

Data driven instructional practices in classrooms

Author – Kunnavakkam Vinjamur Heama

Padma Seshadri Bala Bhavan Senior Secondary School, Chennai, India

Abstract - An analysis of the pros and cons of data driven instruction in classroom.

It is often observed that the students non performance or poor academic performance is linked to poor teaching strategies or to the low cognitive ability of the learner. This paper attempts to stress the importance of collecting and evaluating data and use that to realign our instructional and assessment strategies to synchronise our learning objectives with the desired learning outcomes, thereby enhancing the academic performance of learners.

Index Terms – Data, Assessment, Teaching strategies, technology, innovation, data analytics, pedagogy

Introduction

It is all about DATA – Data Accountability and Trust Act

Data driven instruction involves collecting information about the students in each classroom, creating a database and using that information to monitor the effectiveness of the teaching strategies and the desired learning outcomes in students.

The work is primarily done by the teachers themselves, but it is the responsibility of the school leadership to build a culture of data driven instruction in teachers.

Methodology

Every classroom comprises students with diverse needs, different learning styles and levels of understanding. The needs may be emotional or pedagogical. Factors like attendance, medical condition, parents' involvement and socio economic factors may affect students' performance. Data driven instruction attempts to take all of this information into account when building curriculums, designing teaching strategies and assessment plans. The steps involved in data driven instruction are:

Data collection: Test scores of exams which may range from informal class quizzes to standardized tests, classroom polls, project presentations, laboratory activities, classroom interactions are some of the sources for our database along with personal information like economic status and health condition of the learner.

Data analysis: The data is then filtered to weed out the non essentials from essentials. Then there is a search for a pattern if any. A root cause analysis may be done either individually or as a team. Inferences are drawn and conclusions are made.

Follow up : If the learners have achieved the desired learning outcomes, then the teacher can move to the next topic, or recircle to re-teach certain concepts to the learners. Informal tests scores and standardized test results only tell us the knowledge level of the students. We have to dig deeper to understand the "why" and "how" of the situation.

Gathering the necessary data to answer the "what", "why", and "how" is the basis for data driven instruction.

Strategies for Data driven instruction

1. Encourage teachers to collaborate with each other.- Teacher collaboration is a form of professional development. Teachers can build off of each other's ideas during brainstorming sessions to create an even better learning experience in the classroom.
2. Review the effects of re-teaching - It is important that teachers revisit their assessments to ensure that students are really getting the sense of the information. The entire dataset of your students gives you the story of your teaching.
3. Build a schedule for data analysis - A flexible schedule is to be drawn so that the teachers do not get exhausted and the process is smooth and continual.
4. Set goals that are visible for students - This can be done by creating visual goals and allowing students to measure their own progress.

The teachers must plan time for student self-analysis. Give the learners the opportunity to look back on their work, see what they

have accomplished and develop a growth mindset.

5. Collect only the data you need - The teachers have to make sure that the data collection processes center on information that is

essential. It is very important our assessments must be standardized. So to do this the teachers must be given specific guidelines on

how to collect and analyze student data.

PROS

Data can be used to inform about the continuous improvement or otherwise in student learning. This tool can be used during parent teacher discussions to review student's progress in classroom.

Teachers can use the data to meet the individual needs of students by realigning the appropriate strategies on an individual basis or for a larger group of learners.

When teachers are engaged in data driven instruction students have positive academic outcomes.

Students can be taught to use there own data to make their own learning goals. This strategy can be used across content areas.

Data can help teachers find the root of a students' academic deficit. This actually helps in remedial teaching which paves way for increased academic grades.

Using data to drive instruction can improve teacher quality and curriculum development.

CONS

Teachers must be technologically, statistically, and pedagogically proficient to successfully implement data driven instruction.

Effective professional development must be available to all teachers.

Teachers are not mentally prepared to effectively implement this strategy for various reasons.

Lack of confidence in using the data creates anxiety in teachers making them less likely to use the strategy.

Teachers do not have the time or resources available to effectively use the data Teachers feel anxious and inadequate when they see low test scores of their students and tend to reduce the quality of the evaluation procedures.

Very often the validity of the data becomes questionable as the teachers do not align the Learning outcomes with their assigned tasks to children.

It is also observed that in subjects like Math and Science the instructional strategies are mainly procedural perspective and not cognitively demanding. This sometimes can invalidate the data and the actual ability of the learner.

Role of school leaders

The three important pillars in a successful classroom would be

1. Curriculum
2. Instructional strategies
3. Data

The role of the school leader is to empower all the teachers with the importance of aligning these three pillars in the classroom to get the desired outputs. This can be done by asking the teachers to exhibit their tasks assigned to learners during a meeting.

Using Bloom's Taxonomy and Webbs's Depth of Knowledge, there can be a brainstorming session on whether the teacher's tasks align with the desired learning outcomes. Display of students' works is another effective way to analyse if our teaching strategies are in the right place.

Conclusion – Realigning the three pillars – Curriculum, Instructional strategies and Data is of primary importance to achieve our desired goals as teachers and the vision of the school as well. This data driven approach will help us to stop blaming the students for non/low performance and realise that the learning outcomes are a collective responsibility of the learners, students and the parents.

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