Part Two: Background

We have come to believe that activities labelled '*Transfer of good practice*' and '*Dissemination of teaching and learning*' are both more subtle and more complex than the common rhetoric suggests. Our understanding has grown from our twin viewpoints, acting both as disseminators (facilitating the transfer of materials/practices) and as practitioners (wanting better solutions to persistent problems) and the interaction between these roles.

Transfer expects transformation

Evaluating success in transfers is not easy:

> " ... whether a transfer is good or bad is contingent: it has to be judged on the merits of a particular situation. Ideally, one would perform a full cost-benefit analysis on every case of transfer or transfer failure to say if it was appropriate. In practice, this can be very problematic because costs and benefits are delayed, hidden and not quantifiable with confidence"[1]

In particular, in our evaluations, we encountered something unexpected: nothing emerged the same as it went in. No practice was "transferred" in the sense that the importer institution replicated the practice as it was undertaken in the exporter institution. There were recurrent phrases in the evaluations concerned with the changes that were made. "[they] had to implement a version of the bundle themselves", "Any materials used would have to be modified for local conditions so I was not looking for directly transferable mateials" and, "As the package provided was sketchy there was plenty of scope for putting our own stamp and interpretation on it".[2]

At first we regarded this as "transfer failure" but, as it occurrred so often, we started to think of it as a characteristic, and came to the view that if a practice had not been adapted or otherwise changed in the process of adoption then "transfer" had probably not taken place. We came to believe that the question "How have you changed this?" was a metric for transfer success. If the question could not be answered, then there was no transformation: without transformation there was no transfer. Our view changed so that for us "transfer" was not essentially concerned with the exchange of ideas and materials but with transfer of the *ownership* of those ideas and materials.

Although surprising to us, these behaviours have been previously documented:

> "Diffusion of skill and knowledge from one community to its neighbours and neighbours' neighbours constitutes the central process of human history. Ever since significant differences in skills arose among separate human groups, borrowing back and forth has taken place whenever someone saw a real or apparent advantage in doing so. Borrowing nearly always involved modifying what was borrowed to make it fit smoothly into a different set of skills and customs"

> and

> "In real situations, borrowing provokes invention, when the new does not quite fit what was on the spot already; and invention provokes borrowing, whenever what has been invented proves attractive or threatening to others"[3]

In the transfers we observed we found that importers were keen to choose only that which was going to advantage their own situation and were careful and cautious in their choices. Secondly, we observed the *borrowing provokes invention* activity in almost every exchange: "it will be used in the context of individual third year rather than second year group projects", "If the idea is good it will be adopted and adapted to cope with local constraints" and "The benefits of teaching practices are always oversold. The bundle allowed me to focus on the problem and to gain some improvements but has not provided the total solution it offered. But I did not believe it would to start with (no silver bullets)" [2]

This act of "tailoring" a piece of practice (which had *already* been abstracted for transfer) seemed to be integral to the process of transfer, and created part of its value. There are *borrowing provokes invention* practices evident in Part Two. The attentive reader will note that some bundles, packaged for different aims

and appearing in different sections, are actually different aspects of the same piece of practice. We have kept these in becuase we recognise the value of the process that they represent.

There are two implications from this formulation of transfer. The first is that you should expect to change anything that you import. The second is that, as an exporter, you have to "let go" and abrogate your ownership of the practice. This is not necessarily easy, especially in an academic environment, where reputation rests on claiming ownership of ideas and practices, but it seems to be the way effective transfer works.

Focussing on solutions

In undertaking transfers you have to be aware of the pressures on practitioners and the limited enthusiasm they may have for changing their practice. This has been succinctly described with regard to medical doctors and their adoption (or not) of evidence-based medicine, where

> "the emphasis on the need for evidence in medicine, and better transmission of information, needs to be balanced by a recognition that most general practitioners are *pragmatic, averse to innovation, and already feel overwhelmed with information*." (emphasis added) .[4]

Educational practitoners, too, are resistent to prescription and may be "averse to innovate" in the face of explicit expectations that they import "best practices" in teaching and learning from elsewhere. So you have to find a form, a "packaging", for transfer materials which does not prescribe or patronise and equally does not "overwhelm with information".

We use a form which emphasises what is good and advantagous, which addresses real needs and which provides sufficient detail without being prescriptive. We were influenced in our choice of "packaging" by the work on patterns and pattern languages[5, 6] and devised a pattern-like form which is solution-focussed, allowing you to assess the benefits of the practice and decide whether it would be useful for you to adopt it. This form also allows us to describe a real implementation of the ideas and materials withour second-guessing whether they would be appropriate in your context[1.]

Dealing with context

To identify a need for change is to identify only half the problem. Practitioners do not exist in isolation nor work in identical circumstances. For transfer to occur, not only must you want to change your practice but you must also be able to do so. Your context has to permit you to change.

We found context to be a very big problem indeed. Practices for transfer are not recipes, not some set of instructions which you can follow to obtain a guaranteed result, precisely because of context. Context is a difficult thing to grasp, to pin down, but can wreck many otherwise well-intentioned efforts at transfer. In the same way that it is unhelpful to say that *Wine should be as cheap in England as it is in France* without accompanying the statement with a substantial investigation into the reasons—reasons of history, geography, taxation regimes and culture—it is just as unhelpful to say *You should do projects in this way* without considering all the details of context that they rest on.

And yet, how can that context be adequately described? It is comparatively easy to say "this came from a prestigious research-oriented department" or "this came from a teaching university with large class sizes" but that sort of information is insufficient (and at the wrong scale) when what you want to change is how you do projects. What does it depend on? Smart kids? Small classes? Or something which the original teachers didn't even consider: "We do it this way because years ago we tried it another way and it didn't work" or "This fits because it builds on something I know my colleague does in a previous class – but only because I used to teach on that course". For effective transfer it is necessary that your chosen pieces of practice are not only fit for purpose, but fit to culture.

Initially, we tried to list everything, at every level, which impacted on the practice we were descibting. However, the unpicking and uncovering of these dependencies proved to be, in practice, not particularly valuable. We were not the first to discover the twin horns of this particular dilemma:

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[1] The form is "pattern-like" but bundles are not patterns. A pattern specifically describes an invariant quality which has been abstracted from many different examples. Our form inverts this to describe a specific piece of practice, which is inevitably transient.

> "... we tried to give a point-by-point analysis of all these 'real-world' problems , in an effort to show, one by one, how they could be solved ... But somehow, no matter how we wrote [it], it always seemed thin. Either the solutions we proposed were too concrete and specific, or, in other versions, too vague and general. Somehow, however we wrote this chapter, it never seemed entirely convincing, even though it actually gave detailed answers to all the the specific points which might arise" [7]

We believe the reason which underlies our version of this dilemma is that context is evolutionary. By this we do not mean that it develops over time in a series of very small incremental changes (although that, too, is true) but that the final product (which is a piece of practice) is uniquely designed in synergy with the contextual niche in which it was created. Equally, evolutionary products cannot be reverse-engineered. You cannot look at a thing and say "Oh, OK, we'll grow one just like that too" and then re-create the particular combination of environment and forces which produced it. On the other hand, with projectwork we are talking about a very small section of products - perhaps (to extend the analogy) just fish, or just birds. Whilst these are very different from one place to another, they still share characteristics by which we know them to be fish, or birds. As one practitioner said of our first attempt of preparing transfer materials "There it too much uncessary detail ... I need ideas, experience and examples of practice"[2]

So, we have left the practice we describe as context-implicit. After all, a practitioner knows the particularities of their context very well, so it will be immediately obvious if some solution is not useful - because it will contradict Quality Assurance procedures, or because they do not run projects very early in the programme, or some other specific detail. We also believe that this approach is context-respectful. Context-respectful means presenting solutions, not problems – and it appears to be quite rare. (To take a mundane example, certain shampoos will be advertised as "for fine & fly-away hair". That identifies a problem, not a solution: it tells me what I have, not what it will do for me, and I know very well what I already have). Everyone is an expert on their own context and the problems that they're facing. What they don't have is solutions. If it's not obvious that a given solution will solve their problem, then it's probably not a good solution "I know the constraints in my own environment and how they will impact on some practice to be adopted. Knowing the constraints in the exporting environment is of no interest. If the idea is good it will be adopted and adapted to cope with local constraints"[2]

Transfer Checklist

Part two, therefore, has been constructed to maximise the chances of transfer of practice, taking into account the both the "disseminator-push" and the "practitioner-pull" against three rules of thumb:

1. Look to transfer small pieces of practice. Anything too large will infringe local context and be broken down into smaller things anyway.
2. Focus on the solution, not the problem
3. Describe the practice as you do it—not in the way you think someone else should.

Part Two: Introduction

We have divided Part Two in six thematic sections. The structure of part two reflects
- what we think project work involves
- why we think these are the important aspects

For example, we have no section on "deliverables". We believe that, if you get these six aspects right, then you get deliverables "for free". That is to say that technical objectives are easily achieved if the projectwork experience is correctly (and appropriately) structured. The sections are:

Allocation

When undertaking projects, unlike lecture courses, there is usually an element of choice (for both staff and students) which must be managed by a departmental process. How that choice is exercised, and how allocations are made, can drastically affect the outcomes of projects.

Supervision

There are many ways to act as a supervisor for a project. However, in the vast majority of cases, the supervisory role constitutes the primary point of contact between the student(s) and the department. It is crucial that this role is figured in such a way as to maximise the benefit for all parties.

Assessment

It is difficult to transfer familiar models of assessment (constructed in relation to small pieces of coursework and exams) to projects. Partly this is because, with projects, not everyone undertakes the same piece of work to the same deadlines, and partly because they produce a wide range of types of "product" all of which can potentially be assessed. Careful thought has to be expended on appropriate, reliable and scalable assessment regimes.

Reflection

Students not only learn by delivering the outputs of a project, they learn from the *process* of doing a project. This is not always transparent to them. Building in opportunities for reflection on the value of the activity they are undertaking can enhance their experience.

Team or Group projects

When students work in teams to produce a project, some of the existing problems with projectwork are multiplied. Other problems occur only as a result of working with others. Equally some of the benefits of team work are not obvious and not obviously predictable.

Motivation

Project work is an unusual form of teaching in CS in HE (that is to say, it is not the usual lecture-based course); its scale and lack of detailed guidance make motivation an issue. It is important to pay attention to the motivational background of the students and the potential "baggage" they may bring to working on projects.

Each of these sections has been overseen by a different person. Almost always, these individuals are the ones who have worked on the same theme throughout. Each section is structured in the same way, with an introduction to the important issues followed by a set of specific practices which have been prepared for transfer (we call these bundles). More than in any other part of the book, the prefatory pieces outlining the issues are the work of one person, each written in their own "voice". The style throughout part two is therefore not even, but intentionally so.

What is a Bundle?

A bundle captures a piece of practice that we think is in some way "good". It might be the best way we have seen for addressing a particular problem, it might be the *only* way we have seen to address a particular problem. In any case, the practices that bundles encapsulate are real, they have all been used in at least one institution. What we have done is to identify the core elements of the practice and put them ("bundled" them) into a format which makes them accessible. From reading a bundle you should (if your context matches the original) be able to adopt the practice easily, and find no "nasty surprises" of scale, scope or applicability; nor that any essential detail of implementation is missing.

Here is what each bundle looks like:

1. Problem Statement

Each bundle starts with a formulation of a *general* problem to which the body of the bundle is a specific solution.

2. Body

The Body of each bundle is presented in a format that shares certain formulaic phrases. These are:

This Bundle	A phrase which captures the essence of the practice
The way it works is	A description of what is involved (this may be quite short, or many paragraphs long. Occasionally it will be many pages, sometimes including detailed documentation.)
It works better if	Key criteria for success
It doesn't work if	Watchpoints for unsuitable (or undesirable) situations

Every bundle has these. Additionally, they may be supplemented by

It doesn't work unless	Points which are absolutely required
You'll know it's worked if	Ways to check that the desired result has been achieved
Variations	Other ways this might work (mostly, but not always, we have observed these "in real life")

3. Solution Statement

Following the body of the bundle is a *general* solution which refers back to the initial problem statement. (The solution statement, of course, captures the aim of the body too, because a bundle is itself a specific instance of the general solution).

If you read the problem statement and find that it does not apply to you then you can skip the rest if you want. However, if the problem is applicable but the body of the bundle will not fit your context, then the generalised solution statement should tell you what you have to do – if not specifically how to do it.

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