Roamer-Too Background Information

Roamer-Too is a development of the popular Roamer robot first launched by Valiant Technology in 1989.

In 1992 Valiant supported a research project conducted by Mike Blamires of Canterbury Christ Church University. The aim was to explore the use of Roamer in SEN. As early as 1989 SEN Teachers had found the robot useful. However, the Canterbury Project aimed to explore the possibilities in more depth. The result was that though teachers found the product useful it was also frustratingly limited. They constantly wanted to adapt it. Problems could be as simple as a student not being able to operate the keypad or a partially sighted student having difficulty seeing the robot move.

This inspired Dave Catlin to conceive a modular robot to meet SEN diversity. A project called SEROTA (**S**pecial **E**ducation **Ro**botic **T**eaching **A**id) was set up with the aim of developing the robot. This led to the development of Roamer-Too. Inevitably the new robot soon became a tool that teachers can use in mainstream education, but it retains a particular flair for SEN.

What is the New Idea?

You programmed Turtles and Roamer via a Logo or a Logo like computer language. Through the process of writing a program students would engage and play with powerful concepts and thus acquire knowledge. Roamer-Too does not abandon programming, but it does offer alternatives. It focuses on students interacting with the robot in meaningful and more natural ways. How might you use a robot that has voice recognition and speaks to you? How can you use a robot that changes shape? How could you use a robot that has emotions and can throw a tantrum? Robots with these characteristics are now possible.

> ### Pedagogy is the Key
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> The new robot is the first educational robot that has the capacity to use powerful modern robotic technology. However, without a clear pedagogy, the technology is just a gimmick!

Since 1992, the idea of Roamer-Too evolved as the sporadic research effort kept nudging the project forward. In mid 2005 a creative surge gave birth to the **ERA Principles** (**E**ducational **R**obotic **A**pplications). This theory has guided the design of the robot. It links technology to developmental psychology and our understanding about how people learn. It has one aim - to help students understand and learn more effectively.

What is Roamer-Too Like?

The Classic Roamer has the following attributes:

1. **Input**: You program it through the keypad
2. **Behaviour**: It has a specific behaviour based on the syntax of Logo
3. **Output**: It moves and turns (and sometimes plays music)

With Roamer-Too all of these attributes can be the same, or they can be radically different. Roamer-Too is a basic robotic platform that you can change to suit the needs of the students and the classroom activities. With Roamer-Too you can have:

1. **Input**: Perhaps you have a student that can only move their eyes – you can build a Roamer to cope with that; or you are helping children to read and you want the robot to respond to phonetics – you can do that. Or maybe you would like to use the Roamer with an Interactive White Board. All of this is possible.
2. **Behaviour**: Roamer can have different behaviours to support different types of activity. For it could have a Tamagochi like behaviour that supports a whole range of different activities.
3. **Output**: Instead of moving the robot talks to you. Maybe it can change shape and colour. Perhaps it tells another robot what to do.

Roamer-Too is designed to interact with existing technologies, both hi-tech and traditional. For example you can interact with it using a Pocket Computer (PDA) or you can make it respond to a student's writing and drawing a picture. All of this and far more is technically possible.

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> **Don't let the existing technology limit your imagination.**
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> We can add all sorts of technological capabilities to Roamer-Too. However, education needs to lead technology, not the other way around. What technology do you need? Ask and we will try to give it to you.

n Practicality

We have the technology, but this is not enough. The robot has to meet the practical needs of teachers. It needs to:

1. Support good teaching practice
2. Be affordable
3. Be easy to use, even for the most technologically phobic teachers
4. Help teachers deliver the curriculum
5. Be reliable and durable

To achieve these stringent requirements we need activities that teachers can use to meet the diversity of age and ability across as many areas of the curriculum as possible. It is possible to produce many hundreds of exciting classroom activities. To achieve this Valiant has opted for an open source and open content policy. This aims to make most of the activities freely available to schools.

RoAD Partnership Programme

The **Ro**amer **A**ctivity **D**evelopment Partnership Programme aims to create the open source free activities. If you wish to contribute an activity to the Roamer community you can apply to be a RoAD Partner. It means that we will create a formal partnership with you with the aim of creating the activities or producing some useful research on the use of Roamer in education. Note: This is voluntary.

As a partner you will:

1. Receive discounted or free equipment[1]
2. Liaise with Valiant designers to explore the possibilities
3. Receive editorial and graphical support to help you produce high quality materials

As part of the partnership agreement you will work with Valiant to:

1. Develop vision, goals and objectives
2. Develop an action plan
3. Work with the monitoring and evaluation team

Your work on has to be different to the work of other partners or existing activities. Other than this stipulation you are free to work on any activity or research project you wish. Valiant is very flexible about the scheme: it is all a matter of what works best for both partners and what will help produce the best activities to help teachers and children.

What Happens to the Activities?

The activities will be posted to the Valiant web site and made available to teachers and educators as an open source open content resource[2]. You will be publicly credited for you contribution.

Are the Activities Free to Teachers and Schools?

Yes. Valiant do not charge schools for the activities. However, they do reserve the right to charge for Roamer Behaviours they have to create to support the activities.

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[1] There are no absolute rules about this. It depends on the circumstances and we will discuss each situation on a project-by-project basis.
[2] http://en.wikipedia.org/wiki/Open_source_curriculum and http://en.wikipedia.org/wiki/Open_Content

What to Do Next?

If you have any questions please contact Dave Catlin on 020 8673 2233 or dave@valiant-technology.com. Once you are happy with everything click on the registration link below. You will be asked to provide some basic information (which will be strictly confidential), agree to the Partnership terms and conditions then you will be asked to register for the RoAD Partnership Forum. This will also involve agreeing to the Forum behaviour code. Valiant will need to validate your details and will then activate your Partnership.