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Breaking Academic Inclusionthrough Cluster-Basedinstruction (An Approach to Differentiated Instruction for Students with Disabilities in Inclusive Schools)

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Abstract: Inclusive education has become the goverment policy in promoting the demand of education for all. However, the employment of full inclusive system remains dissatisfactory. This study aims at: exploring ways of learning enhancement for students with disabilities in inclusive schools, measuring the impact of Pull out Cluster Model (DIPOCM) on the students with disabilities in comparison to In-Class Cluster Model (ICCM). This research is an explorative case study involving teachers and students in two different inclusive schools in Central Java, Indonesia. Questionnaire and observation were used to collect the data on teacher's skills of instruction through a lesson study. Questionnaire was used to assess the teacher's competence in scaffolding the students with disabilities, while teacher's activities and student's learning behavior during the classes were measured by observation. The data of the two different instructional strategies, both quantitative and qualitative were analyzed descriptively. The results showed that DIPOCM exceeded ICCM in yielding the student's learning behavior, better behavior of learning preparation was shown by students with disabilities. It is recommended that students with disabilities be provided with DIPOCM to improve their engagement.

Key words: Differentiated instruction, pull-out cluster model, inclusion, disabilities, learning, behavior

INTRODUCTION

As it is legally stated under the Ministry of Education Rule No. 70-2009, that inclusive education in Indonesia is essentially designed to provide equal educational services for all children including those with learning disabilities. It is recommended that inclusive and friendly environment be emphasized which means that a wide range of opportunities for children to attend, participate in learning and gain meaningful results should be provided (Anonymous, 2007) which will make children feel physically, socially and psychologically safe, comfortable and favorable to learning. Depending on their degree of capabilities, children with learning disabilities may best learn in the full inclusion system or diferentiated in pull-out cluster model.

Inclusive education is also interchangeably called special need education where the educational service is characterized by accommodating the learning needs of diverse students. Such a placement has called the regular teachers for a specific demand of differentiated instruction to enable those with disabilities to learn meaningfully in the heterogenious classroom (Woodcock and Vialle, 2010). Otherwise, children with disabilities would never learn equally along other children without disabilities. Gunarhadi (2014) admit that children with specific disabilities havesuch a unique need of learningthat they need special way of instruction accordingly. They believe in the effectiveness of differentiated instruction.

However, inclusive education is restricted by some limitations due to the lacks of facilities, human resources and curriculum as well as instructional strategy for children with disabilities in regular schools (Gunarhadi, 2014). In-Class Cluster Model (ICCM) has been a prime type of instruction. As a typical heterogenious classroom, ICCM is characterized by one curriculum and one way of instruction employed for all students. This is the real problem of ICCM where one classroom teacher lacks adequate attention to the special needs of children with disabilities. In addition to limited attention, the next problem is that most regular teachers are not accustomed to teaching children with such disabilities. Moreover, when several children with disabilities exist in the respective class, they are even unfamiliar with the characteristics of students with various disabilities.

The fact has indicated that it is quite common for inclusive schools to have children with visual impairment, hearing impairment and mostly those with specifc learning disabilities. They learn together in the mainstreamed class that is managed by one classroom teacher. Each of the children with different types of disability may have different needs and different learning styles, hence, the

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need a different way of teaching strategy. In spite of having a long expereince on teaching, the limited knowledge on special education would not likely lead the teacher to employ the instructional strategy that fits such children with various learning problems. Above all, inclusion is a new trend for most of them and they have to accept all the way it is. An extreme example, it is impossible for a teacher to manage a class of 20 students with a number of 7 out of them have varius learning difficulties. Yet, that is what happens and the success is there for the teacher who is knowledgeable in teaching strategy of special education.

ICCM also has caused various complaints on the facts that children with learning disabilities are not engaged in learning together with the normal peers in a huge heterogenious class. These disabled children do not get meaningful benefit from educational services as expected. They are left behind those of non-handicapped in a particular subject matter. Children with learning disabilities more often fail to learn because teachers are not familiar with academic learning problems such as reading, writing, orarithmatics. A large number of studies, for instance have shown that most of students (80%) with learning disabilities manifest with difficulties in reading acquisition (Antoniou and Souvignier, 2007). Children with learning disabilitiies seem to be invisible learners since, they look just like other children in general except that they have to struggle harder in learning for success. It turns that children with learning disabilities represent the biggest category of special education, comprising 51% of all children receiving special education services in the United States of America (Haight *et al*., 2001). National Association of Schools Psychologists (NASP), similarly, mentions around 2.9 million children which means 5.5% of the school population US receive special education service.

In Indonesia, the number children with learning disabilities is not much different in term of the largest prevalence of 17% as compared to other children with special needs inclusive schools (Abdul Rachman, 2012). Such children are characterized by the discrepancy between academic achievement and cognitive potential (Haight *at al*., 2001). Intellectually, they belong to children with normal to superior intelligence quotient. Nevertheless, they are vulnarable to academic achievement that they often fail to perform their best. To some extent such struggling learners find learning a painful process. For them, learning problems may be due to their poor cognitive skills such as inadequate prior knowledge, poor study skills or problems with maintaining attention (Abdul Rahman, 2012). Other problems such as slow response to instruction, anxiety and other maladaptive behaviors are also common to happen among these children. These problems, nevertheless, remain unsolved when the teachers do not know what to do to help them. Teachers in regular schools should be aware of their specific needs of learning such as placement in the appropriate group and specific way of teaching strategy. Vaughn and Fuchs (2003) for example, propose model of grouping so called tiers. Students with learning disabilities are grouped into a tier on the basis of ability to thei adequate response to instruction. They learn better under a differentiated instruction in their appropriate tier. It means that they can learn only when they get extra help of instruction which is different from other children in general. In practice, unfortunately, teachers do not have much time to learn the knowledgeon differentiated instruction and practice it in their classroom activities. As a rsult, children may become frustrated and often end up in drop-out. These all indicate that children with disabilities need a different way of instruction other than ICCM.

Now that, ICCM is considerably ineffective for both normal peers and more over for those with disabilities, a different model of instruction is sought. The research is to prove whether or not Differentiated Instruction of Pull out Cluster Model (DIPOCM) can facilitate students with more meaningful learning. As a result, instead of learning in ICCM, students with learning disabilities may learn meaningfully in a differentiated instruction of pull out cluster which means a small group with variety of learning needs. Clustering serves as a principle of differentiating the strategy of teaching. This is in accordance with the statement by DeRuvo (2009) that differentiated strategies of teaching will meet the specific learning needs and learning styles of all students. Since, inclusive education is responding to unique needs of each learner, differentiation in teaching is required for students with learning disabilities. For them, learning in cluster is preferable rather than learning in a classroom with a big number of students. It implies that learning in a cluster is enhancing them to learnon their pace and capability basis.

Learning in cluster can take place inside the classroom so named in-class-cluster. The purpose of such grouping is mainly to help students learn meaningfully in classical instruction. This does not mean at all to discriminate upon their rights for education service. Grouping is intended to provide differential learning strategies for academic enhancement. In-class-cluster requires thatdisabled children remain in the whole class most of the time to enhance social interaction with the normal peers.

Unlike in-class-cluster, pull-out cluster is made up of three of four learning disabled children with relatively homogeneous level of abilities (Gunarhadi *et al*., 2016). In the practice of instruction, the teacher begins by joining them in the general class of non-disabled peers. In most cases such children with disabilities experience various academic problems. For the sake of learning differentiation, this group is pulled out from the rest of the peers to have extra educational services. Academic scaffolding for disabled children in the pull-out cluster is normally tackled by a special education teacher. According to Gregory and Chapman (2009), learning together ina small group is more effective. More attention can be given to individual students for better acdemic achievement. Educational service in this cluster will enable each member of the small group of children with disabilities learn in their own paces under a careful control from the teacher. However, they need to return to the original classroom as to enhance social interaction. In addition to learning in a small group, these children learn on the individual basis of instruction.

Differentiated instruction is a typical educational service both in in-class-cluster and pull out cluster model. Differentiation of instruction serves as an extra help which is purposively designed and implemented in a way that students with learning disabilities learn appropriately on their individual needs. Hence, DIPOCM represents a differentiation of instruction which is required particularly when these students with learning disabilities are pulled out for certain scaffolding. DIPOCM is expected to provide better assistance for children with disabilities to learn measningfully in inclusive school setting.

MATERIALS AND METHODS

The study was carried out in Surakarta, Central Java. This is an explorative action research which was conducted through a lesson study format in inclusive classrooms. The sample consists of 27 inclusive school teachers and the mainstreamed disabled students in the respective schools. Questionnaire and observation were used as einstruments to collect data which are validated through interrating evaluation by teacher union forum. Research procedure was carried out by assessingthe scaffolding performance of master teachers in each of two different settings of ICCM and DIPOCM, respectively. The dependent variable was the learning behavior of students with disabilities and was analyzed both quantitatively and qualitatively.

RESULTS AND DISCUSSION

To collect data of the other variable, teacher's competence, a lesson format is prepared as instrument.

Table 1: Comparison of teacher's competence between ICCM and DIPOCM

Instructional settings aspects of skill	In Class Cluster Model (ICCM)		Diff. Instruct. Pull-out Cluster Model (DIPOCM)	
	Average score (%)	Average score (%)	Average score(%)	Average score (%)
Curriculum modification	4.17	83.4	4.41	85.7
Instructional modification	4.20	84.0	4.47	88.6
Learning behavior modificationat	4.11	82.3	4.47	8 8.6
Average	4.16	83.3	4.45	87.6

The format contains teaching strategy that will be used to enhance children's learning behavior in ICCM and Differentiated Instruction of Pull-out Model (DIPOCM). There are, at least, three ways the teacher can do to improve the students with disabilities to learn better. First, the teacher is required to consider the limited learning capacity of the students with disabilities. When this comes to burden them, it is the teacher responsibility to modify the learning material in such a way the the students learn the most appropriate work with joy.

Secondly, when the teacher finds the children get bored with possible competition atmosphere within the class, it is the signal that the teacher needs to change his or her teaching style in such a way that makes the students with disabilities better involved in learning. The third is the strategy that can make the students feel motivated that they behave positively towards learning.

Data of the teaching skill in the instructional settings of both of ICCM and DIPOCM is summarized in Table 1. From Table 1 in general, it is seen that teacher's competence in DIPOCM setting (87.6%) exceeds the one in ICCM (83.3%). It is indicated by the facts that teachers make and implement better skills in modification of curriculum, instructional modification and learning behavior modification.

As indicated in Table 1, the student's learning behavior is measured on basis of the teacher's skills of instruction in terms of pre-teaching preparation, instructiona strategy. DIPOCM is a strategy of differentiated instruction that requires teachers to find ways on how students with disabilities learn better. Differentiated instruction has made the teacher possible to help students with disability learn along the standard which already been set up for the whole class. A previous study has shown a general tendency that differentiated instruction for students with disabilities affect better performances in terms both academical and psychological points of view (Gunarhadi *at al*., 2016). As a part of differentiated instruction, teaching in DIPOCM means fostering the importance of unique learning styles among

students in the diversity of the classroom. It is expected that such students will be no longer left behind the rest of the peers in term of academic achievement (Gregory and Chapman, 2009). Lastly, DIPOCM enhances motivation building to learn how to learn among children with disabilities. By pulling out, a teacher in DIPOCM can accommodate the children learning needs.

The implemenatation of differentiated instruction: Differentiated instructional strategy is characterized by modification of learning material, strategy and student's learning behavior.

Curriculum modification: Learning material in ICCM (83.4%) was a fixed package delineated from the sillabus. In addition, the package was presented in the instruction. No choice for them except learning the given material in the same way of other peers in the big class. Unfortunately, this has caused specific learning problems for students with disabilities. They feel forceful to keep up with those of non-disabled. On the other hand, materials selection was more preferable (85%) than giving the whole package of materials in the syllabi. It is assumed that only certain selected materials can be given to certain group of students. In pull out cluster model, individual needs are accommodated by providing only selected items of the syllabi.

Instructional modification: In full inclusion, most student's learning problems (84%) have been accommodated by differentiated instructional methods. In cluster models, however, emphasizes of instructional methods (86.9%) are put on small group and individual needs. Scaffolding is typical service in this cluster model, either in class cluster or pull out model. One kind of instruction may not fit others depending on their learning styles (Gregory and Chapman, 2009). Individualized instruction is a typical modification of teaching strategy. Such a program is conducted on the basis of individual needs that can clearly be identified for further treatment. That is the reason why a individualized instruction fits well in DIPOCM instead of ICCM. Compared to classical service, individualized instruction is strongly believed to be more effective (Cooper, 2011).

Learning behavior modification: Modification of learning behavior in ICCCM (82.3%) is a bit more complicated as compared to the one in DIPOCM. That is reasonable, since the teacher has full responsibility of over all studentsin the whole class where students with disabilities are mainstreamed. On one side, the teacher has to admit that students with disabilities has more learning problems and hence, they need more assisstance in doing several learning tasks. On the other side, he/she has to be fair to the rest of students. Everyone in the class has to feel equal for the opportunities to succeed in learning. and from those of non handicapped students. Both students with and without disabilities should feel the joy of learning (Halvorsen and Neary, 2009). What makes it difficult for the teacher is how to make everone successful in learning including those with disabilities. That makes sense. Despite the number of students with disabilities is smaller part of the whole number of students in the classroom, they demand extra help in learning. That is the reason why managing behavior of learning in DIPOCM (88.6%) seems relatively less complicated. By pulling them out, students with disabilities get more specific service which is adjusted to their needs and capabilities. In addition, individual scaffolding for students becomes a typical characteristic of DIPOCM by giving the students opportunities to keep on task of learning meaningfully. The most recent research by Gunarhadi *et al*. (2016) has indicated that ICCM is more conducive to social interaction but less productive to academic achievement. The reason is that ICCM provides them with better interaction opportunities among the classmates. Nonetheless, they often feel cognitively underestimated within the big group of a classroom instruction. To avoid such a problem, the cluster consisting students with learning problems were pulled out and guided by a special education teachers. In addition from the psychological point of view, students with learning disabilities have such a close relation both with the pers and even the teacher that they feel motivated to learn through interactive discussion (Reeve, 2006; Pintrich, 2003).

CONCLUSION

The research draws conclusion that: through modification of teaching strategy, DIPOCM enables the teachers to adjust their instruction to the learning needs of the students with learning disabilities. This way enhances the students to learn on their own pace away from academic classroom competition. DIPOCM utilizes pull out strategy where they can learn in a small group that students with learning disabilities feel the joy of learning under a close relation both the peers and the teacher. DIPOCM enables the students with diasbilities to learn better on the individual basis of learning.

LIMITATIONS

It is admitted that DIPOCM can be conducted meaningfully only with the special education teacher availablein the respective inclusive school.

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