



Project Title: Reducing Occupational Stress in Employment

Project acronym: ROSE

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Product

Appendix 13 Technical Report

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Introduction

The aim of the ROSE project was to produce an online stress management intervention tool. This tool was to help people working in the mental health and intellectual disability sector to understand stress and stressors that can affect them in a personal context and through their work environment.

Development Lifecycle

The development of the ROSE application followed an iterative software development process consisting of detailed requirements analysis, design, development, testing and implementation phases. Focus groups combined with “throw-away prototyping” were used to inform the requirements analysis and design phases. The development lifecycle was cyclical in nature with repeated iterations of analysis, design, development, testing & implementation.

1. Requirements Analysis

ROSE focus groups were held in the partner countries to gain an understanding of the Information Communication Technology (ICT) competence of the target users, their familiarity with current online environments and any technological factors that may influence or impact the use of the final application. Issues relating to desirable functionality that could be integrated in the system were also discussed.

1.1 Key Findings Identified From Focus Groups

- The focus groups found that over 84% of users operate with a broadband connection with a further 6% unsure as to whether their connection was broadband or dialup.
- The average user spent approximately four hours per week online. Internet explorer was found to be the most prevalent web browser followed by Mozilla Firefox.
- Users considered themselves comfortable operating computers based on operating a range of tasks such as email, web usage, word processing etc.
- Most staff had not been offered any ICT-based training for their position in the organisation but would like to receive some.

- All users highlighted button layout, functionality and loading speed to be important to them.
- Users identified a preference for blue as a colour to be associated with ROSE. This choice is in line with psychological literature concerning the effects that colours have.
- The focus groups demonstrated a preference for clear and simple interfaces.

These findings provided input to the design and implementation of the prototype for the ROSE system.

1.2 Prototyping

The team used prototyping to inform and further define the technical requirements of the ROSE applications.

1.2.1 Technical Requirements

An initial prototype was developed to further define the technical requirements of the application that would host the learning sessions. This proved an important process and highlighted the challenges that would be faced by building an application that would fit all of the requirements (log in facility, user tracking and monitoring, web based, in built functionality for pre and post analysis questionnaires, reliable and secure, etc) from scratch. Alternatives to building an application in house were considered and Moodle was identified as the most suitable candidate for hosting the learning sessions.

Moodle is short for Modular Object Orientated Development Learning Environment (<http://moodle.org>). It is an open source Virtual Learning Environment that provides a complex array of functionality for supporting web based learning interactions. In addition, the eLearning Support Unit in WIT have extensive experience in deploying Moodle to support virtual learning.

1.2.3 Development of the Learning Sessions

It was important that the learning sessions would incorporate the principles of Instructional Design so as to ensure, for example, that the navigation, “look and feel” was consistent throughout the learning sessions. In addition, the learning sessions

should conform to industry standards and be reusable across platforms to ensure their durability and usability beyond the lifetime of the project. The team experimented with a number of software packages in order to identify a suitable package that matched the requirements and could be used by all the team in the partner organizations for content production. CourseGenie, in conjunction with Microsoft Word was used for the content development for the initial pilot phase. However, feedback from the pilot phase warranted a change in the application used to develop the content. Articulate, in association with Microsoft Powerpoint were used for the final content development. In addition, the eLearning Support Unit in WIT has extensive experience in Instructional Design and using Articulate for developing eLearning content.

2. System Design

ROSE was designed as an eLearning system for the delivery of stress management content. The content was developed by Waterford Institute of Technology and Kings College, while the system architecture, along with the aesthetics of ROSE were designed by the eLearning team based at WIT. The deliverables of the focus groups informed this process.

ROSE is built on a two tier architecture comprising of a backend populated with two categories of content and a front end which allows the user to access the content that is most relevant to them at a particular time.

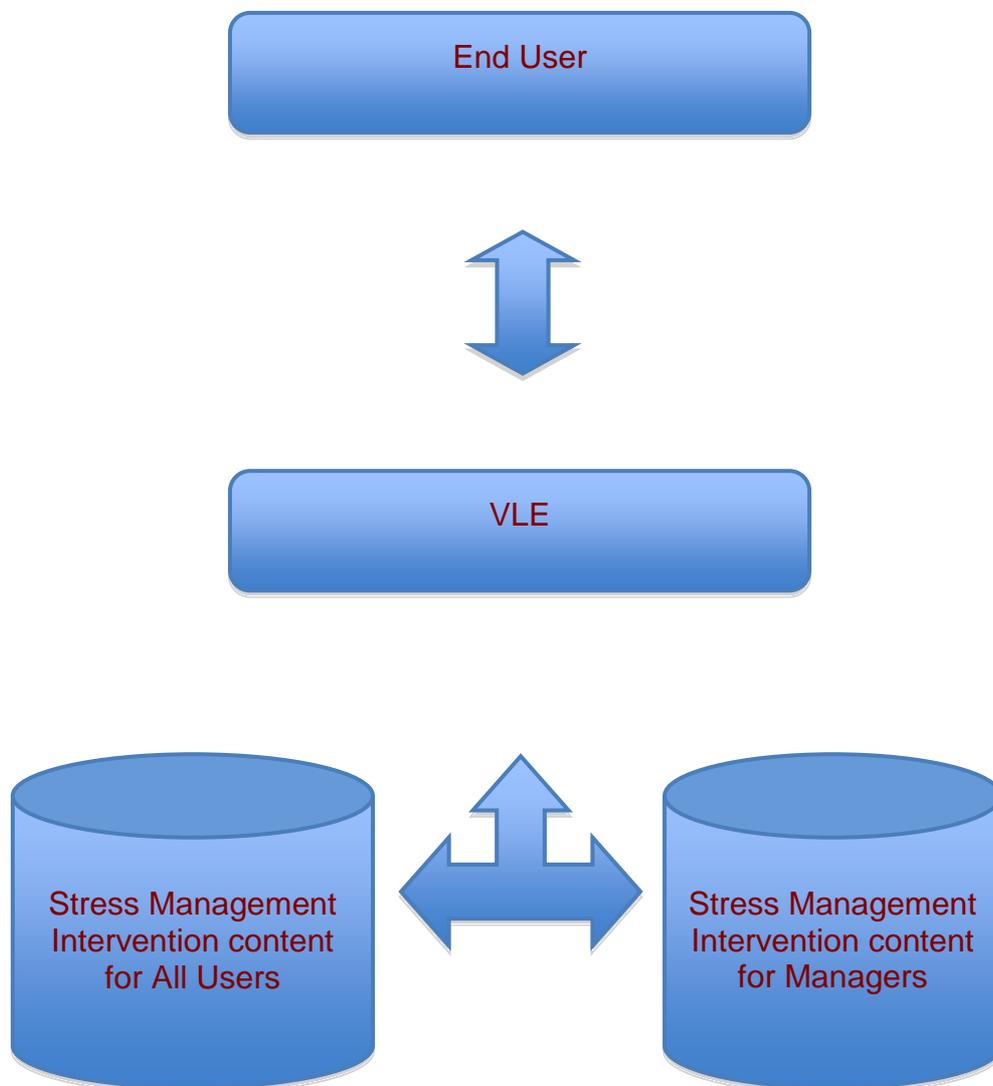


Figure 1: ROSE System Architecture

The Virtual Learning Environment (VLE) chosen was Moodle, an open source learning/content management system built on php and available freely online. The content was published using Articulate and Powerpoint in a video “player” type format that allows users to move through the lessons at their own pace.

3. Pilot Phase

The first iteration of ROSE was piloted and evaluated by a number of users targeted by the partner organizations. The feedback from this evaluation was input back into the ROSE development lifecycle.

Questionnaires were used to illicit feedback from the end users. The key findings discovered from the pilot evaluation were:

When filling in questionnaire wanted to return to learning session but was unable to

Experienced technical problems/system crashing

Problems with feedback and exit button on learning sessions for staff

Suggested that it may be useful to include print button

Experienced problems with links/exits

Had problems with cookies-required IT support to enable the system

Suggested that we include some information about the research team in the introduction

Noted that ‘About Us’ was placed last on the toolbar-perhaps this should be placed first

Possibility of including a demonstration/guidelines on how to make the most of the website

Overall look of the site-not consistent across sessions-needs to follow the same format

Flow and overall look of the site needs to be considered

Coloring and graphics-some graphics appear blurred-some graphics may need to be re-considered-are they applicable to the content?

Feels that there is quite a lot of reading-could be more interactive

Appears to be a lot more links in the managers learning sessions

Some of the learning sessions are quite brief and others are detailed-not consistent

Suggested that we include some information on ‘work-life balance’ and ‘employee well-being’

Noted that many links are to UK and Irish sites-perhaps add the equivalent sites from other countries- engage with partners to establish if there are similar links in the other partner countries

Appears to be differences between staff and managers sections

Suggests that we simplify content in the management section a little more

Suggests that we split manager learning sessions into guidelines, directions and extra links

Difficulty accessing site with cookies and passwords

Experienced difficulties with navigation-difficulty returning to learning sessions after completing evaluation

Include instructions on how to change users password if desired

Suggests that it may be useful to differentiate between the ROSE project and the ROSE product in the introduction

These findings led to an iterative redesign of the ROSE system and are discussed in the Implementation section.

4. Implementation

The feedback received during the pilot phase was integrated into the final design and implementation of ROSE. Technical problems such as passwords and cookies were addressed. Cookies, which had been monitoring user access and allowed users to access a lesson from the point at which they had last left off that lesson were removed due to being disabled in many of the work environments encountered on the pilot. The site was branded with a more consistent look and feel. A video was developed to allow people to understand how to use ROSE. A more substantial 'Help' section was also added. ROSE also created a Facebook page to allow users to interact with each other in a forum type environment. A set of Terms and Conditions were developed for the final version of ROSE. The requirement for users to create a user account was also removed allowing for open access to ROSE.

The final design of ROSE was launched in June 2010. The content was made available in four languages, English, German, Romanian and Italian. The ROSE homepage, introductory video and help sections were also translated in the four languages. An initial pilot was held from June until August.

Conclusion

The outcome of the ROSE project is an application containing a number of self-directed learning sessions. The development process was an iterative lifecycle consisting of requirements analysis, design, development, testing and implementation stages. Throw away prototyping was used to inform the overall design of the ROSE. User feedback through observational analysis, questionnaires and surveys were undertaken at several stages during the project including focus groups, prototyping and piloting. This produced a highly accessible, scalable and informative eLearning application of use to those in the mental health and intellectual disability sector that could also be used by a wider audience.