

Welsh Education Research Network (WERN)

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Introduction

The Welsh Education Research Network (WERN) has been funded by the ESRC and the Higher Education Funding Council for Wales (HEFCW) for a pilot period between 1st October 2007 and 30th June 2008. The aim of the Network is to develop educational research capacity, by building a collaborative partnership, which shares expertise, between all the higher education institutions (HEIs) with education and related departments in Wales. Its membership comprises Aberystwyth University, Bangor University, Cardiff University, North East Wales Institute (NEWI), The Open University in Wales, Swansea Metropolitan University, Swansea University, Trinity College Carmarthen, University of Glamorgan, University of Wales Institute Cardiff (UWIC) and

University of Wales Newport. The leadership of WERN is distributed and democratic involving all partner institutions. All decisions about the nature, purpose and direction of WERN are taken by an Executive comprised of one member from each HEI. The day to day running of the Network is conducted by the Chair of the Executive (0.3) and an Administrator (0.4); the Vice-Chair (0.1) is also able to offer some support. WERN also benefits from the advice and support of an Advisory Group comprised of eight experienced academics and stakeholders. An external evaluation was conducted by Prof. John Gardner, Queen's University, Belfast in May 2008.

Rationale

As a result of devolution, there are differences between the context and needs of different parts of the UK and it is useful to summarise some of the key features in Wales to provide a backdrop for the WERN initiative. The context in Wales can be characterised by:

- A marked differentiation between the research intensive Cardiff University that is 5* rated and the remaining other less research intensive institutions that receive no QR funding.
- The other institutions would regard themselves as having strengths in their connectedness

with educational practice e.g. pedagogic research. There is a danger that, because this type of research can struggle to attract funding, educational research into pedagogy may wither and education training become divorced from its research base.

- A rapidly dwindling pool of active researchers with few new entrants to become the researchers of the future.
- University education departments that have a relatively small number of research active staff. Therefore these staff may lack opportunities for sharing of expertise, mentoring and co-development.
- Restructuring of HEI based initial teacher training is currently being negotiated between HEFCW and the affected HEIs into three regional schools of education. At present this process is focusing narrowly on the policy priority of scaling down the output of teacher training, but if a more strategic approach is adopted linking these changes to regional collaboration on research, as suggested by a review of ITT in 2007 (Furlong et al., 2006), then this may present opportunities for building more viable groupings of active researchers.

As a consequence of the above, the educational research infrastructure in Wales is deteriorating. The fragil-

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ity of the system was identified in a review of educational research capacity in Wales carried out in 2001 (Furlong and White, 2001) and the negative trend has not subsequently improved. Thus educational research is in serious decline in the majority of HEIs in Wales (Rees and Power, 2007). As a result expertise is mostly fragmented and isolated, and researchers lack opportunities to develop expertise by working alongside more knowledgeable peers. Drawing on evidence from an analysis of participation in the research activities undertaken by RCBN, Rees et al.(2007) found that work place based opportunities for acquiring research skills were viewed by participants 'as crucial to their development as accomplished researchers' (p.773). In order to attempt to reverse this decline, WERN aims to build capacity by facilitating collaborative research activity between educational researchers in different institutions, providing opportunities for joint activity and social learning between partners with varied levels of expertise and experience.

Group Bursary Scheme

The principal method of developing capacity has been the provision of bursaries to support groups of colleagues from different institutions to work together to write a proposal for research funding. An essential criterion for receipt of bursary funding was to demonstrate that the mix of skills and experience within the group had the potential to build the capacity of the group members. Despite the very short period for the preparation of applications, 24 applications were received with high levels of inter- institutional collaboration. Institutions participated in an average of six applications (range 1-11) and collaborated with an average of five (1-7) other institutions overall (Gardner,2008)..

Of the total number of applicants (N=93), 57 early career researchers (13 male, 44 female) were involved and named in the applications. These ranged from those totally new to research such as ex-head/ deputy head teachers, ex-local authority advisors, new initial teacher

education (ITE) lecturers to HEI lecturers with one or two internal departmental working papers or a recently acquired doctorate. Many of the ITE applicants had Masters degrees or were still studying them. All the applications fulfilled the basic criteria of being cross institutional, having the potential to develop capacity and being relevant to Wales. The Advisory Group, who selected the eight successful applications, did so on the basis of these criteria, also the quality of the embryonic outline proposal, and the likelihood of the subsequent application to attract an award from a funding body.

The funded bursary groups included in total 27 early career researchers (5 male and 22 female) and as shown in Table 1 there was an even spread of experienced and inexperienced researchers.

Each funded application received a budget of £13,000 for the bursary period from 1st January to 30th May 2008. All but two institutions had members of staff participating in bursary groups, with a total of 51 academics in Wales being involved in bursary activity. Each group had an identified mentor, for three of the groups these came from Welsh HEIs but the remaining five worked in English universities. The range of funded bursaries gave coverage to substantive research issues across all education phases from the Foundation Phase to Further and Higher Education though the majority (n=7) were focussed upon primary and secondary sectors.

All of the funded groups were expected to have completed their formal funding application by the end of the bursary period, however although all groups have proposals underway, only one has been submitted. One group has been awarded a grant by BECTA, there are five applications in progress

(one nearly complete) for the ESRC, there are applications also being prepared for the Joy Welch Educational Foundation, the Leverhulme Trust, the Leadership Foundation and an institutional internal fund. Abstracts have been submitted to the 2008 annual conferences of the European Conference on Education Research (ECER), the British Education Research Association (BERA), the Scottish Education Research Association (SERA), Inquiring Pedagogies (IPED) and British Psychological Society (BPS).

Analysis of both the interim and final reports from the eight groups, and a bursary evaluation questionnaire distributed to all bursary members (returned by N=13) indicates that the following benefits of bursary activity were identified:

- Working with a mentor and more experienced colleagues was very valuable in order to build research skills;
- The group offered a non-threatening environment for less experienced researchers to gain experience. It was also seen as supportive environment to build capacity for all team members and their institutions;
- It created a space for intellectual challenge e.g. exchange of conceptual ideas, chance to reflect;
- Opportunities to network, collaborate and gain respect of colleagues were important.

The less satisfactory aspects of the experience were identified as:

- Some frustrations due to mix of experience in group;
- Some difficulties in communication across institutions;
- Insufficient meeting time, which could be due to: geographical distance between team members; short time frame for turn around of proposals; activity being additional to normal workloads.

For many bursary group members,

Table 1. Research experience of bursary group members

	Years of research experience			
	0	1-5	6-10	11+
Number of staff	15	12	9	15

particularly group leaders, there was a tension experienced between finding the time to deliver good learning experiences for less experienced group members, and having sufficient time to deliver the expected output - a completed research proposal to a funding body. A number of groups prioritised the former, and as a result did not advance as far as they would have liked with the assembling and refinement of their research proposal. This suggests that capacity building, even when using a social practices model, will not take place entirely incidentally and requires the dedication of time to specifically facilitate the learning of less experienced colleagues. This is evident in the training activities organised by some group leaders; examples of training sessions include: a workshop session on the analysis of qualitative data using NVivo software; the development of research questions; the design of a poster for conference presentation; collaborative bid writing using an interactive whiteboard; practice sessions using VSRD; and the interpretation of video samples of teacher practice. Some groups have also held events to further develop the working of the group, for example a seminar on partnership working was held by the rural education bursary group.

With the support of the Teaching and Learning Research Programme (TLRP), a Virtual Research Environment (VRE) to support the bursary groups was created without committing a large amount of WERN time and funds. Despite training to encourage usage, the VRE was only used by two of the groups. This was not found to be detrimental to their activity, and this is not surprising as the bursary funding was provided to facilitate face-to-face networking and joint work. However, the two groups that used the VRE demonstrated that it could add value to a group's activities.

Collaborative Research Events

WERN has also begun to build a collaborative research community by the organisation of joint research events. Two training days were held to support the development of re-

search infrastructure, one focused on 'writing a research proposal', the other 'how to manage and administer research grants'. The former was well attended; the latter had a smaller attendance, partially as a result of organisational issues. As the Pilot drew to a close, an All Wales Colloquium was held which celebrated the research activity that had been occurring in Wales as a result of TLRP and WERN initiatives. All of these joint events were evaluated by the participants and their opinions were found to be predominantly very positive.

"Learning some of the tricks of bidding from a person so open and willing to share the insider knowledge was great!" [Unfunded Bursary applicant]

"There is more to FEC and costings than I had ever realised. If I am really honest- I didn't know what it was that I didn't know about!" [Bursary participant]

"The colloquium showcased excellent and really promising research for Wales. Done by people with a real knowledge of issues inside Wales. The Minister's message really touched home!" [Experienced researcher bursary mentor]

The Impact of WERN

What has been the impact of WERN, as a result of its, albeit brief, existence? At the level of individual participation, it has provided opportunities for bursary research activity for 51 academics (and a far larger number in total have engaged in the wider range of WERN activity), 21 of them new or early career researchers. The external evaluator (Gardner, 2008) who interviewed a cross section of participants, reported that 86% of respondents viewed the initiative as good or better with individual comments such as "a profound experience" and "extremely valuable".

The impact at an institutional level has, not unexpectedly, varied. Six institutions were the lead for at least one of the bursary groups but even in institutions where there was not this level of involvement, the impact

was felt,

"WERN has been a catalyst and has made a huge contribution to changing the context of research in my department" (Executive member)

Institutional involvement with the leadership has been strong with all eleven HEIs in Wales with education or related departments actively participating in WERN's Executive. The distributed and democratic nature of the leadership has contributed to the maintenance of institutional commitment. Thinking about the future of WERN, one participant reflected,

"If WERN could continue in the same spirit with its outsider role and its participatory and non-elitist ethos it may well be one of the most important change agents for departments like mine....somehow I see the WERN model having more effect in creating actual research activity than the internal, home-grown strategies and structures that we have. I used the word 'baggage' just now and WERN has no baggage. It has no hierarchy and no deeply rooted preconceptions or personal agendas held by powerful gatekeepers. That seems so important and should be maintained."

At a pan Wales level there is evidence of very productive partnerships being formed between researchers from different institutions. All bursary groups will continue their collaboration until, at minimum, the funding proposals have been submitted, and at least three intend to continue working together whether they are eventually successful in their grant application or there is a WERN follow-on. Joint events, such as the Colloquium, have provided opportunities to see the beginnings of a cultural change that is building a community of educational researchers in Wales. A spin-off benefit has been renewed support for the Welsh Journal of Education, and the Colloquium proceedings will form the basis of its next issue.

Concluding Remarks

Lack of time has been the major challenge to WERN participants -

academics, particularly those in less research rich institutions have most of their time committed to teaching - and the short time frame of the pilot has exacerbated these tensions. For example six months to complete the bursary scheme from initial rounding up of participants, preparation of the outline bid for 1st December 2007 and then from January 2008, the real work of writing, reading, training, discussing and nurturing in *collaborative* ways to generate a final version of a proposal has proved difficult for bursary holders. The WERN administration team were also "against the clock" and though we anticipated many queries and "What if scenarios", wrote detailed FAQs and guidance notes, designed protocols and explicit terms of reference, between ourselves we fielded hundreds of emails and telephone calls. The WERN executive and administration have experienced an enormously valuable learning journey which will stand us in good stead to support future WERN initiatives and maintain momentum. It has been hugely satisfying to witness research activity and hear accounts of upskilling and the value placed on this modest pilot initiative:

"The WERN pilot was the beginning of an important phase for Wales and educational research capacity. It has probably made impacts at a personal, departmental and institu-

tional level which are not easy to capture in terms of outcomes. Confidence, knowing how and why, are not easily reported and not everyone is good at making visible their learning and specifying particular gains or their own upskilling, or even reporting on that of others. Building research capacity is not an overnight one initiative thing is it? But this is an excellent start and stepping stone towards increasing the population of academics and practitioners able to undertake research for Wales. If continued in some way, WERN could incrementally make a very real difference!" [Bursary Participant]

These comments are indeed insightful, nevertheless there is tangible evidence of a variety of outputs that have, and will it is hoped, deliver funding that will help to sustain further research activity across Wales. The external evaluation reached the following conclusion :

'WERN was never formulated as transforming 'silver bullet' initiative but in terms of its primary intention 'to trial a funding and support structure for education researchers in Wales that harnesses collaboration between institutions to build research capacity'...the WERN initiative has been highly successful' (Gardner, 2008:2)

Education research in Wales has

suffered a long, and severe period of decline in all institutions except Cardiff University, therefore this initiative can only be a start to the reversal of this trend. There is evidence that a good beginning has been made, and it is hoped that further funding will be made available to continue and sustain this progress.

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Developmentally Appropriate Research Methods: A Strategy for Use With Child and Adolescent Participants

Jenny E. Symonds

This paper broaches the concept of 'developmentally appropriate research methods' and encourages researchers to use these in order to improve participatory experiences whilst raising the validity of information gathered. This two way beneficial effect for researchers and participants follows the conventional wisdom of pooling resources for the greater good. Developmentally appropriate research methods can be

used to investigate samples of any age, although here their potential is explored primarily in relation to children and early adolescents.

Developmental appropriateness in research

The lengthy period of development in humans creates vast physical and psychological differences between particular age groups. Although these differences underpin the field

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of developmental psychology, our research here (and in most other disciplines) uses similar tools for gathering information from samples of children, adolescents and adults. Methods are usually modified by the simplification of questions and demands when working with younger ages. However, this is often done without proper consideration of the nuanced developmental states and needs of child and adolescent sam-

ples.

The extent to which development occurs within and across biological, psychological, and behavioural domains can be readily observed by inspecting the chapters of developmental psychology textbooks (e.g. Lerner and Steinberg 2004). Reviews of alterations in personality occur for the key areas of attachment, self-concept, self-esteem, self-efficacy and motivation, along with overviews of the common behaviours of childhood and early adolescence. Recent neuroscience has prompted discussions on changes in the brain such the sudden increase of grey matter during early adolescence and of the shifting roles of the amygdale in relation to emotion, and of the prefrontal cortex in moderating cognitive response. These age-specific capabilities of the brain are central to our understanding of how physical development can influence a child or young person's abilities to conceptualise and behave. By identifying changes within and across the domains of the body and the psyche we can begin to understand how environments interact with individual differences to create developmental states of being.

Several major psychological theories conceive of set developmental stages occurring across the lifespan (see for example Piaget 1967 and Erikson 1950). Social constructions such as 'childhood', 'adolescence' and 'adulthood' are further indications of how stage theory can be used to categorise developmental states. Erikson (1950) introduced the idea that each developmental stage constituted specific goals that when met would facilitate positive wellbeing. An example of this is the acquisition of enough autonomy to be independent within a community during young adulthood – a tradition that is fostered in homes, schools and in the wider social arena. Erikson used the term 'developmental needs' to refer to that which is necessary to reach such goals. Critiques of stage theories remind us that individuals of any age are deservedly whole beings and should not be considered as 'unfinished

products' on a continuum of birth to adulthood (James and Prout 1990). However, when observing that certain age groups do display developmental similarities, we can assume that the relationships between individuals and their environments will affect how these changes are played out and thus impact on development. Therefore, 'developmental needs', as linked to achieving positive development, are an inherent part of individuals' social and physical interactions, regardless of whether or not these are directed towards a specific goal.

To achieve a 'best match' between a group of similar aged individuals and a research method, we can look across the various domains in which development occurs and do so in mind of both developmental states and needs. A strong argument for this rises from Eccles and Midgley's stage-environment fit theory (1989) which proposes that the mismatch between developmental needs and environment hinders developmental outcomes and creates negative psychologies and behaviours. Following this view we may hypothesise that by not tailoring our research methods to the characteristics of a particular sample, we are inhibiting the chances of participation being positive and facilitating developmental gains. Using developmentally appropriate research methods is therefore a child or 'person' centred approach. A second case for matching research techniques to developmental states is that a better method-participant fit will raise the validity of information gathered. This can occur in as many ways as there are aspects to a method. When each aspect is in line with participants' developmental needs or states, we should incur less setbacks (such as the artificial manufacture of information and participatory anxiety) and obtain better quality responses.

An example of how methods can react differently with specific age groups comes from an investigation of ten early adolescents who were involved in testing a selection of research methods for developmental appropriateness (Symonds *in*

press). The methods examined were peer and self interview, stimulated video recall, mind maps, video diaries and projective tests. The participants' negative and positive reactions to the use of each method were coded into the developmental characteristics of early adolescence as outlined in the stage-environment fit literature. These areas include the increased desire for autonomy, the salience of identity issues and increased peer orientation and self-consciousness (Eccles and Midgley 1989). Building on these findings, the method of active participation (Rudduck 2001) was chosen for use in a further study, where a sample of twenty early adolescent participants are currently engaged as researchers of their own experiences. This method attempts to promote participants' autonomy and sense of personal agency in the research, to assist relational bonds with the adult researcher, and to allow for more control over the disclosure and treatment of information to alleviate concerns about anonymity, self-appearance and incompetence.

Active participation not only meets many of the developmental needs of early adolescents when conducted sensitively, but also has the potential to raise the quality of information when participants express themselves using intuitive concepts and on their own terms. Researchers from the EPPI-Centre found in a study of mental health, that young people did not relate to medical terms such as 'mental illness' and 'depression' and were more likely to describe their mental states in emotional terms such as 'happy', 'sad' and 'frustrated' (Harden et al. 2001). They advised for young people to be actively engaged "in the task of eliciting their views" (p.6) so as to avoid these types of misunderstandings. Smyth and Hattam (2001) explain the benefits of this process in stating that "the promise of voiced research is anchored, local knowledge, in the face of objective, normative, hegemonic forms of knowledge" (p.47).

A common approach in active participation is to empower young people to do their own interviewing, a

technique used in many studies including Pollard (1985). Peer interviews allow the researcher to gain knowledge otherwise inaccessible to adults (Fielding and Bragg 2003) and to find accounts that more accurately reflect participants' realities. By consulting young people about research and by actively involving them in the research process, we can "enable young people to express themselves in a manner in which they are most at ease" with "lines of questioning and terms which are relevant to the context of their everyday lives" (Harden et al. 2001 p.6). In this we are creating a research environment that improves the authenticity of information by considering a sample's developmental state.

Developmentally appropriate strategies can also be used without altering the entire structure of one's research. An example of this is in vernacular term interviewing, where participants are asked 'what did you mean by that?' in an attempt to better understand a specific age group's individual and social concepts. Surveys can be decorated with pictures to engage the visual orientation of younger children, or used to facilitate autonomy and responsibility for adolescent participants by offering personalisation options when presented online and by revealing the purpose of gathering information with respect to its use in local or international contexts. We can foster participants' cognitive reflective development by asking them to comment on our analysis of results so as to ensure that our interpretations reflect the 'real world' that they inhabit. A final suggestion is that when working with children and young people as researchers we can draw on their intuitive understandings of how they best impart information, by asking them to construct research methods of their own. Herein lie ways to improve the chances for methods to be developmentally appropriate, by 'opening up spaces for young people to tell their accounts' (Smyth and Hattam 2001: 404) in a manner that is not too forced or predefined.

Testing for developmentally ap-

propriate research methods

Considering the methods suggested above, there are plenty of opportunities to be more developmentally appropriate in our research. However there is still some definition to be made between allowing for more developmentally authentic processes and information through our altered use of traditional methods, and in designing research methods that *are* in themselves more developmentally appropriate to a specific age group. Unfortunately there is very little publication on age specific research methods which belies a lack of testing for these. Pilot studies most often examine methods for the appropriateness of their question types and wording, or for the reliability of themes or measures. However these types of studies simply test an existing a method for its degrees of participant fit, instead of generating new methods or comparing a range of alternative techniques that may be more developmentally appropriate.

A further aspect that is rarely tested for age appropriateness is a method's administration. For example, what are the needs of six year olds in comparison to older children when completing paper or online surveys? How long can different age groups concentrate for before their attention and commitment reduces and error occurs? What effects might the location of an interview or familiarity of a researcher have on early adolescent participants who are asked to express sensitive information about growing up? These issues and more lurk under the surface of age specific investigations yet their potential impact on the ethological validity of data is considered far less in pilot studies than are the testing of questions and themes.

As we hardly ever test alternative methods or the conduct of methods in relation to a samples' age specific needs, and as our eventual alterations to research techniques are unlikely to be discussed in publications, the current approach to pilot testing does little to generate developmentally tailored research methods. The failure of many research-

ers to properly test for developmental appropriateness when researching with children and young people undermines the prospective success of our studies to produce good quality information and positive participatory experiences.

Building a community of active, engaged participants

So how might we address the dearth of published information and construct a bank of developmentally appropriate research methods? Firstly, a review of what is known is badly needed. It is likely that useful advice and examples are imbedded in the text of many articles and methodology chapters. Ideally, this data could be reviewed systematically for different age groups of samples. Secondly, pilot studies could begin to consider multiple factors of method-participant fit, such as the choice of method, a method's contents, its administration and the quality of its results – and do so in relation to developmental psychology. Although the multiple relationships, effects and causes in any developmental state may present a serious challenge to researchers when attempting to discover what is developmentally appropriate, this complexity should not prevent us from trying. Thirdly, we must try to incorporate this information into publications, conference presentations and into our communication with colleagues and student researchers. This will extend our knowledge base and encourage research that does not harm participants.

In summary, when research methods and developmental needs are in line we are likely to provide more positive participatory experiences whilst improving the quality of information gathered. By using active participation we can assist young people's agency, skills and reflective tendencies and by this add to progressive development. Importantly, through the use of developmentally appropriate research methods we can help to foster a community where young people and their caregivers are enthusiastic about participation in research and thus willingly contribute to our studies.

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Mixing Methods and Blending Data: The case of researching learning

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A great deal has been written on how theoretical orientations affect methodology but less has been said about the reverse. Yet the tools and techniques used by the researcher restricts what can and cannot be seen and what is foregrounded and what is backgrounded. This, by implication, limits what is possible conceptually and the questions that can be framed. Here we draw on our combined personal experience of researching learning to illustrate this point. By reflecting on our recent separate work using mini-ethnography, life history and panel survey research we argue that different methodologies have strong affinities with particular theoretical positions on learning.

When I (Phil Hodkinson) used a mini-ethnographic approach to research with others cultures of learning in FE in the TLC project, we found that whilst our method of enquiry allowed us to focus on the practices through which students participated and through which their learning was mediated, it had less of a facility to examine the individual life stories that the students and their tutors brought with them to the learning situation under examina-

tion. As our research purpose was to study the relational dimensions of learning by examining the complex interrelationships between factors that influenced learning, centring of cultural practices was crucial to the investigation. Learning was examined through the lens of theories that saw it as social rather than individual (e.g. Engeström, 2001; Lave & Wenger, 1991). It was the practices in which students participated as a group that were foregrounded rather than individual students. This not only had the effect of unintentionally marginalising the learners and their histories as learner, but also pushed the research in the direction of a participatory metaphor of learning (Sfard, 1998) shaping what we could see and what was hidden from our view.

In my next project, Learning Lives, the focus was on the life history of individual learners. Here it was the individual's story that was the unit of analysis in contrast to the TLC project where it was the FE site rather than the learner. This meant learning in the Learning Lives project could be seen and understood over a long time frame that spanned the full length of the individual partici-

pant's life. But this was at the expense of shifting the focus away from the sites of learning in which the individuals studied participated. The cultures and contexts in which any significant learning took place during the course of their lives could only be viewed through the lens of their story, the story they told the interviewer. This meant their many and various sites of learning could only be examined indirectly. Seeing learning as participation was thus more difficult. Rather, there was an affinity between the longitudinal and biographical perspective of the life history approach taken and conceptualising learning as a form of construction or as *formation* (Dominicé, 2000). Unlike the participatory metaphor which centred the research on a particular context, the construction metaphor better fitted the method, because it centres on the ways in which people made sense of their learning experiences across contexts and over time. This process involved the project participants in constructing their own versions of what was being learned and sometimes (re)constructing themselves through that learning as they reflected on their own narrative accounts.

(Continued from page 7)

Although life histories and mini-ethnographies in their different ways limited what was conceptually possible in each of these projects, they were both extremely powerful in eliciting the informal and the tacit (embodied) dimensions of learning. This was not the case with our third methodology, survey research. Alongside the life history interviews in the Learning Lives project, I (Flora Macleod) have been using the British Household Panel Data (BHPS). Panels are a special kind of survey that follow the same individuals across time. In this respect they share with life histories a focus on longitudinal data collected from individuals. Whilst the life history interviews rely mainly on retrospective narrative accounts, panels use both retrospective and in real time data, the latter collected by re-interviewing the same individuals at regular intervals. Panels, in common with all survey research, are interested in discovering something about a phenomenon that is assumed to have a 'real world' physical or factual existence. This meant that in the Learning Lives project, to research learning I had to begin from a clear and unambiguous conceptualisation of what learning was by drawing on how it manifests itself in the world. I had, at the outset, to theorise, conceptualise, and precisely define learning so that it could be operationalised and made quantifiable. This quantification of learning inevitably involved me in a process of reification whereby I had to find numerical descriptors of learning which I could use as measures. This pushed me towards a concept of learning that purported to have an objective reality as I put my focus on the characteristics of learning that were directly observable. That is, those aspects of learning that have a clear physical or reified identity in the world and in the process this limited me to the more 'factual' or 'static' manifestations of learning such as individual participation in formal learning events, sites in which formal learning took place, individual outcomes in terms of qualifications obtained. I was thus,

by virtue of my methodological approach, reluctantly forced towards theorising learning as acquisition. I could have, and did, look for proxy (hidden) measures for informal learning but found I was boxed in by the items in the archive dataset.

The question then arises as to whether it would have been possible to measure the informal and the tacit dimensions of learning had I designed my own questions specific for this purpose and not relied a secondary dataset. Is the problem I have highlighted in the previous paragraph inherent to survey research or specific to my situation in the Learning Lives project? The evidence for it being the former rather than the latter comes from others. When attempts have been made to survey informal learning or learning as participation researchers have had either to accept the limitations imposed on them by their methodology (Livingstone, 2000) or failed to achieve adequate measures of learning as participating in a social activity system or community of practice (Felstead, et al, 2008). A further, and perhaps ultimately more serious problem, is that the very process of measuring the informal and the tacit is to change it from what it is to what it is not. Standardisation in survey research requires universal agreement as to what constitutes the phenomenon being measured. Thus the informal and the tacit would need to be made visible, recognisable and comparable across boundaries rather than depending on the (subjective) position of the learner. Survey research, by definition, is a process that involves generating tools whereby the local has to become global by conforming to a mutually agreed norm.

It seems then that whilst survey research may be a powerful tool for modelling reality, it is very limited when it comes to understanding the processes and mechanisms underpinning the trends and patterns it exposes as anything outside what is measurable is not seen. This is not because surveying subjective phenomenon is not possible, but because the more complex and subtle the phenomenon the more difficult it

is to find measures of demonstrable validity. Livingstone, for example, found that he could only measure what his participants could recognised retrospectively as learning. On the other hand, a skilled life history interviewer is tuned in to look for learning which is implicit or taken-for-granted by progressively helping the interviewee to become aware of it in their own lives.

These three examples from our combined experience show how the chosen methodology limits what can and cannot be seen as researchers are pushed, sometimes reluctantly or unintentionally, towards one conceptual direct rather than another. This, in turn, frames their research questions and what is achievable. Conventional wisdom, drawn from science, has it that adopting a theoretical position on an issue is a neutral decision uncontaminated by cultural bias including one's methodological orientation. The assumption is that, regardless of the theoretical position taken, that theoretical position can be tested against empirical evidence in a non-biased way. This view implies that empirical evidence should be able to eventually resolve the relative merits of competing notions. For this to be achieved we would need to be able to identify neutral research methods. This, we have argued here, is not possible in relation to theories of learning, because different research methodologies each tend to favour one or other of a competing way of understanding and influences what is seen and what is hidden from view. By reflecting on our own experience and that of others, we have shown that there is no foolproof way to empirically adjudicate between different conceptualisations of learning because no research position has a conceptually neutral lens.

If this argument is accepted, then it follows that the choice of methodology will skew the research in a particular direction and thus limit the understandings that are possible using that methodology. Given that each methodology has its own strengths and weaknesses, the obvious solution to the problem might seem to be to use more than one

methodology within the same study as this is more likely to lead to a triangulated 'truth' and give a fuller picture of the phenomenon under investigation. This is an appealing solution and one which is apparent in the current UK movement favouring mixed methodologies – a movement of which the Learning Lives project is a part. But this is not our conclusion. Our purpose is not to argue that that mixed methods has no contribution to make, but to draw attention to the partial nature of this solution. The use of mixed methodologies, including mixing different qualitative methods, cannot, of itself, solve the difficult issues around the blending of different conceptions of learning. At root, the problem is conceptual not empirical. Because research is primarily a conceptual and theoretical process problems can never be fully resolved at the

empirical level where all methods start from a non-neutral position. Mixing methods is not just a matter of blending tools, techniques and empirical data because all methods are inherently biased in terms of their tendencies or inclinations. Researchers need to remain fully aware of the theoretical orientations that are implicit in their chosen methodology. This is a much more difficult problem than most methodology texts recognise.

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Adopting A Mixed Method Approach In School-Based Research

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This article discusses the use of a mixed method approach within my research into the content and enforcement of secondary school smoking policies in Wales (Burgess, 2008). Sale et al (2002:44-5) argued that the adoption of mixed method approaches is often done uncritically, and without regard to the differences between the fundamental ontological and epistemological assumptions which underlie each method. Experience suggests that while more people are engaging in mixed methods research, consideration of the practicalities associated with this type of work is still not always a priority. Before discussing some of these issues, I will first outline the mixed method approach I adopted.

The study's research objectives were addressed via a research design which linked the collection and analysis of various data. Three modes of data collection were used to obtain these data:

1. The Welsh arm of the 2001/2

WHO collaborative trans-national Health Behaviour in School-aged Children (HBSC) study. This was a separate study to my own, conducted by the Welsh Assembly Government (I also had some involvement with this process) who provided me with self-reported data pertaining to pupil smoking (e.g. prevalence; policy awareness) from the 59 participating secondary schools.

2. A self-complete survey of five teachers in each HBSC school. Teachers completed this at the same time their class completed HBSC. It collected data on school smoking policy content and enforcement.

3. Semi-structured telephone interviews with local 'experts'. Collected data on school smoking policies and their enforcement in the 46 HBSC schools who agreed to take part.

The teacher survey was designed and implemented alongside HBSC. At the same time, a generic teacher interview schedule was designed. The teacher survey data for each

school was then analysed to identify areas of interest or conflict in teacher reporting to probe and follow up in the interviews. For each school, the generic interview schedule was adapted to probe these issues. Interview data were then analysed thematically to explore between- and within-school variation in policy-level and enforcement-level characteristics. These were written up and the findings also used to develop indicators that summarised these characteristics and discriminated between schools based upon them. Indicators were analysed in association with HBSC self-reported data on pupil smoking prevalence collected in each school. Conclusions were then drawn based on all elements of the research.

My initial struggle concerned whether it is possible to mix methodological approaches. In my early consideration of mixing methods, I found it useful to summarise approaches to mixed method research as a dichotomy which I labelled philosophical and mechanical ap-

proaches to the issue. I later discovered Bryman's similar reduction of the literature, using the terms epistemological and technical versions of the quantitative-qualitative division (2001:446) and Gray & Denten's discussion of differences in approach (1998). While continuing to use my own terms, Gray & Denten's description of divergent methods (1998:419) is useful, especially if contrasted with the term convergent which is used by Bryman, but only in discussing validity through comparative methods (2001:73-4). Hence I would argue that there are two broad approaches to the use of mixed methods: (1) Philosophical approaches: divergent paradigms and separate spheres; and (2) Mechanical approaches: convergent paradigms and right tools for the job.

In the first approach, Philosophical approaches: divergent paradigms and separate spheres, there is a clear methodological divide. It is reasoned that qualitative and quantitative techniques are immersed in, emerge from and are underpinned by fundamentally separate paradigms (Bryman, 2001; Gray & Denten, 1998; Sale et al, 2002). These paradigms are defined by different ontologies, epistemologies and methodologies (Sale et al, 2002:44). This school of thought traditionally says that because the world views of these two approaches are so different, even if looking at the same topic, they can never be said to study the same phenomena (Bryman, 2001:446; Sale et al, 2002:44). This clearly has consequences for cross-validation or triangulation between different methods within the same study, suggesting that mixed method research is not desirable.

More useful to me was the second approach, Mechanical approaches: convergent paradigms and right tools for the job, in which methods are seen as residing around a spectrum. At one end are the qualitative methods, and at the other the quantitative methods. This spectrum tends from (broadly) interpretive and constructionist methods at one end towards (broadly) positivistic meth-

ods at the other. This understanding is common today (Mendlinger & Cwikel, 2008). In this approach epistemological differences are celebrated and seen as compatible. Methods are regarded as tools for a job, and may be selected for use within a study from any point along this spectrum. The limitations of each method are key, the strengths of one method being used to enhance the other. It is argued that this is a more useful approach as techniques can be selected on the basis of their suitability to the topic. Because research methods are viewed as autonomous of their underlying paradigms, it is possible to combine these strategies (Bryman, 2001). Summarising several other writers, Sale et al (2002:46-47) argue that quantitative and qualitative methods are compatible because they share: a unified logic and therefore the same rules of inference apply to both; a goal of understanding and improving the world and the human condition; goals of disseminating knowledge for practical use; a commitment to rigour and conscientiousness and critique in the research progress. They also argue that the complexity of phenomena require the use of a broad spectrum of qualitative and quantitative methods. I have also long felt that while more philosophical debates around the epistemological and ontological differences between approaches are important, instead of letting them prevent mixed methodological research getting done, these may be taken into consideration when designing research and returned to when interpreting findings.

Although this dichotomisation of approach types may be a simplification of a much more complex debate, it is a useful model to use in order to justify the adoption of a mixed method approaches. The argument for a mechanical, convergent paradigms approach which allows the use of mixed methods is a strong one. Such approaches are finding increasing acceptability (Mendlinger & Cwikel, 2008). For me, a mixed method approach presented the opportunity to collect more rigorous and in-depth data on

smoking policies and their contexts than had often been collected before. Data collected and analysed using different methods, were used to inform both other methods of data collection and the overall conclusions.

While the notion of a pragmatic approach to mixed methods overcame issues regarding whether we should mix methods, doing so demands consideration of how differing approaches may be best combined. Only having completed a mixed method study have I realised the importance of this. However guidance on this is varied. Despite increasing acceptance and use of mixed methods research, the field is still very much a developing one (Tashakkori & Creswell, 2007) and there is a lack of consensus as to nomenclature and no standard protocols on how best to successfully combine qualitative and quantitative methods (Mendlinger & Cwikel, 2008). In light of this, the work of Teddlie & Tashakkori (1998, 2006) is useful in understanding how methods may best be combined. They argue that since the emergence of mixed method research, those working in the field have developed typologies of mixed designs (2006). Although they can never be exhaustive, one of the reasons such typologies are useful, they suggest, is because they help researchers to design their mixed method studies (2006). Tashakkori & Teddlie's own typology has developed over time (e.g. 1998, 2006) and provides a useful classification of mixed methods research based upon the combination of methods. They argue that mixed methods approaches traditionally enable comparison of quantitative and qualitative data either simultaneously or sequentially in order to improve analysis (1998). The sequential combination of methods consists of either converting qualitative data into numerical codes for statistical analysis (quantitizing techniques producing quantitized data) or converting quantitative data into narratives for qualitative analysis (qualitizing techniques producing qualitized data). In 2006, they outlined a 2x2 matrix detailing a typology of mixed

method research designs. Along one side of the matrix, research design could be either monomethod (study uses either a qualitative or a quantitative approach only) or mixed method (qualitative and quantitative methods are mixed across the study). Along the other side of the matrix, research design could be either monostrand (there is only one strand to the research) or multistrand research (there are more than one strand to the research). A strand is a phase of study which includes (1) a conceptualization stage (abstract operations including formulation of research purposes; questions etc); (2) a experiential stage (concrete observations and operations such as data generation and analysis and (3) an inferential stage (abstract explanations and understandings including emerging theories and explanations). Under Teddlie & Tashakkori's typology, my work may be described as a mixed methods multistrand design as it contains more than one method and more than one stage of the research.

Within Teddlie & Tashakkori's typology, there are various types of multistrand design for mixed methods of which the current study can be said to follow a sequential mixed design. A sequential approach is one in which:

"there are at least two strands that occur chronologically (QUAN? QUAL or QUAL? QUAN). The conclusions that are made on the basis of the first strand lead to formulation of questions, data collection, and data analysis for the next strand. The final inferences are based on the results of both strands of the study" Teddlie & Tashakkori (2006:21-22) [while the authors use the simplest, two stranded example for conciseness, they highlight that a sequential approach may include more than two strands]

Teddlie & Tashakkori argue that, although difficult, such a design is easier to undertake by a solo researcher than other mixed method approaches as it is easier to keep strands separate and studies tend to unfold both more slowly and pre-

dictably than in more complex approaches. Consequently, a sequential, multistrand mixed method design is a good approach to adopt by a doctoral student seeking to undertake mixed methods research. My study followed this design. Applying Teddlie & Tashakkori's definition, the first strand is the design, implementation and analysis of the teacher survey in order to collect quantitative data on school smoking policies from several sources in each school. The second strand of the research consists of interviews with smoking policy experts in each school. Although a generic interview schedule was created for these interviews, analysis of the results of the teacher survey in each school are used to inform the interview schedule in each school so that interviews can be used to probe and follow up these data. In this way, the first (quantitative) strand is used sequentially to inform the second (qualitative) strand in order that rigorous data may be collected on school smoking policies.

Interviews were first analysed in order to identify characteristics of policy and its enforcement that may moderate the extent to which school smoking policies influence adolescent smoking behaviour. While this analysis stood alone, it was also used in order to develop indicators which described school-level variation in these characteristics. In this way, the second (qualitative) strand data was quantitized, feeding into a third and final, quantitative strand in which the indicators were analysed in order to assess their association with adolescent smoking behaviour. The final inferences were based on data generated from all of these phases.

Through my research, I have realised the importance of being clear about why mixed method research is being used and how the methods fit together in order to create a coherent analysis in which all methods contribute fully to the project outcomes. I have long felt that the pragmatic approaches to research outlined here help justify why mixed method approaches may be used. Although I was not aware of Teddlie

& Tashakkori's work as I designed my research, their writing has allowed me to retrospectively frame what I did in a more concrete conceptual framework. I also feel that this will provide a good basis for future mixed method work, prompting clear consideration of why mixed methods are being adopted, what each method contributes, how the strands of mixed method research may fit together, and how this may vary depending on the capacity of the research team. Such considerations are clearly important contributors to more successful mixed method working.

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TLRP News

DGfE and EERA - Summer School on Qualitative and Quantitative Research Methods

18-22 August 2008, Ludwigsfelde, near Berlin

The Summer School will welcome about 100-120 European Postgraduate Students and Young Researchers. The Summer School offers courses in German and English. For more information please visit the Summer School website:

<http://www.eera-ecer.eu/news/summer-school-2008/>

2008 BERA Annual Conference

3-6 September 2008, Heriot-Watt University, Edinburgh

For more information please visit the conference website:

<http://www.beraconference.co.uk/index.html>

TLRP Annual Conference 2008

24th-25th November 2008, London

The Programme draws to the culmination of its present incarnation with a high profile showcase for policy makers on Nov 24th- 25th at the Queen Elizabeth Conference centre in Westminster, London. The first day will focus on Schools projects and will be co hosted with CUREE and the National Teacher Research Panel. The second day will be on post-compulsory and higher education and HEA have agreed to support this event.

NCRM and RDI Events

Intermediate Meta-Analysis Workshop

1-3 August 2008, Stirling University

The emphasis throughout the course will be more on the application of the methods than the mathematical detail, but supplementary materials and references will be provided for those interested in those details. Specific topics will include: calculating size effects, homogeneity testing, determining predictors and moderators, selecting and conducting fixed effects, random effects, and multilevel models, interpreting the results, and special issues in meta-analysis (e.g. publication bias).

Communicating Research to Policy and Practice

23 September 2008, London

This one-day course gives researchers the knowledge and tools to maximise the impact of their research on policy and practice audiences. Researchers will learn how to improve their relationships with practitioners, create persuasive messages for different media, and develop an effective communication strategy.

Policy Evaluation

29-30 September 2008, University of Edinburgh

Does a government initiative designed to change individuals' behaviour, their incomes, or some other aspect of their lives, actually work? And, if so, how? This course considers various methods for evaluating the impact of social and economic policy.

Survey Data Analysis I Introducing Descriptive and Inferential Statistics

12-14 November, University of Southampton

Topics include descriptive statistics, hypothesis testing for differences between means and proportions and basic contingency table analysis. Practical computer workshops will be used to analyse sample survey data with the computer package SPSS. The course is aimed at researchers who need to perform basic analyses on data from sample surveys, especially those in the social, economic, educational and medical sciences

For more information about these and other NCRM events please visit the NCRM website: www.ncrm.ac.uk or call +44 (0)23 8059 4539, or email: info@ncrm.ac.uk

The events listed here are just a selection of NCRM events in the coming six months. The searchable NCRM Training Database lists over 60 training and capacity building events over the coming year.