A3Learning

Welcome

The A3Learning project

Learning Anywhere, Anytime, from Anyone

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Module 4 - Analyzing Evidence for Educators

Unit 4.1 – Foundation of evidence mastery

Digital Evidence

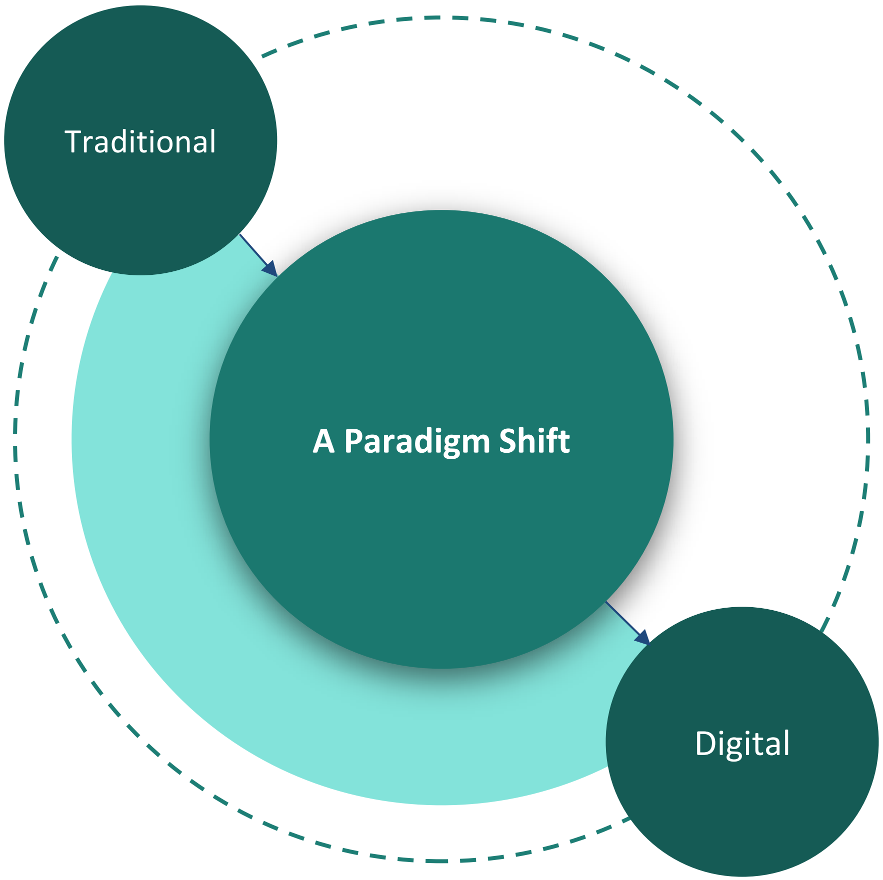
Davide Diletti – Consorzio Ro.Ma.

Agenda

Next slides will present:

- Digital evidence;
- Data from Quizzes;
- Digital evidence from summative assessments;
- Critical analysis of digital evidence;
- Comparative analysis of student' performance data;
- Comparative analysis of student' performance in Science

Assessment models



Digital evidence

Depending on how teachers choose to evaluate students (whether it's ongoing feedback, final assessments, or mid-term evaluations), you can also find digital records of students' performance.

What is doubtless, is that to gather and analyse students’ digital evidence, teachers need to prepare their assessments through digital tools.

And that’s the real challenge that the digital shift may pose to teachers.

Digital evidence

In this unit, some tips will be provided to recognise digital evidence and use them to gain insights regarding students' performance.

Either data from quizzes or video recordings of homework, teachers can use it to gain knowledge of students’ performance, but also the effectiveness of teaching.

Data from Quizzes

Quizzes are easily adaptable and effective for formative assessment.

The goal is not to provide judgements of students, or formally evaluate their knowledge of a certain topic.

Rather, teachers can use results from quizzes to validate their teaching styles, its effectiveness

Digital evidence from summative assessment/1

Teachers can assign students the production of a written text on a certain topic, through Google classroom, specifying the requirements (i.e.: number of maximum characters, deadline, evaluation criteria).

Digital evidence from summative assessment/2

Digital evidence refers to:

- **Submission date and time**: You can see when the assignment was assigned and when it was completed. This helps you monitor students' punctuality and time management.
- **Multiple Versions**: Google Classroom keeps track of document revisions and versions. You can see how many changes have been made to the text over time, which can provide insights into students' revision and engagement in improving their work.

Digital evidence from summative assessment/3

- **Student Activity on the Document**: You can see who has viewed the document and who has contributed to the text. This can give you an idea of how students are collaborating, if applicable, or how much they are working individually.
- **Writing Style and Originality**: You can use tools like Google Docs to assess the text's originality and writing style. Even though you don't have access to plagiarism detection software through Google Classroom directly, you can always copy and paste the text into dedicated software to check its originality, if necessary.

Digital evidence from summative assessment/4

- **Multimedia Attachments:** Students may include multimedia attachments such as images, videos, or slide presentations in their work. These can enrich the content of the text and demonstrate understanding in ways other than just written text.
- **Sharing and Collaboration**: If you have allowed sharing and collaboration on documents, you can see who has collaborated and how. This can be useful in assessing students' teamwork skills.

Critical analysis of digital evidence

Gathering digital evidence over time and through different tools can facilitate the comparative assessment of students' data from different perspectives:

- Compare diverse sources or different time periods to unveil trends, anomalies and correlations.
- Formulate probing questions about the data, such as "Why did this trend emerge?" or "What factors might be influencing this pattern?"

Comparative Analysis of Student Performance Data

Let's say the teacher wants to analyze the performance of their students on math assessments over two consecutive school years.

- **Data Collection**: The teacher gathers test scores from math assessments administered at the end of each school year for two years (Year 1 and Year 2).
- **Data Comparison**: The teacher compares the average scores of students in Year 1 with those in Year 2. They also examine individual student scores to identify any significant changes.
- **Identifying Trends**: Upon comparing the data, the teacher observes that the average math scores in Year 2 are slightly lower than those in Year 1. Additionally, they notice that while some students maintained consistent performance levels, others experienced significant improvements or declines.

Comparative Analysis of Student Performance Data

- **Analysis of Anomalies**: The teacher investigates anomalies such as students who showed drastic improvements or declines in performance. They examine factors such as attendance, participation, and external influences (e.g., changes in personal circumstances or learning environments) to understand the reasons behind these anomalies.
- **Correlation Analysis**: The teacher explores potential correlations between student performance and various factors, such as classroom instructional methods, homework completion rates, or participation in extracurricular activities. They use statistical tools or observation to identify patterns and correlations.

Comparative Analysis of Student Performance Data

- **Critical Thinking and Reflection**: Based on the comparative analysis, the teacher encourages students to engage in critical thinking by reflecting on their own learning experiences. Students are prompted to consider factors that may have influenced their performance and to develop strategies for improvement.
- **Intervention and Adjustment**: Armed with insights from the comparative analysis, the teacher devises targeted interventions to support students who are struggling and to further challenge those who are excelling. This may involve adjusting teaching methods, providing additional resources, or offering personalized guidance.

Comparative Analysis of Student Performance in Science

Student: Sarah

Subject: Science

Grade Level: 8th Grade

- **Data Collection**: Throughout the semester, Sarah's science teacher administers both formative and summative assessments.
  Formative assessments include weekly quizzes on key concepts, conducted using online platforms like Kahoot! or Google Forms. These quizzes assess Sarah's understanding of topics immediately after instruction.
  Summative assessments consist of unit tests administered at the end of each unit, assessing Sarah's overall comprehension and application of concepts.
- **Data Comparison**: The teacher collects data from Sarah's performance on both formative quizzes and summative tests over two units: "Ecology" and "Cell Biology."
  They compare Sarah's average scores on formative quizzes with her scores on summative tests for each unit to identify any discrepancies.

Comparative Analysis of Student Performance in Science

- **Identifying Trends**: Upon comparing Sarah's scores, the teacher observes that while Sarah consistently performs well on formative quizzes throughout both units, her performance on the summative tests varies.
  Sarah tends to score higher on the "Ecology" unit summative test compared to the "Cell Biology" unit summative test.

- **Analysis of Anomalies**: The teacher investigates the reasons behind the difference in Sarah's performance on formative quizzes versus summative tests.
  They consider factors such as Sarah's study habits, engagement in class discussions, and level of preparation for summative assessments.

- **Correlation Analysis**: The teacher explores potential correlations between Sarah's performance on formative quizzes and her performance on summative tests.
  They analyze whether consistent high performance on formative quizzes translates into similar performance on summative tests.

Comparative Analysis of Student Performance in Science

- **Critical Thinking and Reflection:** The teacher engages Sarah in reflective discussions about her learning process.
  Sarah reflects on her study habits and realizes that while she performs well on quizzes, she needs to allocate more time for comprehensive review before summative assessments.
- **Intervention and Adjustment:** Armed with insights from the analysis, the teacher provides Sarah with targeted support.
  They offer study tips, additional resources, and personalized review sessions to help Sarah bridge the gap between her performance on formative and summative assessments.

Through this process, Sarah and her teacher not only identify areas for improvement but also develop strategies to enhance her overall learning experience in science. By integrating both formative and summative assessments, the teacher ensures a holistic approach to monitoring Sarah's progress and supporting her academic growth.

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