RESEARCH PROJECT
DM7915 . KERRY STEELE-JONES

PROJECT PROPOSAL

ABSTRACT

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Teaching

How we acquire and embed new knowledge, in an organisation.

Kolb's (1971) four stage process of how we acquire and embed new knowledge (opposite) is through the Experiential Learning Cycle. The model allows for a flow and change of thought, for playfulness and experiences, and allows for this to occur continually.
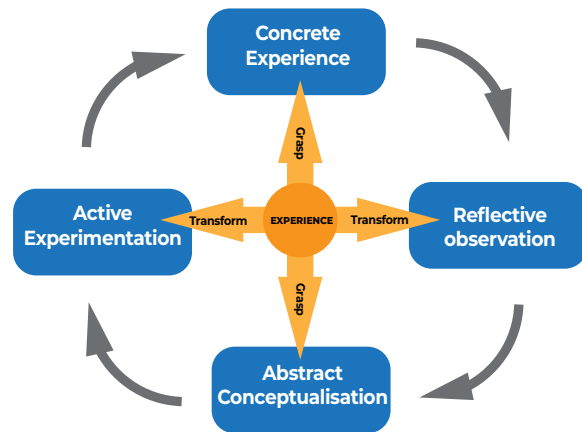

Fig. 1 :   Kolb and Kolb , Experiential Learning Cycle 1971.

My involvement in an arts project has enabled me first hand to model and observe the embedding of new knowledge. The UNDEREARTH digital art project was funded to bring new technology awareness to 24 Year 4 children from two Hampshire primary schools.
The 10 week mentee position gave me an insight into training, lesson planning, engagement and enabling learners to try something new. We delivered AR, 3D scanned models, stop motion animation, computer coding, storytelling, character creation, plot development, key framing, charcoal drawing, and other art forms.

Kolb's model identified with the delivery of the project, we experimented with mud painting, reflected on what our characters would think and feel, we visited a site where we physically connected with the earth, and we used abstraction through imagery - free thinking i.e. they could create anything.

It became very apparent that we were helping to embed knowledge of these different digital forms and the link home with parents required them to be made aware of the value of technology in their children's lives and their learning. Through the interactive exhibition the parents who attended thought the project and the way their children reacted to it was nothing but positive.

Educators need to enable useful and creative ways to engage and empower children, families, schools and communities to seek new ways of learning. Having 'TIME' in education seems to be the

laughable word. Even at the end of the TV broadcast of Howard Gardner and his '5 future minds' lecture, the teachers scoffed at the idea of being able to find time to talk with colleagues about bringing curriculum goals closer together.

Seeking a wider remit than just the individual I need to consider the implementation of future thinking within the education systems in England. Johnson and Redmond (1998) provide a useful and proven framework, and whilst dated in the last century, has much to offer (see fig XX below).
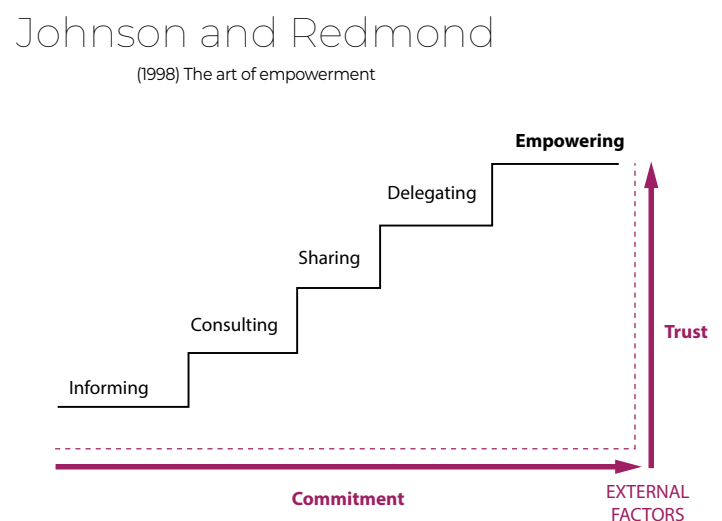
Placing new technology and future thinking into the classroom, schools need to review how they may adapt to find time to empower its teachers to future proof their curriculum, enabling them to have ownership of a vibrant and innovative learning environment.'

Changing an organisation to adopt new technology, Theory O (Beer, M. and Nohria,N.(2000) or a 'Bottom up' approach would demonstrate immediately and practically when things work and when they do not. This form of ideation and refinement can only happen in the context of a classroom, and would provide powerful examples for the teaching team.

Empowerment requires clear goals and clear leadership. The *'Essential Steps to Empowerment'* (1998) are critical to engender trust in the team. Johnson & Redmond diagram where I have paced the external factors of **commitment and trust = empowerment**.

Johnson and Redmond
(1998) The art of empowerment

((2022) Scahill, T - outside of the dotted line - adding to the Johnson & Redmond Model showing intrinsic external factors.

Fig. 2 :   Essential Steps to empowerment, Pg10 Johnson & Redmond

Educators fundamentally want to help teach young minds, to give them hope, aspirations, quality, and care for their students future selves. I believe a *'coaching system'* to aid understanding would need to be delivered for the teaching team to be delivered for involving the teaching team. Adults learn from children, and children learn from adults, to learn together, a metacognitive approach should be adopted

My research question explores change management and technological with change management and technological implementation. Johnson and Redmond state that *"organisational goals cannot be met without involving the whole workforce"* (1998, p5). By implementing an AR strategy or programme into KS1 and KS2, the empowerment of people would be wider than the teaching and stakeholder community.

Brown (1998) illustrated a model of culture change from Gagliardi (1986). He proposed that culture change was in smaller steps and not dismissive of the previous cultural pedagogy. Implementing new and future tech into a school system would suit this approach and possibly provide the path of least resistance.

P. Gagliardi Cultural Change model

(1986) The Creation and Change of Organizational Cultures: A Conceptual Framework

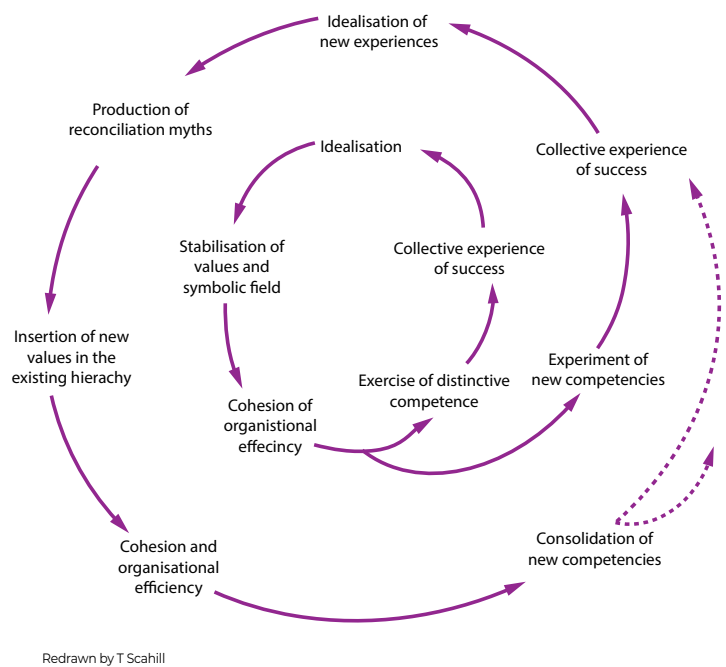Idealisation of new experiences

Production of reconciliation myths

Idealisation

Collective experience of success

Stabilisation of values and symbolic field

Collective experience of success

Insertion of new values in the existing hierachy

Cohesion of organistional effecincy

Exercise of distinctive competence

Experiment of new competencies

Cohesion and organisational efficiency

Consolidation of new competencies

Redrawn by T Scahill

Fig. 3 : Gagliardi Cultural Change Model

Empowerment (defined by Johnson and Redmond) is required for the views of the culture to be valued, the metacognitive approach (Learning to Learn) could help to implement AR into primary schools, any barriers would need to find a solution. If teachers could spend less time planning and more of their time learning new skills and delivering in their own way a classroom activity that pleases and engages them and their students, valuable learning would take place, empowering both the teachers and the students. The Oak National Academy was used extensively in lock down as a resource.

Learning

Smith's Accelerated Learning Cycle (1995) is used within teaching and learning today and illustrates the process a learner goes through to make sense of the teaching. This model is a significant consideration for my project which aims to produce an AR course for Key Stage 1 & 2 children. Accelerated Learning Cycle, is used within teaching today. Smith's learning cycle illustrates the process a learner goes through in order to make sense of the teaching, this is a significant consideration to my project if I am to produce an AR course for children.

In essence, the Accelerated Learning Cycle shows the bigger picture; learners need to use a variety of intelligences and tools, be able to demonstrate what they know, reflect on what they have learned

Alistair Smith theory

(1995) on Accelerated Learning Cycle, is used within teaching today.
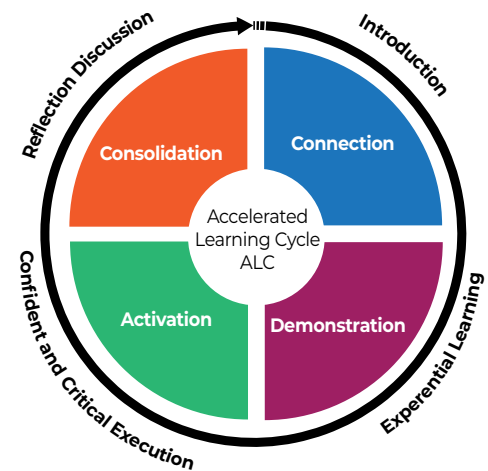
Fig. 4 : Alistair Smith Theory
Accelerated Learning Cycle (1995)

and know where to go next.

The Accelerated learning cycle closely relies on understanding personality types and the ways in which students learn, including the VAK model of learning designed by Walter Burke Barbe (1979) along with Swassing, R.H. & Milone, M.N.

According to the VAK model the best way of lesson planning for a successful class should ideally incorporate activities that facilitate all three learning styles to cater to the needs of all pupils. This is relevant to the implementation of AR/VR/MR in a classroom setting, some learners will embrace the style, the advanced tech and the auditory response that can be enabled. And for others it will need elements turned off for the session to best fit all learning styles in a VAK theory.

VAK Learning Styles

(1979) The VAK learning model divides people into three categories of learner:

Visual learners
– absorb information by sight

Kinaesthetic learners
– absorb information by moving

Auditory learners
– absorb information by sound

all three learning styles required to cater to the needs of all pupils.

Fig. 5 : VAK model 1979 Barbe W B

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"It is not enough to describe a problem-solving process and to describe how individuals differ in their approach to or use of it. It is also necessary to identify specific techniques of attending to individual differences." William G. Huitt 1992

These 'models' will add to my theory of successful implementation of a course in AR in schools. They will use sight, sound and movement to engage in learning delivery.

21st century skills

Personality types

Huitt's (1992) paper on problem solving and decision making using the Myers-Briggs type indicators was useful to evaluate. He discusses the research conducted for personality and cognitive styles which lead to individual differences on an individual's ability to problem solve and make decisions. This could affect the implementation of technology into the classroom environment. If children are to adapt and adopt future tech teachers need to work within group and individual process and function, so they can deliver a course that offer's the best outcomes and assist future learning and thinking.

Huitt uses the ideas around the Myer-Briggs theory, which has been adapted from the theory of 'psychological types' produced by Carl Gustav Jung. Jung based his theory on personalities on identifying 16 personality types, which Jung viewed as stereotypes. The heart of Myers Briggs theory from Jungs work is that there are four preferences. See diagram opposite.

A failure of the Myers-Briggs type indicators have been proven not to be as robust and accurate if the test is repeated, but as a starting point, I think that it is useful to consider it and the impact of the theory's surrounding personality types for learning and the needs within Augmented/Virtual/Mixed reality teaching.

Myers Briggs theory

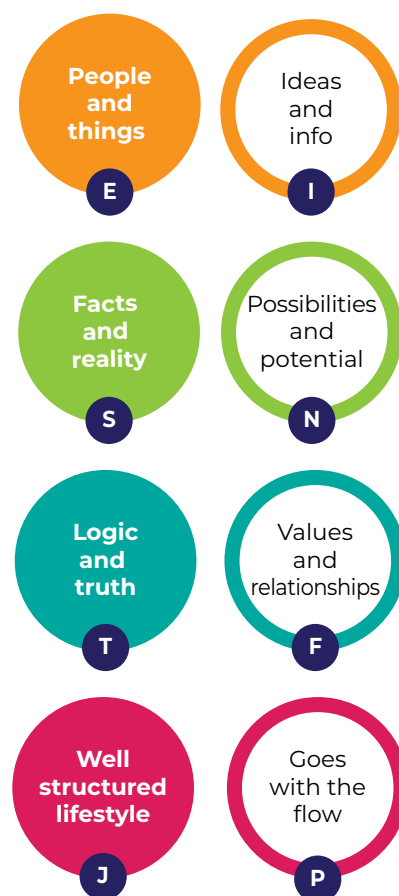(1940s) Choose one statement of each colour that best suits you.

People and things — E

Ideas and info — I

Facts and reality — S

Possibilities and potential — N

Logic and truth — T

Values and relationships — F

Well structured lifestyle — J

Goes with the flow — P

Fig. 6 : Myers-Briggs theory 1940s personality type

Minds of the future

Howard Gardner's Lecture in the RSA series (Gardner,H. 2015) reveals his theory of 5 Minds. He describes these 5 minds as future thinkers. See fig. 7.

His world renowned research into education and the development of a 'good' society is respected, and has led to long running psychology projects, this work is shaping education at secondary to college level.

Disciplined mind   Synthesising mind

Creating mind   Respectful mind   Ethical mind

Fig. 7: T. Scahill Illustration of Gardeners 5 minds

In the lecture Gardener says *"Ideally as a policy maker, I would hope that we could engender all five of these minds in young people"* (ref: 45.50mins 2015 TV show)

The 5 Minds listed above, are required to enable young people to be valued and become useful members in future technology driven society.

Conclusion

The UNDEREARTH project allowed me to gain primary evidence. Plus informal interviews with the teachers connected to the project. The technology involved confirmed my belief that UNDEREARTH was a project they could implement long after our delivery had finished. This has spurred me on to think about developing the resources to enable teachers and learners to access future technology and future thinking.

The final project is concerned with new and evolving technologies and I intend to keep the *climate change* goals to the front of my project materials and a consideration in the course delivery. The UNDEREARTH project utilised a woodland (Andover Trees United) as the children's creative impetus where they learnt about the earth and why woodlands are important as part of this successful tech project, I intend to find ways within the curriculum to deliver the same results.
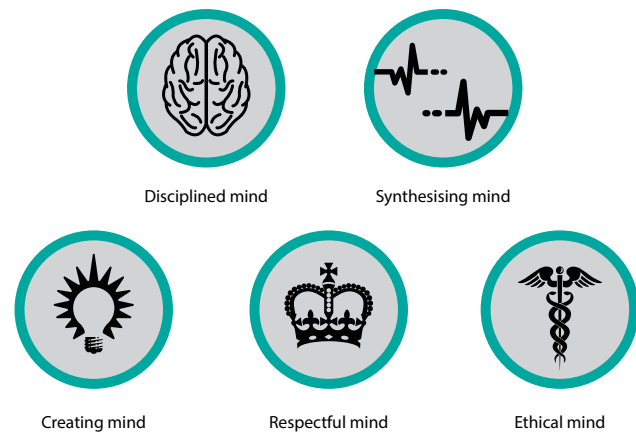

Eight ways to **reduce** and offset your **digital** carbon footprint

Monitor **BRIGHTNESS** to 70%

TURN OFF when not in use

OFFSET your **C**arbon footprint with Eco search engines

STOP video Autoplay

TURN OFF tracking... look at your internet search provider

DON'T stream

STOP Get bored SWITCH OFF

Reuse your searches

Info by Techradar.com article by M.J. Kelly published July 25, 2019

Fig. 8: Infographic by T Scahill, Eight ways to reduce and offset your digital carbon footprint,

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Fig. 6: Myers-Briggs theory 1940s personality type [Accessed online 2022] https://www.teamtechnology.co.uk/tt/t-articl/mb-simpl.htm]

Fig. 7: Scahill T L, 2022 Illustration of Howard Gardener's 5 minds [Accessed online March 2022] https://youtu.be/RqLmvktWmS8

Fig. 8: Infographic by T Scahill, Eight ways to reduce and offset your digital carbon footprint, information [Accessed Online 2022] https://www.techradar.com/news/eight-ways-to-reduce-and-offset-your-digital-carbon-footprint

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