



The Implementation of Differentiated Instruction Methods: An Identification of Inhibiting Factors and Their Solutions Toward Qualitative Surveys

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Abstract. Differentiated instruction is a method of adapting the learning process in the classroom to fulfill the individual learning needs of each student. The adjustments of questions are affected by interests, learning profiles, and student readiness to achieve developed learning outcomes. This research has the objectives of identifying the inhibiting factors for the implementation of differentiated instruction methods and the alternative solutions offered for implementing the differentiated instruction methods in the classroom. A literature review or literature study is used as a method in this research. The literature used in this article is 37 articles relevant to the research which were taken from the Google Scholar database as the source. The findings of the literature study show that difficulties in implementing the differentiated instruction method occur in almost all schools in the world from various levels of education. According to the results of the review of articles, it can be concluded that there are several factors affecting teachers to experience difficulties in implementing differentiated instruction; (1) Differentiation Instruction is time-consuming and difficult to be prepared and implemented, (2) Teachers have to prepare different activities for different students, (3) Lacking time for teachers to prepare the differentiated instruction, (4) Teachers feel unprepared to implement the differentiated instruction.

Keywords: Differentiated instruction · Differentiated instruction Inhibiting Factors · Differentiated instruction Implemented Solutions

1 Introduction

The quality of education in Indonesia is still far behind other countries in the world, Asia and even ASEAN. This can be seen from the average literacy and numeracy ability of students in Indonesia which is still low. Based on *Program for International Students Assessment (PISA)* results, shows that Indonesia is in the bottom 10 of the 79 participating countries. The minimum point limit set by the *Organization for Economic Co-Operation and Development (OECD)* as the organizer of PISA is 80 points, while

Indonesia's points are still below the average. The average of reading skills, math, and science abilities of students in Indonesia are 42 points, 52 points, and 37 points, respectively. Furthermore, in percentage terms, only 25% of students have a minimum level of reading competence or more, 24% of students have a minimum level of mathematics competence or more, and 34% of Indonesian students have a minimum level of science competence or more [1]. Another problem, according to PISA data in 2014 shows that one of the problems causing the low literacy and numeracy abilities of students is due to the diversity of the population, the differentiation of students is quite large and increases in each generation [2]. Therefore, the problem of student differentiation is a serious problem that must be addressed to solve immediately in order to improve students' literacy skills [3, 4].

Differentiated learning is one of the teaching and learning processes that can be used to overcome differences in students and ways of thinking that are essential to support 21st-century learning today. Differentiation learning is a motorized learning model that can be combined with variations of the way students learn [5]. Differentiation learning is used to overcome student differences in terms of learning methods, gender, learning styles, motivation, interests, competencies, and other things [6, 7]. Based on the findings of previous researches, it is stated that classes that use differentiation learning practices are proven to have better numeracy levels compared to traditional classes [8]–[10]. Therefore, differentiated learning is needed to overcome the diversity of students because it has been proven to be able to overcome these problems [11]–[15].

Regarding to the positive impact of differentiation learning, many researches have been conducted on this matter. Several research results show that the positive impact generated by the differentiation learning *method* is not widely used by teachers in providing learning in the classroom. Teachers still rarely use differentiation learning methods in everyday learning and tend to use traditional methods and the use of variations in learning methods is still relatively low [15, 16]. It is because the practice of differentiation learning requires careful preparation it adds to the higher workload of teachers [1]. Moreover, teachers feel unprepared to differentiate classroom teaching as a means of addressing the diverse learning needs of students [16]–[21]. The findings above can explain that the impact of a high workload on teachers results in not optimally implementing the differentiation learning method carried out by teachers [22].

Difficulty in implementing the differentiation learning method with various obstacles experienced by the teacher along its application. There are various reasons why teachers still experience problems in implementing the differentiation learning method in the classroom. This research focusing the discussion toward the factors that cause teachers to experience difficulties in implementing differentiated *learning* methods in the classroom, as seen from the various supporting literature. Moreover, the research will also discuss alternative solutions that can be done by teachers in implementing the differentiation learning method. Therefore, the research question posed is what factors cause teachers to experience difficulties in implementing differentiation learning and alternative solutions that can be used by teachers to facilitate the application of the differentiation learning model in the classroom?

1.1 Differentiated Instruction

Differentiated Instruction is also better known as Differentiation Learning. The two terms have the identical meaning according to some experts. Differentiation learning is useful for developing student knowledge, regardless of student readiness or learning profile, every student got opportunities to be succeed [6, 23]. Learners must be given a differentiation approach to get success in learning [24]. Differentiation Learning is a pedagogical strategy that is used to design teaching according to the readiness of students, interests, and abilities of each student [25, 26]. The implementation of differentiated learning requires teachers to be proactive concerning meeting the needs of students. Content-based learning, products, processes, and learning environments can be used as differentiators in the learning that teachers can do in the classroom [26]–[28]. This is line to statement by [6] who state that differentiation learning is carried out to meet the needs of students, both students independently, in small groups, or all students in a class. This can be done by the teacher by varying the learning in the classroom according to the variants of the students’ needs to create the best experience in learning.

2 Method

A qualitative approach to describe the research results is used in this research. Literature study is used intended for various purposes such as identifying, reviewing, evaluating, and interpreting various research topics that are in line with this research and interesting

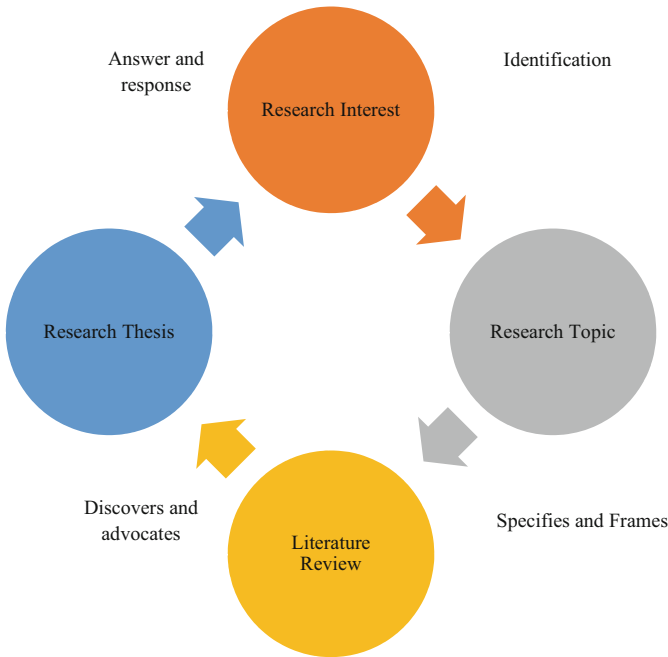


Fig. 1. Literature Study Flow

to disclose. Literature study is considered a more relevant research method because it is one of the methods that can be used to collect collective evidence in certain research areas. Therefore, literature considered as a relevant method to be used nowadays. Literature studies can broadly be described as a systematic way of collecting and synthesizing prior research [29, 30]. An effective and well-conducted literature study as a research method can serve as a solid foundation for advancing knowledge and facilitating theory development [31].

There are several guidelines for conducting literature studies with various approaches used, such as narrative or integrative literature studies [29, 32]; systematic review and meta-analysis [33]–[35]; integrative review [36] and development of specific guidelines as a bridge to business and management research [37, 38]. The literature study in this research is used to identify *human investment* in higher education study of literature for article writing uses the approach proposed by [39] which requires making literature studies in an organized way to research the chosen topic (Fig. 1).

3 Result

This research uses 36 articles to be reviewed. The main focus of the 36 articles used following the criteria that will be discussed in this research is: related to what differentiation learning is, subjects in Elementary Schools, Junior High Schools, and Senior High Schools, discussing the factors that cause teacher difficulties in implementing differentiation learning in schools. Classrooms and alternative solutions that teachers can use as references to facilitate the implementation of differentiation learning in the classroom.

The subjects used in this article consist of various countries in the world that implement differentiation learning in the classroom. Differentiation learning is not only carried out in one country but also in various countries, even countries with a good level of education such as Germany implement the differentiation learning and are still having difficulties in implementing it [40]. Therefore, it is necessary to analyze articles related to differentiation learning to obtain conclusions that can be used as a reference in the implementation of different learning methods. The following are some of the countries as the subjects in this article (Table 1).

Table 1. Countries based on the results of the review

Research Subject Country	Author, Year
Australia	[41] [42]
Netherlands	[7]
China	[43]
Indonesian	[44, 45]

(continued)

Table 1. (continued)

Research Subject Country	Author, Year
English	[46] [17, 26] [47]
German	[5, 8, 10, 40, 48]
Malaysia	[49]
Portugal	[18]
Qatar	[50]
Turkey	[51]
United States of America	[2, 3, 52]–[6, 11, 54]–[14, 19, 20, 24] [20, 55]
Cyprus	[56]
Spanish	[22]

4 Discussion

Answering the research questions that have been formulated, the researcher conducts a review of supporting articles related to the factors that influence the difficulty of implementing differentiation learning methods in the classroom by teachers and alternative solutions that can be used as references by teachers to facilitate the implementation of differentiation learning. in the classroom. Based on the results of the study, it was found that several factors affect the difficulty of teachers in implementing differentiation learning in the classroom. The difficulties experienced by the teacher can be minimized by providing alternative solutions based on the study carried out in this article so that teachers can apply the differentiation learning method better in the classroom.

4.1 Factors Affecting the Difficulty of Implementating Differentiated Learning Methods in Classroom

The factors that cost and affect difficulty of implementing the differentiation learning model in the classroom are as follows:

4.1.1 Differentiation Learning is Time Consuming and Difficult to Prepare and Implement

The effectiveness of differentiation learning depends on the teacher as the key and essential component in the implementation of the differentiation learning method [6][56]. However, in the field, the implementation of the differentiation learning method in the classroom cannot run effectively and experiences various obstacles. According to [42, 47] the implementation of the differentiation learning method is considered difficult to do

because it takes a lot of time and careful preparation for its implementation starting from the preparation of learning media that adapts to the needs of students and preparation of material that adapts to the learning styles of students.

4.1.2 Teachers Feel They Have to Prepare Different Activities for Different Students

Differentiation learning is learning that accommodates, serves, and recognizes the diversity of students in learning according to their readiness, interests, and learning preferences of students [6, 20, 40, 45]. Based on the above understanding requires teachers to be able to prepare different learning activities for students according to their learning needs of students. The results of empirical research indicate that teachers have difficulty when they have to prepare different activities for different students [17, 47, 56]. Teachers experience difficulty preparing different materials, different test questions, and different assignments for each student in the classroom [2, 12, 20, 24].

4.1.3 Lack of Time for Teachers to Prepare for Differentiation Learning

Being a teacher means having a high level of work complexity. Teachers are not only required to teach but are also given other tasks to fulfill. The high workload assigned to teachers worldwide results in a lack of time for teachers to prepare differentiated learning practices in the classroom [1, 12, 19]. High workloads on teachers have an impact on teachers not being optimal in implementing differentiation learning practices in the classroom, therefore the effectiveness of differentiation learning is still considering low [22], [5], [10], [40], [48], [53], [2], [6], [12], [24].

4.1.4 Teachers Feel Unprepared to Implement Differentiation Learning

Differentiation learning requires prepared and well preparation from a teacher. The preparation covers an analysis of student needs, media for learning, learning materials, individual assignments, and many more [3, 13, 14, 19, 20, 54]. However, in fact, he teacher expresses feelings of not being ready to carry out differentiation learning in the classroom as a means to fulfill the learning needs of students [17][18][19][6, 40, 51][20][19, 24, 54].

4.2 Alternative Proposed Solution for Application of Diffentiation Learning Methods in Classroom

Alternative solutions from this research are based on the results of a review of articles conducted to find alternative solutions for implementing differentiation learning methods in the classroom as follows:

4.2.1 Differentiated Learning Should Be More Qualitative Than Quantitative

Differentiated learning should emphasize the quality of the learning process, not a large number of learning bills to students which will burden students that affected to the learning process cannot run optimally [12, 14, 53, 54].

4.2.2 Differentiated Learning Must Be Based and Centered in Assessment

The implementation of differentiated learning in the classroom is required to be based on assessment. This allows teachers to get to know their students better through individual conversations, class discussions, student assignments, observations, and formal assessments. The assessment data will be a catalyst to structure learning that affect students to maximize their potential and talents by paying more attention to their level of readiness to learn, interest in learning, and the learning environment of students [5, 44]–[46, 49, 50].

4.2.3 Differentiated Learning Provides a Plural Approach to Content, Process, and Product

Differentiated Learning is required to emphasize learning on content, process, and product. These three components are expected to teachers will be able to offer different approaches for students to learn, how students learn it, and how students demonstrate what they have learned [2, 6, 8, 12, 24, 51].

4.2.4 Differentiated Learning is Centered on Learners

Differentiated learning must prioritize the principle of *student active learning* by respecting the individual differences of students. Teachers are expected to be able to serve students according to their learning needs and characteristics [3, 10, 14, 48].

4.2.5 Differentiated Learning is a Learning that Combines Individual Learning, Group Learning and Classical Learning

Differentiated learning is expected to be able to build understanding and a sense of togetherness among students with various problem discussions and reviews both individually and in groups [7, 18, 52, 53].

4.2.6 Differentiated Learning is an Organic Thing

Differentiated learning must be evolutionary. Students and teachers are joint learners. Collaboration between teachers and students on an ongoing basis is needed to ensure effective learning opportunities for each student. Differentiated learning has a dynamic nature. Teachers are acutely aware that every teaching hour, every day in the classroom can reveal more ways to make the classroom more suitable for its learners. Teachers see differences as a strategy or something that must be done in the classroom [44, 45].

4.2.7 Proper Training (Especially for Novice Teachers), Focusing in the Implementation of Differentiated Learning

The *decision-makers* are expected to be able to conduct a training for teachers in the implementation of differentiated learning. There will be expected good knowledge in the implementation of differentiated learning in the classroom. Differentiated Learning needs to get more socialization and promotion in pre-service education, in-service teachers, and other programs organized by *decision-makers* [10, 40].

5 Conclusion and Recommendation

Differentiated Learning is a good and effective learning method if it can be implemented in the classroom by the teacher. However, in reality, almost all teachers around the world from various levels of education have difficulty implementing differentiated learning in the classroom. Therefore, the main purpose of the article in this article is to reveal what factors are obstacles for teachers in implementing differentiated learning in the classroom and alternative solutions that teachers can use in implementing differentiated learning in the classroom. Based on the results of the review of articles that have been carried out, it was found that several factors cause teachers to experience difficulties in implementing differentiated learning, namely (1) Differentiation Learning is time-consuming and difficult to prepare and implement; (2) Teachers feel they have to prepare different activities for different students; (3) Lack of time for teachers to prepare for implementing differentiation learning; (4) Teachers feel unprepared to implement differentiation learning.

The difficulties make teachers feel they do not have enough ability to carry out differentiated learning in the classroom, therefore their implementation is still very minimal until now. Regarding to solve these problems, the alternative solutions proposed in this article can be used by teachers based on the problems and learning conditions in their respective classrooms. Alternative solutions for the implementation of differentiated learning as follow: (1) Differentiated Learning should be more qualitative than quantitative; (2) Differentiated Learning must be based and centered in assessment; (3) Differentiated Learning provides multiple approaches to Content, Process, and product; (4) Differentiated Learning is centered on learners; (5) Differentiated Learning is learning that combines individual learning, group learning, and classical learning; (6) Differentiated Learning is an organic thing; (7) There is proper training (especially for novice teachers), focusing in the implementing of differentiated learning.

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