Work-Package Method Exemplified by Enchant.js
For Game Education in Uppsala University

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Abstract
In this paper we introduce the work package process as a new part of the undergraduate course
curriculum at the Department of Game Design, Uppsala University, Campus Gotland, Sweden.
Firstly, the concept and design of the work-package will be explained, as the undergraduate work-
package is different from the research work-package presented at this conference last year.
Secondly, we will explain the particular work-package of Enchant.js, held for 1st year students as
an example of the undergraduate work-package methodology. This will be exemplified by
the resulting games produced during one day by first year students studying game-graphics and game
programming. Lastly, we will explain our plans for future collaborative work-packages.

Keywords
Work-package, game design, Game education, Enchant.js, collaboration, art and technology.

1. Introduction
The Department of Game Design at Uppsala University collaborates with several
universities and companies through an established system of work-packages for the
game education. Last year we implemented research work-packages for master course
students, which was effective in developing new ideas and technology together with game
concepts. The results of such a work-package is described in Art and Science 2013 [1]. This year
we have expanded the work-package method to also include undergraduate students in the
game design education. In this paper, we will introduce the methodology of work-package
and show the experimental results of the

Enchant.js work-package as an example.

2. Implementation of new work-packages
We introduced work package process as a part
of the undergraduate course curriculum at the
Department of Game Design.

2.1 Special events in our department
As part of our curriculum we also have special
events related to game design. These activities
provide our students with opportunities to
apply theories and acquired skillsets into
larger productions and investigations. This is
usually done in teams where each student
holds different complementing roles such as
programmers or graphic artists; depending on
which game design program they are studying. These activities also provide, a complete cycle of theory, applied skillsets, production, evaluation, postmortem and reflection. This is done incrementally throughout the education in an effort to provide maximum experience and learning outcomes. In addition to this undergraduates are exposed to research and development, public play-testing of their games and evaluation by invited academic and industry experts. Below we will briefly explain some of the main activities.

- The Gotland Game Conference, (GGC)
The GGC is held as an annual 3-day event at the end of spring semester around the beginning of June. The GGC is the largest event of our department. Students show their Game productions to the general public and to an invited jury consisting of international academic and industry experts. For more information please check: http://gotlandgameconference.com/2014/

- Tokyo Game Show (TGS)
In 2013 The Game Department at Uppsala University had a booth at The Tokyo Game Show. Ongoing research and several student games that had won prizes at The GGC and the National, Swedish Game Awards were selected and showcased at The TGS. This provided a motivation for students and a good opportunity to them to meet publishers and other industry experts and potential partners.

- Gamex and GDC-Europe
In addition to The TGS we have a large booth at Gamex in Stockholm Sweden and have had a booth at GDC Europe. Our students are also encouraged to enter into national and international competitions and conferences.

2.2 Work-Package
Our Work-packages are often short exploratory workshops in which new technologies are tested and used in the production of new game and other media phenomena. These are often in collaboration with researchers from partner universities in other countries (often in Japan) where for undergraduate and master course students test, or further develop new technology platforms for game content.

The main objective of our work-package method is to educate our students and provide them with the opportunity to participate in international research and developments projects. However it is a challenge to educate in research methods for undergraduate students especially for 1st year students. Because of this we have developed a new concept of our work-package ranging from 1st year students through to master course students.

We achieve a balance between education and research by modeling the ratio of game design activity to research activity as shown in Fig.1. This figure describes the ratio of research to game design and content production depending on educational year, i.e.: 1st year students having a lower ratio of research activity and master students having the highest ratio of research activity. By modulating the levels of research and development in this manner we hope to provide students with a good core education in theory and production while increasing their ability to conduct research.

3. Enchant.js Work-package
UEI (Ubiquitous Entertainment Inc.) started simple game making lessons by visiting universities around the world (mainly in the USA). We asked them to come to Gotland and CEO Shimizu accepted our proposal. The Enchant.js workpackage was held for 1st year
students on 21st and 22nd, Nov, 2013.

3.1 Enchant.js

Enchant.js is a Simple JavaScript framework for creating games, applications and HTML5+JavaScript frameworks. Over 3,000 games have been created using Enchant.js, and for a variety of platforms, including the Nintendo Wii U and iPhone. Recently business software has been developed with the engine. The engine is open-source and although being relatively new, much has already been achieved with this engine in Japan, including projects with large companies such as SEGA. For more information on Enchant.js see:
(http://enchantjs.com; http://global.uei.co.jp/)

UEI also provides a text-book in English that can be found though the link below.
(http://www.amazon.com/HTML5-Programming-enchant-js-Brandon-McInnis/dp/1430247436)

3.2 Schedule

Our work-package usually takes 2 · 3 days in the form of work-package workshops. The first day is mainly introductions and lectures by invited guest lecturers. The second and third days often consist of student production time and presentations of the results. The invited guest lecturers of this work-package were Mr. Ryo Shimizu, (CEO of UEI) and Mr. Brandon McInnis. The work-package began with a talk by CEO Shimizu with the title: *Effective game programming education and the new age of computing with Enchant.js*

After this lecture, the Enchant.js work-package was explained by Mr. Brandon McInnis. This included a game making demonstration in which simple games were made without programming and using human interaction only.

After the lectures, students were divided into randomly selected groups consisting of 2 · 5 members. This was done combining programmers and graphic designers. In the afternoon of 2nd day, productions were finalized and student teams presented working prototypes and power-point presentations of their games, explaining genre, core game mechanics and unique selling points and gameplay.

3.3 Student results using Enchant.js

Each student group uploaded their game on the Enchant.js website prior to their presentation. The website features playable games and mini-games. This ensured that working versions of the games were available for testing and review by UEI and staff and students of Uppsala University.

Fig.2 shows a student presentation where the team presents and explains the concept of the game and receives comments and feedback from Mr. Shimizu. After the presentations, Mr. Shimizu selected 3 high quality games. One of which consisted of graphic designers only but who were able to produce a game with out programming on the Enchant.js engine.

Fig.3 shows Mr. Shimizu and students discussing games and the Enchant.js engine.

4. Conclusions and Future Work

In this paper we introduced our work-
package concept. We are planning further initiatives for the development of work-packages involving collaboration with students from other game educations in Sweden.

Lastly, we would like to express our gratitude to UEI for collaborating on the work-package in our department and for providing our 1st year students with a unique opportunity to test emerging technologies.

References


Fig.1 Overview of the concept and methodology of new work-package

Fig.2 One scene of students presentation their game.

Fig.3 The scene of students gathered around Mr.Shimizu