Design Fiction a decade of reflection; *The impact of teacher training on classroom practice*

Dr Dawne Irving-Bell, Matt McLain and David Wooff
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Technology Education
New Zealand Conference, Auckland
1st - 3rd October 2019

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This presentation has been designed to compliment the conference research paper.

It begins with a showcase of design and technology student teachers undergraduate work.

Then it moves to present student and pupil outcomes, examples of design fiction work completed under their tutelage of those ex-student teachers who are now fully qualified, many of whom have ten years of experience in the classroom.
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Before we begin it may be useful to provide a little context behind the presentation.

Inspired Sterling (2005), this presentation presents a collection of visual narratives from experienced design and technology teachers who were introduced to the notion of ‘design fiction’ while following their Undergraduate Design and Technology Initial Teacher Education (ITE) programme (in England).
So, the aim was to use Design Fiction as a catalyst to effect innovative pedagogical approaches to the teaching of design and technology.

To support the student teachers to challenge their own thinking, to explore new and emerging technologies, and prepare to deliver this new content in a pedagogically innovative way.
First this presentation will bring to the fore exemplar work created by the pre-service teachers themselves, who are now experienced teachers.

The presentation then shares examples of the participants pupils and students work, and in doing so demonstrates the impact that using design fiction as a catalyst for teaching has had on their own classroom practice.
In this next section we share examples of the participants' work from when they were undergraduate design and technology students.
Examples of undergraduate design and technology students work.

“Design as a means of speculating how things could be”

Dunne and Raby, 2013:2
Examples of undergraduate design and technology students work.
Examples of undergraduate design and technology students work.
Design fiction is the “deliberate use of diegetic prototypes to suspend disbelief about change”

Sterling, 2012:1
A fictional realm, where future visions may be brought to life through the process of designing, modelling and prototyping.

Lindley, 2018
...Design Fiction “portrays a different kind of future than you might have been used to”

Near Future Laboratory, TBD Catalogue, 2019:1
Examples of undergraduate design and technology students work.
Examples of undergraduate design and technology students work.
The introduction of Design Fiction was coupled with the other concepts including Cradle to Cradle (2002) and The Circular Economy (Ellen Macarthur Foundation, 2011).
Students (the pre-service design and technology teachers) were encouraged to read around the literature, engaged with ‘sci-fi film, and consider the notion as a catalyst to stimulate innovative design for themselves, as well as to use with the children they were training to teach.
Design fiction as social dreaming. Designers shouldn’t just look to address the issues of today but must also look into the future.

Dunne and Raby, 2013
The purpose was to support the pre-service teachers to challenge their own conceptions of the subject.
Within a framework of support to push themselves out of their comfort zones and move beyond their own pre-conceived ideas of how design could or should be taught.

Outcomes were disseminated
...but...
...what impact has the introduction of 'design fiction' had upon the classroom practice of design and technology teachers?
In this next section of our presentation we showcase a selection of pupil and student work completed under the tutelage of those students (the pre-service teachers) who studied the module all of those years ago ...
Design Fiction
Creative, wacky, innovative, futuristic.

Invention Ideas

Exemplar pupil work
Exemplar pupil work
Exemplar pupil work
Exemplar pupil work
Exemplar pupil work
Exemplar pupil work
Exemplar pupil work
Encouraging children from an early age to speculate, and use the notion of design fiction to help create a futuristic solution to solve a fictional design problem.
The notion of what might be rather than what is.

The use of fantasy as a positive to support young children to engage in creative, designedly activity was advocated by Stables (1992).
As these examples illustrate design developments may include the use of computer modelling and simulation.
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Where a prototype models have been created the focus has been to support pupils to develop skills; cutting, shaping and forming, in the realisation of a really high-quality finish.
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Using the notion of design fiction to teach children about new and emerging technologies.
Focusing on some big themes such as sustainability, transport, the environment, communication...
and the innovation application of new materials
Facilitating an environment where

“children don’t have to make a fully functioning working product so they have more time to focus on the development of other key skills”
Advantages cited by students (the pre-service teachers) included an increase in student motivation to engage in designedly activity.
And they also said that they found using design fiction to be a really useful tool to support the effective delivery of design within design and technology education.
So what next? ...

In the decade since completing their teacher training design fiction has become well-established as a valid concept within the field of speculative design...
...and students (the pre-service who are now experienced teachers) recalled design fiction as a concept introduced to them at University.

However, while it was evident that they had been active in using design fiction to stimulate design work within their own practice, it became clear that they hadn’t always updated their working knowledge of the notion itself.
Within the context of global consumerism, a curriculum that advocates the consideration of the long-term effects that new technologies may have within society could be just what the subject needs.
However, how this could be developed within the design and technology curriculum would need careful consideration...
...because for a subject where the focus is to ‘design and make’...
...because for a subject where the focus is to ‘design and make’...

...this could be an uncomfortable notion
A starting point could be to challenge the subject's well-established pedagogical models of design.

Describing design and technology, adapted from Kimbell & Stables (2007:73)
To challenge current and historic understandings of design and technology...

Challenging current and historic understandings of design and technology: a working model

Irving-Bell et al., 2019
To perhaps replace them, with a different model that better represents new ways of thinking?
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In moving this work forward, our next steps would advocate ways in which teachers may be supported to access and develop resources which reflect current thinking within the field of (speculative) design.
Particularly with regard to spimes, the notion of blockchain and the use of new, transformative technologies ...
...to help children to better understand the concept of responsible design.
...to help children to better understand the concept of responsible design.
In conclusion:

Early work sought to embrace notion of design fiction, and it is clear that it is a useful platform from which to instigate and stimulate design debate.
However, while the field of speculative design has evolved significantly over the past decade, the innovations and developments which could be advantageous to the study of design in schools, have not been as successfully transferred into the classroom as perhaps they might have been.
“Embracing new approaches to design thinking may be pivotal in supporting teachers and will be the focus of future work, to support teachers of design and technology to re-imagine the subject, its purpose and value within a modern school curriculum”

Irving-Bell *et al.*, 2019
Featuring undergraduate work from our design and technology student teachers including contributions from:

Ryan Beales, David Fields, Joseph Johnson, Marc Simpkin, Katherine Elliott, Phil Johnson, Andrew Connolly, John Cox, Sharon Davies, Myles Hall and Richard Woods.

And with special thanks for also sharing their student and pupils’ outcomes:

Katie Holland,
Shrewsbury International School,
Bangkok,
formerly Le Rocquier School, Jersey, UK.

Traci Pierce,
Ormskirk High School, formerly
Thornleigh Salesian College, England.

Elizabeth Flynn,

Stuart Peet,

Martin Plunkett,
St. Chris Bahrain, British International School, Bahrain.
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Dr Dawne Irving-Bell
belld@edgehill.ac.uk

Matt McLain
@The_DT_Geek
M.N.McLain@ljmu.ac.uk

David Wooff
@DesTech2013
David.Wooff@sunderland.ac.uk
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@belld17
belld@edgehill.ac.uk

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M.N.McLain@ljmu.ac.uk

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