Joinedupdesign for Academies: Enhancing Design learning through complexity

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Abstract

This paper reports on research undertaken on the Sorrell Foundation's *Joinedupdesign* for Academies programme, a pilot scheme with four universities in the United Kingdom (UK) aiming to inform the transition of 'failing' secondary (11-18) schools into academies (involving substantial re-designs and re-building). From the authors' university, 12 undergraduate Design students participated in *Joinedupdesign* for Academies, in partnership with two secondary schools in the Midlands region of England. Like other universities in the UK, it has well-established links with local schools and programmes of community engagement, corresponding with reported US experiences (Lerner & Simon, 1998). The Sorrell Foundation model is an example of university design departments working in multiple partnerships in order to align with government initiatives (such as the Labour policy *Building Schools for the Future* to rebuild or renew nearly every secondary school in England over a 20 year period). By embedding the pedagogy of live projects, there is potential to impact significantly on local regeneration.

The aim of the study was to investigate *Joinedupdesign* for Academies as a new model of off-campus learning. In order to do this, we explored: the impact on student learning for employability; the effectiveness of undergraduate learning with pupils as clients, and the challenge of working with multiple partners in a complex environment. In terms of Design education, this provided a rare and timely exposure to the complex demands of the kind of regenerative, publicly-funded work on a large scale which will be providing opportunities for designers in the UK over the next decade.

Keywords

Design pedagogy; Live client collaboration; Multiple partnerships; Community regeneration; Employability Skills

Recent drivers of government policy in the UK following the Education Act of 2002 (Working Together, 2004; Cox, 2005; Leitch, 2006) have prompted a new impetus to Design education and the importance of educational partnerships. This has led to a number of funded initiatives including *Creative Partnerships* and *Building Schools for the Future*. One prominent example emerging from these drivers is the Sorrell Foundation's *Young Design Programme* (YDP), (The Sorrell Foundation, 2005), which aims to enhance the scope of design education at secondary school and university (and in so doing, dovetails with government policy to raise standards in education). Research indicates (Butcher, 2009) that undergraduate Design students on the YDP benefitted significantly from enhanced employability skills, and in return make an impact on the community (Rudd, Marshall and Marson-Smith, 2008). In this study, the authors will relate enhancement in student learning to the complexity inherent in the sister programme *Joinedupdesign* for Academies.

Contextual factors

Design pedagogy

In university Design studies, live client projects are enhancing the curriculum and challenging undergraduate students with outside constraints and deliverables, furthering their knowledge. In return, the community benefits from university links on various levels. 'Service Learning', which involves matching a community need with academic goals, is becoming increasingly important in Higher Education (HE). Student assignments are developed in consultation with academics and external partners requesting input from students to solve a particular problem. These live client collaborations are run as problem-based equivalents to traditional theoretical studio based design assignments. As such they deviate from the more common models of work placements and learning through work programmes, in which the learning is supposed to be integrated into the work experience. This definition of a live client project is described by Viljoen and Hoskyns (2007), who further review current practice in UK HE and relate these to research in Learning and Teaching. We argue in this paper that involving design students in regeneration projects has the potential to impact on the communities in a real way. In focusing on design pedagogy, we explore the impact on undergraduate learning, in particular the enhancement of skills through live client engagement.

Widening Participation/Outreach

From our UK university perspective, engagement with the *Joinedupdesign* for Academies programme offered a new form of community outreach work, in a collaborative partnership which was different to the prevailing agenda of *Widening Participation* (WP) which has driven UK HE policy for over 15 years. WP (HEFCE, 2001) can be represented as a range of policies and funding streams designed to: target groups disengaged from HE; remove barriers to HE; and increase the proportion of citizens with university level qualifications. For Design education in HE, WP has often been 'one-way', through portfolio advice/enhanced curriculum projects in schools or external pre-16 and post-16 aspiration-raising summer schools, (at its worst, 'selling HE to kids'). In contrast, *Joinedupdesign* for Academies has offered a very different conceptualisation of a community partnership, with schools and particularly their pupils serving as clients for the Design students, and industry mentors advising in the context of authentic live briefs. This has been a much more dynamic, two-way learning process, although the Sorrell Foundation's original impetus, to empower the pupil voice in the design of schools, has ensured the WP mission to raise pupil aspirations as part of a social justice agenda, has not been lost.

The Young Design Programme as a national initiative

The YDP is externally coordinated as part of a national initiative, with ten universities and thirty-five schools involved in 2009. It is managed systematically as a regular and continuous part of the curriculum at the participating universities. YDP aims to promote collaboration between design students and secondary school pupils, by asking the latter: "what they want to improve in their schools?" (The Sorrell Foundation, 2008) This programme informs the process of regeneration of school campuses and surrounding community. The approach, established in 2000, follows UK policy initiatives (see above) and *Creative Partnerships*, a creative learning initiative fostering long-term partnerships between schools and creative professionals, including architects, scientists, multimedia developers and artists.

Crucial to the conceptualization of YDP is that, with the support of Head teachers and staff, pupils should take ownership of their brief and present it to as many audiences as possible.

Joinedupdesign for Academies

This approach is refined still further in the *Joinedupdesign* for Academies development, a pilot project undertaken by the Sorrell Foundation with design students at four UK universities. Undergraduate design students from the authors' university worked with school pupils whilst being supported by the *Joinedupdesign* for Academies team and industry-based mentors. These, a practicing designer and a chartered architect had a significant effect on the students' work, concerned with visualisation and building technicalities.

The pupil client team was a group of children from five schools (the two 11-18 secondaries and three 'feeder' 7-11 middle schools), representing the views of the existing school community in formulating a pupil brief informing the master plan for their new academy to engage architects, sponsors and local authorities in what pupils want their academies to be like. This involvement was represented in the subsequent rebuild of the school campuses. Pupils attended a number of sessions throughout the spring term 2009, with the undergraduate designers facilitating (The Sorrell Foundation, 2009).

The university's Design staff, having attended an explanatory talk at a launch event at the London headquarters of the organization, developed a student assignment and mapped this onto the curriculum. Twelve students (four male, eight female) worked with two Academies (with representatives from their feeder schools) in three teams of four students grouped to share skill sets, deliberately cross-disciplinary in order to provide them with the experience of working with people from different subject specialisms: Product and Interior Design. At the university's 'Challenge Day' the pupil client teams met the student design teams for the first time and were tasked to work out what design problem they would like solved. For many, this would have been the first time they had ever entered a higher education environment (Smith, 2008). During this meeting, design teams showed their clients around the college and the client teams presented their design problems; these included school communal and reception areas, outdoor spaces, toilets and specialist classrooms.

Following these initial meetings and throughout the project lifespan, the student design teams attended meetings at the schools to gather background information, develop ideas, show progress and get feedback from their clients. This whole process is described as "the conversation" and included meetings organised by the University Design tutors at creative destinations in London. These visits were arranged to help the pupils reflect on their school environment in comparison to contemporary "designed" spaces. Sponsors met the student designers to discuss their vision for the Academy. They explained to the students why the Academy's specialisms had been chosen, and analysed its proposed relationship with the local community, before addressing issues of design and sustainability. The stakeholders discussed the local issues and the students described early discussions relating to the pupils' priorities.

The pupil clients presented the information they had collected to their local authority representatives, project managers, sponsors, teachers and Design students. They showed them the brief boards they had created for the top three common issues, and explained why they thought it was crucial to resolve these issues. The brief for the student design team was to prepare concepts for a dinner hall and social space. In three subsequent meetings at the school, the students presented design ideas

through sketchbooks, colour drawings, material samples and 3D models, and the pupils offered feedback and further suggestions. The student designers developed and refined their ideas with the support of other students and their tutors. Upon completion of this project the finished design concept was presented to the client team for feedback and was separately assessed by course tutors at the university.

At the beginning of June, the teams gathered for a local celebration of their work on the *Joinedupdesign* for Academies project at the university, where they received certificates for their contribution to the project. They travelled to London the following week to join pupils from the other academy projects. Here, the pupil and design teams discussed their work with stakeholders and sponsors in a special marketplace. Their work was exhibited in the Sorrell Foundation's exhibition *What's Next for Schools?* and the event culminated in the presentation of the finished Pupils' Brief for each academy (See below Fig. 1).

Figure 1 The Pupils' Brief, documenting young peoples' participation in school redevelopment programmes

Methods

In order to gain evidence to address our research question, data was collected in a series of exploratory stages. The researchers monitored each interaction between undergraduate designers and school pupils through field notes. Multiple evaluations were conducted via a range of structured questionnaire and a reflective student group report. Triangulation came from industry mentors, school pupil and teacher feedback. At the end of the project, two focus groups were conducted with the undergraduates to elicit their perception of learning from the project. Findings were compared with a national evaluation (Rudd et al, 2008) and with previous 'live client' engagements conducted within the university sector as mapped in the literature (Viljoen and Hoskyns, 2007).

Analysis was undertaken drawing on an inductive framework informed by educational case study research (Bassey, 1995). In this, indexicality, in which meaning is elicited by coding and categorising from statements shared by participants through grounded theory approaches, allowed themes to emerge.This was iteratively informed by the authors' ongoing review of the programme structure and design in terms of pedagogical principles; the effectiveness was assessed through (a) student oral and written feedback, (b) client engagement and oral feedback, and (c) summative student assessment through presentations and multi-angled feedback by staff and peers, recorded through a scribe and documented with audio visual footage for inclusion in the students' Personal Development Portfolio. The captured participants' perceptions align with the Pilot Evaluation of the Young Design Programme 2005-2008 concludes that the "*the client-centred model encouraging 'real life' experience of the cycle of a design project, has been extremely effective in bringing institutions and individuals together*". (Rudd et al, 2008)

Student learning

In this *Joinedupdesign* for Academies case study, students were extensively briefed by the client team and group work and plenary sessions identified problems leading up to the design brief being finalised. The *YDP* structure enabled students from differing design subject backgrounds to work together and share a range of learning outcomes such as:

- developing support structures within and between teams
- university design student teams engaging with clients
- developing clear mechanisms to communicate one's message and ideas to others

Throughout the term-long project, work was monitored by means of individual and group tutorials and practical demonstrations. The student design teams presented the newly designed environments back to the school children giving them the opportunity to gain an insight into the design industry and university design study process. Just as with previous presentations to professional clients, the undergraduate students took this seriously, preparing elaborate physical and computer generated models, supporting their proposals with well-prepared powerpoint presentations. The researchers noted a high level of nervousness prior to the final presentations, suggesting an authentic engagement with pupils as clients. The school children themselves gained much from the experience and regarded the students as professionals, which bolstered their confidence and helped them to adjust to working with different client groups. This was captured in pupil comments:

It was fun working with real architects; they could transfer our visions for the new Academy into proper designs that looked amazing, we can't wait to see the final designs. (quoted in Schaber, 2009)

The students' feedback, sampled through questionnaires, suggests that this project has been useful to all members of the student design teams involved. A student reported that it *"had allowed all of us to gain valuable experience, and develop skills, which we would have been unable to do through a typical university lead design project. In particular I have been able to develop better time management, which will be of great value in the future. This project also allowed me to improve my communication skills, and has enabled me to work younger aged group of clients than a typical design project, which further helped to develop communication and presentation skills."* Students addressed the problems concerning the organizer's communication and programme management: *"Overall this has been a useful and enjoyable project, however at times it could have been better organised, and … more advanced notice of the event would have allowed us to better prepare for the boardroom meeting with the sponsors, which would have made to event more useful in terms of the information extracted from the meeting."*

As reported in previous research on its sister programme, the Sorrell *Young Design Programme* (Butcher, 2009), undergraduate student learning from *Joinedupdesign* for Academies was both wide and deep, although less about developing specific Design skills (as perceived by the students) than broader interpersonal skills (which of course are integral to Design planning). Some self-reported evidence did include the acquisition of design skills in: *using a laser cutter… in model-making… in photographing work for presentations, improving my computer skills in Photoshop… I am more confident knowing I've got that skill… designing for different types of clients and thinking about the needs of disabled pupils… working with other design disciplines… learning how Product Designers draw products… sketching in CAD.*

However, this acquisition of new design skills was viewed by undergraduates as a by-product of their involvement in the programme, rather than a core learning experience. The greatest evidence of perceived enhancement of their learning came in the 'softer', interdisciplinary skills related to employability. In this, the bulk of feedback was around: team work; problem-solving; time management; working with clients, and in relation to future employment.

Learning in teams

For example, when asked in the focus groups about working in a mixed team, a number of students commented on the enhancement gained from sharing strengths across different design disciplines and collaborating on a shared problem:

You've got to be able to see the difference between our skills and their skills… we had a product designer in our team, she was more knowledgeable in material areas whereas I'm not, but there were also some areas where I could help her… I remembered she had better knowledge in materials than me so I went back to her and asked for help.

Working in a team makes you understand more about your strengths and weaknesses as a designer… so you can work on your weaknesses… Learned to appreciate one another's skills, and compromising, as you can't have it all your own way.

So students recognised this innovative learning experience had 'forced them' to reflect on their own skills, to learn experientially how to compromise and negotiate, and to gain insights into the different design skills of others in a project team. This high level of reflection resulted from being put in a situation in which peer communication (especially between students who had not previously worked together) became a vital component of success:

Communication with different disciplines in our team, with any discipline, is what I've learned… being able to explain what you're doing, being able to listen to what they're doing too, and collaborating with each other… keeping in touch with each other, meeting regularly to exchange ideas.

While this was not an easy experience for most students (as evidenced by the body language during the focus groups), the authentic live brief, though complex in its demands, pushed students to see themselves as operating in a more 'professional' environment when they had to deal with real clients:

You just get things done, it's professionalism… you just don't want to let the rest of the team down.

When you work with a team that you're not normally used to working with, you find different ways of doing things rather than the way you've been taught to do things… sometimes they're better, as working with other people helps you discover better things when designing from your point of view… even if there is a 'collision' with others!

This element of working in a mixed team was reported as a critical learning enhancement, especially considering students perceived themselves not really used to working in a team.

Learning through problem-solving

The focus of the team's work together was also an important aspect of the learning, exemplifying problems to solve. One problem in particular was accommodating different design ideas from the team members (and the clients) into a final 'pitch'.

It made me realise how important it is to learn how to take the views of others into consideration and be able to put them together to find a solution rather than just taking one person's… it's quite a learning curve to know how to put them all together… everybody has really different opinions… it's difficult to mesh them all into one design.

Individual students were able to develop a strategy to address that problem, which they represented as taking a professional approach to others' ideas – something they had not had to do on their degree course previously. This problem-solving was an important aspect of personal learning as perceived by individual students:

Learning your own strengths and weaknesses through the timescale, and trying to get things done in a group… you can recognise what you're not so good at.

The 'problem' of over-enthusiastic pupils as clients also had to be sensitively dealt with:

Our client team wanted a juice bar but it had to be a reception so we had to dissuade them by encouraging their other ideas.

Students were thus in a position to utilise their novice designer personas to find a creative way to shift a preoccupation with a single (in this example, inappropriate) design idea. Our commitment to the importance of teaching visual communication is confirmed, as oral presentation skills have to be refined when presenting to live clients, often at community and board level, with direct implication on employability.

Learning time management

Interestingly, the opportunity to learn time management skills was linked to the challenge of operating as an effective team in a way which could enhance problem-solving. This became a particular feature of the way this project was structured, in that students operated semi-autonomously, and recognised:

We had to ensure we kept the lines of communication open… if you were with a 'difficult' group it made it harder, some members were willing to come in earlier… communication had to be strong between members of the group to ensure we got that extra time.

This resulted in further personal learning:

I prioritised this work over other projects… worked a lot of hours outside college time.

It also enabled key roles to emerge in relation to the challenges faced:

At the beginning everyone was on an equal footing, but towards the end there were two of us that had to become leaders, to take a leadership role to ensure the group even stayed together.

Learning from pupil clients

However, the most strikingly innovative aspect of the *joinedupesign* for Academies programme was the crucial involvement of pupils (aged between 10 and 14) as clients, in the context of planning the rebuild of their own schools. For them, this was not an abstract exercise, and they brought a lot of passion to discussions of what

they wanted their new school to look like. In working with clients, our design students learned a great deal, much of it unanticipated:

You need to think what you are going to say a bit more… we were describing a particular part of our model, we had to explain to them that you can physically build glass walls… they thought it was easily smashed, they thought vandalism would be a problem and it would break… technically we understood that, but we had to find a different way to explain it.

We had a double skin on ours (a roof, then another roof). Trying to explain that without a model was quite difficult – until we managed to sort out a computer-generated image… it was the visual aid that helped rather than relying on explaining it through words.

Figure 2 Client conversation aided by physical and digital models

These 'language clashes' were evidence of communicative dissonance which prompted our undergraduate design students to find creative solutions to overcome their initial reliance on 'taken-for-granted' technical language. This learning experience was reflected on as a positive one, in forcing recognition of client needs:

From the first visit we learnt that just describing something was not enough… the best way to communicate was to show, because they had showed us around the school… the enthusiasm came from them saying 'look at this', running ahead to point something out… images were the way forward.

It also opened up an important insight into the needs of different partners:

I really enjoyed working with children, communicating with different age ranges… I was excited working with them rather than school governors, who were only interested in money, not in our designs.

Students were also able to articulate the benefits from working with this unusual client group:

It helps you to adapt… they can want something that will never work, but as a designer you can take it and mould it to what will work.

I didn't see it as unusual because you have to adapt to your client… but they're going to have slightly different views, they haven't seen much of the world yet.

So the learning was coming from a sense of empathy and insight with the fact that all clients will be different, and the pupils merely offered one step on the client

continuum. This authentic client undoubtedly added to the students' learning experiences:

Working with an external client outside the university was quite exciting.

It gave me a sense of professionalism…we knew we had to present properly to proper clients, rather than imagining a client.

Learning for employability

The complexity of the project (involving our design students working with pupils, teachers and governors, academy sponsors, Sorrell Foundation staff and industry mentors) led to a number of important personal insights into individuals' intended career paths. For some, the innovative link with pupils and schools was timely:

It made me think more about teaching design… I really wanted to work with children – their imaginations are incredible and limitless… adults have the realities of practicalities - like costings.

I thought it was cool working with the kids because you might not work with them otherwise as a designer… you wouldn't normally go back to work in a school… and they were so enthusiastic.

For others, it confirmed different paths:

Working with a school was useful, I wanted to work in a commercial environment rather than domestic…and it was great to have more scope for a wider range of design ideas.

Even though I enjoyed working with my group, when it comes to employment I will consider working for myself now rather than for a company… as such it was a (negative) learning experience.

Discussion

Complexity of multiple partnerships

Complexity in Design has been outlined by Alexiou, Johnson and Zamenopoulos (2005). They conceptualise Design as an interactive process taking place in a social environment requiring cooperation and the exploration and construction of common knowledge. In this study, complexity was apparent in the multiplicity of partnerships, and to some extent in the 'measure of ignorance' (Alexiou et al, 2005 p.91) between the partners. Thackara (2006) focuses on the changing role of design in a complex world, and the need to reform learning in design, which is part of that. Correspondingly, for some students, the reflection was deeper, about the nature of complex learning:

It was interesting that so many different groups wanted to get so many different things out of the project…there were competing agendas between the children as clients, the Sorrell Programme idea of what should happen, and what we wanted. It helped me understand you need to know what you want from a project…we had to go at the project from all perspectives.

We suggest the complexity inherent in the *joinedupdesign* for Academies project comes from its origins as a 'social innovation', in which collaboration between individuals (pupils, teachers, Design students), organisations (schools, governors, sponsors, education authorities) and environment ('failing schools' and a well-resourced government school rebuilding programme) is the focus. Complexity is

represented as a top-down intervention to engage bottom-up participative aspiration in order to improve pupils' lives, driven by those pupils as 'agents of change'. The premise is that another way (of designing schools) is possible.

As a result of the complexity, there were inevitably advantages and disadvantages. Although student debriefing was facilitated through the feedback and interview sessions, the continuation of the relationship was not built into the programme. Interestingly, some of the students involved exchanged business cards in the hope to gain placement opportunity once the architects are appointed to execute the planned new-builds, but it is uncertain that students identified the various stakeholders' intentions during the session the Sorrell Foundation facilitated at an event in London. There, they had opportunity to query the sponsors, local authority representatives and teachers.

The applied research undertaken by academic staff in the context of the case studies provides up-to-date understanding of multilayered communication and managerial skills and the awareness to planning issues, publicity strategies and manufacturing processes, which can be fed back into teaching. Also, the experience confirmed that *"community organizations, agencies and government bodies each have rules, procedures and practices that either facilitate or inhibit collaborations"*. (Todd, Ebasta and Hughes, 1998)

Benefits for academia and community

The relationship between community, local schools and academic institutions is likely to produce more than short-term gains, and provides insights and networking opportunities to benefit the parties involved.

Through the university's involvement with *the joinedupdesign* for Academies project, the students have worked with what were 'failing schools', known in the communities as 'sink' learning environments. These schools are, by their nature, unlikely to send many pupils to study design at Higher Education level. Whilst engaged in programmes stimulating social regeneration within the community, it has to be asked whether or not it has galvanised the pupils' thinking and challenged them beyond conventional design considerations. In their feedback, our undergraduate students cherished *"the opportunity to work with the school children"* with one of their colleagues stating that "*I am considering working with schools."* A student remarked that the most important point of the brief was *"to create an environment that both pupil and staff can be proud of, and provide all users of the school including visitors with a sense of belonging."* Good design builds reputation and identity in a place and the community at large, and could be "a way of showing they are proud of their school" (Sorrell, 2008).

Most importantly, from the viewpoint of the Sorrell Foundation, *"pupils work in client teams to debate each common issue, noting what it is like in their school now, and proposing how things could be improved in the future. This information produces the Pupils' Brief, a publication informing architects, head teachers and the local authority about the pupils' ideas"* (Sorrell, 2008). Through this, the students, in turn, contribute to the process of urban regeneration. Furthermore, the students impact upon the clients by being positive role models and raised "ambition" in the pupils. One of the children said: *"I liked working with proper architects and as a result of this experience I would like to train to be an architect myself, they made it look really easy"*.

Conclusion

This pilot of *joinedupdesign* for Academies ran concurrently to the much larger YDP, but had distinctive characteristics which we were reminded of at the major launch event: a depth of rigour (through keeping closely aligned with the dates set out in the process guidance's and funding (with the Sorrell team double manning all sessions, recording all student-pupil interaction, and providing direction when appropriate). In addition a coordinator was placed at each school overseeing the transformation into an Academy (in one school there was an external consultant and also a member of an educational charity who will be a sponsor, responsible for the new school. The second school had the assistant head teacher facilitating. This differs from the YDP, which has to rely on an enthusiastic teaching staff, or champion of the engagement.

This innovative community partnership has provided an opportunity for powerful situated learning in Design, with the authentic brief offering HE Design students opportunities to: enhance their skills (through creative problem solving); develop their attributes (through preferences for learning through doing); and improve behaviours (by putting things together creatively). This learning was achieved in the context of a creative/social entrepreneurship model which, as collaboration, was more embedded in the Design curriculum than work experience, and more holistic in terms of facilitating employability skills than work-based learning.

Findings suggest the *Joinedupdesign* for Academies partnership is an effective approach to bringing various stakeholders in Design education together. However, compared to commercial live client projects, the complexity of the multiple sites and partners appeared to make this project markedly less efficient. Students highlighted the repetitive nature of some elements of the project and some felt ill-prepared to present at board level, and struggled to identify stakeholder intentions and underlying agendas. Facilitation from members of university staff was found to be highly demanding (a point acknowledged in the national feedback sessions by the project managers). In terms of undergraduate learning, a wide range of employability skills were demonstrated: community consultation; interpreting a master plan or survey; eliciting feedback from planners, pupils and local government; team work; time management; project planning; presentation to a panel; public/media relations. The authentic complexity of the tasks associated with the partnership project challenged the students to cope with co-learning (involving the merger of expertise in communities with expertise in universities), in a context of less-predictability.

Therefore, key outcomes for the Design students included in this *joinedupdesign* for academies project were positive. In relation to employability skills, their learning was enhanced by the experience of working in teams, of working with pupil clients and working to an authentic life brief. However, as a new model of off-campus learning, significant challenges emerged for tutors running the project, with the complex multiple partnerships requiring additional time and resources. The potential outcomes for pupils are less easy to measure, and will require further research of a longitudinal nature to see if impacts are sustained beyond the life of the programme.

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