feelings about teaching DS students, effective probing questions and feedback, consideration in compiling questions and feedback, and waiting times. The interview given to students was to explore DS students' perceptions of observed learning.

The data analysis was focused on the way the teacher in providing effective probing questions and feedback to DS students. The data was taken by recording the learning process for 2 x 60 minutes; then, it was transcribed verbally. Next, the data from observation, the data from teachers' interviews, and field notes were sorted and coded according to the research problem. Furthermore, the data was validated by the results of interviews with DS students. After that, the data codes were analyzed in-depth based on 6 phases of data analysis, according to Eslamian et al., (2015), to find the types of effective probing questions and teacher's feedback based on considerations taken by the teacher. The results of the analysis were compared with other classes to find similarities (Chazal & Michel, 2021). This qualitative method was to explore the perspectives and experiences of DS teachers and students to find the types of effective probing questions and feedback in inclusive classes as well as the considerations taken by teachers to overcome the gaps found in DS students (Saggers, 2015).

RESULT AND DISCUSSION

Based on the data analysis from the teaching practices of the two teachers, it was found several similarities that were characteristic of effective probing questions and feedback practice in the inclusive class. The teacher used three considerations in providing probing questions and feedback to DS students, i.e., the level of intelligence, social-emotional, and limitations of other mental functions.

Lani Florian & Kristine Black-Hawkins, ndLani Florian & Kristine Black-Hawkins, ndLani Florian & Kristine Black-Hawkins, n.dTeachers used the consideration of the level of intelligence in compiling the types of questions to explore and give appropriate feedback for DS students. The probing question in the form of complex sentences could only be answered by normal children, while DS children only bowed and shook their heads. In another case of teacher B, it was found that DS students could process the information in the compound sentence. However, that finding was categorized as an outlier because it did not represent the ability of DS. To facilitate DS students to be actively involved in learning, teacher A and teacher B used probing questions in the form of direct, short, and concrete sentences because DS students could not process abstract words and

connotative expressions (Lani Florian & Kristine Black-Hawkins, n.d; Siraj et al., 2021). For certain DS students, teacher B simplified questions in their native language. DS students' answer was in the form of chaotic arrangement of words, phrases, short sentences, or rows of words. The teachers tried to understand the students' answers to provide feedback and explore further questions.

The finding above added to Tay & Kee (2019) research that students with special needs applied closed questions effectively because they experienced anxiety in facing open questions. Closed questions in this study were minimized because they were less challenging for DS students to speak. The students sometimes answered "Yes" or "no," but they more often used body language, such as shrugging, nodding, shaking their heads, or smiling. Open questions were proven to encourage DS to respond, even if it was only short sentences. Related to DS students' anxiety, the teacher applied the following way to overcome it:

Second, the social-emotional condition was considered in giving effective probing questions and feedback. The anxiety and restlessness arose when DS students had a turn to answer questions. The teacher immediately said, "don't be afraid" or "you can do it," while smiling or approaching him to give support. The teacher sometimes gave questions to normal students formerly so that DS students listened to the answers. This method was quite soothing and helpful when DS students got a turn. The suggestion from J.W. Meijer (2003); Tay & Kee (2019) and Ergüder et al., (2016) waiting time could not be applied to all DS students. DS students' case in teacher B's class looked nervous and stressed by complaining of nausea, and dizziness went to the restroom and rolled their eyes when they were not helped in answering the questions. Teacher A helped the DS students after 15 seconds they could not answer. The results showed more positive than in teacher B's case. The feedback in the form of praise, both verbal and non-verbal made the students feel happy. The feedback in the form of a firm attitude was also carried out by the teacher to control DS students' attitudes, which tend to lack understanding of the rules (Winnepenninckx et al., 2013).

Third, consideration of other mental functions limitation determined the effectiveness of the probing questions and feedback. This consideration was used to overcome the disparity of some DS students who have hearing loss as well as their characteristics which easily forget what they learned (Tay & Kee, 2019; Winnepenninckx et al., 2013). To facilitate DS students who have hearing loss, teachers A and B helped them by applying visual media, such as pictures or interesting slides with striking colors. The teacher also helped DS students with clearer speech and limb movements, such as hand movements and expressions that clarify the information conveyed. To overcome the forgetfulness of DS students, the teacher helped them by writing learning objectives and keywords or sentences for each step of the lesson on the board and repeating questions. As a result, the implementation of probing questions and feedback, in this case, can be described by the following classroom probing questions and feedback as follows.

Table 2
Reflects Feedback on Students' DS Classroom

No	Justified	Observed Feedback
1	The teacher controlled the class	The teacher is aware of where students with DS will have difficulties
2	Object helps students with DS to understand the meaning	Teacher provides objects
3	Error is important and necessary to learn	Helps students correct with DS their own mistakes Students feel successful when the teacher encourages
4	Encouragement is primary	them and motivates them to work harder to get the highest score
5	Reading is worked on from the beginning but follows from what students have learned to say	Discussion in class is richer and more fun when students have read the material before class



This study tried to gather empirical evidence about the practice of effective probing questions and feedback in public classes with DS students in it. The learning observations, teacher interviews, and field notes data were validated by DS students' learning perceptions to answer research questions. The research findings explained that probing questions and teacher feedback was said to be effective and appropriate if they were arranged based on the level of student intelligence. It was consistent with the practice of a good learning environment for DS students as it was able to overcome DS Students' inability in abstract thinking, short-term remembering, complex sentence processing, and adaptive behavior delaying (Winnepenninckx et al., 2013). Besides, the social-emotional limitations of DS students tended to create anxiety when DS students should answer questions and got feedback (Allely, 2020). This research revealed that teachers could overcome DS students' anxiety. Last, other mental function limitations, such as hearing loss, forgetfulness, and visual processing bias (Li et al., 2020) could be overcome by using visual media and non-verbal language.

This research succeeded in finding a satisfying learning practice strategy for DS students in inclusive classes. The considerations in this study were also in line with all principles related to the use of a comfortable environment and the strength of children (Culver et al., 2015; Haughney et al., 2020). This study seemed to prove that what is useful for DS students is also useful for normal students ((Bartolo et al., 2021).

CONCLUSIONS

The three considerations found in this study had implications for teachers. Moreover, it trained teachers in developing frameworks and designing learning practices with students' diversity. This research convinced teachers that learning practices that accommodate students with special needs in public schools were not burdensome and did not need to sacrifice their classmates. It was consistent with the practice of good DS students learning environment as it helped to overcome cognitive, social-emotional, and other mental limitations and contribute to building teacher trust and positive teaching behavior in inclusive classrooms. This research still had limitations, especially in data collection. The next researcher is recommended to take the data using a special room equipped with recording tools that can close-up students' responses to probing questions and feedback from the teacher.

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