



A STUDY ON DIFFERENTIATED INSTRUCTION PRACTICES OF ARTS AND SCIENCE SECONDARY SCHOOL TEACHERS

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Abstract:

Instructional practices are the means by which students achieve learning outcomes. When designing a course or lesson begin by determining the learning outcomes. The main purpose of this paper is to study on differentiated instruction practices of arts and science secondary school teachers. The Sample consisted of a total of 100 Secondary school teachers randomly chosen from the Schools of Bellary Taluka. Out of the 100 Teachers, were selected. A rating scale titled "Differentiated Instructional Scale" constructed and validated by the investigator was used in the study. The result revealed that there is no significant difference in the Differentiated Instructional Practices of Arts and Science Secondary School teachers of Bellary Taluka and there is no significant difference in the Differentiated Instructional Practices of teachers of Bellary Taluka based on experience.

Key words: Differentiated instruction practices, science, secondary school teachers

1. Introduction:

In India from the Traditional classrooms to the Modern classrooms, Group instructional Technology has been dominant. Teachers through the years have been instructing the groups in a way that "one size fits all". Such instruction has been proved to be futile, especially in the present educational set up. Children vary in their Physical shapes and sizes as well as interests, learning profiles, and readiness levels. In a classroom Some students are two and three years ahead of grade level in the subject to be taught; others are that far behind. Some express prior knowledge and interest in the topic and are eager to learn more. Others are unfamiliar with the tactic. and don't seem interested at all. A few have learning disabilities. Some are in various stages of learning. But the teacher is engaging all of these students and teaching them in the same way. This could be addressed by differentiating the instruction. Children in today's schools are more diverse than ever before, varying in cultural backgrounds, learning styles, academic readiness, and social maturity. Educators have responded to this diversity by

advocating a differentiated classroom, arguing that students' educational experiences should be driven by individual needs, interests, and abilities (Gallagher, 2002; Tomlinson, 2001). When curriculum adjusts to fit individual learners or groups of learners, whether in the classroom or online, this is called differentiated instruction. It is an approach to teaching that acknowledges people have multiple paths for learning and for making sense of ideas. Differentiated instruction has swept through the schools in the last decade, picking up many dedicated advocates.

Not all students are alike. Based on this knowledge, differentiated instruction **applies** an approach to teaching and learning that gives students multiple options for taking in information and making sense of ideas. Differentiated instruction is a teaching theory based on the premise that instructional approaches should vary and be adapted in relation to individual and diverse students in classrooms (Tomlinson, 2001). The model of differentiated instruction requires teachers to be flexible in their approach to teaching and adjust the curriculum and presentation of information to learners rather than expecting students to modify themselves for the curriculum. Many teachers and teacher educators have recently identified differentiated instruction as a method of helping more students in diverse classroom settings experience success. Differentiated Learning and Instruction, being such an effective strategy in the existing educational scenario, the present study has made an attempt to descriptively survey the present status of Differentiated Instructional practices of Secondary school teachers and also to locate the differences, if any, among teachers, based on years of experience and subjects taught by the teachers.

2. Differentiated Instruction:

To differentiate instruction is to recognize students' varying background knowledge, readiness, language, preferences in learning and interests; and to react responsively. Differentiated instruction is a process to teaching and learning for students of differing abilities in the same class. The intent of differentiating instruction is to maximize each student's growth and individual success by meeting each student where he or she is and assisting in the learning process.

As instructors when we differentiate instruction in the classroom, we are saying that we know students come to us with different backgrounds, preferences and needs ideas (Hall, 2002; Reis et al., 1988; Sizer, 2001; Tomlinson, 2001; Tomlinson & Allan, 2000; Tomlinson & McTighe, 2006; Willis & Mann, 2000). Differentiated instruction is an approach to teaching and learning for students with different abilities in the same classroom. The theory behind differentiated instruction is that teachers should vary and adapt their approaches to fit the vast diversity of students in the classroom. (Tomlinson, 1995, 1999; Hall, 2002).

Teachers who differentiate instruction recognize that students differ in many ways, including prior knowledge and experiences, readiness, language, culture, learning preferences, and interests. They realize they must change the way they teach in order to reach all students. Through differentiated instruction, students will get to the same place, but take different paths. Tomlinson notes that schools sometimes deal with differences inside the classroom by sending some youngsters, often the so-called troublemakers and learning disabled, out of the regular classroom for their education. But, our choice

isn't between sending them down the hall or doing nothing. We can differentiate in the regular classroom. To clarify what differentiated instruction is, it is necessary to note a couple of things it specifically it is not.

- a. When assignments are the same for all learners, but the level of difficulty of assignments is varied for certain students than others, and students who finish early play a game for enrichment — the class is not differentiated (Tomlinson 1995).
- b. Differentiated instruction has nothing to do with "dumbing down" or "watering down" instruction or the standards to make it easier for some students.
- c. Differentiated instruction also is not individualized instruction, which proposes to design materials and tasks for the particular needs of each student. Differentiated instruction suggests teachers look at "zones" in which students cluster so they can offer three or four routes to a goal on a given day.

3. The Principles of Differentiated Instruction:

There is no "how to" recipe for differentiation because teachers who value the individual can translate it into classroom practices in many ways. However, there are certain broad principles and characteristics involved in establishing a differentiated instruction classroom, according to Tomlinson (2000):

Assessment is ongoing and tightly linked to instruction. Teachers constantly gather information about how their students are doing at a given point in order to plan instruction.

Teachers ensure "respectful activities" for all students. Each student's work should be equally interesting, appealing and focused on essential understandings and skills. Teachers and students should see all tasks as worthwhile and valuable.

Flexible grouping is a hallmark of the class. Teachers design instruction to allow all students to work with a variety of peers over a period of days. Sometimes students work with peers on the same level of readiness and sometimes with different levels of readiness. Sometimes they work with peers with similar interests, sometimes with peers with different interests; at other times, the students work with peers who learn as they do, sometimes randomly and often with the class as a whole.

4. Building Blocks of Differentiated Instruction:

The research in progress of Forsten, Grant and Hollas (2011), have identified the "building blocks" of successful differentiated instruction. These elements address the needs of culturally and linguistically diverse students because they reflect an approach to teaching and learning that requires teachers to do things differently for different children. The researchers suggest these building blocks and invite teachers to add elements to each.

- a. **Knowing the Learner:** Teachers need to know as much as possible about their students to teach them well, including learning styles and pace, multiple intelligences, personal qualities such as personality, temperament and motivation, personal interests, potential disabilities, health, family circumstances, and language preference.

- b. **Traits of a Quality Teacher:** The teacher believes all students can learn, has the desire and capacity to differentiate curriculum and instruction, understands diversity and thinks about students developmentally, is a risk taker, is open to change and well-versed in best practices, is comfortable challenging the status quo, knows what doesn't work, is able to withstand staff dissension that may arise.
- c. **Quality Curriculum:** Curriculum needs to be interesting to students and relevant to their lives, appropriately challenging and complex, thought provoking, focused on concepts and principles and not just facts; focused on quality, not quantity; stress depth of learning, not just coverage.
- d. **Classroom Learning Environment:** The ideal learning environment includes a balanced student population, appropriate grade and program placement, priority seating based on student needs, has a reasonable class size, practices positive discipline, arranges furniture to promote group work, uses flexible grouping, and has adequate teaching supplies.
- e. **Flexible Teaching and Learning Time Resources:** Includes team teaching, block scheduling, tutoring and remediation within school, before and after-school programs, homework clubs, multiage/looping classrooms.
- f. **Instructional Delivery and Best Practices:** Includes flexible grouping, cooperative learning, learning stations and centers, web quests, tiered assignments, individual contracts, literature circles.
- g. **Assessment, Evaluation and Grading:** Includes portfolios, observations, skills checklists, oral and written reports, demonstrations, performances, work samples, models, taped responses, drawings, graphs and posters, quizzes and tests, and standardized tests.

When teachers teach students the same thing in the same way, usually the result is that some students "get it" and some don't. To gain a better understanding of what differentiated instruction is, it is helpful to compare traditional and differentiated classrooms. The chart below highlights some differences (Tomlinson, 1999). Examine the approaches between the typical traditional classroom and a differentiated classroom.

5. Objectives:

- a. To study the Differentiated Instructional Practices of Secondary School teachers of Bellary Taluka.
- b. To find the difference in the Differentiated Instructional Practices of Arts and Science Secondary School teachers of Bellary Taluka.
- c. To find the difference in the Differentiated Instructional Practices of Secondary School teachers of Bellary Taluka based on their teaching experience.

6. Hypotheses:

- a. There is a significant difference in the Differentiated Instructional Practices of Arts and Science Teachers.
- b. There is a significant difference in the Differentiated Instructional Practices of Secondary School teachers based on their teaching experience.

7. Method:

7.1. Sample:

The Sample consisted of a total of 100 Secondary school teachers randomly chosen from the Schools of Bellary Taluka. Out of the 100 Teachers, fifty were Arts teachers teaching Social Science and Languages, and the other fifty were Science teachers teaching Physical Science, Biological Science and Mathematics. Further they were chosen based on their teaching experience, fifty teachers with less than ten years of teaching experience and the other forty with ten or more than ten years of Teaching Experience.

7.2. Tool used:

A rating scale titled "Differentiated Instructional Scale' constructed and validated by the investigator was used in the study. The tool covered five components of Differentiated Instruction - Knowing the Learner: Family background, Learning Process, Multiple Intelligence, Sociability, Emotional stability, Interest, Potential Disabilities, Learning Preferences; Traits of Teacher, Curriculum, Classroom learning Environment, and Assessment.

8. Analysis of the data:

8.1. Differentiated Instruction Teacher Practices:

Differentiated Instruction Teacher Practices data collected from the sample consisted of the following Mean and Standard Deviation values for each of the following components as given in Table-2:

Table - 1:
Components, number of items, Mean and SD values of Differentiated Instruction Teacher Practices

Sl. No.	Components	No. of Items	Mean	SD
1	Emotional stability	5	11.26	3.37
2	Interest	5	9.43	3.76
3	Potential Disabilities	5	11.93	3.55
4	Learning Preferences	5	11.12	3.31
5	Traits of Teacher	5	19.88	6.62
6	Curriculum	5	7.93	2.9
7	Knowing the Learner Family	5	13.13	2.85
8	Learning Process	5	11.01	2.87
9	Multiple Intelligence	5	12.07	2.7
10	Sociability	5	10.6	2.93
11	Classroom learning Environment	5	7.72	2.67
12	Assessment	5	11.59	4
	Total	60	137.51	25.8

From the Table-1 following conclusions are made:

- Differentiated Instructional Practices of Knowing the learner is not satisfactory. Teacher practices of knowing the interest of learners needs substantial improvement.
- It is also seen that the awareness of Traits of the Teacher required for Differentiated Instruction is high compared to that of the other components. The awareness of Classroom Environment required

for Differential Instruction is very low and hence its practices are unsatisfactory.

8.2. Differentiated Instruction Teacher Practices - Arts and Science teachers:

The objective 2 and the related hypothesis were tested using appropriate 't' test; the results are given in Table-2.

Table-2:

Number (N), Mean (M), Standard Deviation (SD), 't' value and significance of the scores on Differentiated Instruction Practices of Arts and Science secondary school teachers

Sl. No.	Number (N)	MEAN	SD	't' Value	Significance (0.01) level
1	50 (Arts)	144.49	18.12	1.29	NS
2	50 (Science)	152.11	30.50		

From the Table-2, it is concluded that there is no significant difference in the Differentiated Instructional Practices of Arts and Science Secondary School teachers of Bellary Taluka.

8.3. Differentiated Instruction Teacher Practices — Based on Experience of Teaching:

The objective 3 and the related hypothesis were tested using appropriate 't' test; the results are given in Table-3.

Table-3:

Number (N), Mean (M), Standard Deviation (SD), 't' value and significance of the scores on Differentiated Instruction Practices of secondary school teachers based on Experience of Teaching

Sl. No.	Number (N)	MEAN	SD	't' Value	Significance (0.01) level
1	50 (Less than 10 years)	148.40	29.04	0.842	NS
2	50 (more than 10 years)	146.65	17.61		

From the Table-2, it is concluded that there is no significant difference in the Differentiated Instructional Practices of teachers of Bellary Taluka based on experience.

9. Conclusions:

From the past Teachers have been instructing the groups in a way that "one size fits all". Such instruction has been proved to be futile, especially in the present educational set up. There are ample of research evidences that prove Differentiated Instruction is an effective strategy for group instruction. The present study investigated the present status of the Differentiated Instructional Practices among secondary school teachers is unsatisfactory. In addition it shows no difference in Differentiated Instructional Practices among teachers based on subjects taught and teaching experience. Hence a paradigm shift is required in the future classrooms. The teachers should be given awareness and training in following the practices given below to face the challenges of modern classrooms.

a. Differentiate standards-based instruction. Standardized learning goals do not imply "one-size-fits-

all" instruction. Differentiation opens multiple paths to help students reach their goals.

- b. Engage students in setting their own learning goals. Learning contracts, personal goal-setting, and other strategies help students recognize that they have a stake in their own learning.
- c. Build on what students know. Recognize that students build new understanding onto what they already know. Take time to assess their individual starting points, then provide students with a choice of ways to engage with key content.
- d. Engage multiple learning styles. Recognize that students' learning styles vary widely and provide them with opportunities to build on their strengths.
- e. Use grouping wisely. Think about how to group students effectively for different learning activities. Avoid stable homogenous grouping, which can be a detriment to struggling students. Support group efforts by teaching students to mediate conflicts and manage their time effectively. Help all students find a way to contribute to the group's success.
- f. Engage all learners. Teachers are encouraged to strive for the development of lessons that are engaging and motivating for a diverse class of students. Vary tasks within instruction as well as across students. In other words, an entire session for students should not consist of all drill, and practice, or any single structure or activity.
- g. Teach skills for success. Reinforce learning skills that will help all students be successful learners, such as note taking, summarizing, research strategies, and collaboration.
- h. Facilitate success. Provide appropriate support and classroom management to facilitate success in a student-centered classroom.
- i. Provide opportunities for student choice. Give students ample choices and encouragement to pursue projects that interest them as part of regular class work. Provide students who are ready for more challenges with opportunities to tackle independent research projects.
- j. Vary assessment strategies. Use multiple assessments—including portfolios and performance assessments—that will allow all students to demonstrate what they have learned.

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