Jhon Carlo Castro   **BSIS4-B**

Literature Review: Data-Based Decision Making in Education

Introduction

Decision making (DM) in the educational field has changed significantly. The process has changed from being intuition-driven to being supported by data and evidence-based practices. Data-driven decision making (DDM) is increasingly considered as an approach to improve the quality of teaching, reduce the gaps in learning, and raise the level of accountability. Visscher (2021) brings out six real-life examples of Dutch interventions where data-based decision making can have a direct impact on student performance, provided that it is implemented correctly. The review examines the function of DM in overcoming educational problems that have been around for a long time and gives an outline of the methodological approaches to effectiveness evaluation.

Addressing learning gaps

One of the biggest problems in education is the difference between low- and high-achieving students, which is exacerbated by the fact that the teaching is designed in a one-size-fits-all manner. Dutch data-based decision making (DBDM) interventions have dealt with this issue by using assessment data to group students. Those with low achievement were given extended instruction and targeted support, which led to progress that could be measured (Visscher, 2021). Teachers began to rely less on guesswork and more on evidence-based approaches when they used test data for setting goals and modifying lessons, for instance, by focusing on fractions when the weak areas appeared. Regular formative assessments gave up-to-date feedback, which enabled teachers to change their methods during the year instead of waiting for final exams. Professional development and coaching not only elevated the teacher's capabilities but also their confidence in data analysis, thereby, creating a culture of collaboration and practice led by evidence. On the school and district levels, combined data were used to decide resource allocation, helping leaders to direct the areas for training, staff, and materials that have the most need which in turn results in making the decisions more efficient and fair.

Methodology

Visscher (2021) examined six Dutch DBDM interventions by experimental and quasi-experimental designs, which contrasted intervention and control schools, with the results being assessed through standardized mathematics and reading tests. The evidence base was made up of longitudinal data from Student Monitoring Systems, teacher

assessments, and standardized tests. The teachers were given training workshops to improve data literacy, set goals, form instructional groups, and adapt lessons, with classroom coaching to support the launch of the new methods in the real world.

Through classroom observations, teacher logs, and checks on decision-making cycles of analyze, decide, act, and evaluate, the monitoring of implementation was carried out. Student achievement was measured in effect sizes, educational outcomes of subgroups were examined to determine whether there were any positive effects of equity, and teacher capacity was evaluated through surveys and classroom observations. This method generated strong indications of student improvement while also revealing how teacher development and structured processes contribute to effective implementation.

Conclusion

The case from Visscher (2021) clearly shows that DBDM is at the very core of solving a number of educational issues that have been around for a long time: it lessens the learning gap through the use of differentiated instruction, promotes the quality of instruction by basing the decisions on the data, establishes the feedback loops that make the teaching adaptive, supports the teacher capacity, and at the policy level, helps to allocate resources in a more equitable way. The research methods—experimental designs, longitudinal test data, professional development, and monitoring—make it possible to believe the claim that DBDM, when implemented with fidelity, can change the educational practice. Nonetheless, the results also point out that the degree of success is predicated on the teacher training, the continuous coaching, and a supportive culture that enables instruction to be informed by data rather than being a burden.

Reference

Visscher, A. J. (2021). The truth about data-driven decision making significance in education: The proof from six Dutch dBDM interventions. Studies in Educational Evaluation, 69, 100842.

https://doi.org/10.1016/j.stueduc.2020.100842