Making programming education **ready for the future** at the Vrije Universiteit Amsterdam

Introducing

Dr. Ing. Thilo Kielmann
Program director and Associate Professor at Vrije Universiteit Amsterdam

USING CODEGRADE SINCE: 2019

Thilo is Program Director for the Computer Science programs at Vrije Universiteit Amsterdam (VU). The VU computer science department is one of the most renowned in the world, with groundbreaking work in cyber security (VUSec). The VU started using CodeGrade in their undergraduate and graduate programming education. Thilo also teaches an introductory course on C++ programming.

Challenges

"We didn't have a good way to integrate programming education with our Learning Management System (Canvas). We used a simple homemade solution for some assignments, but it wasn't user friendly or flexible enough for all the different courses we have and programming languages we teach."

"Teaching assistants had to manually extract code, run it manually one by one, view the code again and then put it back to Canvas. Besides that, we didn't have a convenient

In 30 seconds

- The VU previously used a homemade solution for programming assignments. This didn't live up to the standards and needs of their education.

- With CodeGrade they can meet their high standards, relieve teachers, and, finally, give students the feedback they need.

- CodeGrade makes programming education ready for their increasing numbers of students in the future.

plagiarism checker." Not having a simple system to do all of this also led to inconsistencies between grades. "Students complained about this justly. There was just no structure to maintain consistency."

Adopting CodeGrade

The growing numbers of students was an extra push to adopt CodeGrade on a large scale. "The transition to CodeGrade was very easy. Of course, we had some teething problems, but we worked together with the CodeGrade team to improve this very quickly."
"It's simple to put everything in CodeGrade and it works together with Canvas, saving us an administrative headache."

"CodeGrade takes so many things off my plate, I can finally focus on teaching again!"

- Dr. Ing. Thilo Kielmann

The results

"CodeGrade was very essential to get our programming assignments up to our high standards, with integrated immediate feedback and grading, and make it user friendly for our teachers and students."

CodeGrade provides automatic and immediate feedback, integrated rubrics, efficient manual grading and a plagiarism checker designed for code. "I'm very happy with CodeGrade. Especially because it takes so many things off my plate, I can finally focus on teaching again! From the other teachers, I get indirect feedback: nobody complains about tools or grading time anymore! We found our solution in CodeGrade."

Besides improving the lifes of Thilo and his colleagues, CodeGrade also benefits students. "For the students it definitely adds a lot of value, they can now immediately see if their assignment compiles, runs and if it does what the teacher expects it to do." Teachers also still give manual feedback to students.

"We now give feedback in the code itself, before, this was just impossible to do within a Learning Management System." This positive change was also reflected in the student satisfaction surveys.

The future

As many institutions worldwide, the VU's Computer Science degrees are growing rapidly. Using CodeGrade, they're ready for the future. "We expect more students for the Computer Science degrees again next academic year. CodeGrade will definitely help us with its high level of user experience for our teachers and students to make everything run smoothly, prevent any problems and overcome challenges."

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