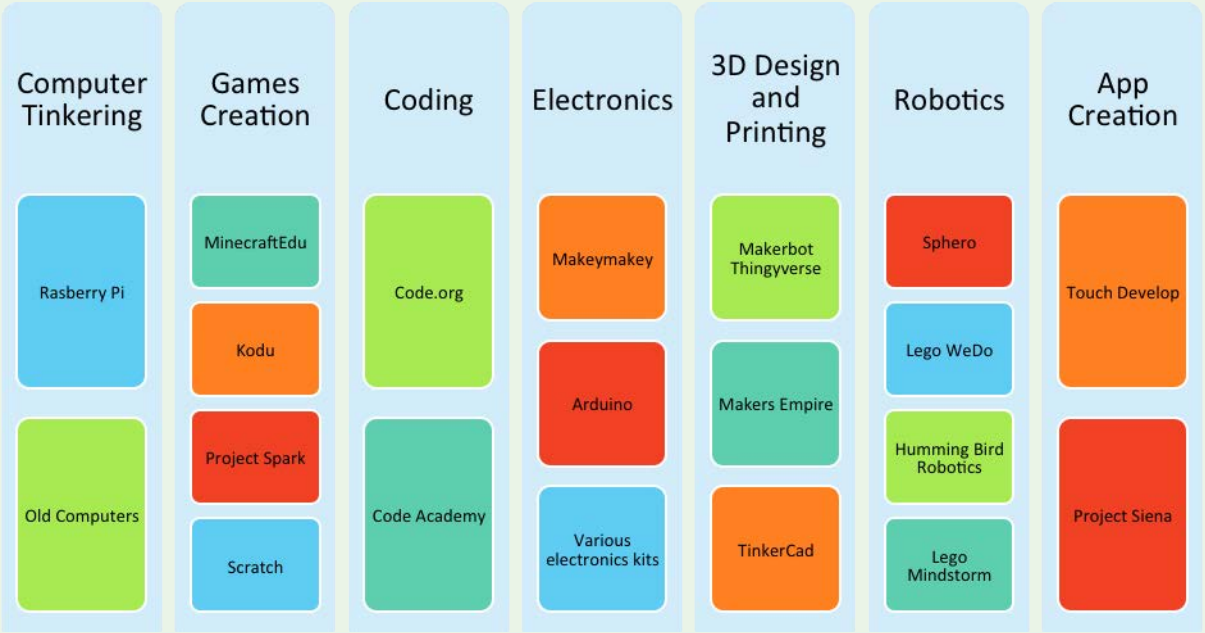
September 2014 (32)
e-teaching
Management strategies for the classroom

The Movement toward Maker Education



What can you make and do in a Makerspace?

There's a quiet innovation happening in schools across Australia. The Maker Education Movement has begun creeping into classrooms and schools and staffrooms everywhere.

What exactly is Maker Education and Makerspaces, and how can you become involved at your school? Read on and be inspired to begin your first project.

What is Maker Education?

Maker Education is hands on tinkering. It can range from using cardboard boxes and duct tape, right through to the latest electronic gadgetry such as Arduino, MakeyMakey and Raspberry Pi. It's about students creating objects that work, objects that are built out of the desire to experiment, tinker and learn, to satisfy a user need.

"Makerspaces provide creative time and, well, space for people of all ages to build prototypes, explore questions, fail and retry, bounce ideas off one another and build something together."[1]

Maker Education inspires and nurtures innovation and experimentation.[2] The core construct of Maker Education is learning through active discovery. It can be said to have grown from modern constructivist theory and Piaget thinking.

Through Maker Education we can differentiate education, teach life skills and engage students in relevant and real learning activities. It really is about students diving into a project that inspires them and guiding them to discover, experiment, fail and construct using technology as a learning tool. It reminds me of tinkering in the shed with Grandfather as a child.

Some of the types of activities that might be the focus of Maker Education in your school might include the following list. Because each school is different, each Makerspace or classroom would offer activities their students or teachers would enjoy using. You might focus on computer creation, games creation, coding, electronics, 3D Design and printing, Robotics or app creation. Before you dive in, stop and consider your budget, the general interest area of students and even future skills needs of your learners.

All links for the resources mentioned in the list and this document can be found on the Makerspace Pinterest Board at: http://bit.ly/makeredu

How can I begin integrating Makerspace in my school?

There are a few different options for opening up, or diving into,

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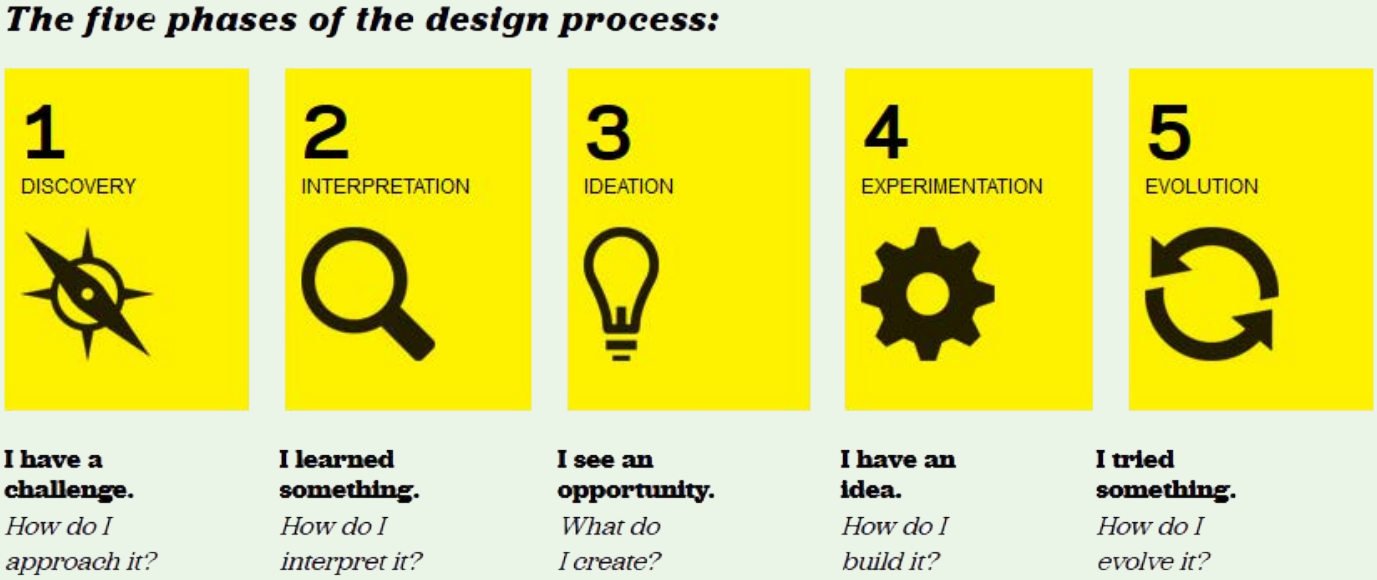

Maker Education in your school. Will you integrate it into regular classroom time? Create a special club? Make a dedicated Makerspace in the school? Below are some options you might like to consider before making any decision.

Genius Hour – In Genius Hour, students spend 20% of their time focussing on a topic that interests them. This time could be spent in Maker Education, opening opportunities for students to focus on tinkering and experimenting with various maker tools. To find out more about Genius Hour in schools, check out this wikispace of ideas http://geniushour.wikispaces.com.

Makerspace – Create a Makerspace to be used during recess or lunch. Grab a group of teachers and work together to open up this opportunity to students. Create a space in the library, in a space storage area, or in a spare classroom. Make sure you have plenty of electricity points and can observe OH and S protocols.

Design Thinking in Education – If introducing Maker Education into your classroom, you might like to consider scaffolding the process by using Design Thinking processes. Through Design Thinking, users are scaffolded to create a solution to a design brief by discovering and researching the problem, interpreting what this problem means to the community, ideating ways to solve the problem, forming a prototype and experimenting with a possible solution and finally, evolving and reflecting on the project just completed. It is a contemporary construct used in the creative and design industry. You can see more about Design Thinking via this wonderful resource hub at http://www.designthinkingforeducators.com. Be sure to download the Educator Toolkit for all you need to get started on Design Thinking.

After School Makerspace Clubs – Does you school have any after school clubs running in partnership with community groups? Is there room to create a once-a-week, once-a-fortnight or once-a-month group that dives into Maker Education? That spends their afternoons tinkering away, innovating and experimenting with the coolest toys, gadgets and online spaces?

Makerspace Resources

- Martinez, S and Stager, G; Invent to Learn – Making, tinkering and engineering in the classroom. {eBook Version} retrieved from Amazon, 2013
- Makerspace Pinterest Board: http://bit.ly/makeredu
- Creating Makerspaces in Schools; Accessed August 3rd, 2104 http://www.edutopia.org/blog/creating-makerspaces-in-schools-mary-beth-hertz
- How the Maker Movement is Embracing Education; Accessed August 3rd, 2014 http://smartblogs.com/education/2014/06/02/how-the-maker-movement-is-embracing-education/

References

1 Creating Makerspaces in Schools; Accessed August 3rd, 2104 http://www.edutopia.org/blog/creating-makerspaces-in-schools-mary-beth-hertz
2 How the Maker Movement is Embracing Education; Accessed August 3rd, 2014 http://smartblogs.com/education/2014/06/02/how-the-maker-movement-is-embracing-education/

Quotes on being creative

A creative man is motivated by the desire to achieve, not by the desire to beat others.
Ayn Rand

It is the supreme art of the teacher to awaken joy in creative expression and knowledge.
Albert Einstein

Happiness lies in the joy of achievement and the thrill of creative effort.
Franklin D. Roosevelt

Physical fitness is not only one of the most important keys to a healthy body, it is the basis of dynamic and creative intellectual activity.
John F Kennedy