

Racing Academy - FE and HE Edition

Racing Academy is a massively multiplayer car racing and vehicle engineering simulation which allows students to engineer and race realistic virtual models of cars. Online facilities allow teams and communities to collaborate and compete on the web. Racing Academy is already available as a prototype aimed at Key Stage 4 students, but this project has been established to develop an edition for use in Further Education (FE) and Higher Education (HE).



Student racing car

Outline

Racing Academy is a game in which players design and race cars. The underlying features are different from any other racing car game in that it is built on real physics and engineering principles. In order to succeed you need to address the same engineering issues that any racing car manufacturer does. This project uses the original prototype but changes the technical content to make the game suitable for FE and HE students. It also addresses the key issue of how to embed game technology in a formal FE and HE curriculum.

of engineers and drivers. Students have to build and maintain their vehicles in order to enter and compete in races, and they have to monitor and analyse performance using data from a variety of telemetry outputs, before and after racing in the videogames environment.

The FE/HE edition of the prototype will uncover some of the vast amount of data produced by the original program that is not deemed suitable for Key Stage 4 students. Meaningful visual means of giving this data back to older designer-racer students are being explored, so that they can appreciate the consequences of the design and driving choices they have taken. This action and reflection on the results of action will, in turn, further our understanding of learning with games.

This project, which is funded by the Joint Information Services Committee (JISC) – a UK body which supports further and higher education by providing strategic guidance on the use of ICT – is jointly lead by Futurelab and the University of Bath's Department of Psychology. Other partners include the developers of the original Racing Academy, Lateral Visions, as well as Barnfield College, Penwith College and the University of Bath's Department of Mechanical Engineering, who are all helping to determine the changes to the original prototype that are needed to meet FE/HE requirements.

An important aspect of this edition of Racing Academy is that it is being developed to have full curriculum relevance. Barnfield College is a Centre for Vocational Excellence in motor vehicle engineering which teaches a range of vocational courses, from City and Guilds Entry Level to National Diploma qualifications. Penwith College is using Racing Academy in its Physics A-level and AS-level courses. In both cases there has been a careful mapping of the potential offered by the game to the demands of the syllabus, and both colleges have found aspects of their



Lateral Visions Software Company 2006

Partners

Joint Information Services Committee (JISC)
 University of Bath, Department of Psychology
 Lateral Visions
 University of Bath, Department of Mechanical Engineering
 Barnfield College, Bedfordshire
 Penwith College, Cornwall

Racing Academy's game engine has the capacity to allow users to manipulate over 1,000 parameters of their vehicles, and to compete as entire teams of practitioners within a virtual community

curriculum that are covered by the Racing Academy prototype. The University of Bath's Department of Mechanical Engineering is using its existing innovative resources to incorporate Racing Academy into its programme of courses. It is hoped that it will improve the motivation, recruitment and retention of mechanical engineering students, and also that it will enable students to think about and solve problems in ways appropriate to a professional engineer.

All three FE and HE institutions have, together with the developers Lateral Visions, used their teaching needs to draw up a list of new features that make Racing Academy more relevant to each curriculum.

This project also addresses the issue of how a significant learning tool, such as a game, can fit into the virtual and managed learning environments already provided by FE and HE institutions.

Research Objectives

Our original research objective for Racing Academy still holds: How can we exploit the opportunities offered by advanced simulations and by online communication facilities to create a complex, challenging and engaging learning environment?

However, an additional question will also be addressed: What can we discover about the needs, preconditions, changes and adaptability of institutions in order to foster the adoption of highly

innovative learning activities? This project explores the changes necessary within FE and HE institutions to implement a game such as Racing Academy, covering both the micro (student and teacher) level as well as wider implications for the institution as a whole. Of particular interest are the contradictions this may highlight and the resultant issues such as staff deployment and assessment.

As with all Futurelab projects we are also interested in:

- What this project tells us about the best ways of designing educational digital resources.
- What this project tells us about how learning processes can be transformed through use of these tools.
- How this project helps us understand the potential of next generation technologies to create intrinsically motivating and engaging learning experiences.

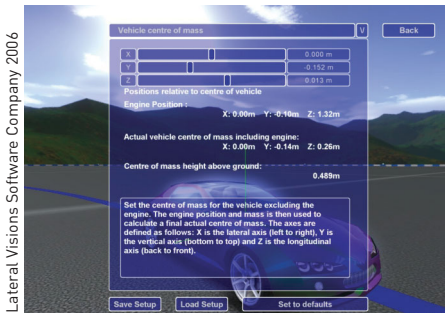
Further Information

Further information on this project will be added to the website as it becomes available:

www.futurelab.org.uk/showcase/racing_academy_fe

More information and downloads of the original Racing Academy prototype are also available:

www.futurelab.org.uk/showcase/racing_academy



Controls for altering vehicle mass



Interface during drag race

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