



Learning Profile Mapping for Differentiated Instruction Implementation

Ery Tri Djatmika*, Pipit Pudji Astutik

Universitas Negeri Malang, Indonesia

***Corresponding Author:** Ery Tri Djatmika, Universitas Negeri Malang, Indonesia

Abstract: This article aims to describe the mapping done by teachers in elementary schools regarding students' backgrounds before they apply differentiated instruction. Mapping students' backgrounds is very important considering the focus of attention from implementing differentiated instruction is alignment with student characteristics, so as to make learning comfortable and enjoyable. There are several methods and aspects used for mapping student backgrounds. The main thing that is expected from the implementation of differentiated instruction is the suitability of what is learned with what is found in students. With these conditions, it is hoped that it will create fun learning that will support an increase in the academic achievement of learning outcomes. There were 44 teachers who participated in this study which was carried out through workshop activities in the community service program. The results of the study revealed that there were things that became problems in mapping students' backgrounds in the implementation of differentiated instruction.

Keywords: differentiated instruction, learning profile mapping, elementary school.

1. INTRODUCTION

Students of the same age do not necessarily have the same body size, interests, personalities, needs, and other abilities. Without realizing it, every day educators are faced with a very large diversity of students. These are the diversity of socio-cultural backgrounds, as well as the diversity of learning needs including learning readiness, interests, and learning profiles. The diversity faced is a challenge that must be faced and various decisions must be taken at the same time. Classrooms characterized by diversity demand different teaching strategies to meet the diverse needs of students. Various efforts have been made by educators to face these challenges, with the aim that each student can go through the learning process successfully.

Differentiated instruction is an alternative choice for teachers as a strategy that can be applied to meet the diversity of student characteristics. Differentiated instruction is an attempt to adapt the learning process in the classroom to meet the individual learning needs of each student. In differentiated classrooms, teachers use a variety of teaching models and methods as well as instructional arrangements to ensure that students achieve outcomes based on student needs (Arends, 2015). Differentiated instruction does not burden students in learning, but instead creates a fun learning atmosphere and stimulates children to continue learning so that it helps achieve learning success (Hollas, 2005).

Before carrying out differentiated instruction, teachers need to map students' needs first. Student needs according to Tomlinson (2001) include aspects of (1) student learning readiness, (2) student interest, and (3) student learning profile. As educators, of course, teachers know that students will show better performance if the assignments given are in accordance with the skills and understanding they previously had. These tasks will trigger curiosity in students (interest) if these tasks provide opportunities for students to work according to what they like according to their learning profile. Readiness to learn is the ability of students to learn new material (Tomlinson, 2001). An assignment based on a student's level of readiness will bring students out of their comfort zone. However, with the right learning environment and adequate support, students can still master the material.

Interest is an important motivator for students to be actively involved in the learning process (Tomlinson, 2001). As it is known that every student has their own interests. There are students whose interests are particularly strong in art, math, science, drama, cooking, social, and many other fields. Throughout the year of learning implementation, different students will show different interests. The thing that educators have to do is connect students to learning activities that are able to maintain their interest. High interest contributes to improving the performance of student learning processes. According to Tomlinson (2001) that student learning profiles are students' preferred approach to learning which is influenced by thinking style, intelligence, culture, background, gender, and others. A student's learning profile is related to many factors such as language, culture, health, family circumstances, and other specificities. Recognizing student learning profiles is important for teachers to choose and determine the use of varied and appropriate approaches, strategies, models, and learning methods.

The estuary of implementing differentiated instruction is the implementation of learning according to student characteristics and improving the quality of learning outcomes by prioritizing the learning process according to student needs. This study reveals the mapping of students' backgrounds by teachers in the implementation of differentiated instruction in elementary schools in Malang City, East Java, Indonesia.

2. REVIEW OF LITERATURE

Effective differentiated instruction is based on a teacher's understanding and appreciation of each student's unique needs and what they have in common. Learning is done in a way that provides comfort and has meaning for students' lives. Teachers must be proficient in what they teach, and adept at modifying critical elements appropriately and creatively such as curriculum, instructional strategies, resources, learning activities, assessments, and learning environments. The results of the study revealed that when learning is applied by paying attention to each student according to their characteristics, it will be very meaningful and beneficial for students' personal development (Tomlinson and Imbeau, 2010; Santangelo and Tomlinson, 2012).

Differentiated instruction is a systematic way to conceptualize the teaching and learning process in such a way that the learning needs of each student are respected, and as a consequence, the potential and learning outcomes of each student can be maximized. Principles related to effective differentiation are respecting each student as an individual, taking responsibility for the success of each student, building a positive classroom community, providing a quality curriculum to support the learning process, and using continuously a variety of assessments as material for learning feedback. There is flexibility in-class activities and resources, sharing responsibility for teaching and learning, ensuring that all students have similar interests and interesting assignments, and creating diverse ways to learn (Santangelo and Tomlinson, 2012).

The results of the study show that there is a response from the teacher with different learning strategies through the application of differentiated instruction. There is an intention to design and implement all learning procedures that are directed at the different characteristics of students, so as to provide benefits, both individually and as a whole, namely by providing a supportive and positive classroom environment. This also has an impact on strengthening academic achievement, the ability to build study groups, and selecting the use of appropriate textbooks, students being actively involved in modeling activities and demonstrating their learning assignments. However, teachers also have hopes and desires to be able to carry out learning with procedures that are more relevant to themselves, such as setting the pace, giving additional assignments, providing more time for students to practice, modifying learning materials, and carrying out various forms of assessment that are appropriate and more adaptive (Wertheim & Leyser, 2002).

It is important to note that teachers follow general principles, which means that rather than being a single practice, differentiation is a set of principles or approaches applied in class. Teachers need to take a leadership role in the classroom with a variety of techniques. Consequently, to maximize the capacity of each individual in the class, teachers are encouraged to implement class routines based on a set of principles (Tomlinson, 2014). Respond proactively to the needs and differences of learners in a flexible way to make full use of their abilities. Differentiated instruction is not a single practice that can or cannot be done by the teacher, but a teaching framework. Teachers can differentiate content, processes, and products by considering individual differences regarding student readiness, interests,

and learning profiles. Differentiation is based on influence/environment and claims that the differentiation technique used is also shaped by the teacher's mindset. Teachers who have what is called a 'growth mindset' believe in the role that individual effort invests in learning, whereas teachers who have a 'fixed mindset' have a tendency to think that some students are born gifted and can learn the material, others cannot, even if they try hard to learn it (Tomlinson and Imbeau, 2010; Zolyomi, 2022).

Differentiated instruction is a teaching approach that seeks to adapt lessons proactively in the classroom to accommodate the various needs of students. Learning is based on several philosophical assumptions rooted in social constructivism. For example, teachers are expected to have a growth mindset, which refers to the belief that a child's academic success depends more on the effort put into learning than on innate cognitive abilities. The purpose of a teacher implementing differentiated instruction is for the benefit of teaching in the classroom. This expression refers to the idea that students learn most effectively when doing tasks that are challenging but manageable with support. Teachers who adhere to this philosophical assumption are expected to proactively adapt their lessons to the various needs of their students. This need can result from the social, cognitive, affective, and/or behavioral characteristics of students. Teachers can respond to this need by adapting one or more elements of a lesson: the content students learn, the teaching and learning process, the learning environment, and the products students create to demonstrate what they have learned. Proactivity is another key element of different instruction, which means that teachers plan, implement, and evaluate their responsive actions in a systematic way. Formative assessment provides a tool for this element as it offers data on which teachers can base their evaluation of past lessons and plan future lessons (Kahmann et al., 2022).

3. METHOD

This article is presented descriptively with the involvement of 44 teachers as participants. They are teachers in elementary schools. The collection of research data coincided with the implementation of community service activities for teachers. The community service program is delivered in the form of a workshop for teachers with the theme of implementing differentiated instruction.

4. RESULTS

Demographic Characteristics

The characteristics of teachers involved in this activity are mostly women, with most work experience between 7-18 years, and status as civil servants or government employees. A more complete description of their demographic characteristics is presented in the following table.

Table1. *Demographic Characteristics*

		Frequency	Percent
Gender	Female	37	84.1
	Male	7	15.9
Group of Age	26 – 35 Years Old	12	27.3
	36 – 40 Years Old	24	54.5
	41 – 50 Years Old	8	18.2
Years of Service (Working Experience)	1 – 6 Years	3	6.8
	7 – 12 Years	14	31.8
	13 – 18 Years	24	54.5
	19 – 24 Years	3	6.8
Employee Status	Government Employees	31	70.5
	Permanent Teacher of the Foundation	5	11.4
	Government Employee with Employment Agreement	5	11.4
	Non-Permanent Teacher	3	6.8
Teaching at Class	Class 1 Teacher	5	11.4
	Class 2 Teacher	3	6.8
	Class 3 Teacher	2	4.5
	Class 4 Teacher	7	15.9
	Class 5 Teacher	10	22.7
	Class 6 Teacher	17	38.6
Total		44	100.0

The following pictures present the profile of the implementation of differentiated instruction, the methods used, and the difficulties encountered in mapping students' backgrounds before implementing differentiated instruction from 44 participants.

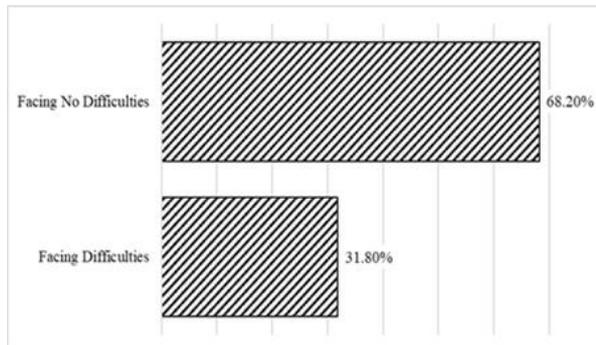


Figure 1. Difficulties in Students' Learning Background Mapping

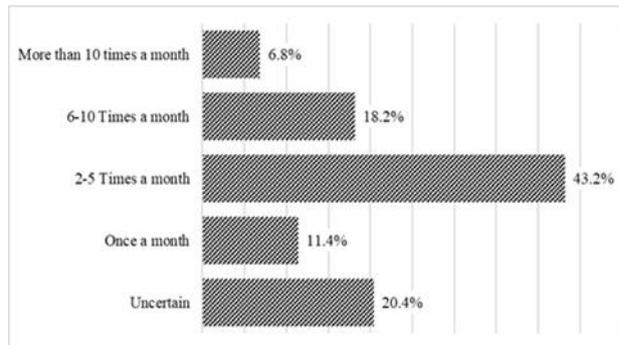


Figure 2. Implementation of Differentiated Instruction

From the figure above, 68.2% of teachers did not experience difficulties in mapping student backgrounds, but 31.8% experienced difficulties. The condition that occurs is that there are variations in the implementation of differentiated instruction among teachers. There are conditions that are still uncertain (20.4%), up to more than ten times a month (6.8%), and most are doing it between two to five times a month (43.2%). Differentiated instruction practices that are still very diverse will certainly be able to cause various levels of involvement from students, considering that the focus of attention from differentiated instruction is on students, which aims to build involvement with student learning comfort, which results in high academic achievement.

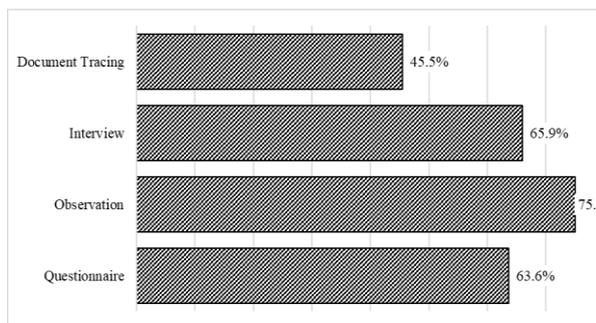


Figure 3. Method Used for Students' Background Mapping

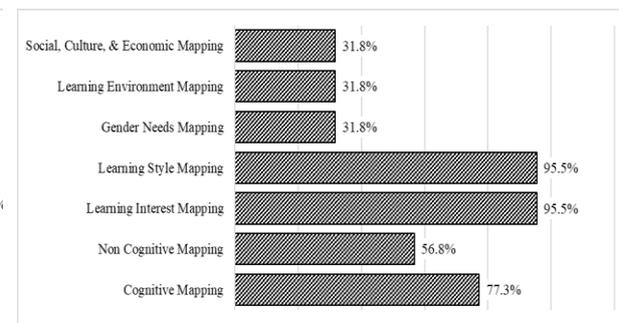


Figure 4. Mapping of Students' Background Components

Teachers can actually use all of the methods, however, from the figure above it can be seen that the distribution of the methods used by teachers is still uneven to map students' backgrounds. The method most often used by teachers is through observation (75.0% of 100%), and the least used is the document search method (only by 45.5% of teachers from 100%). The component most often used by teachers for mapping student backgrounds is related to student learning styles and student interests (95.5% of 100% each).

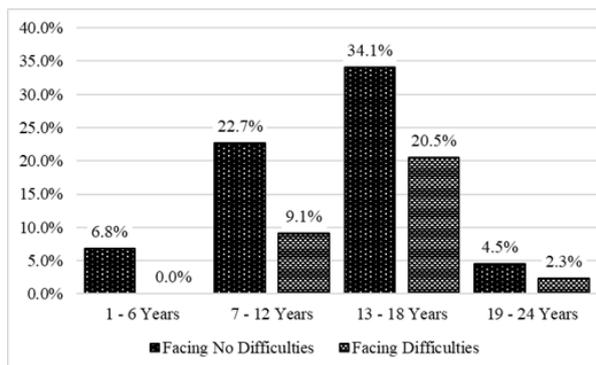


Figure 5. Difficulties in Students Background Mapping Based on Years of Working Experience

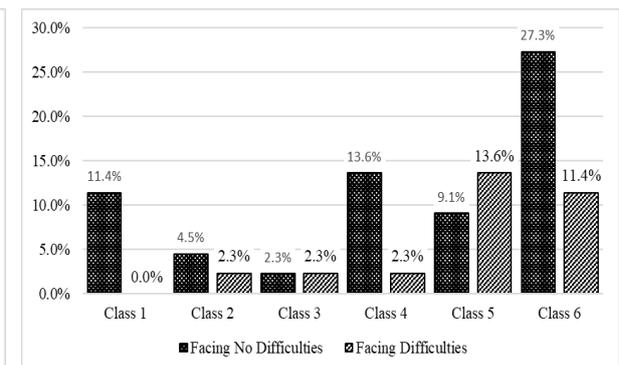


Figure 6. Difficulties in Students Background Mapping Based on Teachers' Class

Difficulties in mapping student backgrounds mainly occur for teachers who have work experience between 13-18 years (20.5%) in grade 5 teachers (13.6%) and grade 6 teachers (11.4%). In addition, it was found that grade 1 teachers had no difficulty in mapping student backgrounds.

5. DISCUSSION

The findings regarding the difficulties experienced by teachers related to the learning process are also found in the work of Kirschner et al. (2006), that there are factors that result in low learning interest, low achievement, and high dropout rates that need to be a concern for teachers to carry out mitigation that can overcome students' motivation problems with learning plans that provide comfort for them to learn. Differentiated instruction strategies are seen as relevant because they are designed to pay attention to various differences in student characteristics (Tomlinson, 2014). Furthermore, it is stated that the behaviors of learning activities such as instructional clarity, classroom management, and control over student learning are positively related to student's academic engagement. The results of the study not only show the importance of students' perceptions of teacher behavior that support students' academic motivation but also show that a decrease in student motivation is associated with a decrease in the quality of the learning environment. In addition, the implementation of learning strategies that pay attention to differences in students' interests, talents, and backgrounds will be able to encourage the achievement of high-order thinking in cognition and metacognition (Handa, 2020).

The results of the study reveal that students who believe that they are capable of carrying out tasks that are their responsibility and have strong intrinsic values, low levels of anxiety, or high self-confidence, will tend to be more involved academically, by using a variety of cognitive strategies, and survive in the learning process. To ensure high academic motivation, the teacher has a central position in the learning process in the classroom. The teacher is a determining factor in the development of a learning environment in the classroom, and this has strong relevance to the academic achievements of student learning outcomes. Teacher control in learning activities is an important domain in learning interactions, namely the extent to which teachers control student learning activities, ranging from very strong control to joint control that can encourage and motivate students to be freer to complete learning activities (Maulana et al., 2016). The problems faced by teachers in mapping students' backgrounds that occur in schools need to be a concern for obtaining solutions so that it will be able to create an atmosphere for students to be more involved and comfortable in their learning process.

6. CONCLUSION

In the implementation of differentiated instruction, there is still diversity among teachers, ranging from those who are not sure or uncertain to do it to those who do it more than ten times in one month. There were quite a number of teachers who experienced difficulties, especially those experienced by teachers in grade five in mapping students' backgrounds before implementing differentiated instruction. Even though there are many kinds of student backgrounds that teachers should be able to use for mapping, what teachers mostly do is related to student learning styles and student interests, while the others are still small. Efforts need to be made to improve students' background mapping practices prior to the implementation of differentiated instruction, including efforts to improve skills in conducting various mappings.

REFERENCES

- Arends, R. (2015). *Learning to Teach* (Tenth edition). New York: McGraw-Hill.
- Brigandi, C.B., Gilson, C.M., & Miller, M. (2019). Professional Development and Differentiated Instruction in an Elementary School Pullout Program: A Gifted Education Case Study. *Journal for the Education of the Gifted*, 42(4), 362–395. DOI: <https://doi.org/10.1177/0162353219874418>
- Handa, C.M. (2020). Examining Students' and Teachers' Perceptions of Differentiated Practices, Student Engagement, and Teacher Qualities. *Journal of Advanced Academics*, 31(4), 530-568. DOI: <http://dx.doi.org/10.1177/1932202X20931457>
- Hollas, B. (2005). *Differentiating Instruction in a Whole Group Setting*. Peterborough, NH: Crystal Springs Books.
- Hollas, B. (2007). *Differentiating Instruction in a Whole-Group Setting (7-12): Taking the Easy First Steps into Differentiation*. Peterborough, NH: Crystal Springs Books.
- Kahmann, R., Droop, M., & Lazonder, A.W. (2022). Meta-analysis of professional development programs in differentiated instruction. *International Journal of Educational Research*, 116, 1-13. DOI: <https://doi.org/10.1016/j.ijer.2022.102072>

- Kirschner, P. A., Sweller, J., & Clark, R. E. (2006). Why Minimal Guidance During Instruction Does Not Work: An Analysis of the Failure of Constructivist, Discovery, Problem-Based, Experiential, and Inquiry-Based Teaching. *Educational Psychologist*, 41(2), 75–86. DOI: https://doi.org/10.1207/s15326985Sep4102_1
- Maulana, R., Opdenakker, M-C., & Bosker, R. (2016). Teachers' instructional behaviors as important predictors of academic motivation: Changes and links across the school year. *Learning and Individual Differences*, 50(August), 147–156. DOI: <http://dx.doi.org/10.1016/j.lindif.2016.07.019>
- Roy, A., Guay, F., & Valois, P. (2015). The big-fish–little-pond effect on academic self-concept: The moderating role of differentiated instruction and individual achievement. *Learning and Individual Differences*, 42, 110-116. DOI: <http://dx.doi.org/10.1016/j.lindif.2015.07.009>
- Santangelo, T., & Tomlinson, C.A. (2012) Teacher Educators' Perceptions and Use of Differentiated Instruction Practices: An Exploratory Investigation. *Action in Teacher Education*, 34:4, 309-327, DOI: <https://doi.org/10.1080/01626620.2012.717032>
- Tomlinson, C.A. (2001). *How to Differentiate Instruction in Mixed-Ability Differentiated Instruction*. Alexandria, Virginia: Association for Supervision and Curriculum Development.
- Tomlinson, C.A. (2014). *The differentiated classroom: Responding to the needs of all learners* (2nd ed.). Alexandria, VA: Pearson Education, Inc.
- Tomlinson, C.A., & Imbeau, M.B. (2010). *Leading and Managing a Differentiated Classroom*. Alexandria, VA: ACSD.
- Wertheim, C., & Leyser, Y. (2002). Efficacy Beliefs, Background Variables, and Differentiated Instruction of Israeli Prospective Teachers. *The Journal of Educational Research*, 96:1, 54-63, DOI: <https://doi.org/10.1080/00220670209598791>
- Zolyomi, A. (2022). Exploring Hungarian secondary school English teachers' beliefs about differentiated instruction. *Language Teaching Research*, 1–23. DOI: <https://doi.org/10.1177/13621688221114780>

Citation: Ery Tri Djatmika & Pipit Pudji Astutik. "Learning Profile Mapping for Differentiated Instruction Implementation" *International Journal of Humanities Social Sciences and Education (IJHSSE)*, vol 10, no. 7, 2023, pp. 51-56. DOI: <https://doi.org/10.20431/2349-0381.1007006>.

Copyright: © 2023 Authors. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.