# Design Education CIC

London Schools Excellence Fund

# Final Report, October 2015

## January 2016 revision

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| **LSEF Project Name** | Design Shed |
| **LSEF Round** | One |
| **Author** | David Baker (Managing Director, Design Education CIC) |
| **LSEF Project No.** | 1027 |
| **LSEF Funding** | £53410 |
| **LSEF Project Start** | September 2013 |
| **LSEF Project End** | September 2015 (GLA/LSEF involvement only) – The project will continue long after this! |

Design Camp July 2015 – some of the pupils with the scooters that they designed and made

# 1 Executive Summary / Headlines

1. Design Education Community Interest Company (CIC) have, over the past two years, delivered a range of educational activities with the planned outcomes of better Design & Technology teaching specifically, and improved pupil engagement and performance in designing and making generally (ref. Theory of Change, p. 5)
2. From an initial project proposal to establish a permanent base (called Design Shed), the project has modified and broadened its activities to investigate a further eight possible avenues to achieve its goals.
3. This Final Report details the most successful of these avenues, specifically
   - TeachMeets for Design, Technology and STEM teachers and trainee teachers
   - Curriculum Innovation CPD sessions
   - INSETs
   - Design Camps
   - Design Days

   as well as the execution of a Design Education web site
4. The report shows that all of the original target numbers for teacher, pupil and school engagement have been exceeded, by some considerable amounts, thus:
   Teachers – original target 60; revised target 86; actual 221
   Schools – original target 4; revised target 14; actual 10
   Pupils – original target 1200; revised target 1980; actual 4359
5. The report concludes with the recommendation that work continues with Design Days and Design Camps as offering the best 'price to performance' ratios when compared to the other activities that have been tried.
6. A general strategy for further work is set out on page 20 in *Section 11.3 Future Sustainability and Forward Planning.*
7. This report should be read in conjunction with the two previous Interim Evaluation Reports of July 2014 and April 2015.

# 2.0 Project Description

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| Update from Stage 2 | In the course of the past two years, it has become increasingly clear that the LSEF programme is fundamentally an experiment.<br>The data gathered in this experiment will be used to test the hypothesis *'that investing in teaching, subject knowledge and subject-specific teaching methods and pedagogy will lead to improved outcomes for pupils in terms of attainment, subject participation and aspiration'*. (Source: LSEF Self-evaluation Toolkit – Final report, March 2015, p.2).<br>DEcic has taken this objective on board and have responded by testing out a wide range (certainly wider than was envisaged at the outset of the project) of approaches to support and encourage more designing and making for school-age children as a means of improving educational outcomes.<br>The research question for us has become 'how can we bring about more high-quality hands-on creative designing and making activity in schools?' |
| Why was the project set up? What need was it seeking to address? | Our initial proposal was based on the idea of establishing Design Shed. This was to have been *'an innovative teaching and learning centre based in West London, providing a range of out-of-school hours teacher training, curriculum development, STEM and D&T programmes'*. (Source: Stage 2 Funding Agreement, p.33). It was to address *'the demise of Design & Technology in many secondary schools …, and the paucity of teacher training and CPD opportunities*' (ibid, p.33) |
| What were the circumstances into which it was introduced? | Having been delivering extra-curricular designing and making activities in West London for some 6 years, DEcic was acutely aware of the limited and reducing levels of hands-on designing and making activities, both in Secondary and Primary schools. Many Secondary DT Departments were closing or reducing timetabled time, and Primaries were ill-equipped to address the new National Curriculum in D&T. |
| What project activities have been put in place? | Our initial intention was to set up Design Shed and to run our existing Design Camp and Design Club activities from there, as well as using it as a base for both in-house and outreach programmes for local schools.<br>However, two things became clear early on.<br>1. the difficulty of gaining the commitment of schools to use the facility in the absence of the facility – a classic chicken and egg situation<br>2. the LSEF focus on teacher training<br>As a result we put the Shed idea onto the back burner and rapidly established a range of alternative activities to further our aims.<br>Thus the following activities were explored and developed:- |
| | • Teachmeets<br>• Curriculum Inspiration CPD sessions<br>• INSET<br>• Design Days<br>• Web site<br>• Design Truck<br>• Design Trolley<br>• Children's University<br>• Consultancy<br>• Networking |
| | These have all been reported on at some length in the previous two Interim Evaluation Reports, in July 2014 and April 2015. |
| Where has the project been delivered geographically? | From Greenford (William Perkins School) in the West to Stratford (School21) in the East, and many points in between. |
| Who delivered the project? | Our ever-growing band of teachers, design practitioners and design students. |
| Who were the target beneficiary groups, and why? | Our main targets have been children in Key Stages 1, 2 and 3 together with their teachers and parents, in the belief that increased levels of designing and making can raise attainment in a wide range of subjects and skills. |

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| 2.1 | Yes, most definitely. |

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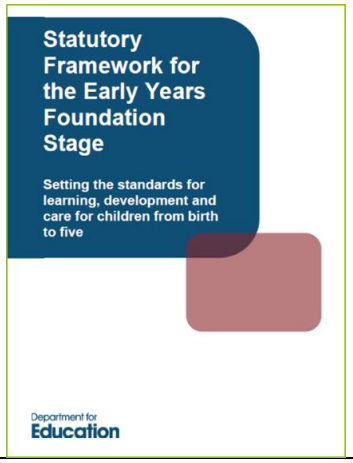
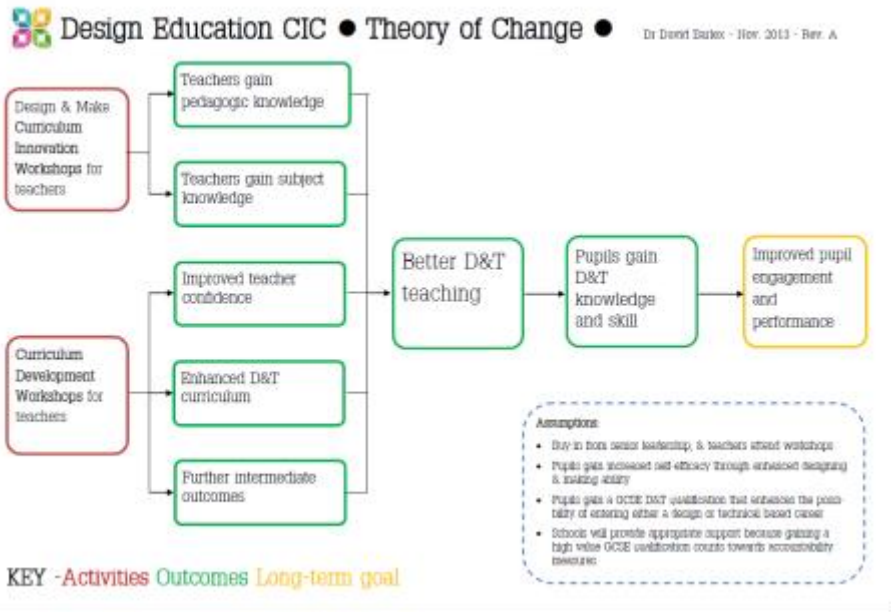
| **Does our project support the new National Curriculum?**<br>  | There is close correlation between our activities and the new NC for D&T Programmes of Study at Key Stages 1, 2 and 3 (ref. DFE-00172-2013 and DFE-00192-2013, published September 2013), both in terms of the NC's overall aims and the specific subject content.<br>Thus for example two of the main aims of the NC are to:<br>• *Develop the creative, technical and practical expertise needed to perform everyday tasks confidently …*<br>• *Build and apply a repertoire of knowledge, understanding and skills in order to design and make quality prototypes and products*<br>All of our activities, whether they be Design Camps, Design Days or teacher training sessions address these aims. |
| **In addition…** | Over and above the NC, our activities align closely with the Government's Design & Technology GCSE subject content aims of July 2015, thus, for example students must:<br>• *Develop a broad knowledge of materials, components and technologies and practical skills to develop high quality, imaginative and functional prototypes and /or products.* |
| **And even…**<br>  | The Statutory Framework for Early Years Foundation Stage (March 2012) sets out one of the learning goals as *'use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function'.*<br>Our Primary School Design Days do all of these things, and in ways that regular Primary teachers cannot. |
| **2.2**<br>**A list of materials produced and/or web links.** | The best place to read about our many activities and materials in on our web site and in particular the blog.<br>We have used the LondonEd web site to a limited extent to publicise our activities, as for instance below:<br>  <br>We could definitely share more, although given the commercial value of some of our output, this might have to be limited to general articles about our activities. |

# 3 Theory of Change & Evaluation Methodology

**Our original Theory of Change diagram**




**Revisions to our Theory of Change**

As can be seen above, our original ToC addressed simply our Curriculum Innovation and Development Workshops for teachers.

However, even in our original Agreement for the Provision of Funding back in December 2013, we envisaged a wider range of activities; thus Item 15, p.22..

- *to raise attainment in the partner schools (and beyond) by building on and scaling up our pilot work of the past five years, where, through the medium of Design Camp, Design Club and STEM Academy, teachers and pupils from the partner schools have engaged in programmes covering a range of LSEF priority areas*

Thus, although our outcomes and long-term goals have remained the same, our activities have changed. More of that below.

**3.1 List all outcomes**

Table 1 – outcomes (as set out in our Evaluation Framework)

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| Teacher outcome 1 | Improved understanding of product design & creativity techniques |
| Teacher outcome 2 | Willingness to use more varied teaching techniques |
| Teacher outcome 3 | Inspired lesson plans |
| Teacher outcome 4 | Confidence in delivery of subjects |
| Pupil outcome 1 | Improved performance of pupils |
| Wider system outcome 1 | D&T subject status enhanced |
| Wider system outcome 2 | Teacher engagement in delivery of subject matter improved |
| Wider system outcome 3 | Increased uptake of pupils in Further & Higher Education design courses |

**3.2 Did we make any changes to our project's activities after our Theory of Change was validated?**

Yes.

A major element of our Theory of Change was based on us delivering a sequence of paired Curriculum Innovation and Curriculum Development CPD sessions on general topics that it was felt were at the cutting edge of the Secondary Design & Technology curriculum. The assumption was that we would deliver an initial session and follow that up some four months later to assess the impact and uptake of what was taught in the initial session.

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| | Although feedback from the initial sessions was excellent, none of the teachers who returned for the second session has been able to incorporate the new material in their teaching because the planning cycle in Secondary schools tends to be annual rather than termly.<br>The second assumption was that the generic topics chosen would be of great interest. However, we struggled (with the exception of the first architecture CPD, which was over-subscribed) to achieve the target of 15 teachers attending each session. |
| | In the second year we therefor redirected our efforts towards the delivery of Design Days in Primary schools. Design Days are school-based designing and making projects with the CPD related directly to these projects and delivered in school premises to the teachers who would be directly involved in the Design Days. These have proved to be far more successful in achieving all of our hoped-for outcomes. |
| 3.3<br>Did we change our curriculum subject/s focus or key stage? | Yes.<br>As noted above, we changed from targeting mainly Secondary teachers to targeting Primary teachers, and from Key Stage 3 to EYFS and Key Stages 1 & 2. Delivery of our pre-Design Day CPD is still given in after-school sessions but is far more targeted to specific projects rather than generic topics. The training is also much more directly and immediately applied in the weeks that follow the CPD and we believe for that reason has had a more profound effect both on teacher confidence, subject status and whole-school curriculum changes.<br>We have also begun to talk to teachers more about designing & making (lower case) than Design & Technology, and of hands-on learning as a way of raising attainment in other subjects. |
| 3.4<br>Did we evaluate our project in the way we had originally planned, as reflected in our validated evaluation plan? | Yes, to some extent.<br>We used self-completion questionnaires both before and after our CPD sessions to establish benchmark data and satisfaction data. We also engaged informally with a number of the teachers during the Design Days themselves to observe their growing confidence and enthusiasm for further designing and making.<br>Furthermore, by carrying out repeat Design Days at a number of schools we were also able to assess the longer term effect of our work, for instance by discussing how the teachers were planning to use more hands-on designing and making in their teaching.<br>What we were not however able to implement were the admittedly rather unrealistically ambitious long term evaluation techniques for tracking GCSE results or tracking into Further & Higher education. |

# 4 Evaluation Methodological Limitations

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| 4.1<br>What were the main methodological limitations, if any, of our evaluation? | In the broadest terms, any short-duration educational research project suffers from two major limitations:<br>• that its effects are often only seen over a very long period of time (the corollary of which is that it is tempting therefor only to evaluate the most visible immediate effects, which may in themselves be very short lived)<br>• that it is well-nigh impossible to set up an equally long-term comparison group who are NOT subject to the project's interventions; this in our case would be to work with a group who are NOT experiencing designing and making in their education, a rather absurd proposition.<br>Given these general limitations, each of the settings for designing and making |

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| | CPD and school-based activities that we established had their own practical limitations.<br>Thus, for example, whilst it was relatively easy to obtain baseline data and post-event feedback on our Curriculum Inspiration CPD and Design Day CPD sessions – the setting was right and there was ample time for this – it proved much harder to settle excited pupils down for a half hour at the end of a Design Camp or a Design Day, to reflect on what they had learnt.<br>The use of daily diaries in Design Camp July 2014 and reported on in Appendix 1 proved much more effective.<br>Nevertheless, by working repeatedly with several schools, we have both anecdotally, and by virtue of our ongoing programme of Design Days, been able to draw some solid conclusions about the longer term impact on particular groups of teachers and individual schools. |
| 4.2<br>Are we planning to continue with the project, once this round of funding finishes? | Emphatically, yes.<br>The impact of our work, in particular of our Design Days and their associated CPD sessions, has been well demonstrated in this project and has become second only to our Design Camps in our battery of effective ways of fulfilling our mission. |
| 4.3<br>If yes, will we (and how will we) evaluate impact going forward? | Yes, we will continue to evaluate our work, both because the experience of working with LSEF has given us an appetite for this, but more pragmatically, because it is increasingly needed for funding.<br>Now that a number of our partner schools are embedding Design Days in their annual calendars, we have the opportunity of following groups of pupils and their teachers over a much longer period of time. In particular, we will have the opportunity to evaluate changes in whole-school curriculum and capital/resource expenditure, as well as deriving data from parents about the pupils' out-of-school designing and making activities and ambitions. |

# 5. Project Costs & Funding

## 5.1 Table 2 - Project Income

| | Original budget | Additional budget | Revised budget | Actual income | Variance |
|---|---|---|---|---|---|
| Total LSEF funding | 15000 | 38410 | 53410 | 53410 | 0 |
| Other public funding | 0 | 0 | 0 | 0 | 0 |
| Other private funding (sales) | 0 | 39431 | 39431 | 31735.68 | (7695.32) |
| In-kind support | 0 | 0 | 0 | 0 | 0 |
| **Total project income** | **15000** | **77841** | **92841** | **85145.68** | **(7695.32)** |

## Table 3 - Project Expenditure

| | Original budget | Additional budget | Revised budget | Actual spend | Variance |
|---|---|---|---|---|---|
| Direct staff costs (salaries/on costs) | 11970 | 17280 | 29250 | 26558.59 | (2691.41) |
| Management & admin costs | 700 | 830 | 1530 | 783.32 | (746.68) |
| Participant costs | 0 | 29900 | 29900 | 20621.36 | (9278.64) |
| Indirect costs | 0 | 3000 | 3000 | 1909.56 | (1090.44) |
| Other costs | 2250 | 11330 | 13580 | 16356.74 | +2776.74 |
| **Total project expenditure** | **14920** | **62340** | **77260** | **66229.57** | **(11030.43)** |

## 5.2 Commentary on project income and expenditure

Once the idea of setting up a physical Design Shed was abandoned, our expenditure profile changed from one that was heavily premises and equipment focussed to one where the dominant cost heading was staffing.
Once the project was thus redirected, the budgets have been quite closely followed and have been shown to be fairly reliable. The shortfalls in both income and expenditure illustrated in Tables 2 & 3 above can be explained quite simply by lower than planned Design Camp activity. We ran two workshops per Camp rather than four as we had done in the past.

# 6. Project Outputs

Our project undertook to deliver a number of outputs, each with a different activity type and different indicators/participants. Thus it is helpful to list those output formats in Table 4a followed by the indicators in Table 4b.
See Appendix 2 for a detailed listing of all activities and attendees.

Table 4A
Outputs by activity type

| Activity type | Detail | Target | Actual | Variance |
|---|---|---|---|---|
| CPD | Generic sessions | 6 | 5 (to date)<br>1 (to come) | 6 more than target |
| | School-specific sessions | | 3 (School21 & William Perkins) | |
| | Design Day prep sessions | | 4 | |
| TeachMeets | | 10 | 8 | 2 less than target |
| Design Days | All in Primaries | 12 'sessions'* | 8 | 1 more than target |
| Design Camps | Mixed Primary & Secondary | | 5 | |

* a 'session' is taken either as a Design Day or a Design Camp (even though the camps last for 3 or 5 days).

Table 4B
outputs by indicator

| Description | Original target outputs* | Revised Target outputs+ | Actual outputs | Variance |
|---|---|---|---|---|
| No. of schools | 4 | 14 | 10 | 6 more than original target |
| No. of teachers | 60 | 86 | 221 | 161 more than original target |
| No. of pupils | 1200 | 1980 | 4359 | 3159 more than original target |

*as set out in original Annex to Schedule 1; + as revised Annex to Schedule 1, 17th Nov 2014

# 7. Key Beneficiary Data

## 7.1 Teacher Sub-groups (teachers directly benefitting counted once during the project)

**Definitions**

**PGCE students** were on full-time Post-graduate Certificate in Education courses at the time of attending our activities. Student came from the courses at Roehampton and Goldsmiths.

**NQTs and Years in Teaching data** – we did not gather this data. Had we known at the outset that LSEF wanted this data, we could no doubt have gathered it.

**Primary & Secondary** – this was easy to deduce from the baseline data sheet where teachers gave the name of the school they were working in

**Date when data collected**

Data was gathered during the various events in 2014 and 2015

## Table 5 Teachers benefitting from the programme

I have rotated Table 5 from that shown in the Template to facilitate the addition of rows and ease of reading. I have also aggregated data by activity rather than by school as this is a more useful form of analysis.

Because of the nature of our work, we have worked with teachers from a great number of schools. We also have not gathered data on how long teachers have been teaching – we had no idea that GLA would require this data.

| | Project totals | CPD | Teach meets | Design Days | Design Camps |
|---|---|---|---|---|---|
| Number of teachers | 221 | 131 | 59 | 24 | 7 |
| % PGCE students | 24% (54) | 18% (23) | 52% (31) | 0 | 0 |
| % NQTs (1st year) | Data not gathered with this level of detail | | | | |
| % teaching 2-3 years | | | | | |
| % teaching 4+ years | | | | | |
| % Primary | 38% (85) | 45% (59) | 0 | 100% (24) | 2 |
| % Secondary | 62% (136) | 55% (72) | 100% (59) | 0 | 5 |

## 7.1.1 Commentary on teacher sub-groups e.g. how this compares to the wider school context.

Each of our four major project types – CPD, TeachMeets, Design Days and Design Camps – produced a different teacher profile, to some extend by design but to a significant extent, by accident.

Our Design Days were only targeted at Primaries, hence the 100% figure there. We would have liked to run Design Days with Secondaries but the apparent impossibility of Secondary SMTs taking a worthwhile number of pupils off timetable, even for a day, mitigated against that.

We were particularly pleased at how easy it was to attract PGCE students to TeachMeets, at least in the Autumn Term when they were not yet on their school placements.

## 7.2 Pupil Sub-Groups

**Definitions**

We have used the standard data sets produced by the Office of National Statistics, and their definitions for LAC, FSM, EAL and SEN.

The only data that we have not obtained is for FSM over the past 6 years as that data does not exist in any of the standard databases. We would have had to drill into a considerable amount of source data in each of the schools where we were working to obtain that, and it is difficult to see its relevance to our work.

**Date when data collected**

We have use the January 2014 returns from schools for these tables.

**Table 6**
**Pupil Sub-groups analysed by disadvantage**

| | Project total | Hammersmith schools | | Newham schools | |
|---|---|---|---|---|---|
| | | Primary | Secondary | Primary | Secondary |
| No. pupils | 4359 | 1870 | 550 | 224 | 223 |
| % Looked After Children | | .55 | | .52 | |
| % Free School Meals | | 28.7 | 25.1 | 29.3 | 37.4 |
| % FSM last 6 years - Data not available | | | | | |
| % English Addit'l Language | | 48.5 | 42.2 | 75.3 | 67.2 |
| % Special Educ'l Needs | | 20 | 18.4 | 17.6 | 20.8 |

National FSM% rates are 15.7% secondary and 18% primary.
National EAL% (defined as pupils whose first language is other than English) rates are 14.3% secondary and 18.7 primary.
National SEN% rates are 17.8% secondary and 16.6% primary.
Data in this table is for the January 2014 figures.

**Table 7**
**Pupil Sub-groups analysed by sex & attainment**

We have not gathered data under these headings.
Indeed, we are mystified by the reference in the LSEF Self-evaluation Toolkit template table to Lower attaining, Middle attaining and Higher attaining.
Neither the London Data Store, Ofsted's Data Dashboard nor the Department for Education's EduBase2 use these terms.

**Table 8**
**Pupil Sub-group analysed by ethnicity**

| | Project total | Hammersmith schools | | Newham schools | |
|---|---|---|---|---|---|
| | | Primary | Secondary | Primary | Secondary |
| No. pupils | 4359 | 1870 | 550 | 224 | 223 |
| % White British | | 25 | 29 | 6 | 8 |
| % White Irish | | 1 | 2 | 0 | 0 |
| % White Irish traveller | | 0 | 0 | 0 | 0 |
| % White Roma/Gypsy | | 0 | 0 | 0 | 0 |
| % White any other | | 13 | 12 | 11 | 10 |
| % Asian Indian | | 1 | 1 | 9 | 9 |
| % Asian Pakistani | | 1 | 2 | 13 | 12 |
| % Asian Bangladeshi | | 1 | 2 | 19 | 18 |
| % Asian any other | | 3 | 4 | 5 | 4 |
| % Black Caribbean | | 7 | 7 | 4 | 5 |
| % Black African | | 19 | 16 | 15 | 18 |
| % Black any other | | 2 | 1 | 5 | 3 |
| % Mix White & Black Caribbean | | 4 | 3 | 1 | 2 |
| % Mix White & Black African | | 2 | 1 | 1 | 1 |
| % Mixed White & Asian | | 2 | 2 | 1 | 1 |
| % Mixed Any Other | | 5 | 4 | 3 | 3 |
| % Chinese | | 0 | 0 | 0 | 0 |
| % Any other ethic group | | 11 | 11 | 6 | 5 |

**7.2.1 Commentary**

The ethnicity data has been derived from the actual number of pupils for each Borough and sector (Primary & Secondary) as set out in the 'Schools, pupils and their characteristics' published on line at https://www.gov.uk/government/statistics/schools-pupils-and-their-characteristics-january-2015
I have taken the actual numbers given in the Borough figures and converted them to percentages for each area where we have mainly worked.
It would not be meaningful or useful to average those percentages and apply them to all of the pupils with whom we have worked. What the data shows is that we have worked in areas that are uniformly underprivileged when compared with national averages.

# 8. Project Impact

## 8.0 The research context

When considering our evaluation design, we have been mindful of four key areas of ongoing educational research:

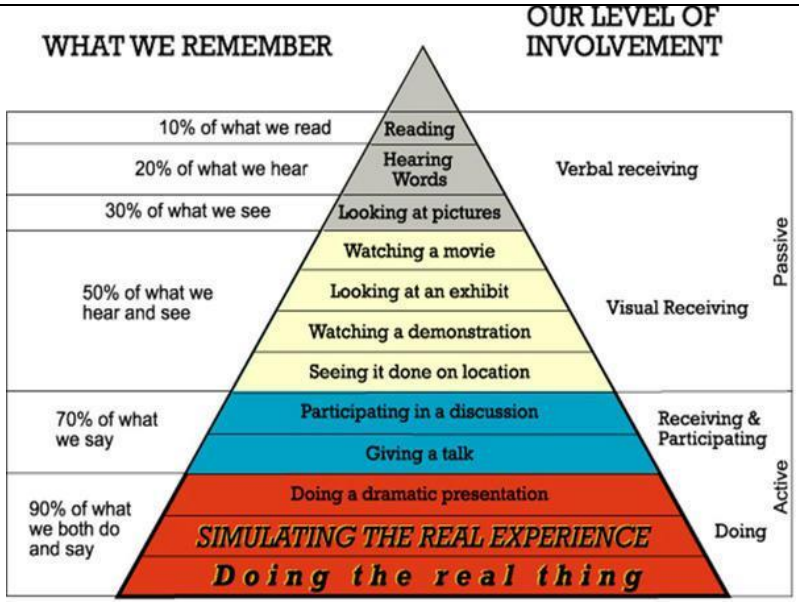
- research into the impact of informal education in general
- research into the impact of design-based learning
- research into the educational impact of hands-on designing and making activities both within and without the domain of Design and Technology
- research into the effects and impacts of evaluation and assessment processes

Given that there is already research into these areas, and faced with the limitations of time and money imposed by the LSEF process, it did not seem sensible to divert a significant amount of time or money to testing any particular pedagogic hypothesis.

Our aim was rather to run worthwhile teaching and learning activities which our experience told us would be fruitful rather than to be part of someone else's research project.

It is useful here to list some of the research that has been carried out in these areas and that have underpinned our confidence that our work would have positive impacts:

- Regarding informal education, the material gathered since 2007 by Professor John MacBeath for the Children's University; although to some extent seeking to promote the CU's work, sufficient data has been gathered over a long enough period of time to show positive impacts particularly in attendance, attainment and attitudes to education (ref. *'Evaluating provision, progress and quality of learning in the Children's University, 2012 – fourth report to the CU Trust, January 2013*)
- Regarding design-based learning, the work carried out by Professor Doreen Nelson at California State Polytechnic University, Pomona; thus from the university's web site *'She pioneered Design-Based Learning over 35 years ago with a method that produces dramatic improvement in K-12 student achievement. It reverses the emphasis from traditional rote learning to engaging students in thinking at the highest level by building physical artefacts that represent concepts in the curriculum.'*
- Regarding the impact of Design & Technology, the meta-analysis carried out by Wilson and Harris and reported in The Journal of Technology Education, Vol. 15 No.2, Spring 2004 *'Creating Change? A Review of the Impact of Design & Technology in Schools in England'*. They reviewed 61 sources from both academic and government bodies.
  Their rather daunting conclusion was that *'Our overall conclusion is that despite the number of references to D&T in the published literature, the impact of Design and Technology has not been proven. This remains a challenge for the research community'.*
- Regarding the impact of hands-on designing and making activities, there are many studies that deal with the effectiveness of particular teaching methods. One particular pervasive illustration of the effectiveness of hands-on activities where pupils actively engage in 'doing' are the so called 'Learning Pyramids'. There follows a typical example but there are many.




Although generally credited to the National Training Laboratories in Bethel, Maine, USA, they have disowned the diagram and its many derivatives. Whilst generally accepted as a fair description of recall following various teaching activities, there is no research basis for the specific percentages noted. The diagram has been heavily criticised in de Bruyckere et al. *'Urban Myths about Learning & Education'* (2015)

- Regarding the effects and impacts of evaluation and assessment processes, many educationalists have written of the 'dead hand' of assessment. The issue is touched on by Sir Ken Robinson and the 'Schools Kill Creativity' lobby, with the underlying belief that it is the examination systems in schools that kill creativity and act again the overall quality of education – the idea that teachers teach to the test.
  Anecdotally, I feel this to be true but I have been unable to find any supporting evidence. De Bruckere et al concludes that *'Maybe schools are not fostering or nurturing creativity enough, but they definitely do not kill it!'* What we absolutely do not want to do in our Design Days or Camps is to inhibit children's creativity or their preparedness to learn from their mistakes by implying that there is a 'right' answer or a 'best' design. We often say that we want them to 'fail successfully'.

## 8.1 Teacher Outcomes

**Date teacher intervention started**

October 2013

**Table 9 Teacher Outcomes: teachers benefitting from the project**

The hoped-for target outcomes (as set out in our Theory of Change) were to be

- Gains in pedagogic and subject knowledge
- Improved teacher confidence
- Enhanced D&T curriculum

These translated in our Evaluation Framework to

- Improved understanding of product design & creativity techniques
- Willingness to use more varied teaching methods
- Inspired lesson plans
- Confidence in delivery of subject (D&T)

Research method / data collection

Paper-based survey forms were handed out and completed at the start and the end of each activity.

In the case of the CPD sessions linked to Design Days, because these have now developed into ongoing relationships with particular groups of teachers, we are able to discuss how our work is affecting their teaching over a much longer

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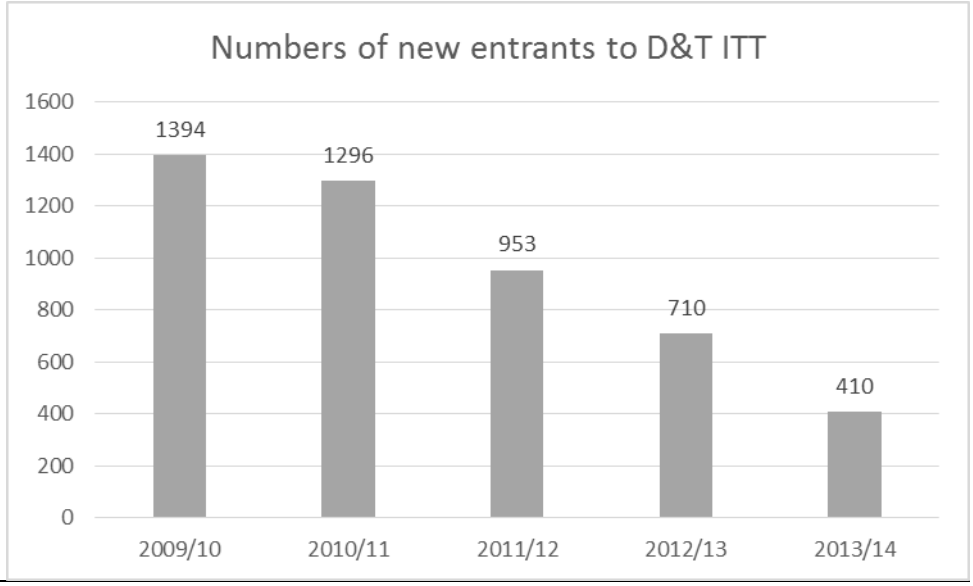
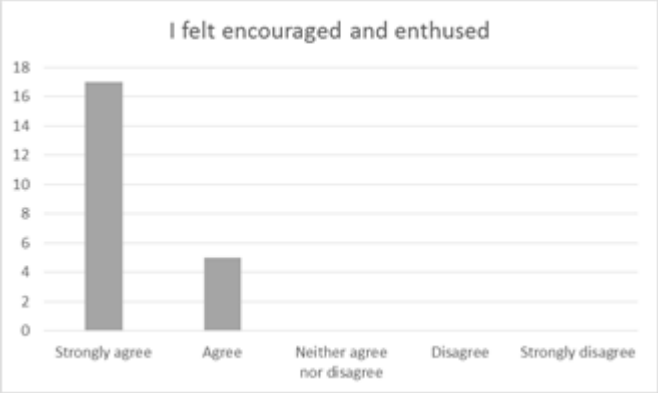
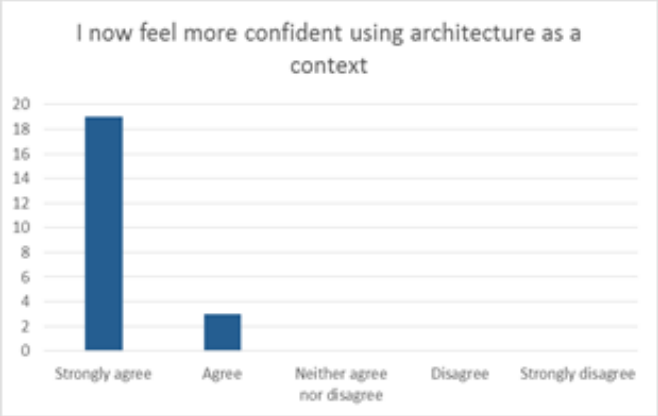
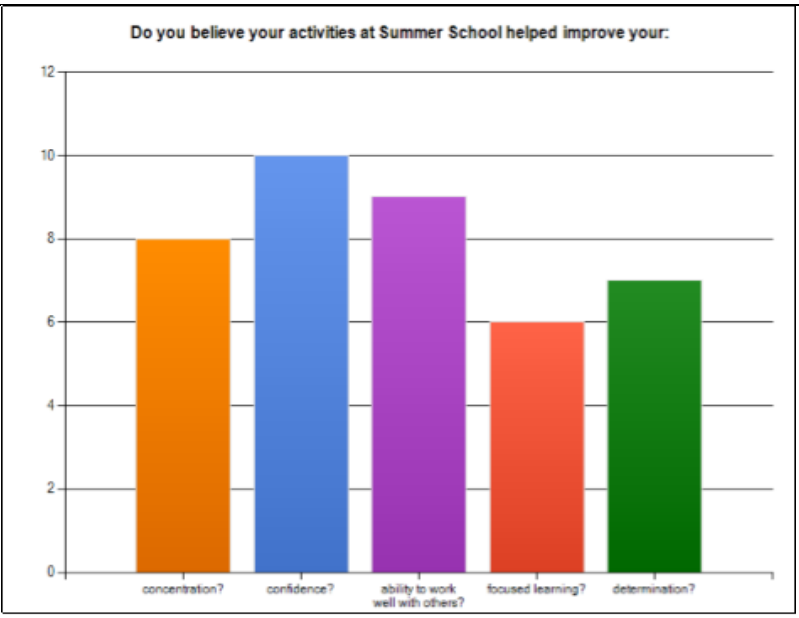
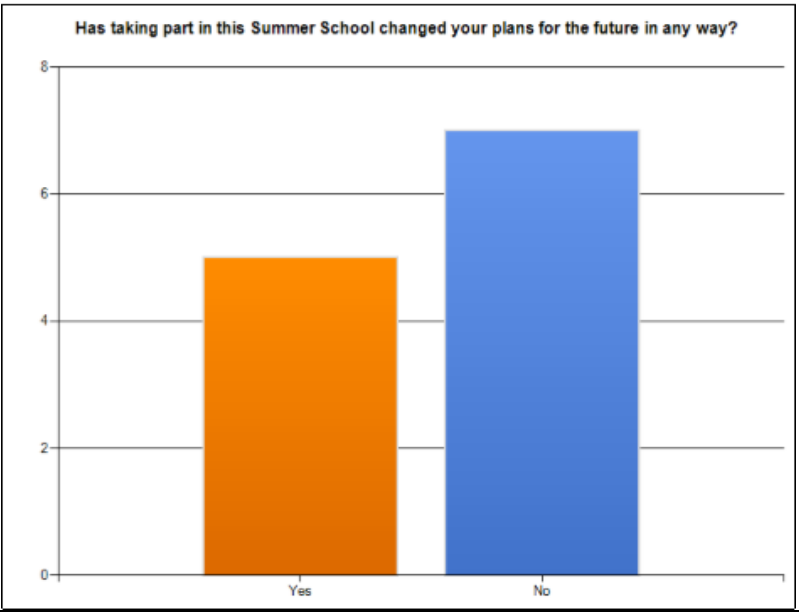
| | period – essentially mini-focus groups.<br>We have also run one larger focus group with Primary teachers under the sponsorship of Tilgear Ltd to explore their attitude to design and technology teaching generally. A professional focus group interviewer was employed for this purpose and his observations are submitted as a separate document to this final report. |
| | Sample Characteristics<br>These varied with the activity, as noted in Table 5 and paragraph 7.1.1 above. |
| | Metric used<br>Generally a 5 point scale from strongly agree to strongly disagree, together with some open questions relating to the specific topic being studied. |
| | 1st and 2nd Return and date of collection<br>Our forms fell into two categories – first time sessions and repeat sessions. In the first time session forms, we gathered baseline data about the age, role, years qualified, and previous experience of designing and making (or the specific subjects being covered in the CPD). We also sought their expectations for the workshop.<br>At the end of that first session we asked questions about the likely immediate impact, in particular what topics they intended to follow up and use in their work. We also took the opportunity to ask about other topics that they might like to learn about.<br>In the second and subsequent sessions we asked if they had in fact used any of the ideas and resources learnt about in session #1. We asked if they now felt more confident using designing and making (or the specific topic or skill covered) in their teaching.<br>The collection of this data has continued throughout the project and will continue in the future. We see this as an important part of our ongoing work and of great value in marketing our Design Days in particular.<br>In addition to this data gathering, we collated data about the falling numbers of teachers training to be D&T teachers as an indicator of the reducing level of designing and making taking place in English schools. Thus, taking data from the DoE's ITT datasets:-<br>  <br> |
| Table 10 Comparison data outcomes for teachers | For the reasons outline in paragraph 4.1 above, our project did not have a comparison group. |
| 8.1.1 Information and | Sample – size, method and extent to which it was representative<br>We worked with 221 teachers over the course of the projects. In the case of our TeachMeets and Curriculum Inspiration CPD sessions these were self-selecting, |

| | |
|---|---|
| commentary about teacher impact | responding to our various advertising campaigns. In the case of the Design Days, the teachers were attending because their schools required them to do so in after school-CPD sessions and on the Design Days themselves. In the case of Design Camps, teachers were recruited by us based on meetings that took place informally in the preceding weeks and months.<br>I'm not entirely clear what the LSEF means by 'representative' – representative of what? I would say that the sample was a typically varied collection of London teachers and trainee teachers as could be, given the nature of the projects and our aims and objectives. |
| | Commentary on teacher impact<br>From comments in the feedback forms it would appear that our work had an immediate and positive impact on the teachers.<br>An analysis of a CPD session, irrespective of the topic being taught, typically produced graphs showing this profile (sample in this case was 21):<br>  <br><br>And<br>  <br> |
| | Qualitative data to support quantitative data<br>We received many positive comments in feedback forms. A tiny sample thus:<br>*'Good to review ideas with others'*<br>*'It's always food for thought and it's great to hear such a range and number of ideas'*<br>*'I am planning to use the drawing frame with Y10 in my next project'* |
| | Additional data<br>Our second Interim Evaluation Report of April 2015 contained much further analysis of data from teachers attending our Curriculum Inspiration CPD and Design Days teacher training sessions.<br>What is particularly encouraging about Design Days is that, working with the same teachers on a repeat basis (several schools have now booked one session per term throughout the school year) we can see their growing confidence and preparedness to use designing and making to give deeper educational experiences to their pupils. |

| 8.2 | Pupil Outcomes |
|---|---|
| Date pupil intervention started | March 2014 |
| Table 11<br>Pupil Outcomes for pupils benefitting from the project | Target outcomes<br>Ambitiously, our target (in our Theory of Change) was for pupils to 'gain D&T knowledge and skills', with the long-term goal of 'improved pupil engagement and performance'.<br>This translated in our Evaluation Framework as a long-term outcome,<br>• Improved performance of pupils measured against previous years' D&T grades |
| | Research method / data collection<br>Our research method always assumed a much longer time period than the 2 years of the LSEF. Further, it assumed that schools were grading D&T at both Secondary & Primary levels. This is not in fact happening in schools; indeed, at both levels, there is so little D&T now being delivered that assessment of pupil improvement would not be possible.<br>We therefor ended up carry out simple post-activity surveys as well as on the spot interviews with pupils. A detailed write-up of our 2014 Design Camp is appended here as Appendix #1.<br>Thus a typical post-Design Camp workshop data set (sample size 15) would produce a graph thus: |




**Sample characteristics**

These varied with the activity. However, with the demise of D&T at Secondary level, we have found ourselves working more and more with Primary aged pupils.

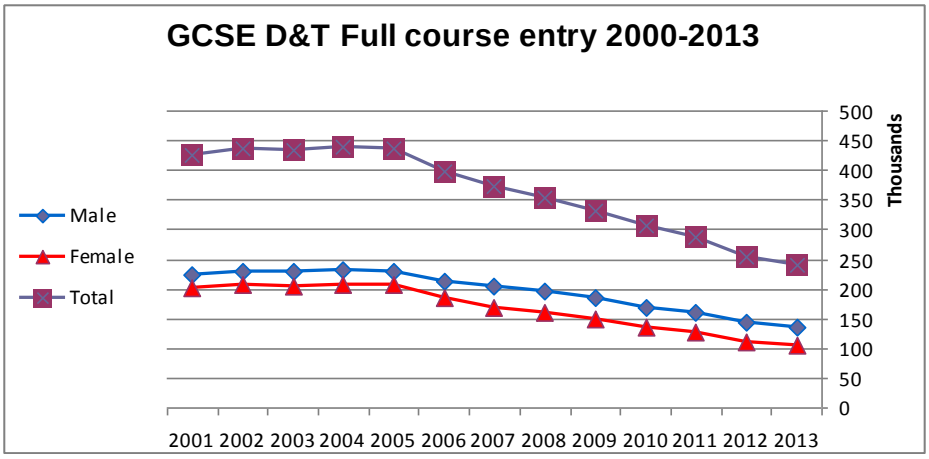
**Metric used**

Generally specific questions relating to pupils' personal feelings and opinions rather than the 5 point scales. See for instance the tables above. At Design Camp 2014 we also asked the pupils to keep diaries of their activities each day and to reflect on what they were achieving. Their comments are summarised in Appendix #1.

**1st and 2nd Return and date of collection**

The baseline data covered pupil's age, school and previous experience of designing and making. We also collected the borough wide data shown in Table 6 above.

We have also for some time been monitoring the reduction of D&T activity being undertaken in Secondary schools as reflected in GCSE candidates; indeed this is one of the motivations behind Design Education CIC and our mission. We believe we were the first organisation to illustrate and publicise this dire situation, thus:




The trend has continued beyond 2013, and remains a strong motivator for our organisation.

**Table 12 Pupil Outcomes for pupil comparison group**

For the reasons outline in paragraph 4.1 above, our project did not have a comparison group.

**8.2.1 Information and commentary about pupil impact**

Sample – size, method and extent to which it was representative

Appendix #2 gives a detailed breakdown of pupils participating in our various activities.

The figure of 632 pupils directly involved is reliable, being based on actual registers taken at events. The figure of 3850 is more hypothetical as it derives mathematically from the numbers of teachers participating in our activities.

Pupils attending Design Camps were self-selecting; those on our other events were attending school in the normal way. To that extent, they were likely to be more representative of the entire cohort.

Commentary on pupil impact

This cannot be assessed over this short period of time, and certainly not by reference to GCSE results. However, the fact that many of the Design Camp attendees are repeat 'campers' would indicate that, if nothing else, we are providing an activity that children are enthusiastic about.

Qualitative data to support quantitative data

Both teachers and parents report to us that pupils are gaining confidence in designing and making things as a result of participation in our activities.

Typical post-Design Camp feedback from parents contain statements such as :

*J... thoroughly enjoyed her week at design camp! As a matter of fact, on the Sunday following the end of the camp, she said that she wished that it was not over and that she could go back again! She was thrilled with the results of her efforts and felt that she had learned quite a bit regarding the process of turning a design into a finished product. She would love to go again next year.*

And...

*N... had a blast. He really enjoyed meeting other people esp the older boys. He met 2 other people from HP who he hadn't known before and that was good. He loved using the equipment and being tutored by someone he was impressed with.*

There is much qualitative data in Appendix #2;

This comment is typical:

*"I feel proud, overjoyed and for once not sad about what I had achieved today and I am extremely excited to show my family what I have done!!!"*

## 8.3 Wider System Outcomes

**Table 13** Target outcomes

| | |
|---|---|
| Wider system Outcomes | Our Evaluation Framework set out three ambitious long-term outcomes:<br>• D&T subject status enhanced<br>• Teachers engagement in delivery of subject matter improved<br>• Increased uptake of pupils in Further and Higher Education design courses |
| | **Research method / data collection**<br>We have observed the changes in both annual plans and staffing that have taken place in the schools where we have been working. |
| | **Sample characteristics**<br>We have worked in 10 schools in the course of the project. However, the greatest involvement has been with 3 Primaries and I Secondary.<br>Each has its own particular characteristics, largely deriving from the ethos established by the Head teacher; however, in demographic and curriculum terms, all are fairly typical. |
| | **Metric**<br>We have observed the extent to which designing and making activities are now included, either in annual events calendars (as Design Days) or in Schemes of Work. |
| | **1st and 2nd Return and date of collection**<br>Baseline data has been gathered as set out in Section 7 above. |
| 8.3.1 Information and commentary about wider system impact | **Sample – size, method and extent to which it was representative**<br>Unsurprisingly, given the upheavals in recent years in the English education system, there is some variety in the 10 schools with which we have worked. Seven have been Primaries, 3 have been Secondaries. Of the Primaries, the variety has been in scale, from single form entry to 3 form entry. Of the Secondaries, 2 are academies, one is a free school.<br>The common feature has been that all have Head teachers and/or senior teachers who recognise the limitations of teaching a traditional curriculum in traditional ways. |
| | **Commentary on wider system impact**<br>At the risk of blowing our own trumpets, we have seen how our involvement in our three core Primaries and two of our Secondaries have had a significant effect on the status of D&T. This is evidenced by the fact that the 3 Primaries now have programmes of D&T Design Days in their school calendars for 2015-16, and the two Secondaries have taken on part-time design practitioners both to deliver designing and making activities directly with pupils and, perhaps more importantly, to support subject teachers in including more ambitious hands-on making activities in their teaching. |
| | **Qualitative data to support quantitative data**<br>The emails from Head teachers have been very positive. Here is a typical example from a Primary Head:-<br>*Thank you for such a brilliant day – the fashion/ shoe show was a great success. All the feedback has been extremely positive.*<br>The head teacher from another school has written<br>*'Design Education has made a big impact at School 21, a new 4 to 18 school in Stratford, in the following ways:*<br>*- building a team of design practitioners who can train teachers to develop extraordinary products with their students: from theatre design to electronic toys to jewellery to installations*<br>*- developing the expertise of senior leaders to ensure that design methodology is used throughout the curriculum so that students learn how to be problem solvers and work to a client brief*<br>*- inspiring all staff to think ambitiously and challenge students to produce high quality work at all ages.* |

| | |
|---|---|
| 8.4<br>Impact Timelines | **At what point in the project did we expect to see impact on teachers, pupils and the wider system; and did this happen as expected?**<br>As far as teachers were concerned, we hoped to see results over a four month period. As far as pupils and schools were concerned, we expected a much longer period over which impact would be seen, certainly longer than the duration of LSEF.<br>In the event, we were wrong about teachers –the period of change is rather longer, at least a year in terms of revising Schemes of Work; and we were wrong about schools – the period of change has been quite rapid. Schools have been able to add us into their annual plans almost immediately.<br>As far as the impact on pupils is concerned, that must still be a long-term prospect. |
| | **Do we anticipate any continuing impact?**<br>Yes, certainly. We are established in the annual plans of three local Primaries and are now on a regular retainer at the Secondary; and we continue to receive enquiries from schools interested in our Design Days. |
| **9.0**<br>*Reflections on the overall impact of our project; the extent to which our Theory of Change proved accurate; the extent to which it contributed to the overall aims of LSEF; the extent to which it supports the hypothesis of the LSEF and what our findings say about the meta-evaluation theme.* | **Reflection on overall project impact**<br>Given the limitations imposed by the size and nature of our organisation, I believe that we have had as much impact as could reasonably be expected. Indeed, when one looks at the greater number of schools, teachers and pupils that we have worked with and influenced over the past two years that we originally planned, a far greater impact.<br>Schools which were doing no D&T and only a very little designing and making, are now doing far more, and have embedded designing and making activities in their curriculum and annual programme of events.<br>Our Theory of Change has proved correct in a number of ways. Teachers do feel more confident after our interventions and are using designing and making more in their teaching.<br>What is difficult to demonstrate though, and this is a problem for the entire 'creative schools' movement, is to show that teaching in more modern and hands-on ways leads to raised attainment (even if we could achieve a consensus on what is meant by 'attainment'). The whole field is at sixes and sevens at the moment so it is hardly surprising that there is a paucity of data on the long-term benefits of designing and making in the lives of our schoolchildren.<br>What one can say, and this does support the LSEF aims (of subject participation and aspiration) is that pupils do want to participate in our type of projects, designing and making ambitious and unique objects that solve real problems, and that for many of them, it puts into their minds the idea that they are the designers of the future and that they might enjoy a future career in design and or manufacture.<br>And this must surely be a part of the cultural change that sees London and its educational system as a creative community tasked with making lives better for all people. |

# 10.0 Value for Money

**10.1 Apportionment of the costs across the activity**

The author of the Self-evaluation Toolkit would appear to have had a particular type of project in mind when drawing up the table that follows sub-heading 10.1 (which I have numbered Table 14). The author seems to be assuming a conventional programme of CPD sessions rather than the more varied battery of approaches that we have tried.

I hope that our form of analysis, based on the LSEF Budget breakdown, gives a useful insight into the spread of funds across a project such as ours, and one that will be useful in future budgeting.

**Table 14**

| Broad type of activity | % of total project cost | £ Actual amounts |
|---|---|---|
| Direct staff costs (programmes manager) | 40.1 | 26558 |
| Management costs (Directors costs) | 1.2 | 783 |
| Cost of sales (cost of running programmes) | 31.1 | 20621 |
| Indirect costs (cost of equipment) | 2.9 | 1909 |
| Computers & software | 0.8 | 552 |
| Website | 12.1 | 8013 |
| Insurance | 2.9 | 1892 |
| Accountancy | 6.3 | 4147 |
| Printing | 0.1 | 96 |
| Tax & statutory fees | 2.3 | 1510 |
| Premises (store room rental) | 0.2 | 145 |
| TOTALS | 100 | 66226 |

**10.2 Commentary on value for money**

In evaluating a mixed economy approach such as ours, a more helpful term than 'value for money' is 'price to performance'; and a broad definition of 'price' to take in the effort involved, is also more useful, vague though it might seem.

The straightforward profitability of each project type is also a factor to consider in terms of the sustainability of our organisation.

Thus I would comment against each of our new project types:

| | |
|---|---|
| • TeachMeets | Superficially cheap, these nevertheless require an inordinate effort to recruit attendees. The outcomes are also highly unpredictable. We have been unable to establish local groups to take these on. Not something we intend to pursue except in the limited locations of PGCE courses/colleges. |
| • Curriculum Inspiration CPD | Expensive to run and highly demanding in terms of recruitment effort. Finding generic topics that will bring teachers out of an evening is difficult. Not profitable. |
| • INSET | If set up at the request of a school or Borough, these can perform well, as the customer handles recruitment and a fee can be agreed in advance. |
| • Design Days | Again these are set up at the request of schools and the teacher attendance can be guaranteed. The beauty of this project type is that costs can be controlled and the CPD teaching is immediately used in the following Design Day. The best price to performance ratio. |
| • Web site | Expensive but essential. |

**10.3 Value for money comparison to control groups**

Not applicable

| | |
|---|---|
| **11.0** | **Reflection on project delivery** |
| 11.1 Key Enablers and Barriers to Achievement | The key barrier to achieving our goal of improved pupil engagement and performance in Design & Technology is the low status given to the subject by much of the educational establishment. The traditional approach still being taken by the Government to education, and its obsession with measures such as league tables, 'Best 8', and EBac subjects is holding back not merely this subject but a far more creative curriculum. Writers such as Guy Claxton and Ken Robinson, and the current Design & Technology Association's campaign ('*Design & Made in Britain???*') make the case far better than I can.<br>Where we have had success, it is due to the visionary approach of individual Head teachers who are prepared to fly in the face of the prevailing orthodoxy. |
| 11.2 Management and Delivery Processes | Given the limitations of our organisation's size and funding, I believe that we have been as effective as we could have been.<br>We have certainly exceeded our own expectations of what we could do over the past two years. |
| 11.3 Future Sustainability and Forward Planning | We have reviewed our work over the past two years and will be implementing the following plan of action:<br>1. Stop running TeachMeets and generic CPD sessions, unless specifically requested by, and paid for by, an organisation or group who can guarantee attendance<br>2. Continue running holiday Design Camps (say 3 per year - a one-week Camp in the summer and 2 (or possibly 3) three-day half term camps) funded by fees and/or sponsorship;<br>3. Continue running Design Days with associated CPD (max 1 per fortnight) funded by schools and/or sponsorship<br>4. Develop Design Trolleys with associated CPD as bespoke made–to-order products to sell to schools or use in our own Design Days funded by sponsorship.<br>5. Continue to take on consultancies as and when approached or opportunity presents itself.<br>6. Develop the usefulness of our web site, including a shared resources section on the lines of Stanford's SparkTruck 'toolbox'.<br>However, it is clear from the finance of the past two years, and our knowledge of the market, that we will continue to require grant aid to cover the general overheads of running the business. |

# 12.0 Final Report Conclusion

| | |
|---|---|
| 12.1 Key findings for project impact | We have tried out a wide variety of ways to spread the designing and making message. Of these, Design Days as a means of both giving teachers an effective CPD experience and the pupils a deep and memorable experience has emerged as an important activity to sit beside Design Camps in our general business plan.<br>Other key findings have been:<br>• The accelerating demise of D&T in secondary schools and teacher training courses<br>• How easy it is to set up TeachMeets and CPD sessions, but how difficult it is to get teachers out of the trenches to attend them<br>• That there is a greater market for design education in Primary than Secondary schools<br>• The difficulties of creating satisfactory evaluation methods for long term impacts<br>• The rapid emergence of the MakerSpace movement<br>• The effort required to set up and manage a vibrant web site |
| 12.2 Key lessons learnt for assessment of project delivery | All of our activities worked to a limited extent, some simply required more effort that the outcomes merited. Thus Teachmeets and generic CPD worked less well because of the unpredictable nature of their audience, whereas INSETs and Design Days with a guaranteed audience, gave much better 'price to performance' results.<br>Design Camps remain the best way of delivering deep and meaningful creative designing and making activities to enthusiastic children.<br>The costs associated with setting up a Design Shed will mean that this will remain a faint hope until such time as a generous sponsor can be found; and although a much cheaper option, even Design Truck looks likely to require substantial sponsorship to put it on the road. |
| 12.3 Informing future project delivery | The project should definitely have done more fundraising. However, given our limited time and money, and our appetite to run our activities as opposed to the disheartening grind of fundraising, this is perhaps not surprising.<br>Both of our main formats – Design Camps and Design Days - are capable of scaling up. All they require is the money to fund additional staff to market and deliver the activities. The demand, and more importantly, the need is there. |

| Appendix #1 | Report on Design Camp 2014 |
|---|---|
| | This report has kindly been researched and written by Niall Morahan, Holly Mahoney, Lyn Chung and Ed Tam of the Services Design MA course at the Royal College of Art. |

*The Experience of Design Camp*

We asked the children to keep daily diaries while at Design Camp recording what they learned, what they found out about themselves, and how they felt. The children's responses reveal a few things. The first is that from day one, Design Camp is very empowering for the participants. From Monday on, children repeatedly tell us they are proud, happy and surprised with their progress and what they've built.

*"I feel proud about my bird home!"* - Beau, Monday

*"I feel very good and pleased with what I made"* - Noah, Wednesday

*"I am amazed and very happy at my progress"* - Jaiden, Wednesday

To a much lesser extent, especially with children who are slightly older, the familiar frustrations and disappointments of the design process are also recorded. Children tell us that there are some elements they are not good at, or that they couldn't get something to work. However, these are negotiated through the week, and on Friday there is a very happy group of children who have learned, gelled and grown. We witnessed this first hand. One of the oldest children, Eloise, told us on Friday:

*"I feel proud, overjoyed and for once not sad about what I had achieved today and I am extremely excited to show my family what I have done!!!"*

Ultimately, the camp builds children's confidence - this is clear both from following the process of what they're learning through the week, and also drawn out explicitly in some of the quotes.

*"I feel confident."* - Joe, Wednesday.

*Learning about Design*

At the end of the camp, we quizzed children on what they had learned. At the most basic level, the camp taught the children how to make the specific objects it was focused on - bird / bat boxes and jewellery. Most of the children cited this as their main learning (11/12). Interestingly, all of the children said 'make' rather than 'design'.

At a slightly higher level, through this activity the camp also taught the children more general making skills, which many of them recognised - tool use and mould making were cited a lot (7/12).

Two of the children told us they had learned how to take a more structured approach to design, however few others were able to extrapolate their skills to how they would be useful in school.

We asked a few of the children to define design, and got some interesting answers:

design is *"thinking outside the box, making stuff, letting imagination run away with you"*

design is *"you think of ideas and plans and how to make an object"*

design is *"the first basis of anything that's made, what makes general structure"*

These answers make clear that the children were learning about design as a more general pursuit - future camps could seek to draw this out more, and make it clearer how the children could bring their learnings to bear in school, beyond just when they are making similar objects or when similar tools are being used. An exercise at the end of the camp where children must define design, or defining design as a theme running through the camp, could be a good addition.

*Learning about Learning*

When we interviewed children on the first day of the camp, we asked them how they feel about school generally. Four responded positively, one negatively, but the overwhelming response was indifference (7/12). Children told us things like "I don't mind it" or "I'd give it 5/10". There was a clear opportunity for the camp to offer another narrative and another type of learning / learning environment.

This became clear again when we asked children after the camp how it had affected their views of learning. Half of the children told us it had changed their view - (5/12) - citing the relaxed atmosphere, the fact that they could move around, *"learning by actually doing",* and that *"learning can be fun".*

Two children told us that they had realised they did not have to fear making mistakes. *"Design is hard"* one child told us. *"Sometimes you make mistakes, but that's ok - you can make another one"* (presumably another model rather than another mistake!).

It might be personal bias talking here, but we believe this theme could be drawn out much more in the camp. At our own camp, we gave a presentation to the children about all of the successful people who got it wrong before they got it right, and how failure can be good. We'd be all too happy to share it with you.

We end our review on a mixed note. When we asked the children whether anything would be different when they went back to school, five told us that their experience in DT would be changed in some way - they would be more engaged, or more able. Five told us that it would be exactly the same - nothing would be changed when they went back to school. And two told us that all would be the same, except for one things - they *"will be missing design camp".*

Integration of learning and continuity is the major challenge for design camp moving forward as we see it. Our suggestions of engaging the children with design as a general concept and encouraging making mistakes, and similar initiatives, will go some way towards consolidating learning. However there will be another major piece to this which involves school engagement and potentially even term-time programming, take-home activities for the children, or leveraging parent networks.

# Appendix 2 Detailed schedule of activities

This schedule has been prepared to support the figures given in Table 4 – Outputs.
Teachers and Pupils who are 'repeats' are bracketed and have not been counted in the totals.

| | Topic | Location | Date | Teachers attending | Pupils Directly | Pupils Indirectly |
|---|---|---|---|---|---|---|
| **CPD - generic** | Biomimicry 101 | Makerversity | 26 Feb 2014 | 10 | | 250 |
| | Biomimicry 102 | Burlington Danes Acad. | 24 June 2014 | (11) | | (275) |
| | Architecture 101 | Royal College of Art | 8 Oct 2014 | 22 | | 550 |
| | Architecture 102 | Royal College of Art | 4 Feb 2015 | (8) | | (200) |
| | Design in the classroom | Royal College of Art | 22 Jan 2015 | 9 | | 225 |
| **CPD - School specific** | Curriculum Innovation | William Perkins Acad. | October 2013 | 12 | | 300 |
| | Primary DT Curriculum | TriBorough Teachers Ctre. | 7 May 2014 | 18 | | 450 |
| | Design-based Learning | School21 | 23 July 2015 | 60 | | 600 |
| **CPD - Design Day prep sessions** | Structures 1 | St Stephens CoE Primary | 23 Oct 2014 | (9) | | 330 |
| | Structures 2 | | 19 Nov 2014 | 11 | | (330) |
| | Shoes 1 | | 26 Jan 2015 | (11) | | (330) |
| | Shoes 2 | | 23 Febn 2015 | (11) | | (330) |
| | Skyscrapers & SketchUp | St Pauls Primary | 13 Mar 2015 | 3 | | 30 |
| **TeachMeets** | 1 | Bush Hall | 9 Jan 2014 | 8 | | 200 |
| | 2 | Latymer Upper | 12 Feb 2014 | 10 | | 250 |
| | 3 | RCA Battersea | 19 Mar 2014 | 5 | | 125 |
| | 4 | Goldsmiths | 8 May 2014 | 18 | | 450 |
| | 5 | Goldsmiths | 17 June 2014 | 5 | | 125 |
| | 6 | Goldsmiths | 27 Nov 2014 | 4 | | 100 |
| | 7 | Latymer Upper | 1 Oct 2014 | 5 | | 125 |
| | 8 | Business Design Centre | 12 Feb 2015 | 4 | | 100 |
| **Design Days** | 3D Printing | St Stephens | 10 Mar 2014 | (4) | 60 | |
| | Structures | St Stephens | 12 Dec 2014 | (11) | 330 | |
| | Shoesday | | 26 Mar 2015 | (11) | (330) | |
| | Flyunderday | St Stephens | 19 June 2015 | 2 | 30 | |
| | | St Pauls | 4 June 2015 | 2 | 30 | |
| | | John Betts | 11 June 2015 | 2 | 30 | |
| | | Greenside | tba | 2 | 30 | |
| | Skyscraper Day | St Pauls | 20 Mar 2015 | 2 | 30 | |
| **Design Camps** | Bird boxes & jewellery | St Stephens | 21-25 July 14 | 2 | 13 | |
| | Robots & badges | St Stephens | 17-19 Feb 15 | 3 | 32 | |
| | Robots 1 & 2 | St Stephens | 14-16 April 15 | (2) | 17 | |
| | Hammersmith Flyunder Camp | St Pauls Primary | 26-28 May 2015 | 2 | 15 | |
| | Scooters | BDA | 20-24 July | (2) | 15 | |
| **Totals of unique nos.** | | | | 221 | 632 | 3850 |

Appendix 3

# Design Education CIC - Evaluation Framework – school year 2014-15

| Outputs | Indicators of Outputs | Outputs Data Collection |
|---|---|---|
| • Provision of designing and making expertise for teachers and pupils<br>• Development of D&T community that enhances the subject<br>• Development of practice that improves pupil engagement and performance | • We will run 6 CPD sessions as rolling workshops with up to 15 teachers attending each session<br>• We will run 10 TeachMeets<br>• We will work with over 50 unique teachers<br>• We will run 12 pupil sessions (both in-school and out-of-school) reaching at least 180 unique pupils | • Baseline survey to establish benchmark prior to session at sign up point to collect data using self-completion questionnaire<br>• Satisfaction survey at end of session to assess possible improvements to session and encourage networking<br>• Follow up survey 3 months after workshop using combination of self-completion questionnaire and face to face interviews asking additional questions to assess growth and the attribution to the project |
| **Intermediate Outcomes (teachers subject knowledge)** | **Indicators of Outcomes** | **Outcomes Data Collection** |
| • Improved understanding of product design & creativity techniques | • Positive changes to the D&T curriculum in line with the new National Curriculum (NC)*;<br>• changes could be observed through changes to teaching paperwork, such as Programmes of Study and Schemes of Work, including students' workbooks and worksheets<br>• an expert auditor would need to assess the changes both in NC terms, such as wider range of tools, techniques and materials being used and wider range of teaching methods being proposed – and in terms of originality, topicality and the motivational impact on students (the latter being observed in lessons as well as through paperwork) | • Monitoring via follow up self-completion survey and some face to face interviews to provide enrichment and input to further questionnaire design – baseline interviews and surveys in Autumn Term 2014 (September to December) 2014; impact interviews and surveys – Spring and Summer Term 2015 (January to June 2015) |
| • Willingness to use more varied teaching methods | | • Data collected via online portal when teachers accessing new tools and lesson plans; from launch of new web site in Autumn Term 2014 (September 2014) and continuing throughout 2015 |
| • Inspired lesson plans | | |
| • Confidence in delivery of subjects | • Better delivery of subject content and improved pupil engagement and attainment as observed by expert auditor in lesson observations | • Lesson observation notes |
| **Long Term Outcomes (pupil attainment)** | **Indicators of Outcomes (pupil attainment)** | **Data Collection (pupil attainment)** |
| • Improved performance of pupils measured against previous years D&T grades | • Improvement in GCSE performance when compared to previous year<br>• Improved end of KS2 and KS3 assessment<br>• Larger GCSE pupil uptake | • Monitoring of GSCE results to check grades and pass rates<br>• Tracking KS2 and KS3 assessment results to monitor data shifts<br>• Measuring pupil uptake of subject to see increase using school data |

| Long Term Outcomes (wider school system) | Indicators of Outcomes (wider school system) | Data Collection (wider school system) |
|---|---|---|
| • D&T subject status enhanced<br>• Teachers engagement in delivery of subject matter improved | • Increasing network of teachers engaged in Design Education CIC (DEcic) activities<br>• Growth in number of TeachMeet D&T sessions London-wide<br>• Inclusion of our specialist teaching topics (e.g. biomimicry, 3D printing, architecture, wicked problems etc.) in the D&T curriculum | • Survey of curriculum offering both prior to and post attending CPD and TM with DEcic via school Heads of Department interviews face to face and telephone<br>• Register of attendees and feedback forms from DEcic TeachMeets |
| • Increased uptake of pupils in Further and Higher Education design courses | • Numbers of pupils enrolling on design courses | • Tracking of long term Designers and Makers from this project by maintaining twice yearly contact with a selection of D&T students and graduates<br>• Destination data from Careers Department |

* Programmes of Study and Schemes of Work where *'Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values'* (D&T Statutory Guidance, September 2013).

The NC also indicates what progression looks like in D&T.

Thus for instance KS1 pupils must be taught to….
 design purposeful, functional, appealing products for themselves and other users based on design criteria
 generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology
 select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
 select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

And at KS2 …….
 use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
 generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design
 select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
 select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

It is that kind of subtle progression that the expert auditor would be on the lookout for.