

# AiX-Analytics: Analytics Tool at RWTH Aachen University

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**Abstract:** In this paper we present the AiX-Analytics prototype. The tool is a web-based prototype that visualizes usage statistics and analytics of the learning platform's log data. The prototype has three parts: data management, RESTful application engine, and user interface(s). The data management receives, cleans, analyzes and aggregates the learning platform logs, and saves the derived results and analytics. The RESTful application engine is a Web API application that provides data and analytics to the front-end (UI). The user interface provides a set of visualizations, which interactively presents the learning data for different stakeholders in higher education scenarios. The user interface has two main aspects. The first is intended for the university's administration and eLearning coordinators, in order to help in understanding how different faculties and institutes use the learning platform. The second aspect focuses on individual courses, where the teaching staff and students can take a look which modules, when, and how were used during the ongoing semester(s). The presented work is an ongoing research project at the Learning Technologies Research Group at RWTH Aachen University.

**Keywords:** Learning Analytics, Decision Making, Learning Data

## 1 Introduction

This paper presents an analytics tool that provides insights about how students use the platform, resources they appreciate the most, whether they use different devices while learning, and provide insight how they learn with the platform. On the other side, the administration can have an overview how the different faculties use the modules of the learning platform, detect general trends, or invest more resources to improve the eLearning experience. The tool's target audience is divided into two main groups: teachers and students, and administration. This distinction is important because these two main groups have different expectations and goals, although the same data is the basis for the visualizations and indicators. The main emphasis of this prototype is to provide easy-to-understand visualizations of learner-data, and compel the audience to use it in their daily activities.

## 2 Professors and Students

This prototype builds upon a knowledge gained through previous research on different Learning Analytics prototypes developed and provided as pilot projects at RWTH Aachen

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University [Dy14],[Dy12]. The visualizations in the tool are interactive and enable the user to filter out specific parts, select and zoom-in on other parts of the visualizations. The analytics and visualizations help the teacher to understand how the students use the course and the learning resources. Hence, this prototype provides basic analytics and insights to each course, to inspire both teachers and students to reflect upon their activities in the learning process.

### 3 Data Driven Decision Making

Decision making is usually based on intuition, presumption, and on accumulated experience, without any specific data or analysis[CDO07]. We implemented a prototype which focuses on the entire platform, its modules, different faculties, and different semesters. The visualizations are interactive and enable the user to focus on specific parts of the visualization. The main idea behind this prototype is to provide actionable intelligence and help the administration in understanding how different faculties learn and use the platform, in order to better distribute resources and support both the staff and the students.

### 4 Conclusion

AiX Analytics is a web-based application that uses learning generated data to provide analytics in every course room on the platform. Furthermore, it uses the same data to provide analytics and actionable intelligence to the administration, and provide support in the decision making processes in regard to the eLearning initiatives and activities at RWTH Aachen University. We are preparing to conduct a large-scale pilot phase of the prototype to assess its usability, utility, usefulness, and acceptance.

### Literature

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