Comino Foundation dinner-discussion October 2018

Making as a form of Learning

"Doing is a different way of thinking" …..it enables "students to conduct real-world research and enquiry, allowing them to discover unexpected outcomes and have a much more whole knowledge… Hands-on learning differs from, and is complementary to, academic scholarship."
Liz Corbin, RSA "Does 'making' really matter?" https://bit.ly/2MpV6KG

"haptic learning, a defining characteristic of craft, can increase broader engagement and achievement"
Julia Bennett, Crafts Council/Plymouth College of Art 'Making Futures', https://bit.ly/2AYXLGs

This dinner-discussion was held on the 31st October, one of an occasional series of such events, which focus on themes relevant to the Foundations current priorities. The background to the event was the Foundation's anxiety about the decline of opportunities for 'making' in English schools; our engagement in the maker movement and our support for education in engineering and the development of the habits of mind necessary for engineering practice. The dinner-discussion also had links to the Foundation's origins – its founder, Dimitri Comino, was a maker, both in his invention of Dexion and in his setting up of the company to manufacture Dexion. It was his conviction that people could learn the process of 'making' both objects and outcomes – a process he called Getting Results and Solving Problems.

The Foundation was represented by:

John Slater	Trustee (Chairman)	Vice President of the Parliamentary & Scientific Committee and formerly Metropolitan Police
Anna Comino James	Trustee	Facilitator of Gifted and Talented discussion groups
David Perry	Trustee	Ex Director Technology Colleges Trust & independent education consultant
James Westhead	Trustee	Director of External Relations Teach First and formerly correspondent with the BBC
Paul Pritchard	Trustee	Founder Chair of the JCB Academy and formerly Head of Learning at JCB
John Bothamley	Trustee	Chairman – Four Acre Trust
Professor José Chambers MBE	Development Fellow	Education specialist and formerly Assistant Vice Chancellor of the University of Winchester
Anthony Darbyshire	Administrator, former Trustee	Former businessman and Founder Chairman of the North Nottinghamshire TEC
Sir Mike Tomlinson CBE	Comino Fellow, former Trustee	Education Commissioner for Birmingham, Chair of Working Group for 14-19 year old reform, formerly Chief H.M. Inspector of Schools
Professor Daniel Charny	Speaker	Professor of Design at Kingston University

Julian Astle	Guest	Education Director – The RSA
Julia Bennett	Guest	Head of Research and Policy – Crafts Council
Helen Charman	Guest	Director of Learning Victoria & Albert Museum
Daniel Cundy	Guest	Principal, South Bank Engineering UTC
Liza Fior	Guest	Co-founder of muf Architecture/Art LLP
Sharon Hodgson MP	Guest	Member of Parliament
Kavitor Kapoor	Guest	Chief Operating Officer, Micro:bit Educational Foundation
Jack Mayorcas	Guest	Parliamentary Researcher for Sharon Hodgson MP
Professor Sadie Morgan	Guest	Designer – founder of dRRM Architects
Kate Mulcahy	Guest	Makerspace Co-ordinator Imperial College London
Oliver Quinlan	Guest	Senior Research Manager, Raspberry Pi Foundation

Professor Daniel Charny of Kingston University and the *FromNowOn* Consultancy opened the discussion with a short introductory talk. Daniel pioneered the FIxperts programme which has been taken up by universities world-wide and encourages a social approach to solving practical problems: small teams work with someone with a specific practical problem (the Fix-partner). Careful listening leads them into designing a solution to resolve the problem, usually through the provision of some sort of made device which is gifted to the partner. Each of these activities is recorded in a short film and a bank of these are accessible through the [Fixperts website](#).

The exhibition Daniel curated at the Victoria and Albert Museum: *The Power of Making*, was designed to show that 'making' is everywhere, for instance in surgery. It addressed the idea that there was always an 'end in sight' for people having experience of making and set out to prove that making is a way of thinking. Making can also be a form of exploration, a means by which to investigate a concern to determine the best direction of travel.

Daniel made a series of initial points:
- Where might young people first meet making opportunities?
- Students identified as 'academic' often don't get a chance to develop making skills at school
- There is now little opportunity to see making in action in cities.
- Teaching post-graduates at the Royal College of Art and Design (RCA) he found students had reducing levels of confidence in their making skills, whether using hands, tools or machines
- There is a lot of hype around 'making' , and though at times it may have shallow connections with the level required for learning design, it's part of a larger and positive trend or awareness.
- Making is a life skill
- Making enables people to access their own creativity, both as individuals and with others; it promotes problem solving skills and is an essential component of work in the creative industries.

 . . and therefore Daniel is interested in shifting the use of making as a learning activity which is thought to operate within the confines of a specific discipline to something which offers rich opportunities for learning in its own right, across disciplines. The experience of designing and making can be fundamental to children's lives. It offers and develops competencies such as

problem solving attitudes, empathy and material intelligence. Daniel is intent on ensuring that this is recognised.   However systemic change in the current English school curriculum would be needed to give every child that experience.

Over forty universities worldwide embed the Fixperts approach in their degree Programmes, but the (*Comino-sponsored*) move of Fixperts from university-level into schools is proving difficult. Fixperts are asking 'Is the offer wrong? Their approach is Integrated with STEM (science, technology, engineering and Maths) but government has not picked up the relationship of STEM with designing. Is "making with a purpose" in a project based learning model the wrong approach? Some digital innovations in schools are having success, for example MicroBit, Code Club, Raspberry Pi, but they are rarely in school hours and there is a fragmentation with lot of groups offering such provision not getting together.

Daniel suggested that the multi-disciplinary learning, which 'making' provides, gives a broader purpose to learning and is a approach which is future orientated, linked to the needs of others. This reflects the future skills that are talked of in venues such as the World Economic Forum. It builds both creativity and social skills and is essentially about being human. One Fixperts-related approach which promotes this kind of learning is the RSA's Pupil Design Awards (*also Comino sponsored*). These Awards focus on social design and may result in a policy proposal rather than a tangible product, but nevertheless engage young people in making as a form of learning.

In August 2018 Fixperts held their first 'FixCamp'[1] which engaged children in responding to the challenge of how we might live well in cities that are getting increasingly crowded. 62 'big builds' were made with teams of children engaging with some grand ideas, while learning everything in the process from making their own tools, to clearing up after themselves.

The central questions which FixCamp seek to address are:

- **How can we engage young people with creative problem solving?**

- **Can making be a positive way of learning to develop a better relationship with imagination and skills?**

As the discussion progressed the Chair asked a fundamental question: 'How has the human race survived? His argument was that since the human race has continually to adapt to changing circumstances, education which encourages creativity and inventiveness should be absolutely central. So, why are we flushing 'making' out of the education system? Is it because the academic is high status? Is there a cultural prejudice against making? Is it because 'academic' work is easier to assess?

The conversation widened to consider creativity and problem solving in schools more generally. It was apparent that there was considerable dissatisfaction both with the current curriculum and the impact of the current performance measures by which schools are judged on schools' choices and priorities. Teachers are teaching to the test. Children are no longer learning that achieving usually involves trial and error; they are being taught instead to be scared of failure. There is little attention to "know how"; instead the emphasis is on "knowing that". Educators and researchers in the group stressed how making integrates and relies on failing as part of the learning process.

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[1] 2min20sec video available at http://fixing.education/fixcamp

One Head teacher spoke of how it was possible for students to do BTEC courses in Engineering without needing to go into a workshop. Whilst the Treasury is highly concerned about the 'skills gap' he found the DFE uninterested.

By contrast a participant with experience in China remarked that whilst people in China are expected to learn by rote, Chinese parents speak of wanting to send their children to England for schooling. They want competitive advantage plus creativity. Another spoke of how Singapore was deciding to give up formal examinations to promote creativity in their schools.

(In September 2018, the Singapore Education Minister announced that the Mid-year examinations for Primary 3 and 5 pupils, as well as for Secondary 1 and 3 students, will be scrapped over the next three years. In 2005, Singapore embarked on the "Teach Less, Learn More" movement. There is now to be a new phase to be called: "Learn for Life":

> "Learn for Life is a value, an attitude and a skill that our students need to possess, and it is fundamental in ensuring that education remains an uplifting force in society."
>
> Reported in The Straits Times, 29 September 2018)

One guest remarked that 'the reference economy' was still strong: references are often valued more than formal qualifications. This was echoed by others who agreed that employers are keen to recruit students on the basis of their qualities and their experience portfolio, rather than their qualifications, but schools have to be brave to value what is not highlighted by the government's accountability measures. Two participants praised a particular Hackney school for their investment in the creative arts. Others spoke of how, when learning is experienced as having an immediate purpose, it is enriched. One guest, who runs a community makerspace for young people, which is sponsored by a university, observed that: 'The young people I work with are empowered by making'.

A guest asked 'What is it that makes British people so creative?' and another commented that his 18-year-old daughter, having just left school, had joined a 'stitch and bitch' group and discovered an enthusiasm to 'just make stuff'. Others responded that there is an urban trend to rediscover making for personal development and as a social activity. Some do this as a form of resisting consumerism and others perhaps reinforcing consumerism by buying making as an experience.

One guest with high level experience of Ofsted pointed out that Ofsted's values are changing and that a close correlation had been identified between University drop-out rates and both 'exam factory' state schools and highly-coached private school students. (It is beginning to be recognised that the DFE's Longitudinal Education Outcomes data assessment needs to extend beyond immediate post-university employment.)

Concern that schools were not now attending adequately to developing creativity provoked a series of remarks:
- Teachers need to be freed-up to be creative – currently they don't have time or space to be creative;
- Subject focus structure is difficult for project based learning, making thrives as a way of learning;
- Facilities in schools are disappointing; teachers are afraid of messy work - activities that involve making that can be done in an ordinary classroom are crucial;
- It's time to trust our schools; if they're not to be trusted then we'll pay the price.

An architect and town planner present commented that there is now a 'Child yield calculation' in town planning: minimum standards are set to provide for each child's needs. The post-Gove

schools account for every school metre and how it is used with consequent pressures on space-intensive activities such as Art and Design and Technology.

Discussion focused then on the amount of data DFE now holds, but also on the belief that this data doesn't necessarily reveal what we might need to establish. For example, community data gathered in tight localities might reveal intense opposition to many DFE priorities from key groups such as parents. Such data, if reliably collected in sufficient quantity, might provide a strong basis to influence policy.

Professor Charny closed with the remark that the future holds a period of massive change, on multiple levels within our lifetimes, encompassing the technological, economic, social and societal. This will demand radical shifts in education to support this change. The response to this future has to lie in partnerships: public; private and government.

David Perry, José Chambers