

Management Summary

The G@S project aims to research and develop an **open platform for the creation and distribution of educational games**. In recent years, commercial and academic interest in educational uses of video games has been growing rapidly. Due to their systematic and self-motivational nature, games are often seen as an important future aid in primary and secondary education. Nevertheless, the development of video games, particularly in 3D, is still complex and expensive, which explains why available content is limited. G@S aims to overcome these problems by creating a platform for the easy creation and free distribution of user-generated educational game content. In order to achieve this, the project aims to innovate in four main areas: authoring, adaptive content and feedback, understanding of the user and distribution.

In order to enable common users such as teachers to create inviting game content it is important that a new generation of **game authoring tools** is developed which can ensure a visually rich and inviting game world adaptable to the designer's needs. Educators are not game developers so the editor will need to contain a suggestion framework for supervised level generation and a user-friendly level creation interface. Moreover, in order to allow for the storage and exchange of educational game content it is important that an open, non-proprietary data specification with powerful compression is developed which supports this type of content.

Further, ensuring optimal learning combined with a satisfactory game experience requires a powerful **adaptive content and feedback** framework. Existing systems are insufficiently dynamic to function in a complex learning environment such as an educational game and they regularly fail to adapt to highly proficient and below average learners. Therefore new adaptivity algorithms will be developed and tested iteratively in interaction with feedback systems in order to ensure that individual learners are confronted with learning content appropriate to their needs.

As the G@S project is aimed at common users and learners, it is important to understand and cater to their specific needs. Hence user research will be an important guide for the different technological developments. Moreover, extensive testing of the **effectiveness of prototypes** of games and a longitudinal experimental study into the effectiveness of the use of the platform in schools will validate the different developments.

Finally there is the **distribution** aspect which will be looked into as there are several educational, legal and business issues that need to be dealt with. In terms of **education**, it is important that new transmedial possibilities are well integrated in existing learning practices both in terms of methods and infrastructure. This will involve working with the target audience to ensure the platform's acceptance and compatibility with existing hardware. Moreover, **legal** research is needed in order to ensure the legal compliancy of the platform in terms of security, data protection, privacy and intellectual property. G@S involves the creation and sharing of content by users, which raises important questions related to user-generated content (sharing of rights between users) and social media (liability, inclusion) and protection of minors. Finally, there are a number of issues in the **business** realm that need to be researched. For this, we will rely on the lessons learnt from best practices observed in national and international industry cases that show similar characteristics in terms of services offered, technical design choices taken, and financial revenue schemes.