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Better quality of school development

with Skolanalys

Thanks to Skolanalys, the schools in the city of Helsingborg have gained new insights and a better understanding of how they can adapt their activities to the pupils' needs. With the help of Skolanalys, data has been collected and analyzed, which has enabled the schools to identify new measures and challenges. At the same time, the systematicity of the data analysis has increased the transparency of the quality work and the possibility of a more equal school.

What does the research say

about data analysis in school?

> Studies have shown that by using and bringing together different types of data, you get a better understanding of the conditions and processes that are connected to the pupils' learning[1].

In data-informed school development, not only study results are examined, but also demographic and family related factors, attendance, motivation and attitudes as well as school and teacher factors. In this way, different types of data can be better used to identify challenges, determine measures and follow up efforts, which has been shown to have positive effects on student learning and performance[2].

According to the Swedish National Agency for Education, the differences in pupils' knowledge development and results are increasing. Their socio-economic background turns out to have greater significance for their knowledge results.

Many students continue to fall behind and every year one in seven students leaves primary school without a qualification for upper secondary school[3].

Something that has proven to be a possible solution is to use artificial intelligence in school, according to the National Board of Education. But they believe that more understanding is required from the teachers. Not only can AI be used to improve teaching and pupils learning, it can also help teachers understand the opportunities and challenges that can be realized in the near future. It can be used to track pupils progress, understand their strengths and difficulties, and provide quick feedback in the form of explanations and appropriate assignments.

When pupils use these systems, large amounts of data are created that can be used to analyze pupils learning and can provide both instructional strategies and feedback[4].

1 Mandinac & Schildkamp, 2021.
2 McNaughton, Lai, and Hsajo 2012; Poortman and Schildkamp 2016; Van Geel et al. 2016.
3 School Board, 2023. The Norwegian School Board's assessment of the situation: The Swedish school does not give all students the same opportunities.
4 School Board, 2020. Artificial intelligence in schools requires increased insight on the part of teachers.

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raises the quality of teaching

Nationally, a pattern can be seen that indicates an increasingly unequal school, while at the same time there is a great shortage of qualified teachers.

Students are all different and have different backgrounds, conditions and needs for their learning. Studies show, for example, that children from socioeconomically disadvantaged areas perform worse in school and that many schools are segregated.

Getting more students to reach the knowledge targets at school is one of the city of Helsingborg's prioritized challenges - and they use Skolanalys to cope with it. New knowledge about need-based teaching and digital technology creates opportunities.

With Skolanalys...

- Children and students can achieve their maximum potential

- Goal achievement in school can increase

- The eligibility can increase, which can increase the application to upper secondary school

- A school is created that is based on science and proven experience

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A holistic way of thinking

about learning and teaching

In schools, there is a long tradition of using grades as an indicator of how well students succeed and how well schools manage to run a quality business.

> But using grades as the only indicator is problematic, because grades are not given in all classes and several reports show a lack of equivalence in grading.

Therefore Skolanalys can be used with advantage. The data analysis offers a holistic way of thinking about learning and teaching with the possibility to ask more questions and gain new insights.

In school operations, data analysis can contribute to investigating the following questions

What do the relationships between school factors, student performance and evaluations look like?

(Eg.,, staff turnover, sick leave and teacher density)

What are the connections between attendance, evaluations, teachers' qualifications and results at municipality and unit level?

How can the school factors be adjusted to compensate for socio-economic background?

What do the connections between the students' socio-economic background and school factors look like?

How can the quality in the business be improved?

How can implemented improvement efforts be followed up?

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Decisions based on data

instead of gut feeling or preferences

> According to the city itself, the data analysis has increased the transparency of their school operations by providing objective data that they use to communicate results and make decisions. It has contributed to a more efficient and transparent decision-making process where decisions are based on objective data instead of gut feeling or preferences.

They have used Skolanalys to identify trends and patterns on an overall level, which has given them a more efficient use of resources. They have gained a better understanding of the effects of absence on goal achievement and the relationships between teacher density, teacher qualifications and results. They have also discovered how staff turnover and sickness absence co-vary with the students' background.

> The city of Helsingborg also feels that they were able to evaluate the effects of the teaching in a more dynamic way, as opposed to using only grades as an indicator.

The city of Helsingborg also feels that they were able to evaluate the effects of the teaching in a more dynamic way, as opposed to using only grades as an indicator. The preschools have also been given a better opportunity to communicate the results and demonstrate their effectiveness to various stakeholders, such as municipal support functions, political decision-makers and society at large.

Skolanalys was developed over three years

The city of Helsingborg wanted to test the possibilities of analyzing school data with the help of AI. At first they only used simple tools but they quickly proved to be inadequate. That's why School Analysis came into the picture. Then data could be collected and analyzed from preschool and elementary school in separate modules. The demands on quality and development in preschool are high. The goal is for every child to have the best possible conditions for development and learning. Even so, the issue of evaluating preschool children's learning and skills is controversial. The primary school, unlike the preschool, has a lot of data to draw on and the possibility to go back in time several years. The challenge has therefore been to understand which factors can explain successful school performance, which can be found at the individual level, the family level and the school level.

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"Skolanalys challenges our way of thinking and acting"

The results from Skolanalys in Helsingborg's city schools confirm some myths that exist in the school, but challenge other myths.

> School analysis can, for example, show how absence affects school results on a deeper level than the previous correlation analyzes that were done. Admittedly, it has shown that absences generally have a negative impact on school results, but Skolanalys has been able to show that this is not true for all student groups and subjects. Another example concerns the impact of teacher qualifications on school results.

> Skolanalys has been able to show that the teachers' experiences of the school's governance and management, as well as the collaboration with colleagues, turn out to have a stronger predictive value for the school results than the teacher's qualification has.

At the same time, Skolanalys results also show that the students' socio-economic background is the factor that most affects the students' performance. The percentage of students who are approved to apply to upper secondary school decreases the most when the percentage of students with a foreign background increases, while the average grade point increases the most when the percentage of parents with academic education increases.

> Thanks to these results from Skolanalys, the city of Helsingborg has changed its way of thinking regarding measures to promote attendance and how they can be adapted to different student groups and to the conditions at different schools.

The city of Helsingborg also thinks that Skolanalys helped them gain a different understanding of how to work compensatory with the students' socio-economic backgrounds.

The city of Helsingborg has decided that **all preschools and schools will use Skolanalys.**

ⓘ The development of a high school module in School Analysis is underway. Then we will cover children and students' entire schooling. This creates new opportunities to understand how to create conditions for lifelong learning for all children and students.

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