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Skills diagnostics and screening tools: A literature review

**Jenny Bimrose, Sally-Anne Barnes, Alan Brown, Chris Hasluck and
Heike Behle**

A report of research carried out by the Warwick Institute for Employment Research,
University of Warwick on behalf of the Department for Work and Pensions

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The Authors

Jenny Bimrose, Principal Research Fellow, Institute for Employment Research, University of Warwick.

Sally-Anne Barnes, Research Fellow, Institute for Employment Research, University of Warwick.

Alan Brown, Professorial Fellow, Institute for Employment Research, University of Warwick.

Chris Hasluck, Principal Research Fellow, Institute for Employment Research, University of Warwick.

Heike Behle, Research Fellow, Institute for Employment Research, University of Warwick.

Abbreviations and acronyms

ABSA	Attitudes, Behaviours and Skills Assessment
ALMP	Active Labour Market Policies
AMAS	Activity Matching Ability System
BECES	Barriers to Employment and Coping Efficacy Scale
CFI	Careers Future Inventory
CISS	Campbell Interest and Skill Survey
CMSG	Case Management Screening Guide
CPK	Client Progress Kit
CSES	Career Self-Efficacy Scale
ESCI	Expanded Skills Confidence Inventory
FDSS	Frontline Decision Support System
FJR	Fortnightly Jobsearch Review
IB	Incapacity Benefit
IS	Income Support
JSA	Jobseeker's Allowance
JSCI	Job Seeker Classification Instrument
KCS	Kuder Career Search
KSA	Kuder Skills Assessment
LSI	Life Skills Inventory

MAPP	Multidimensional Addictions and Personality Profile
NAO	National Audit Office
NDYP	New Deal for Young People
OECD	Organisation for Economic Co-operation and Development
PA	Personal Adviser
PES	Public Employment Services
SAPS	Statistically Assisted Programme Section
SCI	Skills Confidence Inventory
SII	Strong Interest Inventory
SOMS	Service Outcome Measurement System
TANF	Temporary Assistance for Needy Families
TREFFER	Treatment Effect and Prediction Project
TSOSS	Task-Specific Occupational Self-Efficacy Scale
UI	Unemployment Insurance
WFI	Work Focused Interview
WPRS	Worker Profiling Re-employment Services

Glossary of terms

Academic or 'cognitive' skills	Generally associated with subject matter these skill areas are typically defined by various school disciplines like English and mathematics. Knowledge is primarily learned in school and assumed to be transferable across different contexts. They are widely assessed through standardised tests.
Blended assessment	This refers to an approach to assessment which combines traditional (paper-based) assessment and electronic (digital assessment).
Criterion-referenced assessment	Criterion-referenced assessment involves measurement against defined (and objective) criteria. Criterion-referenced assessment is often, but not always, used to establish a person's competence (whether they can do something). The best known example of criterion-referenced assessment is the driving test, when learner drivers are measured against a range of explicit criteria.
Diagnostics	This term refers to assessments providing information about a learner's ability in a skill, level of knowledge in a subject and relevant personal characteristics. A diagnostic test should provide feedback indicating areas of greater and lesser ability, rather than just a grade or mark. Diagnostic assessment typically occurs before, or at the start of, a programme of learning and enables learners to be provided with or directed towards appropriate support.

Formative assessment

Formative assessment is carried out at the beginning or during a learning programme. The purpose of this technique is to improve the quality of learning and should not be evaluative or involve grading individuals. It can also be used to review and modify programmes, where learning outcomes are not being met, so can result in the improvement of the learning experience.

Generic or key skills

These are assumed to be transferable across a range of different contexts. In the UK, the notion of 'key skills' was originally developed by the National Council for Vocational Qualifications, with six skill areas identified: communication; application of number; information technology; working with others; improving own learning; and performance and problem solving. These skills can, however, assume different meanings in different work contexts. For example, whereas 'problem solving' is often associated with mathematical problems, it can also be applied more generally.

Norm-referenced assessment

Norm-referenced assessments are not measured against defined criteria. This type of assessment is relative to a target group of individuals undertaking the assessment. It is effectively a way of comparing individuals. The IQ test is the best known example of norm-referenced assessment.

Profiling

A statistical systems approach that computes only a single risk factor for each person, which is usually the probability of becoming long-term unemployed.

Skill

This term is variously described as:

- the ability to perform a task or activity consistently over a period of time. The expertise required for a particular task or occupation which may include manual dexterity and/or mental aptitude;
- a present, observable competence of a candidate to perform a learned act with ease and precision;

- the ability to perform a task or activity consistently over a period of time. The expertise required for a particular task or occupation which may include manual dexterity and/or mental aptitude;
- an elementary action requiring manual or verbal dexterity that is necessary for performing a compound or complex set of actions in order to accomplish a particular task; the ability to do something well arising from training or practice; 'know how'.

Statistical modelling

Statistical modelling provides a means of assessing a jobseeker's need for support on the basis of a prediction of their future situation. Such a statistical model consists, first, of a target, or dependent, variable. This could be the predicted length of time out of work, the customer's risk of exhausting benefit entitlement, their labour market status at some future date or similar. Second, a set of explanatory variables that are believed to be determinants of, or at least associated with, the target variable is required. These would include personal characteristics of customers, work and benefit histories and other factors associated with employability. Statistical techniques are then used to estimate the relationship between target and explanatory variables using historical or cross-sectional data for the target and explanatory variables. The estimated relationship can then be used to 'predict' the expected outcome for any new customer given their particular characteristics and circumstances. Such predictions can be used to identify customers in most need of support and/or for determining the type of support made available. For instance, those at high risk of remaining unemployed (say for 12 months) might be identified as being in greater need of support than those predicted to be at little risk. Needless to say, statistical modelling of this type can be complex and

models vary considerably in the way that they are specified and the methods used to estimate them. The technical aspects of statistical modelling are reviewed in Appendix A of Hasluck (2004).

Summative assessment

Summative assessment is comprehensive in nature, provides accountability and is used to check the level of learning achieved at the end of a learning programme. It is evaluative and often involves grading. Data from formative assessment can contribute to summative assessment.

Targeting

This approach to statistically modelling attempts to predict the potential labour market outcomes of every individual programme (including non-programme options) for each individual.

Technical skills

Refers to specific skills needed in a particular occupation. These may include references to academic skills (e.g. maths needed by plumbers) or knowledge of particular processes (e.g. use of a particular machine). They are often codified in industry skill standards and measured through standardised assessments.

Work-related attitudes or 'soft' skills

These are the most difficult groups of skills to define, since there is no one generally accepted way of conceptualising them. The term can refer to motivation or disposition and often relates to a combination of personal attributes and abilities that contribute to overall employability (e.g. enthusiasm; reliability; sense of humour; adaptability; ability to take initiative; planning; organisation).

Summary

Introduction

A key recommendation from the Leitch review of skills is the establishment of a national network of one-stop shops for careers and employment advice, achieved through close collaborative working relationships between a new service and Jobcentre Plus. The new service is to offer a free 'skills health check' and is to become the source of skills expertise for Jobcentre Plus. In parallel with this development, the Department for Work and Pensions (DWP) is developing the Flexible New Deal, which involves examining the need to achieve a better understanding of the circumstances of each customer. As part of these processes, the DWP commissioned the Warwick Institute for Employment Research to examine available evidence relating to the review, identification, assessment and diagnosis of skills, together with good practice, tools and methodologies identifying customers requiring more intensive support.

Aims of the literature review

The aims of this study were, therefore, twofold, with a remit to identify and review the research and evidence on two separate, but related, areas:

- skills appraisals to help identify and measure individual skills levels (including those skills needed by employers); and
- screening methodologies that help recognise influences on employability (including individual lack of skills).

A systematic review methodology, modified to allow researcher discretion, was used to search databases to ensure that the searches across the electronic databases were consistent.

The initial search strategy for the first review question on skills yielded 29,677 hits. Of these, 579 publications were screened by abstract and title. In total, 29 relevant studies were retrieved from electronic databases, ProArbeit (German labour market database) and online searches. These studies were synthesised

according to emergent themes relating to the main review question and sub-question. Particular emphasis has been given in this review of skills to identifying tools developed for measuring skills and, also, reviewing the evidence relating to the use and effectiveness of such tools.

For the second review question, the initial search strategy yielded 81,455 hits. Of these, 1,131 were screened by abstract and title. In total, 40 studies were retrieved and integrated into this review. As with the first review question, particular emphasis has been given to publications presenting methodologies for which a sound evidence base has been, or is being, developed.

Main findings – skills review

Search results for this literature review revealed a recent proliferation of skills appraisal instruments. Yet there has been limited practice in the assessment of adult skills for employability, with no one suitable 'off-the-shelf' tool that can be identified.

This proliferation of skills tools has been fuelled, at least in part, by Government imperatives to drive up skill levels to increase economic competitiveness. Tools for the review, identification, assessment and diagnosis of skills have therefore been developed for varied purposes and for different target audiences. Funding for the development of many tools has come from public sources (e.g. the European Union; the Higher Education Funding Council) that have typically supported short-term projects to address specific local, regional, educational or occupational needs. When funding ceases, development support for the tool also often ceases, with the result that scrutiny of effectiveness – especially over a longer time frame – is often lacking. Many available tools may, therefore, have considerable merit, but claims to effectiveness have often not been validated.

In addition to product development supported by public funding, there is also a flourishing commercial market. Robust evidence bases underpinning skills tools for this review have been found more commonly in association with these commercial tools. In these cases, developing such an evidence base, which testifies to the efficacy of tools, may well be part of an investment decision that supports the marketing strategy for the product.

Regarding skills specifically for career progression, there is agreement about the desirability of appraising these alongside vocational interests. Five tools with well-developed evidence bases, for the appraisal of skills and/or interests, have been identified. These are: the Skills Confidence Inventory (SCI) to be used in conjunction with the Strong Interest Inventory (SII); the Campbell Interest and Skills Survey (CISS); the Expanded Skills Confidence Inventory (ESCI); the Kuder Skills Assessment (KSA) to be used alongside the Kuder Career Search (KCS); and the Task-Specific Occupational Self-Efficacy Scale (TSOSS). All have been commercially produced in the United States.

It is perhaps relevant to note that a review of career assessment tools for use with disadvantaged groups found only a limited number which provided relevant

evidence of reliability and validity for these populations. Of those identified in this review, the SII, the SCI and the TSOSS met criteria indicating their appropriateness for use with these groups.

The French 'bilans de compétences' is a well established and well known example of appraisal for career development, which includes skills assessment. This is delivered nationally through a network of 'Centres interinstitutionnels de bilan de compétence' (CIBC) and comprises an individualised, face-to-face process which lasts up to 24 hours. This model of provision has been adopted in other European countries – specifically Switzerland, Belgium and the Czech Republic, with similar approaches adopted in Italy, Bulgaria and the Netherlands. A similar approach is also used in Canada, where a recent evaluation of its efficacy revealed encouraging results.

Many tools are now available online for self-administration, for use in groups or with the support of a practitioner (i.e. tutors, trainers, careers and employment practitioners). Others are paper-based and like online versions can be self-administered, or used as part of a one-to-one intervention or group work. Yet others are available both as paper-based versions and online. Whilst the most economical option will, undoubtedly, be the self-administration of these tools, evidence indicates that the most reliable results are obtained through facilitated tools – especially where an action plan to develop skills is regarded as a desirable outcome from the process of appraisal.

The use of language around the implementation of tools for skills appraisal in practice can be somewhat confusing, with the concept of skills itself contested.

Recent lessons in the implementation of assessment frameworks, which include skills, emphasise the importance of convincing both practitioners and managers of the value of the tools. Attending to the anxieties of users, who may associate a skills appraisal with negative experiences of assessment, also emerges as another critical success factor in their effective implementation and use.

If one purpose of an initial skills tool for a new adult careers service is to get users to identify skills that need further development, as a prelude to agreeing to undertake particular learning actions, then some thought needs to be given to what type of approach might be appropriate for those clients who have already identified that they wish to undertake further learning.

Because the ability to act effectively to cope with particular problems or tasks is contextual, it may be useful if any universal skills check focuses not just on the possession of skills, but also on the context of use.

It may also be useful to regard competence in skills as developmental, rather than as something that can be achieved. Hence, one of the options in any skills check may be to develop further skills in areas that are already strong, in order to deepen expertise.

Any appraisal of skills has to gather together information on skills not only drawn from a variety of sources but which operate at different levels of aggregation. An approach modelled on those tools that provide free text spaces for individuals to identify their best 'examples' of particular skills may be advantageous to users since it not only involves description of the use of skills in particular contexts but can be updated as skills develop.

Considering whether to support the idea of horizontal progression will also be important. In practice, 'spiky profiles' of skill are common – meaning that some skills may be much more developed than others. To become more skilled and effective in terms of overall performance, it is often necessary for individuals to pay attention to the development of skills they may well possess, but at lower levels of competence than others, as well as gaps.

Any skills tool designed to build a learning culture within the context of career progression needs to recognise the importance of needs, motivation, knowledge, values and interests, as well as skills.

As there is a tremendous richness to the type of learning activities individuals can undertake to develop their skills, any appraisal process needs to incorporate a vision of what a culture of learning might look like.

Main findings – screening tools

An extensive literature emerged from the review on tools and methodologies for identifying clients requiring extensive support. Since the purpose of these techniques is to facilitate more effective and efficient adviser discretion, it is relevant both to acknowledge the critical role played by the Jobcentre Plus Personal Adviser in this process of identification and to recognise the different roles and varied responsibilities that place competing demands on an already highly pressurised group of employees.

The current 'triggered' approach to assessing customer need in Jobcentre Plus has the advantage that resources are directed only to those who have actually experienced difficulty in obtaining employment. However, it may not be the most efficient process because of the wide variation in the customers' circumstances and needs. Support offered early on might secure a more speedy return to work.

Three broad approaches to the identification of customer need can be identified: complete adviser discretion; the application of rules binding adviser discretion; and the use of diagnostic tools to aid adviser discretion.

Every EU member state uses some system of adviser (or case worker) resource allocation, with adviser discretion being the dominant mechanism. Advantages include it being flexible, individual and providing a 'personal touch'. Disadvantages include the risk of customers not being treated equitably and the quality of decisions depending too much on the expertise of the adviser. Evidence is mixed regarding its effectiveness, with some studies casting doubt on the overall effectiveness of this approach.

Most (if not all) public employment services limit adviser discretion by the use of eligibility rules. The bases for these rules vary and few studies have examined explicitly how well they identify customers need in Jobcentre Plus support. Because of the diversity of the population of customers, it is likely that eligibility rules represent something of a blunt instrument in terms of securing a good match between individual customers and existing provision.

The use of diagnostic or assessment tools involves the application of some form of instrument to determine a customer's situation or need. Their use represents an intermediate position between allowing advisers complete autonomy and expecting them to operate with administrative rules that may be inflexible. They represent a systematic means of assessing need and can avoid the inconsistency and error that may arise with adviser discretion. An additional advantage is that they can be used in combination with other methods.

This review of literature has identified three categories of diagnostic tools and methodologies that have been piloted and/or are being used to identify clients/customers requiring intensive support: those that attempt some form of attitudinal screening; those that are based on statistical modelling; and a growing category of approaches that address the intensive support needs of particular groups of individuals.

The objective of attitudinal diagnostic tools is to identify jobseekers whose attitudes present a constraint on them obtaining employment and to inform activities designed to change jobseeker behaviour. This type of screening instrument tends to produce ordinal measures of employability (high, average, low, etc.) rather than quantifying it. Examples of this approach can be found in France (Copilote Insertion), Germany (Placement Characteristics), Portugal (Forecast Guide to the Difficulties of Insertion) and Denmark (Job Barometer).

Other similar tools have been recently piloted, so have not yet acquired a robust evidence base sustained over time. These include an inventory of positive career planning attitudes (US), an attitudinal segmentation model (Australia) and a new methodology that has been piloted in the UK for measuring the complexities of lone-parents' decision-making around returning to work, comprising cognitive interviewing methods and a card sort.

The use of statistical systems to identify customers requiring support or to identify the type of support is probably most highly developed in the USA and Australia, but an increasing number of countries around the world have experimented with various systems. A distinction is made between 'targeting' and 'profiling' systems.

An issue highlighted as requiring careful consideration is the process of introducing these types of tools into any Public Employment Service (PES), because of the way staff may react.

Systems which figure most prominently in the literature include: the Worker Profiling and Re-employment Services (WPRS); the Frontline Decision Support System (FDSS); the Service Outcome Measurement System (SOMS); and the Job Seekers Classification Instrument (JSCI). Of these, two have now been withdrawn from use for a variety of reasons, including cost (FDSS and SOMS). The one emerging with the most consistently robust track record is the JSCI.

Other countries that have piloted statistically based profiling systems include Korea, Finland, France, Hungary, Ireland, Mexico, New Zealand, Slovakia, Sweden and the Netherlands, though evidence of their efficacy is not available in all cases. Yet others are currently piloting systems, like one in Switzerland (being piloted from 2006/09) that claims to be the first pure targeting system.

There is currently no statistical profiling system in use in Jobcentre Plus. A recent study concluded that it would be possible to use profiling to predict the benefit spells of Jobseeker's Allowance (JSA) claimants, lone parent and disabled people on benefit, with predictions being more accurate than would have been achieved by randomly guessing at outcomes.

Both attitudinal screening and statistical profiling operate at a general level in terms of the predicted outcome for the individual customer. Other diagnostic tools tend to be more specific and attempt to measure specific characteristics, often for particular groups of jobseekers. Some include assessments of particular skills, others are designed to measure strengths and job aspirations of jobseekers, whilst yet others seek to identify key barriers.

There are few examples in the UK of diagnostics designed to identify customer need in terms of skills and learning. The Skills Coaching pilots represent something of an exception. Jobcentre Plus customers claiming JSA or an inactive benefits (Income Support (IS) or Incapacity Benefit (IB)) can be referred to the Skills Coaching service, delivered by nextstep where their Personal Advisers (PA) judged that a lack of skills was the barrier to sustained employment. This represents a mixed methods approach, combining interviewer discretion with a diagnostic tool and a reflective learning tool.

Other interesting examples include the Activity Matching Ability System (AMAS), which reviews what individuals are able to do and builds self-confidence. The Worker Role Interview (WRI) is a semi-structured interview and rating scale designed to assess psychosocial capacity for return to work in injured workers, with a similar approach embedded in the USA in their Temporary Assistance for Needy Families (TANF). A 'rapid attachment' approach, followed by work experience to develop job maintenance and coping skills, has been used successfully with people living with HIV/AIDS in the US. An interesting approach piloted in Germany with unemployed people over 45 years old achieved a much higher success rate than expected by convincing clients of the merit of accepting atypical forms of employment, even though these jobs were of a lower status and low paid.

In none of the examples identified in this review has the adviser been replaced by one of these tools, even in instances where it was highly automated. In most cases

advisers (or case workers) administer the diagnostic tool and have discretion over their outcomes. However, the consequences of this level of reliance on advisers in supporting individuals with intensive support needs back into employment, in terms of psychological distress, are beginning to emerge in the Australian example.

One reason why diagnostics are currently underdeveloped in the UK is the limited administrative data available about customers. Tools built on limited data will inevitably operate with a wide margin of error, requiring mediation by an adviser.

The many and varied methodologies developed more recently show promise but take delivery and design beyond an emphasis on placement outcomes. These different approaches recognise the limitations of statistical assessment and attitudinal screening, accepting that for some of the most disadvantaged in society, improving employability through more individualised, holistic approaches represents sufficient gain, with the concept of distance travelled more relevant for measuring progress. Case management involving tools and techniques that identify strengths, as well as difficulties, and that is on-going, seems more likely to meet the complex needs of diverse individual clients.

The inter-related nature of the components that may comprise different types of intensive support requires a coherent approach to the overall design of any programme.

The successful implementation of any screening process has implications for staff capacity and training. This will be particularly important where staff turnover is high and/or the workplace is highly pressurised.

Different kinds of tools and methodologies are likely to be appropriate to different settings, client groups and purposes. Implementation of any one will bring particular practical (sometimes ethical) implications.

1 Introduction

1.1 Introduction

The final report from the Government commissioned Leitch Review of the UK's long term skills' needs identified the optimal skills mix for 2020¹. This particular skills mix was needed, it was argued, to maximise economic growth, productivity and social justice. The policy framework required to support the achievement of this goal included a recommendation for the establishment of a new universal adult careers service, which would provide '*a universal source of labour market focused, accessible careers advice for adults*' (p.22, para. 73). A key objective would be the establishment of a national network of one-stop shops for careers and employment advice, achieved through close and collaborative working relationships between the new service and Jobcentre Plus, with the new careers service both being delivered in a range of locations (including co-location with Jobcentre Plus) and drawing on their information and services. The Government welcomed the principles outlined in Leitch and agreed the ambition outlined.

In parallel with responding to the Leitch recommendations, the Department for Work and Pensions (DWP) is developing the Flexible New Deal. This involves examining the need to achieve a better understanding of the circumstances of each customer, enabling the identification of particular barriers to work so that support can be tailored accordingly. A key aspect of the design of the Flexible New Deal is an initial diagnosis of customers' needs.

1.2 Aims and objectives

The aims of this literature review were twofold, with a remit to identify and review the research and evidence on separate, but related, areas as follows:

- skills appraisals that help identify and measure individual skills levels (including those skills needed by employers); and

¹ Department for Education and Skills (2006). *Leitch Review of Skills: Prosperity for All in the Global Economy – World Class Skills. Final Report*. Norwich: The Stationery Office.

- screening tools to help recognise influences on employability (including individual lack of skills).

Because of the scope of the questions to be addressed, two separate review processes were necessary to ensure comprehensive coverage of the subject areas under scrutiny. For the first review, the objectives were to:

- identify diagnostic tools developed for measuring skill level;
- review the evidence relating to the use and effectiveness of such tools; and
- identify evidence of good practice.

Objectives for the second review were to:

- identify influences on employability (including barriers, constraints and enabling factors);
- identify screening tools that have been used to identify clients/customers requiring more intensive support and early intervention; and
- identify evidence of good practice.

Both were carried out by the Institute for Employment Research at the University of Warwick and undertaken during a three-month period from April to July 2007.

1.3 Review questions

The main question for the first literature review was:

What evidence is there of tools and methodologies used for the review, identification, assessment and diagnoses of individuals' skills levels, both active and inactive in the labour market?

With the sub-question:

Are there examples of good practice that accommodate different methods of delivery?

For the second literature review, the main review question was:

What evidence of good practice, tools and methodologies is there to enable the identification of customers/clients requiring more intensive support to increase their likelihood of moving into work?

With the sub-question:

Having identified people needing more intensive support, what evidence is there that we can identify and implement the most effective types of support?

Both reviews were to include schemes with an explicit and documented evidence-based rationale and good quality evaluation evidence to show utility and practicality. This was to ensure that the resulting literature reviews would be sufficiently robust to inform policy development and practice.

1.4 Report structure

This section has provided an introduction to the review, including the aims, objectives and review questions. The review methodology is detailed in Appendix A with strengths and limitations of this particular approach considered in Appendix G.

Chapter 2 addresses the question on the review, identification, assessment and diagnosis of skills and diagnostics. It examines the different purposes for which skills appraisals have been developed and potential difficulties with definition, measurement and lack of common standards for such tools. The well established tradition in skills appraisals for career progression is examined, together with an exploration of insights provided by the implementation of various tools. Examples of practice in educational, training and occupational settings are presented, together with the brief existing evidence of 'good and interesting practice'. This section ends with a discussion of issues arising from the review and conclusions from the study.

Chapter 3 addresses evidence relating to screening tools for employment. It considers the crucial role played by the Jobcentre Plus Personal Adviser in the process of identifying people needing intensive support and highlights three approaches: adviser discretion, application of eligibility rules and diagnostic tools. Two distinctive types of methodologies are considered that combine elements of all three of these approaches and tend to operate at a general level: attitudinal screening and statistical profiling. A third category of methodologies, which include a mix of methodologies typically designed for specific purposes with particular target user groups, is also presented and discussed. Like Chapter 2 of the report, Chapter 3 ends with an identification of issues and some conclusions.

2 Skills review, identification, assessment and diagnosis

2.1 Introduction

This section examines the body of evidence that has emerged from a systematic investigation of the following question:

What evidence is there of tools and methodologies used for the review, identification, assessment and diagnoses of individuals' skills levels, both active and inactive in the labour market?

With a related, sub-question:

Are there examples of good practice that accommodate different methods of delivery?

The Leitch Review of Skills (2006)² recognised *'the need to energise individuals, building a culture of learning by raising awareness'* (p.25). It proposed a new offer to individuals to support the development of this learning culture, part of which should be a new adult careers service, to: *'provide a universal source of labour-market focused and accessible careers advice for adults, including a free Skills Health Check'* (p.103). The Review recommends that this should be a free entitlement and *'would identify an individual's skill needs and strengths,'* so that careers advisers can *'ensure that people are advised on the most effective action... to tackle their needs and develop their career'* (p.110).

A cross-government review of information, advice and guidance (IAG) for adults also identified the need for *'a powerful new skills and careers service'*, that would

² Department for Education and Skills (2006). *Leitch Review of Skills: Prosperity for All in the Global Economy – World Class Skills. Final Report*. Norwich: The Stationery Office.

provide access to a skills diagnostic to 'help individuals take stock of their skills and act on opportunities to progress their careers as well as enable advisers to identify and support the specific skills development of the unemployed' (p.1)³. This particular review explored possible models for a skills health check and concluded that such a tool should both include an initial assessment of need and lead to a range of more specific skills assessments (p.6). Individuals should be able to return to a range of tools available through the Skills Health Check as often as they chose⁴.

This part of the literature review presents evidence both from the UK and internationally, focusing on tools that have been used to appraise skills of individuals who are both active and non-active in the labour market. The initial search strategy yielded 29,677 hits, with 579 screened by title and abstract. Twenty-nine studies provided the basis for this review (for a detailed account of these search results, see Appendix C, and for annotated bibliography of texts used in this part of the review, see Appendix H). It has placed priority on the identification of schemes with an explicit rationale and good quality evaluation evidence, which demonstrate their utility and practicality. Findings will contribute to an increased understanding of what exists, and what works, in the area of evidenced-based skills review, identification, assessment and diagnosis, with the potential to inform policy development for the introduction of a skills health check as part of the service offer of a new adult careers service.

2.2 Background

Skills research is an under-developed area, with the problematic nature of 'skill' a recurrent theme. This is particularly evident in the lack of any commonly accepted definition of skill⁵; differences in the constructs used in the range of available tools; varied methods of measurement; variations in the response formats employed; and lack of any common standards (Balgobin *et al.*, 2004; Betz and Rottinghaus, 2006; Borghans *et al.*, 2001; Clayton *et al.*, 2003; Dostal, 2003).

Variations are particularly evident regarding the different types of skills required for different purposes. Four broad skill categories can be identified in the literature: academic; generic; technical; and 'soft'⁶ (Stasz, 2001) and this categorisation will be used throughout this review.

³ Centre for Guidance Studies (2007). *IAG Review Expert Practitioner Workshop (Summary Report)*. 22-23 January 2007. Department for Innovation, Universities and Skills and Centre for Guidance Studies, University of Derby. [Available online: <http://www.iagreview.org.uk/papers/StratfordWorkshopPaper.pdf>]

⁴ This conceptualisation of the skills health check as a process over time, rather than 'one off', is consistent with approaches used in health care and consistent with the need to develop a learning culture, identified in the Leitch Review.

⁵ See Glossary of terms for definitions of 'skill'.

⁶ See Glossary of terms for definitions of these four categories.

Available tools appraise different combinations of these categories of skill, for example:

- some are designed for use across a range of different contexts (e.g. schools, colleges, universities, careers organisations) to appraise generic, 'soft' and elements of academic and/or technical skills;
- some are context specific, designed for use in particular educational or training settings. They typically combine the appraisal of generic skills with academic or technical skills;
- others are focused on the appraisal of particular technical skills required by employing organisations, so also context specific. These are often developed in response to a particular employment need and may also incorporate elements of 'soft' and generic skills.

Methods used to assess skills also vary (Balgobin *et al.*, 2004). For example, four broad approaches to the assessment of generic skills are identified as: external holistic judgements (i.e. by teachers, practitioners); portfolio-based assessment (i.e. created by the individual being appraised); work-based assessment (i.e. typically carried out by employers); and assessments using purpose-developed instruments (i.e. standardised instrumental assessment). The method of assessment is usually determined by its overall purpose. For example, whether the appraisal is being undertaken primarily to support learning; increase self-confidence; measure individual achievement; or evaluate learning and/or training programmes (Curtis, 2004). Within these four broad approaches to assessment, some tools have been designed for one-off appraisals, whilst others (usually those designed for use in educational and training contexts) are intended for use as part of an on-going process of development. An evaluation of Employer Training Pilots and Sector Skills Pilots highlighted the value of the so-called ATA (assess-train-assess) approach in increasing the likelihood that learners will complete an award. This involves initial assessment of the learner's existing skills, identification of any skills gaps and training customised to meet the individual's needs, followed finally by assessment to establish the extent to which the 'gap' has been filled. (Miller *et al.*, 2005).

Checklists of 'good practice' for developing skills appraisals exist, which whilst comprising useful guidelines, currently lack consistency (for example, Balgobin *et al.*, 2004⁷ and Drew *et al.*, 2002).

The variations evident in existing tools will depend, at least in part, on the model of skills underpinning their design. An economic approach, for example, assumes that skills are unitary, measurable traits that individuals possess, which can transfer from one context to another. Lists of skills included in tools derived from this approach are often constructed in a fairly arbitrary way and may not necessarily closely resemble skills required in particular employment contexts. An alternative

⁷ Eight best principles are identified: scope; validity; values; reliability; practicality; expertise; cost; and fairness.

perspective is the socio-cultural approach, which emphasises the importance of regarding skills as relevant to particular contexts (e.g. educational or occupational). This approach does not assume that skills can be easily transferred from one context to another (Stasz, 2001).

Work-based learning has been found to be more important in skills development than usually thought (Bell and Ford, 2007; Dostal, 2003; Green *et al.*, 2001) and its importance is strongly reinforced with evidence from national skills surveys⁸. Evidence of the use of skills diagnostics in the workplace is limited, though two studies identified in this review both reflect a socio-cultural approach to these tools (see the paragraph above). One study examined user reactions to skills assessments, which were found to have important consequences for the motivation to learning amongst trainee truck drivers. Trainees' perceptions of distributive justice (i.e. whether the skills assessment was fair) and of its utility (i.e. whether the skills assessment was useful to them) were crucial in engaging trainees in the learning necessary to address the skills gaps identified (Bell and Ford, 2007). In a similar vein, another study, piloting a skills assessment with a set of individuals who have been traditionally reluctant to use e-learning (employees in small businesses) concluded that an initiative that focused on a quick technical fix was doomed to failure. This particular tool was designed to help employees review their current skills (expressed in terms of technical skills, information skills, people skills and learning skills) and to think about what skills they may require in two years' time. Developing the tool in isolation from attending to the context in which it was to be used proved futile. Its successful integration in the workplace depended on supporting the development of a learning community (Brown *et al.*, 2002).

In the particular area of skills appraisal for career progression, differences in content and methods of appraisal have been identified as a particular problem, since this can result in inconsistent interpretations and recommendations across user groups (Betz and Rottinghaus, 2006). So, where an individual has undertaken a number of different skills appraisals (e.g. in school, in university, then in an employment agency), perhaps with slightly different outcomes, this has the potential to cause confusion.

One other problematic area relates to the determination of particular levels of mastery of different skills. Indeed, the tacit nature of some skills makes recognition particularly difficult, not only for assessors but for those being assessed. It has been suggested that the ability to conceptualise and articulate possession of generic skills could be regarded as the most sophisticated of the generic skills – a meta-generic skill (Clayton *et al.*, 2003, p.24).

⁸ Felstead, A., Gallie, D. and Green, F. (2002). *Work Skills in Britain 1986-2001 (SKOPE Publication 3)*. Oxford/Warwick: SKOPE Centre, University of Oxford and University of Warwick. [Available online: <http://www.skope.ox.ac.uk/WorkingPapers/Workskills%20in%20Britain.pdf>]. Felstead, A., Gallie, D., Green, F. and Zhou Y. (2007). *Skills at Work 1986-2006*. Oxford: SKOPE Centre, University of Oxford.

Two particular success factors for the successful implementation of skills appraisals were recently highlighted by an evaluation of the holistic framework used to assess the needs of young people (including skills) as part of the service offered by the Connexions service in England. These were the need for adequate training support for the practitioners introducing this framework and the commitment of managers to its implementation (CRG Research, 2002). The importance of training support for practitioners is also highlighted in an evaluation of the literacy and numeracy screening, initial diagnostic assessment tools⁹, which are used across different education and employment contexts and include a skills check. Whilst this evaluation does not focus exclusively on the skills check, it does provide useful indicators for future implementation of such tools in practice. In particular, the importance of clarity of purpose is emphasised. Regarding the skills check, the majority of respondents did not see its relevance and felt it unnecessary – with only ten of the 39 evaluation sites contacted choosing to pilot this tool. It was also evident that a choice of delivery methods (that is, paper-based and online) were necessary as many providers did not have access to IT (Holden and Hinman, 2007).

2.3 Skills reviews, identification, assessment and diagnosis

The Leitch Review¹⁰ indicates that the new *'careers service will become the source of skills expertise for Jobcentre Plus. The Review recommends that the careers service provide skills diagnosis for workless people who need it in England, including those making repeat claims, with Jobcentre Plus referring claimants to it'* (DfES 2006, p. 131).

The first theoretical model that underpinned careers practice (and which has now been in use for over a century) has the assessment of skills, interests, aptitudes and abilities at its centre. Although criticisms of this framework have increased recently (especially in relation to disadvantaged groups), it continues to be widely used. This model, based on the psychology of individual differences, originated in the United States at the turn of the last century¹¹.

Within psychometrics, the development of skills 'diagnostics' – still regarded as a new and evolving field – is heralded as a major paradigm shift. This is because it represents a move away from reliance on summative assessment methods, to

⁹ These were developed on behalf of the Skills for Life unit of the Department for Innovation, Universities and Skills.

¹⁰ Department for Education and Skills (2006). *Leitch Review of Skills: Prosperity for All in the Global Economy – World Class Skills. Final Report*. Norwich: The Stationery Office.

¹¹ Parsons, F. (1909). *Choosing a Vocation*, Boston: Houghton Mifflin.

blended assessment that uses both summative and formative methods¹² (Stout, 2002). The measurement of 'soft' (e.g. distance travelled), as well as 'hard' outcomes (e.g. placement into employment) is, thus, made more feasible, a development particularly relevant to the measurement of 'soft' skills (e.g. verbal communication).

The early literature on skills appraisals for career progression began with measures of self-efficacy, which were typically combined with appraisals of vocational interests. Indeed, it is argued that interest items and self-estimated skills assessments in many tools are 'uncannily similar' (Zytowski and Luzzo, 2002, p.192). Subsequent investigations of the relative importance of these two elements indicate that both must be present for successful career progression (Campbell, 2002; Chartrand *et al.*, 2002; Betz *et al.*, 2003; Betz and Rottinghaus 2006; Koumoundourou, 2004; Zytowski, 2001; Zytowski and Luzzo, 2002). The rationale for a dual approach relates to it not being sufficient for someone to possess the skills necessary for a particular occupational area; they also need to be interested (for example, whilst a young woman may have the skills necessary to enter bricklaying, she may not be interested in going into the construction industry because of its image). So, it is argued, for the purpose of career progression, skills should not be measured in isolation from vocational interests.

2.4 Skills appraisals for career progression

Within the context of career progression, a number of skills tools have been developed to be used alongside vocational interest inventories (see above). Those reviewed below have a record of evaluation and testing which provides a robust evidence base to support their use.

2.4.1 Strong Interest Inventory and Skills Confidence Inventory

The Strong Interest Inventory (SII) has been under development since 1927. Over this time it has evolved beyond its original component of occupational scales to include basic interest scales (e.g. in areas such as mathematics) and general occupational themes (e.g. investigative). By the 1970s, the SII viewed interests from three perspectives – general (e.g. investigative), specific (e.g. mathematics) and occupational groups (e.g. accountancy).

Developed in 1996 to be used in conjunction with the SII, the Skills Confidence Inventory (SCI) measures self-efficacy for tasks associated with general occupational

¹² For definitions of formative, summative and blended assessment, see Glossary of terms.

interests (i.e. Holland's RIASEC model¹³). Activities, or educational subjects, are measured on a scale of 1 (no confidence) to 5 (complete confidence). Although relatively new, evidence has accumulated to support its use, particularly alongside the SII. Analysis of data from 27,000 respondents, for example, was undertaken to evaluate the usefulness of using interest inventories together with skills assessments. Specifically, this evaluation focused on the combined use of the SCI and the SII and found that there was 'ample evidence' to support their combined use (Chartrand *et al.*, 2002, p.176).

Interventions, based on the results of these combined assessments (the SII and SCI) and informed by Bandura's theory of self-efficacy¹⁴, are described to support both the development of individual skill and, importantly, self-confidence to perform particular skills. For example, referrals to education or training programmes that address particular aspects of skill development (referred to as 'performance accomplishments') would ideally be combined with the organisation of some type of work shadowing or observation where an individual client is encouraged to spend time in an employment context observing someone working in a particular occupational role ('vicarious learning').

2.4.2 Campbell Interest and Skills Survey

The Campbell Interest and Skills Survey (CISS) has been available since 1992, representing a '*recent addition to a long line of statistically based career inventories, dating directly back to Strong in 1927*' (Campbell, 2002, p.150). It asks users to assess their degree of skill in 120 specific occupational activities and their interest in 200 academic/occupational topics. Answers are scored with standardised scales and an 11 page profile is produced with an additional two page report for the career practitioner. The profile contains information around three scales: seven orientation scales (e.g. influencing, organising, helping, creating, analysing, producing and adventuring); 29 basic scales (e.g. maths, law); and 60 occupational scales (e.g. engineer; maths-science teacher). In addition, two special scales are provided – academic focus and extraversion. Two scores are provided for each scale: an interest score, which reflects the respondent's interest in an area and a skill score, reflecting the respondent's level of confidence in performing well in the

¹³ John Holland developed a widely used framework for careers practice, which has been thoroughly and extensively evaluated and validated, based on the assumption that individuals select jobs which fit most closely with their personality preferences. He developed a model comprising six broad occupational areas (Realistic, Investigative, Artistic, Social, Enterprising and Conventional – RIASEC), which, he argued, accommodates all occupational environments and personalities. e.g. Holland, J.L. (1973). *Making Vocational Choices: A Theory of Careers*. Englewood Cliffs, New Jersey: Prentice-Hall.

¹⁴ Bandura, A. (1977). 'Self-efficacy: toward a unifying theory of behavioral change', *Psychological Review* 84(2): 191-215.

same area. This is an approach to measuring skills which is based on standardised items and normed responses which provide an interpretation of the implications for practice of different combinations of interest and skill (e.g. Interest high, skills low – explore; interest high, skills high – pursue).

2.4.3 Expanded Skills Confidence Inventory

One other relatively new evidence-based tool for the measurement of skills is the expanded skills confidence inventory (ESCI) (Betz *et al.*, 2003). Like the SCI (see Section 2.4.1), the ESCI is also based on Bandura's self-efficacy theory. It was developed by evaluating 17 scales (comprising 186 items) measuring confidence or self-efficacy related to areas of occupational activity. The tool was developed on a total sample of 1,221, including undergraduate students and employed adults. Confidence scales include previously measured interest dimensions (like writing, public speaking), but also include items designed to represent changes in the world of work (e.g. creative production and cultural sensitivity). The development and initial validation of this particular tool indicate rigour for measuring self-efficacy in skills for occupations.

2.4.4 Kuder Career Search and Kuder Skills Assessment

Yet another set of tools that combine skills appraisal with interest assessment are the Kuder Career Search (KCS) and the Kuder Skills Assessment (KSA). The KCS, published in 2001, came from the developers wanting to take into account the rapidly changing labour market context, and the instability this had produced, both in occupations and occupational membership. This instability, it was thought, challenged the core assumption built into many assessments of interest, that occupations and occupational environments enjoy at least a degree of stability. This led to the development of an approach that matches an individual to all persons in a population of individuals, rather than all persons in an occupational group. The rationale for this approach is the lack of similarity in the way people in the same occupation operate and the differences that exist between occupational environments in the same occupational area (e.g. doctors in different health care environments). The KCS has six career cluster scales¹⁵ and includes a compilation of job sketches (i.e. a description of the individual's present job duties, sources of satisfaction and dissatisfaction, and other information) rather than job descriptions. These job sketches are continuously up-dated to include emerging occupations and the pool is maintained at a maximum of 2,500. Implications for practice requires a shift in the approach taken by a career practitioner from recommending an occupation based on necessary interests, to an approach that provides job sketches of several people with the same interests: '*See what you can learn by reading descriptions of their jobs*' (Zytowski, 2001, p.234).

¹⁵ Outdoor/Mechanical; Science/Technical; Arts/Communication; Social/Personal Services; Sales/Management; and Business Operations.

The KSA is a 90-item measure of self-efficacy (Zytowski and Luzzo, 2002), designed to be used in conjunction with the KCS (see the previous paragraph). It is part of the Kuder Career Planning System, administered via the internet¹⁶ and has six scales corresponding to the six career cluster scales of the KCS. It was developed in response to concern that an increasing number of skills assessment tools are based on self-report. These are not usually normed and are designed to increase an individual's self-awareness of which skills they have most highly developed. However, this is done without any reference to how they might rank within a comparison group and because of their subjectivity, there is little opportunity to validate them. The development of the KSA (with a sample of 638 male and female students from different stages of education and different geographical locations) addressed these issues and the six scales of the KSA match the career clusters of the KCS for the purposes of developing norms and for exploratory use in careers work. Recently, an additional specialized 160-item version of the KSA was introduced to expand content coverage and co-ordinate with career clusters developed by the US Department of Education. The internal consistency coefficients for this version of the KSA range from 0.78 (arts, audio video technology and communication), to 0.88 (both information technology (IT) and manufacturing), with a median of 0.85. A longitudinal study is also underway to examine career outcomes for hundreds of students in two rural Midwestern communities (Betz and Rottinghaus, 2006).

2.4.5 Task-Specific Occupational Self-Efficacy Scale

Evaluation results for another skills tool, the Task-Specific Occupational Self-Efficacy Scale (TSOSS), across cultures, indicated the transferability of this particular instrument across national contexts. The TSOSS is a self-efficacy measure, which assesses an individual's confidence in performing career task-specific skills. The original version comprised 230 items and was developed in 1989. A short form, with just 60 items, was developed in 1993. The items are categorised around four factors (language and interpersonal skills; quantitative, logical, scientific and business skills; physical strength and agility; and aesthetic skills). The reliability and validity of the tool was examined with a Greek sample (N=170) and the results were encouraging and this same tool has also been used successfully in Israel, Korea and New Zealand (Koumoundourou, 2004).

¹⁶ Available at: <http://www.Kuder.com>

2.4.6 Bilans de compétences

The French 'bilans de compétences' is a well established and well known example of appraisal for career development, which includes a skills assessment¹⁷. This service is delivered nationally through a network of 'Centres interinstitutionnels de bilan de compétence' (CIBC) and comprises an individualised, face-to-face process which can last for up to 24 hours spread across a number of sessions. What is also relevant in the context of this review is the uptake of this model of provision in other European countries – specifically Switzerland, Belgium and the Czech Republic, with similar approaches adopted in Italy, Bulgaria and the Netherlands¹⁸.

There is a universal entitlement to a skills check (bilans de compétences) in France, in contrast to Canada where no such entitlement exists, but where a similar approach is in use. A critical review of the effectiveness of general 'skills checks' (modelled on 'bilans de compétences') in French speaking countries, concludes that whilst there are insufficient robust data to regard these skills checks unambiguously as effective for all users, there is evidence that their use has sufficient positive impacts, both for the individual and for society, to merit their continued use. Drawing on evidence from 1,460 respondents (including students, the employed and the long-term unemployed) who had undertaken skills checks either in France or Canada, the following benefits were recorded (in order of importance): increased self-knowledge; alignment to particular training; career planning; recognising skills; change of occupation; choice of occupation; securing employment; increased mastery of existing job; gaining new responsibility at work; setting up in a business; and getting a pay rise (Michaud *et al.*, 2006)¹⁹.

2.4.7 Skills Diagnostic

A Skills Diagnostic²⁰ is currently a key element of the pilot of the skills coaching service in England and along with the Entry Review interview, is the only element of

¹⁷ The 'bilans de compétences' is defined as: '*in collaboration with an external management consultant, an in-depth analysis by an employee of his/her motivations, skills and professional experience, with a view to re-considering his/her future career objectives*'. Jackson, C., Hawthorn, R., Haughton, L., Henderson, L. and Sadler, J. (2007). *Career Development At Work – A Review of Career Guidance to Support People In Employment*. Thessaloniki, Greece: CEDEFOP, p.96.

¹⁸ For a description of the history, operation and adaptation in other countries of 'bilans de compétences', see Jackson, C., Hawthorn, R., Haughton, L., Henderson, L. and Sadler, J. (2007). *Career Development At Work – A Review of Career Guidance to Support People In Employment*. Thessaloniki, Greece: CEDEFOP, pp. 95-100.

¹⁹ It is noticeable that skills checks that are used as part of a process are reported as being able to accommodate differences in context and circumstances.

²⁰ See Glossary of terms for definition of diagnostics.

the service that coaches are required to provide. This particular tool was designed to help the skills coaches identify the skills-related barriers that need to be addressed, also functioning to help users recognise the skills and experience they already possessed. An evaluation of the first pilot found that most users found the tool to be useful, citing the narrowing down of options, the opening up of choices and the boosting of confidence, as benefits. However, other users found it off-putting, since it reminded them of school. Yet others were negative about the tool because it was too difficult to understand or too basic. Some of the users found the job suggestions arising from the diagnostic to be unsuitable or too general to be of any use. The practitioners administering the tool (skills coaches) were generally positive. They valued it particularly because it raised awareness of skills levels, motivated lower ability users and could operate as a useful springboard for the skills coaching process. Criticisms included: it was difficult for users with no or few IT skills; it intimidated customers with low self-esteem and self-confidence; and it was too simple and patronising for higher ability users. Whilst these findings are relevant in the context of this review, it should be noted that the evidence on the efficacy of the skills diagnostic tool currently is currently limited to the initial evaluation of skills coaching (Hasluck *et al.*, 2006).

2.5 Other skills appraisals tools

A recurrent theme in the literature on skills assessments used in educational (or training) settings relates to the potential value of this process in identifying skill gaps and targeting provision relevant to the learner. Four examples were identified by the review process, with each contributing insight(s) to the design and/or operation of such tools: First, the Brigance Diagnostic Life Skills Inventory (LSI) is a criterion-referenced²¹ measure used in basic adult education, secondary special education, vocational education and 'English as a Second Language' programmes. Field testing has provided validity for this measure and in addition to providing a means for targeting provision, it has also proved useful in monitoring student progress (Bradley-Johnson, 1997).

Second, in higher education, a diagnostic tool for undergraduates had, as a guiding principle in its design, that the diagnostic would lead to support within the system and that the self-evaluation should provide a learning opportunity in itself. The tool, 'Key Skills Online', is a computerised self-assessment that reflects the themes of the Qualifications and Curriculum Authority's Key Skills (England). The evaluation methodology considered the technical aspects of the system, the management of implementing such a resource and also its practical use with staff and students. Views of stakeholders were collected in a variety of ways, including observation, questionnaire, focus groups and interviews. These were administered to 550 respondents across three universities. The evaluation process demonstrated how the guiding principles for the design of the tool were important to users. That is, it was valued because of the way in which outcomes led to the next stage of

²¹ See Glossary of terms for definition of criterion-referenced assessment.

learning and because the process of completing the tools proved to be a learning experience in itself (Drew *et al.*, 2002).

Third, in further education, a diagnostic assessment online tool for three core skills areas (communication, numeracy and IT) was found to be especially helpful with adults returning to learning. The tool was designed for use across four colleges, part of a consortium in Scotland. The approach to evaluation included both qualitative and quantitative elements. Data were gathered from three categories of users: those who manage the core skills area within each college; those who administered the tool; and those who had been assessed by the tool. Evidence suggests that the tool is: ensuring course selection is appropriate; preparing potential students for further study (including fast-tracking); supporting articulation amongst a wide range of qualifications; providing a tracking mechanism for core skills; fostering individual learning plans; and enhancing guidance provision. Interestingly, feedback from users in this particular study suggested that information on weaknesses as well as strengths should be made available to users (Laird, 2003).

The fourth example from an educational setting actually stresses the importance of thorough and systematic validation of skills tools, because of the potential of this process resulting in significant improvement in the efficacy of the tool. In this particular example, a skills tool was designed to improve the teamwork skills in two groups of engineering undergraduates at different universities by improving the validity and reliability of self/peer ratings. Both the initial and follow-up pilots are reported, together with results of the qualitative and quantitative evaluations. The process that was used (i.e. pilot test, revision, follow-up pilot test, revision) resulted in increased accuracy of the measure. Like other tools discussed (see previous page), this tool also proved useful in the early identification of skill gaps, which facilitated remediation (Van Duzer and McMartin, 2000).

2.6 Examples of good practice that accommodate different models of delivery

The sub-question for the main review question on skills specifically asks for the identification of examples of good practice which accommodate different methods of delivery. Research findings actually highlight the importance of flexibility in the delivery of skills tools. For example, different formats were shown in one study to assist in maintaining the interest and motivation of users (Laird, 2003). One other review discussed the importance of having an alternative to an IT based system to accommodate the digital divide, since some users will simply not have access to IT (Holden and Hinman, 2007).

However, no specific examples of good practice, which specifically highlight the merits of methods of delivery were found as part of this literature review. Examples of tools with clear evidence bases which model good practice in particular areas and have the potential for flexible delivery did, nevertheless, emerge. These are as follows:

- A key feature of the ESCI, which has the potential for flexible delivery, was how the content is reflective of current labour market changes (Betz *et al.*, 2003).
- Good practice examples of how to apply the SII and SCI collectively in career assessment are presented as part of a broader evaluation. For example, specific ways in which career exploration options can be expanded as part of the career development process are described (Chartrand *et al.*, 2002). Both these tools have the potential for flexible delivery.
- A review of career assessment tools for use with disadvantaged groups²² found only a limited number which provided relevant evidence of reliability and validity (Eby *et al.*, 1998). Of those identified in this review, the SII, the SCI and the TSOSS were identified as suitable.

2.7 Discussion

This literature review provides a clear indication of the broad, varied and in many ways problematic, nature of skills appraisals. Additionally, there are uncertainties regarding the precise requirements for the delivery of the 'skills health check', to be offered as part of the new career service in England.

If a core principle guiding either the design, or selection, of the skills tool is to build a 'culture of learning', as indicated in the Leitch Review, then a number of relevant issues have emerged from this study, which will be highlighted below and briefly discussed.

The variability of skills tools and uncertainty of policy requirements are exacerbated by the unpredictability of the needs of the users. They will make many demands on a skills tool operating as a portal to the new careers service. For example, users may wish to:

- update their skills, knowledge and understanding in their current occupational area;
- reflect on their current competences in order to know the type of jobs they could do immediately or in the future;
- improve their level of expertise in a general area or proficiency in a specific competence;
- support their learning development or formulate their learning goals;
- bring together their achievements and learning from different fields: education, training, employment, home, community and leisure (learning from all these areas may contain aspects of both formal and informal learning);

²² People with disabilities and members of certain minority ethnic groups are cited in the Leitch Review as having no or low qualifications, with a relationship between low attainment and low skills indicated (p.104).

- get a new job;
- find out what learning activities are available (and feasible);
- decide upon a particular learning path;
- undertake particular learning actions;
- have their skills assessed;
- formulate a personal development plan;
- discover how and where to get support from a learning network;
- investigate where and how they can share their learning development; and
- find out how to get involved in learning activities.

Potential users may have already decided that they wish to improve their ability to cope effectively with particular problems, events or tasks in a specific situation (e.g. in relation to an occupation, a hobby, a sport, helping children or grandchildren, etc.). However, these reasons may not always map onto the design principles of available tools. An example relates to the majority of adults taking work-based 'skills for life' programmes, engaging with these programmes not because they believe it is necessary to cope with the demands of their work, but for reasons external to the workplace. Some users may, therefore, have very clear ideas of the type of skills, knowledge and understanding they wish to develop, so interaction with the new careers service may be partly motivated by the particular need to identify appropriate learning programmes, actions or plans. If one purpose of the skills tool is to get users to identify skills that need development as a prelude to agreeing to undertake particular learning actions, then some thought needs to be given to whether a 'reduced' initial skills check may be more appropriate for those who have already identified they wish to undertake further learning.

The ability to act effectively to cope with particular problems or tasks is contextual (depending on the nature of the situation, team or organisation): that is, the ability of individuals to perform effectively depends not only on the understanding, skills and knowledge of individuals, but also upon the context in which they are to be deployed. The contextual nature of competence means that (particularly in some organisational contexts and team-working) individuals can have very different skill sets yet still be effective in the same context. Indeed, one of the advantages of working in a team is precisely that people collectively bring a much wider range of skills and knowledge than possessed by any one individual. It may, therefore, be useful if any universal skills check focuses not just on the possession of skills, but also on the context of their use.

The ability to deploy skills effectively to cope with particular problems or tasks also depends on the degree of challenge and support available. Thus, for example, nearly all new nurses struggle to cope in their first six months post-qualification,

because the work is so demanding and they do not receive sufficient support²³. It may be useful, therefore, to regard competence as developmental, rather than something that can be achieved. Hence, one of the options in any skills check may be to develop further skills, knowledge and understanding in areas that are already strong in order to deepen expertise.

Any appraisal of skills has to gather together information on skills, competence and qualifications which is not only drawn from a variety of sources, but which operates at different levels of aggregation. Designing a universal, integrated system to present and edit the information in an appropriate context, structure and format would be challenging. It is interesting to note that many large companies have responded to this challenge in their application processes by using fairly open free text 'spaces' for individuals to identify their best 'examples' of team-working, problem-solving, etc. (and use the same application form for an applicant for work experience or a senior management post). The advantage of this type of 'best practice examples' type approach is that it not only involves description of the use of skills, knowledge and understanding in particular contexts, but can be updated as the user accumulates experience and develops expertise. This type of approach can also illuminate the extent to which examples draw on similar situations or upon a variety of contexts.

If at least one aspect of the skills check was a review of 'examples' of use of aggregations of skills, knowledge and understanding in particular contexts, then this could be subsequently under the control of the user to update. The user is not given responsibility for keeping track of the development of all their skills (and coordinating all the sources, documents and activities) but rather, just updating significant examples of how their skills were used in tackling significant problems or tasks in particular contexts.

Any skills tool designed to build a learning culture within the context of career progression needs to recognise the importance of needs, motivation, skills, knowledge, values and interests. For example, a recent study into the development of adult basic skills has emphasised the critical importance of building confidence in

²³ It has been found that when nurses become fully qualified, they invariably struggle for the first few months (some think of leaving the profession) because of a lack of support in dealing with the significant learning challenges they face in their transition from student status and in their attempts to transfer what they have previously learned to their new work situation. Eraut, M. (2007). *Early Career Learning at Work: Insights into Professional Development During the First Job (Teaching and Learning Research Briefing 25)*. London: TLRP. [Available online: <http://www.tlrp.org/dspace/retrieve/2023/Eraut+RB+25+FINAL.pdf>] Similar criticisms that graduates are not fully 'work-ready' fundamentally misunderstands how support for transfer of learning and the development of a new work-related identity is almost always required when people move between contexts.

learners²⁴. Another similar study highlights how many adults returning to learning may have very 'fragile' learner identities²⁵.

There may be a need to support the idea of horizontal progression. In practice, 'spiky profiles' of skill are common – meaning that some skills are much more developed than others²⁶. To become more skilled and effective in terms of overall performance, it may be necessary, therefore, for individuals to pay attention to the development of skills at lower levels, including those below, as well as above, their current highest 'level'.

There is a tremendous richness to the type of activities individuals can undertake to develop their skills, so any skills appraisal process that seeks to support the development of a 'culture of learning' needs to have a vision of what such a culture might look like²⁷.

2.8 Conclusions

There has been a recent proliferation of skills appraisal instruments. Yet research into skills measurement for adult employability in England has concluded that there has been limited practice in the assessment of adults in this area, with no one suitable 'off-the-shelf' tool that can be identified (Balgobin *et al.*, 2004).

This proliferation has been fuelled, at least in part, by the imperative to drive up skill levels to increase economic competitiveness²⁸. Tools for the review, identification, assessment and diagnosis of skills have, therefore, been developed for varied purposes. They have been designed to support individuals in the acquisition of

²⁴ Eldred, J., Ward, J., Snowdon, K. and Dutton, Y. (2005). *Catching Confidence: The Nature and Role of Confidence*. Leicester: NIACE.

²⁵ Gallacher, J., Crossan, B., Field, J. and Merrill, B. (2002). 'Learning careers and the social space: exploring the fragile identities of adult returners in the new further education', *International Journal of Lifelong Education* 21(6): 493-509.

²⁶ LLUK (2007). *Addressing Literacy, Language, Numeracy and ICT Needs in Education and Training: Defining the Minimum Core of Teachers' Knowledge, Understanding and Personal Skills*. London: Lifelong Learning UK.

²⁷ Brown, A. (2006). The relationship between work-related learning and higher education following the implementation of the Bologna Process and the European Qualifications Framework: Is the focus upon levels, learning outcomes and qualifications making it more difficult for Europe to reach the Lisbon goals? *Conference on Educational Labour Market for Academic Graduates*. Maastricht.

²⁸ See, for example, Department for Education and Skills, Department for Trade and Industry, HM Treasury and Department for Work and Pensions (2003). *21st Century Skills: Realising our Potential [Individuals, Employers, Nation] (Cm 5810)*. Norwich: HMSO.

a range of skills, including skills for life, skills for transition into employment and skills for particular occupational areas. Some are targeted at children, some at young people; some at adults, some both at adults and young people; and some have been designed for groups perceived to have particular needs (e.g. young people at risk; people with disabilities). Funding for the development of many tools has come from public sources (e.g. the European Union; the Higher Education Funding Council) that have typically encouraged short-term projects to address particular local, regional, educational or occupational needs. When funding ceases, development support for the tool also often ceases, with the result that scrutiny of effectiveness – especially over a longer time frame – is often lacking. Many available tools may, therefore, have considerable merit, but claims to effectiveness have often not been validated²⁹.

In addition to product development supported by public funding, there is also a flourishing commercial market. Robust evidence bases underpinning skills tools for this review have been found more commonly in association with these commercial tools³⁰. In these cases, developing a robust evidence base for the efficacy of tools may well be part of an investment decision that supports the marketing of the product.

Regarding skills tools specifically designed to support career progression, there is agreement about the desirability of appraising them alongside interests. Five tools with well-developed evidence bases, for the appraisal of skills and/or interests, have been identified. These are: the SCI to be used in conjunction with the SII; the CISS; the ESCI; the KSA to be used alongside the KCS; and the TSOSS. All have been commercially produced in the United States.

The French ‘bilans de compétences’ is a well established and well known methodology of appraisal for career progression, which includes a skills assessment. This service is delivered nationally through a network of CIBC and comprises an individualised, face-to-face process which can last for up to 24 hours spread across a number of sessions. This model has been adopted in other European countries – specifically Switzerland, Belgium and the Czech Republic, with similar approaches adopted in Italy, Bulgaria and the Netherlands. It is also used in Canada, where a recent evaluation of its efficacy revealed encouraging results.

Many tools are now available online for self-administration, for use in groups or with the support of a practitioner (i.e. tutors, trainers, careers and employment practitioners). Others are paper-based and like online versions can be self-administered or used as part of a one-to-one intervention or group work. Yet

²⁹ See Appendix I for selected online skills assessments and diagnostic tools for which no evidence of efficacy could be found.

³⁰ Though a recent literature review on personalisation found the opposite – that there is not much information on the validity of tools produced for commercial purposes, compared with publicly funded tools (*Sachdev et al., 2007*).

others are available both as paper-based versions and online. Whilst the most economical option will, undoubtedly, be the self-administration of these tools, evidence indicates that the most reliable results are obtained through facilitated tools – especially where an action plan to develop skills is regarded as a desirable outcome from the process of appraisal (Balgobin *et al.*, 2004).

The use of language around the implementation of tools for skills appraisal in practice can be somewhat confusing. Screening, initial assessment, diagnostic, review, identification, formative and summative assessment are all examples of the terminology in use – sometimes with slightly different meanings. The concept of personalised learning³¹ is, therefore, relevant in this context, with a ‘learning journey’ providing one framework for making sense of the different stages in the process of supporting an individual to develop an awareness of strengths and weaknesses regarding their skill development. The model used by the Skills for Life National Strategy is instructive, since it presents screening as a discrete stage before initial assessment, which is then followed by diagnostic, formative and summative assessments (Sachdev *et al.*, 2007, p.13).

Recent lessons in the implementation of assessment frameworks which include skills emphasise the importance of convincing both practitioners and managers of the value of the tools. Attending to the anxieties of users, who may associate a skills appraisal with negative experiences of assessment, is another success factor in their implementation and use. Both these potential difficulties may be mitigated, however, if a skills check is represented more as a process rather than a one-off event.

2.9 Summary

A systematic search of evidence on skills review, identification, assessment and diagnosis revealed 29,677 results, of which 579 references were screened by title and abstract. Twenty-nine of these studies subsequently formed the basis of this literature review, which found that numerous tools and methodologies currently exist. They have been developed for different target audiences and different purposes, but few are able to marshal evidence in support of their effectiveness. The small number with robust and positive evidence bases, have all been produced by the commercial sector in the United States. Five such tools are described and discussed in this review. In addition, a well-established and well-known methodology used in France for career development, the ‘bilans de compétences’, is considered here because it has skills assessment as a key component. Key findings from the review relate to the confused use of language regarding skills; the limited evidence of effectiveness of such tools with disadvantaged groups; an emerging consensus around the need to combine interest appraisals with

³¹ The Further Education White Paper, Raising skills, improving life chances (Department for Education and Skills, 2006) commits to making personalised learning available for every learner, irrespective of background.

skills evaluations for career development and progression; and the crucial role of training for practitioners administering these tools. Key issues emerging from findings include the importance of context in any process of skills appraisal; the emphasis that should be placed on skill development as an on-going process; the importance of horizontal, as well as vertical, progression; and the need to appraise skills at different levels of aggregation. Overall, building a learning culture that will raise awareness, as well as energising individuals, requires a vision at the centre of what that culture of learning might look like.

A summary of information on the tools identified by this literature review follows in Table 2.1. The information in this table is limited to that available from the texts identified by the review process.

Table 2.1 Summary of skills reviews, identification, assessment and diagnosis tools

Tools	Brief description	Delivery	Target audience	Robustly evaluated	Time to complete	Training to administer	Cost
	<ul style="list-style-type: none"> Developed in 2004 Part of a suite of initial and diagnostic assessment tools developed by the Skills for Life unit Designed to help assess the quality of Skills for Life provision (including literacy, language and numeracy provision) Informs self-assessment Assesses organisation against a series of quality statements Can be used or adapted for use in other contexts 	Paper-based	Colleges	<ul style="list-style-type: none"> 39 evaluation sites Majority did not see relevance of tool or understand its purpose 		Importance of training highlighted	Downloadable booklet
	Skills check (1)						

Continued

Table 2.1 Continued

Tools	Brief description	Delivery	Target audience	Robustly evaluated	Time to complete	Training to administer	Cost
<p>SII:</p> <ul style="list-style-type: none"> • Under development since 1927 • Evolved from occupational scales to include basic interest scales and general occupational themes • From 1970s, viewed interests from three perspectives: general; specific; and occupational groups 	<ul style="list-style-type: none"> • Sample of the 1,853 individuals (1,007 women and 846 men) composed primarily of 'Caucasians' • Internal consistency of the 10-item scales reported to range from .84 for the enterprising scale to .88 for the realistic scale • Three week test-retest reliability coefficients for college students ranged from .83 for the realistic scale to .87 for the social scale • Evidence of the concurrent validity of the General Confidence Themes was based on findings that employed adults reported significantly higher confidence levels than college students • Reported that SCI can be used to help predict occupational choice 	<p>Online or paper-based</p>	<p>15 years and over</p>	<p>40-50 minutes</p>	<p>\$112 for 10 paper-based assessments; \$9.50-\$17.60 per online assessment (dependent on number purchased)</p>	<p>Continued</p>	
<p>SSII and SCI (2)</p> <ul style="list-style-type: none"> • Developed in 1996 to be used with SII • Based on Bandura's self-efficacy theory • Measures self-efficacy for tasks associated with general occupational interests 							

Table 2.1 Continued

Tools	Brief description	Delivery	Target audience	Robustly evaluated	Time to complete	Training to administer	Cost
	<p>Combined SII/SCI:</p> <ul style="list-style-type: none"> • Six General Occupational Themes to describe personalities and preferred work environments • 30 Basic Interest Scales provide information on areas of interest • 244 Occupational Scales relate to interest patterns of satisfied workers • Five Personal Style Scales describe preferred style of working, learning, leading, risk taking, and team participation • Perceived skills illustrating how interests compare to level of confidence in performing activities • Ideal for college and high school counselling, one-to-one management coaching, and staff development programmes 			<ul style="list-style-type: none"> • Statistically significant correlations between interest and skills confidence levels was found • Significant confidence-interest correlations were noted within all theme areas, ranging from .44 (enterprising) to .63 (artistic) 			

Continued

Table 2.1 Continued

Tools	Brief description	Delivery	Target audience	Robustly evaluated	Time to complete	Training to administer	Cost
CISS (3)	<ul style="list-style-type: none"> Available since 1992, dates back to 1927 Assesses degree of skill in 120 specific occupation activities and interest in 200 academic/occupational topics Answers scored with standardised scales Measures self-reported vocational interests and skills 	Paper-based, computer or online	15 years and above	<ul style="list-style-type: none"> Standardised using a reference sample of 5,225 employed men and women representing a wide array of occupations and ethnic backgrounds Based on standardised items and normed responses 	25 minutes		\$18 online for individual test
ESCI (4)	<ul style="list-style-type: none"> Developed in 2003 Based on Bandura's self-efficacy theory Measures confidence or self-efficacy related to domains of occupational activity Confidence scales include: interest dimensions such as writing and public speaking Inclusion of items representing changes in the world of work 			<ul style="list-style-type: none"> Standardised using a sample of 1,221 graduate students and employed adults Developed by evaluating 17 scales (comprising 186 items) measuring self-efficacy related to domains of occupational activity Sample of 496 college students retest values over a three week interval ranged from .77 to .89, with a median of .85 (Robinson and Betz, 2004) 			

Continued

Table 2.1 Continued

Tools	Brief description	Delivery	Target audience	Robustly evaluated	Time to complete	Training to administer	Cost
	<ul style="list-style-type: none"> Published in 2001 Developed from the 1939 Kuder inventories Combines skills appraisal with interest assessment Part of Kuder Career Planning System¹ Matches an individual to all persons in a population of individuals, rather than all persons in an occupational group Includes six career cluster scales and approximately 25,000 job sketches (description of job duties rather than job descriptions) 	Internet	Students, jobseekers and career changers	<ul style="list-style-type: none"> Assessments were re-normed in 2005 Re-norming included people from all states and territories of the United States, all ethnicities, diverse economic backgrounds, and ages from middle school through to adult Rank order of career clusters, skills, and work values were re-normalised to ensure results can be interpreted in current context 	Each assessment takes 15-20 minutes		\$19.95 to create online Kuder career portfolio
KCS (5)							
	<ul style="list-style-type: none"> 90 item measure of self-efficacy Six scales corresponding to six career cluster scales of KCS Designed to be used in conjunction with Kuder Career Assessment Part of Kuder Career Planning System 	Internet	Students, jobseekers and career changers	<ul style="list-style-type: none"> Difficult to validate, because of its subjectivity Developed with a sample of 638 students from different stages of education and different geographical locations Specialised 160 item KSA has internal consistency coefficients from .78 (arts, audio video technology and communication) to .88 (both IT and manufacturing), with a median of .85 	each assessment takes 15-20 minutes		\$19.95 to create online Kuder career portfolio (of which KSA is a part)
KSA (5)							

Continued

Table 2.1 Continued

Tools	Brief description	Delivery	Target audience	Robustly evaluated	Time to complete	Training to administer	Cost
	<ul style="list-style-type: none"> Developed in 1989 Self-efficacy measure Transferable across national contexts Assess confidence in performing career task specific skills including: language and interpersonal skills; physical strength and agility; quantitative, scientific and business skills; and aesthetic skills 60 items (1993) 			<ul style="list-style-type: none"> Greek sample of 170 were used to examine the reliability and validity of the tool Sample of 201 students (126 females and 75 mates) in psychology and journalism classes at a midwestern university supported the feasibility and utility of a task-specific measure of occupational self-efficacy (Robinson and Betz, 2004) 			
TSOSS (6)							
	<ul style="list-style-type: none"> Set up as law in 1991 in France Career development appraisal which includes a skills assessment Three phases: identification of needs; analysis of motivations, and professional and personal interests; and action planning Enables identification and assessment of professional and personal aptitudes Aims to set out plan to define next steps/outcomes Organises individuals' professional priorities Delivered through a network of 'Centres interinstitutionnels de bilan de compétence' (CIBC) 			<ul style="list-style-type: none"> Sample of 1,460 students, employed and unemployed who had undertaken skills checks in France concluded that it had benefits and positive impacts for the individual and society 	Up to 24 hours	Training required to administer	
bilans de compétences (7)							

Continued

Table 2.1 Continued

Tools	Brief description	Delivery	Target audience	Robustly evaluated	Time to complete	Training to administer	Cost
Brigance Diagnostic Life Skills Inventory (8)	<ul style="list-style-type: none"> • Criterion-reference measure • In-depth skills assessments range in difficulty from grade levels 2-8 • Assesses listening, speaking, reading, writing, comprehending and computing skills within the context of everyday situations • Rating scales evaluate aptitude or attitude • Part of a range of assessments including: Brigance Diagnostic Inventory of Basic Skills; Brigance Diagnostic Inventory of Essential Skills; and Brigance Diagnostic Employability Skills Inventory 	Paper-based, CD ROM and online	Basic adult education, secondary special education, vocational education ESOL programmes Grades 2-8	Norm-referenced tests		No specialised training required to administer	\$59.95 per CD ROM

¹ The Kuder Career Planning System is an Internet-based system combining research-based interest, skills, and work values assessments with portfolio development, comprehensive educational and occupational exploration resources, and administrative database management. It offers a comprehensive solution for career planners at all stages of career development. The Kuder system includes: Kuder Career Portfolio; Kuder Career Search with Person Match Interest inventory; Kuder Skills Assessment; and the Super's Work Values Inventory.

(1) Quality Improvement Agency, 2007 (UK) [<http://excellence.qia.org.uk>]

(2) Betz et al., 1996; Betz et al., 1998; Chatrand et al., 2002; Donnay and Borgen, 1999); Association for Assessment in Counseling and Education, 2007 [<http://aac.nacat.edu>]; CPP Inc., 2007 (USA) [<http://www.cpp.com>]

(3) (Campbell, 2002); Pearson Education Inc., 2007 (USA and Canada) [<http://www.pearsonassessments.com>]

(4) Betz et al., 2003; Robinson and Betz, 2004)

(5) (Zytowski, 2001; Zytowski and Luzzo, 2002); National Career Assessment Services Inc., 2007 (USA) [<http://www.kuder.com>]

(6) (Koumoundourou, 2004; Rooney and Osipow, 1992)

(7) (Jackson et al., 2007; Michaud et al., 2006); Ministre du Travail, des Relations Sociales et de la Solidarité, 2007 (France) [<http://www.travail.gouv.fr>]

(8) (Bradley-Johnson, 1997); Curriculum Associates Inc., 2007 (USA) [<http://www.curriculumassociates.com>]

3 Identification of customers/clients needing intensive support

3.1 Introduction

This section examines the body of evidence that has emerged from a systematic investigation of the following question:

What evidence of good practice, tools and methodologies is there to enable the identification of customers/clients requiring more intensive support to increase their likelihood of moving into work?

With the sub-question:

Having identified people needing more intensive support, what evidence is there that we can identify and implement the most effective types of support?

It builds on evidence identified in a review undertaken by Hasluck (2004)³², which focused on profiling as a method of targeting individual customer need. In that review, arguments for introducing some type of targeting were presented, based on the twin principles of equity and efficiency. The two particular methods of targeting provision that are most commonly used to allocate clients to different types of support in Public Employment Services (PES) were identified as: administrative rules (the use of eligibility criteria) and adviser discretion (the use of the subjective judgement of advisers). Available evidence, however, cast doubt on the effectiveness of both these methods. Whilst administrative rules can fail to differentiate sufficiently between individuals, adviser discretion is open to challenge

³² Hasluck, C. (2004). *Targeting Services in the Individual Customer Strategy: The Role of Profiling. A Review of Research Evidence (Department for Work and Pensions Report W192)*. [Available online: <http://www.dwp.gov.uk/jad/2004/192rep.pdf>].

because of its subjectivity, with evidence suggesting that adviser discretion was no more efficient than random assignment of clients to services.

The initial search strategy for this part of the review revealed 81,455 hits. From these 1,131 references were screened by title and abstract. Forty studies subsequently formed the basis for this review (for detailed account of search results, see Appendix F, and for an annotated bibliography of texts used in this part of the review, see Appendix G). This review focuses on good practice, methodologies and tools that might support the exercise of effective discretion by Jobcentre Plus Personal Advisers (PAs), so it is relevant to note that the PA role lies at the heart of the process of delivering services to people seeking employment by matching available services to individual need. Recently, they have assumed an ever more critical role being described by the Director of the National Audit Office (NAO)³³ as 'the jewel in the crown' of Jobcentre Plus.

PAs are required to fulfil a number of roles, only one of which directly relates to the assessment of customer need and the matching of service provision to that need. Key responsibilities are to:

- carry out diagnostic, work targeted interviews to help customers understand the benefits of working and agree a realistic course of action to gain or move them closer to sustainable employment;
- help customers apply for appropriate jobs;
- effectively/actively manage a caseload of customers;
- develop and maintain partnership working with Jobcentre Plus colleagues and employers/relevant external organisations to improve and extend the range of support for customers; and
- help protect the integrity of the benefit system by making sure people fulfil their responsibilities and remain entitled to benefit³⁴.

While every PA is likely to carry out all of these responsibilities to some extent, the balance of responsibilities will vary according to role. For instance, the assessment function of an Incapacity Benefit Adviser (IBA) will be different from that of a Jobseeker's Allowance (JSA) new claims adviser. According to the NAO, there were around 9,300 PAs working in Jobcentre Plus during 2005/06³⁵, of which:

³³ Lonsdale, J. (2007). 'Personal advisors are the "Jewel in the crown"', *Public Service Review: Central Government Issue 14*, 9 May 2007. [Available online: http://www.publicservice.co.uk/feature_story.asp?id=7679]

³⁴ Department for Work and Pensions, cited in National Audit Office (2007). *Jobcentre Plus: Delivering Effective Services through Personal Advisers* (HC 24 Session 2006-2007). London: Stationery Office. [Available online: http://www.nao.org.uk/publications/nao_reports/06-07/060724.pdf]

³⁵ Expressed as full-time equivalents and averaged over the period April 2005 to March 2006.

- 2,977 were JSA new claims advisers;
- 2,200 were New Deal advisers (New Deal for Young People (NDYP), New Deal 25 plus (ND25plus) and New Deal 50 plus (ND50plus));
- 1,721 were Lone Parent advisers;
- 1,221 were Restart advisers;
- 595 were IBPAs; and
- 570 were Disability Employment Advisers (DEAs).

The extent to which Jobcentre Plus PAs meet customers on a face-to-face basis has been estimated to constitute just over 50 per cent of their working week, with an average of 28 interviews per week (lasting 41 minutes on average)³⁶. The remainder of their time is spent on training, performance monitoring and completing necessary paperwork, though the research also notes how PAs are required to perform other roles or cover for absent colleagues³⁷. Within their 'front-line' activity with customers, PAs undertake a range of functions, suggesting that time available for diagnostic assessment of customer need may be very limited, especially at the start of a benefit claim. Indeed, Jobcentre Plus has recently issued an instruction to reduce the time allocated for interviews, indicating increased pressure on PA time. One other way of alleviating pressure would be to support PAs by means of systematic methods of assessing customer need.

A key role for PAs is to carry out an assessment of what actions need to be taken by customers and what services need to be supplied by Jobcentre Plus. Individual customers are, however, different, requiring differing levels and forms of support. The NAO distinguished five broad types of Jobcentre Plus customer in terms of their job market situation and benefit status. These customer groups, together with the associated level of support required from a Jobcentre Plus PA, are as follows:

³⁶ Department for Work and Pensions, cited in National Audit Office (2007). *Jobcentre Plus: Delivering Effective Services through Personal Advisers* (HC 24 Session 2006-2007). London: Stationery Office. [Available online: http://www.nao.org.uk/publications/nao_reports/06-07/060724.pdf]

³⁷ Department for Work and Pensions, cited in National Audit Office (2007). *Jobcentre Plus: Delivering Effective Services through Personal Advisers* (HC 24 Session 2006-2007). London: Stationery Office. [Available online: http://www.nao.org.uk/publications/nao_reports/06-07/060724.pdf]

Customer situation and benefit status	Interaction with PA
People already working who wish to change jobs, e.g. qualified individuals. Not claiming benefits.	None.
Customers who have worked recently, e.g. made redundant. Short-term claimants of JSA.	Initial New Claim Interview. Advisers are encouraged to refer customers to external channels.
Customers with good employment history, out of labour market for a while, e.g. parents returning to work. Claiming either JSA, Income Support (IS) or Incapacity Benefit (IB).	A mixture of mandatory and voluntary help from the PA, depending on benefit claimed and customer need.
Customers with poor employment history: either long-term unemployed or series of short JSA claims alternating with short-term jobs.	Mandatory interviews at certain key times. Must join New Deal programme at 18 months (six months for under 25s). Early entry to New Deal is available if appropriate.
Customers with significant barriers to employment, e.g. long-term illness/lack of childcare. Claiming either IS or IB.	Mandatory interviews at certain key times. Customers may volunteer to take part in more regular interviews.

Source: Adapted from Figure 5, page 10, in National Audit Office (2007). Jobcentre Plus: Delivering Effective Services through Personal Advisers (HC 24 Session 2006-2007). London: Stationery Office. [Available online: http://www.nao.org.uk/publications/nao_reports/06-07/060724.pdf]

This classification is, however, less straightforward than appears at first sight. Crucially, it is based on a 'triggered' approach, particularly in respect of JSA claimants. A JSA customer is presumed to be 'employable' until evidence (in the form of a lengthening JSA claim) indicates to the contrary. After an initial Work Focused Interview (WFI) with a PA, most new claimants are only required to attend a Fortnightly Jobsearch Review (FJR), which does not involve a PA. This lasts between 5-10 minutes and is intended merely to establish that the customer is looking for work and to record their job seeking activities. It is only after six months in the case of people aged 18-24, or 18 months in the case of people aged 25 or above, that a JSA customer qualifies for additional support and is required to join a New Deal programme. For customers on 'inactive benefits' (IB or IS), the situation is more complicated. These customers are not required to seek employment and while some interaction with a PA may be required (for instance at the start of a new claim), it is often only when such benefit claimants present themselves on a voluntary basis that further support is provided.

A 'triggered' approach to assessing customer need has the advantage that resources are directed only to those who have actually experienced difficulty in obtaining employment. However, this may not be the most efficient process because of the wide variation in customers' circumstances and needs³⁸. Current status, especially amongst the short-term workless, may actually prove to be a poor guide to a customer's employability. For instance, some currently short-term JSA claimants will be destined to become long-term JSA claimants. Despite their recent employment history, they may face serious constraints on returning to work in the future (such as their age or having obsolete qualifications). In other cases, despite facing few barriers currently, some customers will experience a decline in their employability as their benefit claim lengthens (perhaps as the result of declining morale or motivation). In either case, a 'triggered approach' may be inefficient as support offered early on might see a more speedy return to work. Conversely, there will be some customers who, despite being job ready and facing no significant barriers to work, find, through bad luck, that it takes longer to find a job than expected. These customers may not require additional support, even though their current status (longer-term benefit claim) suggests otherwise.

3.2 Background

The key to providing an efficient PES is the accurate identification of the customers requiring support and the form such support should take (as well as those that do not require support). Three broad approaches to customer assessment can be identified. These are: complete individual adviser discretion; the application of rules binding adviser decisions; and use of diagnostic or assessment tools to aid adviser decisions. Each will be briefly discussed next.

3.2.1 Adviser discretion

Given customers face widely differing circumstances and require different forms of support, an obvious mechanism for identifying individual need is to use the experience and expertise of advisers. This, it could be argued, is particularly relevant where customers may (intentionally or otherwise) present partial information, or even conceal relevant information. By building a relationship with the customer, the adviser will be able to identify the real barriers to work, motivate customers and help them gain access to available provision.

The PES in every EU member state uses some system of adviser (or case worker) resource allocation³⁹, with discretion being the dominant mechanism for identifying

³⁸ Hasluck, C. and Green, A.E. (2007). *What Works for Whom? A Review of Evidence and Meta-analysis* (Department for Work and Pensions Research Report 407). Leeds: Corporate Document Services. [Available online: <http://www.dwp.gov.uk/asd/asd5/rports2007-2008/rrep407.pdf>]

³⁹ PLS Ramboll Management (2001). *Study on Early Identification of High Risk Unemployed: Final Report*. European Commission, DG Employment and Social Affairs. [Available online: <http://www.upload.pls.ramboll.dk/eng/publications/HRandWorkingLife/studyonearlyidentification.pdf>]

both the form, and level, of employment services. Advantages with this system are that: it is a flexible, individualistic approach; it can accommodate a wide range of information, including qualitative data; and it provides a 'personal touch'. Disadvantages include: the risk of clients not being treated equitably; the quality of decisions depending on the expertise and experience of advisers; decisions being subjective (with different advisers arriving at different decisions); it being time consuming and expensive; and performance targets encouraging advisers to 'cream' customers with the best chances of job placement, rather than those most in need but difficult to help⁴⁰.

Evidence on the effectiveness of Jobcentre Plus PAs is mixed. The NAO concluded that there was consistent evidence from a number of studies that WFI with a PA were associated with higher numbers leaving benefits⁴¹. This impact appears particularly strong for lone parents⁴². Nonetheless, some studies have cast doubt on the overall effectiveness of PAs, in some instances suggesting that outcomes from an exclusively adviser driven system were no better than could be achieved by a random allocation of customers to provision (Lechner and Smith, 2007).

A small qualitative study has recently focused on the apparent contradiction of designating users of services 'customers', thus assigning a range of consumer rights, whilst at the same time also being objects of control (since PAs exercise considerable discretion). The research found how PAs operate a number of client typologies in practice, based on perceived attitudes to work and formed on the basis of body language, together with the general demeanour of customers in initial interactions. These typologies were based on a mixture of benefit categories (e.g. JSA), demographic factors (e.g. youngsters), social class/status (e.g. graduates) or inferred attitudinal/behavioural attributes (e.g. 'lazy gits'). It is argued that this categorisation of customers is strongly influenced (though not fully determined) by the structures and ethos of Jobcentre Plus and provides PAs with a way of 'anticipating and cueing' strategies to cope with potential conflicts in their work. Categorisation of service workers in this way has been found most prevalent

⁴⁰ Heckman, J., Heinrich, C. and Smith, J. (1997). 'Assessing the performance of performance standards in public bureaucracies', *American Economic Review* 87(2): 389-395.

Bell, S.H. and Orr, L.L. (2002). 'Screening (and creaming?) applicants to job training programs: the AFDC homemaker-home health aide demonstrations', *Labour Economics* 9(2): pp. 279-301.

⁴¹ Department for Work and Pensions, cited in National Audit Office (2007). *Jobcentre Plus: Delivering Effective Services through Personal Advisers* (HC 24 Session 2006-2007). London: Stationery Office. [Available online: http://www.nao.org.uk/publications/nao_reports/06-07/060724.pdf]

⁴² Dolton, P., Azevedo, J.P. and Smith, J. (2003). *The econometric analysis of the New Deal for Lone Parents* (Department for Work and Pensions Research Report 356). Leeds: Corporate Document Services.

when: the task is complex; control is limited; clients are numerous; and duration of the interaction is short – with the structuring of the role of the Jobcentre Plus PA encompassing all of these factors⁴³. This tendency to categorise is likely to be a key influence on the way in which adviser discretion is operated in any screening process (Rosenthal and Peccei, 2006).

3.2.2 Eligibility rules

Many, if not all, PES limit adviser discretion by the use of eligibility rules. The basis for such rules vary, with some designed to limit or ration provision amongst customers while others are for administrative convenience. Eligibility rules variously relate to differences in:

- contribution to the social insurance scheme funding the PES;
- obligations (e.g. JSA recipients may be treated differently from other benefit claimants);
- personal circumstances and needs;
- barriers to employment; and
- effectiveness of different services/provision.

In practice, any differentiation is likely to reflect all of these criteria, at least in part, since the implementation of policy is intrinsically a political process.

Requiring Jobcentre Plus PAs to work within the confines of eligibility rules assumes that all people who fall within the relevant customer group share the same broad needs. For instance, young people aged 18-24 years who have been claiming JSA for less than 26 weeks are regarded as needing less support than those who have claimed JSA for 26 weeks or longer, who will be referred to NDYP. In the case of NDYP, PAs are able to refer some disadvantaged young people to NDYP as early entrants, but even these exceptions are governed by rules (the young person must fall into a disadvantage category such as member of an ethnic minority group, an ex-offender, etc.).

Advantages of eligibility rules include their simplicity to implement and operate; easy to understand and explain; very cheap to operate; and equitable, as all clients are treated according to the same rules. Disadvantages relate to the diversity of needs that exist within the customer population. Consequently, the use of rules may mean that some people who do not require the service may be referred to it and some who require the service may be excluded.

⁴³ Rosenthal, P. and Peccei, R. (2006). 'The social construction of clients by service agents in reformed welfare administration', *Human Relations* 59(12): 1633-1658.

There are few studies that explicitly examine how well eligibility rules identify customers in need of Jobcentre Plus support. However, a recent review of evidence relating to key Jobcentre Plus target groups concluded:

'The evidence reveals just how diverse is the population of customers for whom provision is made. They are diverse in terms of personal characteristics, household circumstances, their neighbourhood context, the barriers to employment they face and their attitudes and motivation. In many instances the customer groups are simply too all embracing to be useful as a guide to provision⁴⁴.'

Eligibility rules, therefore, represent something of a blunt instrument and are unlikely to be efficient in terms of helping PAs achieve a good match between individual customers and provision. To some extent this can be addressed by defining ever more precise eligibility groups but this merely makes the job of a PA ever more complicated and bureaucratic while the basis for such groups may become ad hoc or arbitrary.

3.2.3 Diagnostic or assessment tools

The use of diagnostic or assessment tools involves the application of some form of diagnostic instrument to determine a customer's situation or need. Such instruments will be based on information about the individual and some underlying model of the relationship between such information and the individual's chances of employment or their need for support.

The use of assessment tools represents an intermediate position between allowing PAs complete autonomy and expecting them to operate within inflexible administrative rules. Diagnostics provide a systematic means of assessing the needs of public employment service customers. In so doing they have the potential to avoid the inconsistency and error that some have claimed arises with complete adviser discretion. Similarly, by seeking to identify customer need on an individual basis, diagnostics may also avoid the 'one size fits all' approach that is inherent in administrative rules.

Diagnostics can also be used in combination with other methods. For instance, the application of eligibility rules might be used to identify a broad target customer group for PAs, who would then use more detailed diagnostic tools to establish the level of support for individuals within the target group. Alternately, some form of diagnostic might be used to identify individual customers who face particular barriers to employment, with PAs then working with such customers to establish their needs more precisely.

⁴⁴ Hasluck, C. and Green, A.E. (2007). *What works for whom? A review of evidence and meta-analysis for the Department for Work and Pensions* (Department for Work and Pensions Research Report 407). Leeds: Corporate Document Services. [Available online: <http://www.dwp.gov.uk/asd/asd5/rports2007-2008/rrep407.pdf>]

3.3 Tools, methodologies and evidence of good practice

This section examines practice, tools and methodologies that enable the identification of customers requiring more intensive support to increase their likelihood of moving into work. Whilst all classifications are, to some extent arbitrary, it may be useful to consider these tools and methodologies as fitting one of three categories:

- attitudinal screening;
- statistical modelling⁴⁵; and
- other.

3.3.1 Attitudinal screening

Attitudinal screening is increasingly used in public employment services as a means of identifying customers most in need of support. It is commonly acknowledged, both by practitioners and evaluations of programmes, that a jobseeker's attitudes and motivation can have an impact on their ability to find employment⁴⁶. The objective of attitudinal diagnostic tools is to identify jobseekers whose attitudes present a constraint on them obtaining employment and to inform activities designed to change jobseeker behaviour. They are based on psychological models of 'employability' and typically take the form of checklists for advisers to use during interviews with customers. This type of screening instrument tends to produce ordinal measures of employability (high, average, low, etc.) rather than quantifying it. Examples of this approach can be found in France (Copilote Insertion), Germany (Placement Characteristics), Portugal (Forecast Guide to the Difficulties of Insertion) and Denmark (Job Barometer).

In recent years an attitudinal segmentation model has been developed for use by advisers in Australia. The model identifies eight jobseeker types based on their level of motivation and their openness to types of job and job search activities. The eight categories identified were:

- drivers – highly motivated and open to all job opportunities;
- struggling jobseekers – highly motivated but less confident of their abilities;
- drifting jobseekers – want a job but not sure what or how to look for it;
- disempowered jobseekers – want to work but lost all confidence in themselves or their skills;
- selective jobseekers – highly motivated but place specific requirements on future jobs;

⁴⁵ See Glossary of terms for definition of statistical modelling.

⁴⁶ Hasluck, C. and Green, A.E. (2007). *What Works for Whom? A Review of Evidence and Meta-analysis for the Department for Work and Pension* (Department for Work and Pensions Research Report 407). Leeds: Corporate Document Services. [Available online: <http://www.dwp.gov.uk/asd/asd5/rports2007-2008/rrep407.pdf>]

- dependent jobseekers – limited in the type of jobs they will consider and losing confidence in finding the right job;
- cruising jobseekers – relaxed about being workless and not seeking a job; and
- withdrawn jobseekers – not motivated to look for a job and believe they are not able to work for health or other reasons.

Jobseekers are identified on the basis of a questionnaire containing 21 items which jobseekers have to rank on a scale of 1-10.

Career adaptability and optimism are personality characteristics thought to be important in overcoming barriers to employment insofar as they relate to the self-regulation of behaviour. Consequently, it is argued that they are pivotal for successful navigation of the labour market. Initial results from the development and validation of the Careers Futures Inventory (CFI), a new 25-item measure of positive career planning attitudes, shows promise, though testing has so far been limited to college students in the USA (Rottinghaus *et al.*, 2005). Nevertheless, it may have relevance to high achieving (in terms of qualifications) jobseekers with low career goals and provides an understanding that complements established measures of interests and abilities.

A new methodology for measuring the complexities of lone-parents' decision-making around returning to work could, it is argued, be adopted as a standard approach, based on results from initial piloting (Collins *et al.*, 2006). Key to this approach is a shift in focus away from an exploration of barriers to work to one that considers choices and constraints facing this target group. Two attitudinal domains (work orientation and attitudes to parental care) are central⁴⁷. The theoretical underpinnings to this approach⁴⁸ help identify groups of lone parents with different needs, values, beliefs and attitudes that could make them more receptive and responsive to interventions that support a return to employment. Cognitive interviewing methods were used to establish attitudes to work, parenting and the intention to work. Then a card sort exercise was used to establish the relative importance of a range of factors that make work difficult at a particular time. For use as a standard approach, the attitude questions could be adapted to a self-completion format, immediately before the card sort exercise. Data collected from the process could be used to help explain patterns and relationships, rather than imposing any assumptions.

3.3.2 Statistical modelling

The early and accurate identification of jobseekers at risk of becoming long-term unemployed is central to the delivery of effective PES, but individual support

⁴⁷ Four typologies, comprising different combinations of these attitudes, are used to categorise lone parents.

⁴⁸ The work/parental care orientation typology and the theory of planned behaviour.

combined with early interventions is very costly. The Organisation for Economic Co-operation and Development (1998) identified four countries as being advanced in their policy developments and practices of 'profiling'⁴⁹: Australia, Canada, the United Kingdom and the United States (OECD, 1998). Examination of the systems then in operation in each of these countries resulted in the conclusion that none of the methods in use at that time (i.e. statistical modelling, characteristic screening or staff judgement) achieved high rates of success. Whichever was used, there was still the risk of two types of errors: jobseekers at risk not being referred for additional support and jobseekers not at risk being identified and referred.

Whilst the use of statistical systems to identify customers requiring support or to identify the type of support is now probably most highly developed in the USA and Australia, an increasing number of countries around the world have experimented with various systems (Behncke *et al.*, 2006). In Korea, a profiling instrument based on the probability of becoming long-term unemployed is currently used to provide information on customers to assist case workers. Recent legislation in Germany (Hartz legislation) has resulted in the introduction of a 'profiling process', involving the use of two new screening tools (Schuetz and Oschmiansky, 2006)⁵⁰. Finland⁵¹, France, Hungary, Ireland, Mexico, New Zealand, Slovakia⁵² and Sweden have all piloted statistically-based profiling systems. A distinction is made in the literature between 'targeting' and 'profiling' systems⁵³ in Public Employment Services.

Worker Profiling and Re-employment Services

Since 1993, each US state has been required, by law, to implement its own Worker Profiling and Re-employment Services (WPRS) system that would identify Unemployment Insurance (UI) claimants likely to exhaust their benefit entitlement⁵⁴. By 1995, all states had operational WPRS systems in place, with most adopting a statistical profiling approach, containing local economic and labour market conditions along with worker characteristics. Profiling models are applied to new claimants and provide estimates of the risk of UI 'exhaustion'. Claimants are then ranked, from high to low, to provide a basis for referral to re-employment services. Advisers work with referred customers to develop an individual service plan drawing

⁴⁹ In this context, profiling refers to '*the identification of individuals at risk of long-term unemployment and their referral to various active labour market programmes*' (OECD, 1998, p.9).

⁵⁰ See Appendix K for a summary of the recent developments in the German labour market.

⁵¹ In Finland, a review and evaluation of such tools is currently underway, due for publication in Autumn 2007.

⁵² De Koning, J. and van Dijk, B. (2004). A profiling system for the unemployed in Slovakia. Paper for the *TLM Meeting on Active Labour Market Policies*, Rotterdam.

⁵³ For definitions of 'targeting' and 'profiling', see Glossary of terms.

⁵⁴ UI benefits in the USA are strictly limited to a 26 week period.

on a comprehensive set of re-employment services. A recent study argues that the WPRS system represents only a partial example of statistical modelling, since case worker discretion guides the assignment of services, even though a statistical treatment rule is used to assign mandatory services (Lechner and Smith, 2007). So whereas profiling is used to identify customers for 'treatment', the system still relies on the expertise of advisers to allocate customers to the right re-employment service. Its effectiveness will also depend on the extent to which the information on economic and labour market conditions contained within these models are updated, and an evaluation of this system by the WPRS Policy Workgroup found that states had generally not done this since implementation. In the longer term, this was regarded as a potential weakness that was likely to compromise the accuracy of the models (Wandner and Messenger, 1999). However, one evaluation of this system has estimated that it has reduced UI benefit receipt and increased subsequent earnings (Black *et al.*, 2003).

Frontline Decision Support System

The Frontline Decision Support System (FDSS) was developed from a pilot project carried out from 1998 to 2000 in the USA and comprised an integrated system for assessing customers using one-stop careers centres (Eberts, 1997). Central to the pilot was a statistical assessment model⁵⁵ based on the statistical relationship between an individual's attributes⁵⁶ and job retention. More than 6,000 welfare recipients took part. Participants in each of three groups of employability scores were randomly allocated to a control group and a treatment group. FDSS consisted of two modules and identified sequences of activities that most often led to re-employment. The first model was a systematic job search module providing labour market information to help in the job search process; the second a service referral system. The probability of entering a job was estimated for each customer, then entry to any particular sequence of re-employment activities was conditional on that estimated employability score. The whole system was automated, downloading data from administrative systems as well as using information provided by the customer. It was found that targeting employment services to the specific needs of the welfare-to-work participants, using statistical assessment and referral, was more efficient than a 'one-size-fits-all approach'. Increases in retention rates were achieved without substantial increases in costs (Eberts, 2001; Eberts and O'Leary, 2002; Eberts, 2002). Despite the considerable investment in FDSS, the FDSS pilots were terminated in 2003 for 'several reasons', so it was not in use for long enough to undergo a rigorous evaluation (Eberts, 2005, p.82).

⁵⁵ This model was based on the outcomes of participants entering the employment programme during 1996.

⁵⁶ Personal attributes included age, level of schooling, vocational education and prior employment history.

The Service Outcome Measurement System

The Service Outcome Measurement System (SOMS) was operated in Canada between 1994 and 1999. Unlike the US profiling system, SOMS was a statistical targeting system that sought to identify the most appropriate services for customers. Using a range of customer characteristics, the probabilities of various outcomes from different services programmes were modelled for each customer. This provided an instrument for advisers to identify the most likely outcomes for a customer with a particular set of characteristics and refer them to the service that offered the best prospect of a positive outcome. Under the SOMS system, frontline staff both retained a degree of discretion over referral to services and were not obliged to use the SOMS system. The SOMS system was suspended in 2002 over concerns about data protection and resistance from advisers.

The Job Seekers Classification Instrument

The Job Seekers Classification Instrument (JSCI) is variously described in the literature as a classification and streaming tool; a profiling tool; an evidence-based profiling instrument; and a self-disclosure and self-assessment tool. It operates as part of the Job Network in Australia⁵⁷, which offers three types of services to unemployed people: job matching, job search training and intensive assistance. Initially, an unemployed person presents themselves at 'Centrelink' (the government agency that administers the social security system), the 'one-stop shop' managing a range of services related to employability. This is the gateway to the Job Network and it is through the JSCI, administered by Centrelink staff, that the level of service provided is determined. The administration of the JSCI is undertaken by a Centrelink officer, using a screen-based application. The Centrelink officer asks a set of standardised questions, within 'best practice time protocols'.

The JSCI was designed to provide a relative (not absolute) measure of employment disadvantage and calculates a score for each individual by totalling the points assigned for 18 risk factors (up to a maximum score of 96). Those assessed as low risk are provided with job matching services (vacancies to search online); those assessed as medium risk (i.e. those with scores up to 23 points and who have been unemployed for three months) are provided with job training; those assessed by the JSCI as high risk (more than 24 points) are provided with intensive assistance. However, employment officers⁵⁸ also apply personal judgement to detect those at high risk, according to low self-esteem, time out of the workforce, poor motivation and low levels of literacy and numeracy. It has been estimated that such human

⁵⁷ Job Network comprises recruitment agencies in the private or community sector contracted to provide employment services.

⁵⁸ Significant levels of psychological distress have been found amongst Job Network staff responsible for delivering these services to the long-term unemployed: Goddard, R., Patton, W. and Creed, P. (2001). 'Psychological distress in Australian case managers working with the unemployed' *Journal of Employment Counseling* 38(6): 50-61.

judgement contributed to 30 per cent of all individuals initially detected as high risk and in need of assistance (Rudolph, 2001). For some clients, the JSCI is supplemented by a secondary clarification, triggered by Centrelink customer service staff and guided by a list of observable behaviours (e.g. inappropriate eye contact; unusual dress, poor hygiene, obsessive behaviour; appearance not in keeping with peers). This comprises a form of 'special needs' assessment, usually undertaken by an occupational psychologist. Where regarded appropriate, Centrelink officers can refer to an alternative service, the Personal Support Programme.

An independent review of the JSCI as part of the Job Network was undertaken by the Productivity Commission in Australia in 2002 and recommended its continued use. The instrument is presented as a scientific tool, which was developed through rigorous statistical modelling. It assesses personal characteristics and employment barriers as well as measuring various personal attributes. Important features of its development are identified as a combination of formal research, expert judgement and the involvement of the employment services industry. Evaluations, reviews and analysis of administrative data have been conducted at various times to investigate data accuracy and collection methodology issues as well as the re-estimation of the weightings for the factors included in the instruments. These have led to refinements in the Centrelink interview to collect the JSCI information, which has resulted in improved accuracy. Re-weighting exercises have also helped provide more accurate profiling of jobseekers (Lipp, 2005). However, the accuracy of information used for the JSCI will depend on the willingness of jobseekers to reveal sensitive personal information, the ability of Centrelink Officers and Job Network members to elicit such information and the accuracy of recording such information. It has been argued, therefore, that the subjective nature of the secondary classification items, together with a certain lack of transparency regarding some of its features weakens the psychometric status of the JSCI⁵⁹.

The 'chance-o-meter' (Kansmeter)

A number of other countries have experimented with some form of statistical profiling. The 'chance-o-meter' (or Kansmeter) is a profiling tool used by PES in the Netherlands to diagnose jobseekers' chances of securing employment. The tool places jobseekers in one of four categories, which then determines the level of ongoing support to the individual. It allocates points along a five point scale across four elements thought to be crucial in successful job search: how the individual stands in relation to the labour market; realistic understanding of the labour market; energy levels and motivation; and the extent to which they are a 'self-starter'. The diagnostic is administered by a 'guidance practitioner' who can

⁵⁹ McDonald, C., Marston, G. and Buckley, A. (2003). Risk technology in Australia: The role of the job seeker classification instrument in employment services. *Critical Social Policy* 23(4): 498-525.

adjust the weighting to take account of extrinsic influences⁶⁰. Evaluation of the tool was carried out from 1999 to 2002 with a sample of 1.6 million jobseekers, registered with the CWI (Centre for Employment and Revenue, Netherlands Public Employment Service). This focused on the correlation between the categorisation of the tool and eventual duration of unemployment. Findings indicate that early, personalised intervention reduces length of unemployment. Whilst it is currently regarded as reliable as a predictor of duration of unemployment (especially long term unemployment) it is not proven as preventative (Herbillon, 2004).

Treatment Effect and Prediction Project – Treffer

A profiling instrument (Treatment Effect and Prediction Project – Treffer), developed and piloted from 1999 to 2001, was introduced as part of the reforms of the German PES. It was evaluated for its effectiveness in the early identification of those at risk of long-term unemployment (Rudolph and Münstich, 2001). It comprised selection criteria, a profiling work sheet and assessment rules. It was designed for use immediately after unemployment registration and was used with approximately 1,500 registered unemployed. On registration, profiling work sheets were used by advisers to categorise the level of risk of becoming long-term unemployed. The four categories comprised: 'market' clients, 'counselling and activating' clients, 'counselling and promoting' clients and 'looked-after' clients⁶¹ (Behncke *et al.*, 2006). In addition, a 'probit' model was used to estimate the probability of becoming long-term unemployed, using labour market information and personal characteristics. Where categorised as being at high risk, individuals were randomly distributed to either a case-management or control group. Those allocated to case-management were invited to attend the job office for further support. It was found that whilst the profiling instrument could be used to identify groups of unemployed people according to risk of unemployment, the case management intervention had no measurable impact in terms of length of unemployment or employment outcomes.

Statistically Assisted Programme Selection

A randomised pilot is currently underway in Switzerland of a system that is claimed to be the first pure targeting system⁶² (Behncke *et al.*, 2006). Its purpose is to evaluate whether statistically assisted programme selection (SAPS) can improve the allocation of unemployed labour market programmes. It began in 2006 (scheduled

⁶⁰ The role of local labour market information in supporting jobseekers is acknowledged as critical in this respect, but its capture and mediation is regarded as an intransigent problem.

⁶¹ The re-employment chances of the first and the last groups are not expected to be improved by participation in labour market programmes.

⁶² In this context, targeting is defined as a system that predicts potential labour market outcomes for every available programme, including the non-programme option.

to continue until 2009) and involves case workers from five regions. About 150 randomly selected case workers were provided with predictions on potential labour market outcomes for their clients. Another group of about 150 case workers in the same offices constitute the control group. Case workers are being provided with predictions of potential labour market outcomes on jobseeker's employment chances after participating in particular programmes online, with case workers only able to retrieve predictions for their own clients. The methodology uses all available data on past participants to estimate impacts free of selection bias, which are then averaged with respect to all the variables not available for the current specific client. Initial results from this pilot conclude that Swiss case workers obtain roughly the same employment placement rate as random allocation to services, whilst statistical treatment rules (even with capacity constraints), do substantially better. This is despite what is regarded as generous resourcing of case workers, where each has allocations of between 75 to 150 clients who have an in-depth interview every month (Lechner and Smith, 2007). Whilst raising legitimate questions about the cost-effectiveness of case worker performance, the value of advisers for functions other than job placement is highlighted (e.g. monitoring the unemployed, encouraging them to look for work/training, networking with employers to develop job opportunities, etc.).

3.3.3 Other diagnostic methodologies

Both attitudinal screening and statistical profiling operate at a general level in terms of the predicted outcome for the individual customer. Other diagnostic tools tend to be more specific and attempt to measure specific characteristics, often for particular groups of jobseekers. Some include assessments of particular skills, others are designed to measure strengths and job aspirations of jobseekers, whilst yet others seek to identify key barriers.

Client Progress Kit

In 2000, the Client Progress Kit (CPK) was introduced for use on the New Deal. It was designed to support existing advisory activities in Jobcentre Plus, particularly WFIs. Whilst the tool was designed to be used at the end of a specific interview process used within JobcentrePlus (that is, Work Targeted Interviewing), experience suggests that it is most useful when used during continued contact between the adviser and customer since this improves information quality and allows weaknesses to be identified and addressed. By means of repeat use of the instrument it also provides an indication of client progress. It comprises nine features: a match between job goal, skills and experience; match between job goal and the local labour market; match between job goal and functional literacy and numeracy; motivation in job search; resources for conducting job search; barriers to finding or keeping a job; attendance at interview; participation in interview and perception of own situation. An evaluation, using a sample of 1,498 CPK cases obtained from ten jobcentres during 2001, concluded client outcomes are related to their CPK scores. In particular, clients who match the 'high score profile' of the CPK are more likely to enter employment more quickly than those with 'low

score profiles'. One other key finding was that clients with a low CPK score were less likely (as were those with a high score) than clients with intermediate scores to be offered support and other provision (James and Brennan, 2002)⁶³. The CPK has subsequently been presented as one of a number of 'mutually supportive and reinforcing tools', including the 'Five Challenges to Work' and the Customer Assessment Tool, all of which are underpinned by self-efficacy theory⁶⁴.

Skills Coaching Pilot

There are few examples in the UK of diagnostics designed to reveal customer need in terms of skills and learning. This probably reflects two factors: First, the primary aim of Jobcentre Plus is to place customers into employment ('work first'). Second, the responsibility for workforce development and learning lies elsewhere. Organisations like the Learning and Skills Council have a variety of diagnostic tools that are relevant to the assessment of skill and learning needs, but these do not appear to have been used with Jobcentre Plus customers. The Skills Coaching pilots represent something of an exception. Jobcentre Plus customers claiming JSA or an inactive benefit (IS or IB) can be referred to the Skills Coaching service, delivered by Nextstep⁶⁵ where their PA judged that a lack of skills was the barrier to sustained employment. The Skills Coaching process includes the use of a Skills Diagnostic assessment of the individual's employability leading to agreement of a Skills Development Plan setting out skill-related objectives for the customer. The Skills Coach then seeks to broker appropriate provision through local learning providers to enable the customer to meet their Skill Development Plan objectives. In practice, a much broader range of Jobcentre Plus customers than originally envisaged (many of whom faced additional barrier to employment) were referred to Skills Coaching (Hasluck *et al.*, 2006).

The Worker Role Interview

The Worker Role Interview (WRI) is a semi-structured interview and rating scale designed to assess psychosocial capacity for return to work in injured workers. The theoretical base of the WRI explains occupational behaviour as a function of motivation, lifestyle and performance capacity in interaction with the surrounding environment. It scores participants on 17 items which are grouped into six categories⁶⁶. Each item is rated on a four-point scale, indicating its impact on likelihood of return to work. Three studies, each focusing on different populations

⁶³ James, R. and Brennan, D. (2003). *The Client Progress Kit: Development, Research Base, and the Use of Work Focused Interviews* (DWP Psychology Division Report 788). Sheffield: Department for Work and Pensions.

⁶⁴ Brennan, D. (2006). 'When empiricism and theory meet', *Journal of Occupational Psychology, Employment and Disability* 8(2): 231-238.

⁶⁵ Nextstep are services offering information, advice and guidance for adults, based on eligibility criteria, funded through the Learning and Skills Council.

⁶⁶ Personal causation; values; interest; roles; habits; and environment.

of workers with different types of injury, were carried out in the USA to examine the validity of the WRI. Overall, the WRI score was not found to be a good predictor of likely return to work, so did not help identify those in need of more help (Veloza *et al.*, 1999). These results were somewhat modified by results from a later study into its predictive validity carried out in Sweden. Clients who attended an insurance medical investigation centre for a two-year follow-up were the focus of this small scale study. Significant differences between working and non-working groups were found in five of the 17 items, with the item with the best predictive validity found to be personal causation⁶⁷ (Ekbladh *et al.*, 2004). Evidence, therefore, is mixed on such a tool. A recent pilot that attempted to build on existing methodologies⁶⁸ to develop a new model to predict vocational rehabilitation assessment of earning capability concluded that a standard measure of forensic vocational rehabilitation practice could indeed be developed with further research (Williams *et al.*, 2006).

The Case Management Screening Guide

The Case Management Screening Guide (CMSG) is a self-completion questionnaire filled out by jobseekers. It identifies basic information, employability, family needs and barriers to employment. Each of these is given a score which contributes to the overall employability score. An examination of this assessment tool, which was designed to assist case managers in targeting services in the USA (Arizona), found that clients who used this tool compared with clients who did not, received more services and had higher rates of programme participation. However, no improvements in short-term employment outcomes were detected. The experimental group (N=276) were randomly assigned to a control group and experimental group – the former completing CMSG and the latter not completing the screening tool. Findings indicate that using a screening guide can prove useful for identifying client needs – necessary for providing support services (Peck and Scott, 2005).

Temporary Assistance for Needy Families

Investigations into the Temporary Assistance for Needy Families (TANF) programme in the USA provide insights both into employment barriers and methodologies for supporting this vulnerable group. Continuing barriers to employment, identified in a review of research evidence (post 1996), included: physical and mental health, low educational levels, domestic violence, drug/alcohol problems, health of children, poor housing, learning disabilities and limited use/understanding of the English language (Goldberg, 2002). A comparative study of drug-using and non-drug using females on the TANF programme identified similar barriers:

⁶⁷ Personal causation is conceptualised as part of the motivation to work and includes factors such as the individual's capacity to assess their work abilities; belief that they will return to work; and the responsibility taken for the work situation.

⁶⁸ These included the Transferability of Skills Analysis, the McCroskey Transferability of Skills Program; and Labour Market Access methodologies.

demographic characteristics; work and welfare history; drug use behaviour; self-perceived skill levels; psychological functioning and other factors. Results found that both of these particular groups (N=248) perceived themselves to be more suited to unskilled than skilled work. All participants were, therefore, regarded as needing not only training and educational services, but counselling services for personal problems (Montoya *et al.*, 2001). In a separate evaluation of TANF, the approaches adopted by different case managers on this programme were found to vary considerably, because they had a tendency to rely primarily on informal assessments⁶⁹ from an interview for their initial placement decisions. Work pressures led to a reliance on simple 'guiding practices', which were actually unsuitable for dealing with individuals with multiple, complex, long-term barriers. Further, personal and family circumstances and attitudes were found to have the potential to override the impact of other barriers (Gooden *et al.*, 2001).

The Activity Matching Ability System

The Activity Matching Ability System (AMAS) assesses job activities and individual abilities, providing information about the correspondence between these two. It is a 78-item matching system for people and jobs available on CD ROM and has particular merit for people with health conditions or disabilities. The potential of this tool to support the employment assessment process was recently examined as part of a recent survey collected data from 238 clients of varied backgrounds, as well as 18 work psychologists (Birkin *et al.*, 2004). The survey set out to capture the views of work psychologists on the value of the AMAS and to review the characteristics of the interview sample. Like many such tools, it focuses on important aspects of jobs but neglects broader aspects of contexts, so may well fail to identify certain influences on employability. Results did, however, indicate a measured level of support for the tool, since the work psychologists reported that the AMAS would enhance assessment for one-fifth of the sample. Specifically, its value was regarded as contributing to the exploration of physical and cognitive factors: by providing a focus; by reviewing what individuals are able to do; and by building self-confidence.

Rapid attachment approach

A 'rapid attachment' approach, followed by work experience to develop job maintenance and coping skills, has been used successfully with people living with HIV/AIDS in the USA (Escovitz and Donegan, 2005). The study aimed to identify barriers to obtaining and maintaining employment for this group, then use strategies to overcome those barriers. Although the study was small (N=148), participants were drawn from populations previously under-represented in HIV/AIDS research. This approach, involving personalised support that moved participants towards employment relatively quickly, demonstrates positive impacts on the self-reported

⁶⁹ Clients were assessed in terms of 'job readiness', considering factors like: basic reading and maths skills; soft skills; employment and education background; and mental and physical health issues and personality.

quality of life. Moreover, of the 148 participants, 114 (77 per cent) were employed at some point during the project. Even those with multiple barriers to employment were helped to work, though all participants were volunteers, therefore motivated or ready to work.

Employability and ageing

An interesting methodology piloted in Germany with unemployed people over 45 years old achieved a much higher success rate than expected (Lohmann, 2005). The participant group of 605 consisted of a high proportion of migrants⁷⁰. Of these, 313 entered a special (mandatory) active labour market scheme, with case managers succeeding in placing 206 people in unsupported employment (34 per cent). A key strategy in the approach adopted by case workers was to convince people of the merit of accepting atypical forms of employment, even though these jobs were of a lower status and low paid. Key success factors in the scheme included contact between employers and case managers, together with a concerted attempt by case workers to change attitudes and increase motivation (using a three-stage process described as involving: appreciation of the past; confrontation with reality; and the creation of something new). The ability of case workers to sanction participants (withdrawal of benefits) and a programme specially designed for older unemployed were also regarded as critical to the success of this pilot. One other methodology also focusing on ageing, but not directly used in PES, was recently tested within an organisational setting in Holland. Initial findings indicate both validity and reliability of the tool (van der Heijde and van de Heijden, 2005). Employability was measured along five dimensions: occupational expertise; anticipation and optimisation (preparing for future change); personal flexibility; corporate sense (participation and performance in different work groups, teams, networks); and balance (ability to compromise between opposite interests). It was found that supervisors rated employees over fifty less employable than the self-rating of employees.

Barriers to Employment and Coping Efficacy Scales and Career Self-Efficacy Scale

Results from an empirical study on 'people with mental illness' provide initial data on the validity and reliability of two tools: Barriers to Employment and Coping Efficacy Scales (BECES)⁷¹ and the Career Self-Efficacy Scale (CSES)⁷². A sample of 254 individuals who were registered in one of eight vocational programmes in French speaking Canada participated in the study. The first version of BECES was

⁷⁰ Thirty-one per cent were immigrants of German origin ('Aussiedler'); three per cent were Turks; 57 per cent were Germans; and nine per cent 'other'.

⁷¹ This questionnaire comprises 43 potential barriers identified by people with mental illness seeking a job. Participants are asked first the extent to which each represents a barrier; then the extent to which they feel able to overcome this barrier.

⁷² This has been designed to assess the degree of confidence a person has for performing a variety of career search tasks.

piloted with 50 people registered in a vocational programme. They were asked to add other barriers they felt were important. The final version consisted of 43 items. Findings were encouraging, demonstrating satisfactory results regarding validity and reliability for both of these two measures when used with people from this particular client group (Corbiere *et al.*, 2004).

3.4 Discussion

Whilst Jobcentre Plus have implemented varied methodologies to identify and support people needing intensive support, there is currently no statistical profiling system in use. An Early Identification Pilot project set up in 1994 used a model of the probability of remaining unemployed after 12 months to identify customers at risk of becoming long-term unemployed. The pilot concluded that the degree of error was too great to justify prolonging the study⁷³. A more recent study concluded that it would be possible to use profiling to predict the benefit spells of JSA claimants, lone parent and disabled people on benefit, with predictions being more accurate than would have been achieved by randomly guessing at outcomes⁷⁴. However, little progress has been made in Jobcentre Plus with the development or implementation of a statistically-based profiling model.

A number of studies have tried to evaluate statistical profiling as a means of allocating resources. A review of systems used in the Netherlands, the US, Australia, Canada and Germany concluded that mathematic models, though useful, remain flawed in the prediction of unemployment. It suggests that profiling early on in unemployment can lead to misclassification (Rudolph, 2001). One other study estimated average treatment effects (using cost-benefit analysis) as the basis for an overall assessment of policy (Frölich, 2003). In particular, the Service and Outcome Measurement System (SOMS) operated in Canada (see page 51), the WPRS and FDSS both used in the USA (see page 49 and 50) are examined. SOMS and FDSS, described as 'targeting' approaches, are now both discontinued. Nevertheless, these systems were thought to be more promising for identifying risk of long-term unemployment than the WPRS, which is considered to be fatally flawed. This is because it relies on 'parametric specifications with few explanatory variables' (Frölich, 2003, p.48), omitting race, age and gender (prohibited by law). The shortcomings of the WPRS have been corroborated by one other evaluation, also highly critical, finding that it does 'a poor job of predicting the profiling variable'

⁷³ Gibbons, C. (1997). *Early Identification Pilots: Results at 12 Months (REB113)*. The Employment Service.

Wells, B. (1998). Early identification/profiling in the United Kingdom. OECD (ed.) *Early Identification of Jobseekers at Risk of Long-term Unemployment. The Role of Profiling*. Paris: OECD.

⁷⁴ Bryson, A. and Kasparova, D. (2003). *Profiling benefit claimants in Britain: A feasibility study* (Department for Work and Pensions Research Report 196). Leeds: Corporate Document Services. [Available online: <http://www.dwp.gov.uk/asd/asd5/rports2003-2004/rrep196.asp>]

(Berger *et al.*, 2000, p.32). The continued review and refinement of the Job Seekers Classification Instrument (JSCI), used in Australia, seems to have ensured the continued usage of this particular profiling system (see page 51).

Overall, case workers or advisers are regarded as having the advantage of knowing more details about individual jobseekers, compared with pure statistical assignment systems. There is scope, therefore, for supporting case workers or advisers by providing them with information on the impact of programmes. A combination of case specific knowledge with group specific knowledge processed by a statistical expert system is argued to be the ideal (Behncke *et al.*, 2006).

An issue highlighted as requiring careful consideration is the process of introducing these particular types of tools into any PES because of the way staff may react (OECD, 1998). One of the reasons SOMS was withdrawn, for example, was because of adviser resistance. An evaluation of a recent implementation of a new screening tool in the Netherlands, which had placed great emphasis on the skill of the 'guidance practitioners' administering the tool, achieved a measure of success in this respect when practitioners were found to be neither highly enthusiastic, nor resistant, to the instrument, accepting it as a useful tool in their repertoire (Herbillon, 2004).

These types of standardised statistical screening tools are not, however, suitable for use with individuals experiencing particular barriers to employment, like disability⁷⁵. In England, the Disability Discrimination Act (1995) requires employment assessment practitioners to ensure that the assessment tools used with disabled people are fit for purpose⁷⁶. Two methodologies developed in medical contexts both emphasise the need for an inter-agency approach to working with clients with complex problems. One was developed for vocational assessment and rehabilitation after acquired brain injury (BSRM/Jobcentre Plus/Royal College of Physicians, 2004). The other was designed to engage those who are 'hard to reach'⁷⁷ with traditional health service provision (Bonner, 2006). Existing evidence indicates, therefore, that a range of tools used by members of a multi-disciplinary team, are needed for use with individuals with intensive support needs.

⁷⁵ Schroeder, H. and Steinwede, J. (2004). *Unemployment and the Chance to Integrate Severely Disabled People*. Nuremberg: Institut für Arbeitsmarkt und Berufsforschung.

⁷⁶ A pro-forma, which enables practitioners to review their use of assessment materials, is available Birkin, R. and Meehan, M. (1999). 'Introducing a framework for evaluating psychological assessment materials (PAM) for use in employment assessment situations', *Journal of Occupational Psychology, Employment Disability* 2(1): 9-55).

⁷⁷ Routes to social exclusion in this context referred to client groups with overlapping and complex needs, including: physical disability; degenerative illness; mental health problems; alcohol and drug problems; refugee status; women with children; frail elderly; AIDS/HIV; learning difficulties; drugs, ex-offenders; young leaving care; domestic violence; single homelessness.

Many barriers to employment exist, like substance abuse; domestic violence; physical disabilities and chronic health problems; depression and other mental health issues; criminal records; very low basic skills and learning disabilities; and language barriers – with various tools and methodologies developed to address the needs of particular groups. However, the success of any approach supporting a successful return to work will depend, in part, on the level of severity and number of barriers faced by any one individual. Neither can any one particular barrier be regarded as the main cause of unemployment for an individual. For example, a small scale evaluation of the range of psychological assessments (i.e. work focused vocational interviews and individually selected vocational interest and psychometric ability tests) used alongside general advice under the New Deal for Disabled People (NDDP) suggests that motivation and capacity to overcome barriers may be key factors in a successful return to employment (Bonney and Stammers, 2006).

Approaches to identifying barriers to employment vary. Waiting for barriers to emerge, in preference to initial assessment is one; brief initial screening is another; and a full assessment is a third. The most effective approach is likely to be a combination of all three: up-front screening of those individuals most likely to face barriers, together with ongoing identification of barriers as they become evident, followed by a full assessment of those identified by either of the first two approaches. An example of this type of approach relates to the identification of victims of domestic violence⁷⁸. Staff are trained to identify suspected abuse through subtle cues and indirect questions as part of initial screening. Once abuse is identified, an Intensive Service Team (job counsellor, case worker, social worker and, if necessary, child support worker) develops a six-month plan to identify barriers as they emerge, typically including emergency shelter, counselling, legal support, relocation funds and, in some cases, exemption from work requirements (Brown, 2001).

3.5 Conclusions

The literature on tools, methodologies and good practice for enabling the identification of customers/clients requiring more intensive support in order to increase their likelihood of moving into work, is extensive and developing. Assessment and diagnostic tools undoubtedly provide the potential for improving the effectiveness of advisers and a number of approaches have been implemented in various countries across the world. Some have been suspended and withdrawn after a number of years in operation and others have thrived. Where tools have continued to be used, there has been a commitment to continuous quality improvement, sustained investment and policy commitment.

⁷⁸ Violence against women is often accompanied by emotional abuse and controlling behaviour. For example, a partner may refuse to provide transportation, promise to provide childcare and then renege, or destroy (or hide) clothing needed for work.

In none of the examples identified in this review has the adviser been replaced by the tool, even in instances where it was highly automated. In most cases, advisers (or case workers) administer the diagnostic tool and have discretion over the consequences flowing from its use.

One reason why diagnostics are currently underdeveloped in the UK is the limited administrative data available about customers. Tools built on such limited data will inevitably operate with a wide margin of error, requiring mediation by an adviser. In the case of Jobcentre Plus, the administrative data about benefit recipients is very limited (far more so than in many other countries). For instance, there is no information about skills or qualifications in Jobcentre Plus customer data (other than last occupation which could be very misleading). Another omission is data on attitudes or motivation. One study that included survey data on motivation was based on just one study⁷⁹, because such data is not routinely available for Jobcentre Plus customers.

Collection of the missing data is one way forward, which can only be done with the active involvement of the adviser. This occurred in the example of the FDSS pilot in the USA before it was suspended, where administrative data held online was merged with new information collected by the adviser when the unemployed person first registered their UI benefit claim.

Varied methodologies developed more recently show promise, but take delivery and design beyond an emphasis on placement outcomes. These different approaches recognise the limitations of statistical assessment and attitudinal screening, accepting that for some of the most disadvantaged in society, improving employability through more individualised, holistic approaches represents sufficient gain. Here, the concept of 'distance travelled' becomes relevant for measuring progress. Case management involving tools and techniques that identify strengths, as well as difficulties, and that is on going, seems more likely to meet the complex needs of diverse individual clients.

The inter-related nature of the components that may comprise different types of intensive support requires a coherent approach to the overall design of any programme. Success is likely to depend not only on the robustness and appropriateness of any tools used but also on effective inter-agency collaboration that will ensure the smooth transition of the client from one component of support to another.

A recurrent theme in the literature is the attention that needs to be given to implementing tools and methodologies to provide intensive support. The successful implementation of any screening process has implications for staff capacity and training. This will be particularly important where staff turnover is high and/or the workplace is highly pressurised.

⁷⁹ Bryson, A. and Kasparova, D. (2003). *Profiling benefit claimants in Britain. A feasibility study* (Department for Work and Pensions Research Report 196). Leeds: Corporate Document Services. [Available online: <http://www.dwp.gov.uk/asd/asd5/rports2003-2004/rrep196.asp>]

Different kinds of tools and methodologies are likely to be appropriate to different settings, client groups and purposes. Implementation of any one will bring particular practical (sometimes ethical) implications.

Whichever diagnostic tools are considered, skill rarely features as a factor in the tool/model. The closest equivalent is educational qualification, level of schooling attained or some similar measure. Previous occupation may be used as a proxy for skill but may be misleading where the last job was some time in the past or not typical (for instance if taken as a temporary job after redundancy). The introduction of the Skills Coaching trials provided, perhaps for the first time, a route by which Jobcentre Plus advisers could direct customers to provision that would seek to address their skill-related constraints on employment.

3.6 Summary

This section has examined the evidence relating to tools and methods used to identify customers requiring intensive support to increase their likelihood of moving into work. A systematic search of evidence yielded 81,455 search results, of which 1,131 studies were screened by title and 40 selected for detailed scrutiny. The evidence suggests that diagnostic methods can be categorised into three broad groups: attitudinal screening, statistical models and 'other', with a range of approaches implemented in various countries across the world. The use of diagnostics is currently underdeveloped in the UK, with limited administrative data about customers being a significant contributory factor. In none of the examples identified was the adviser replaced by the diagnostic tool, even in instances where the process was highly automated. In most cases, advisers (or case workers) administered the diagnostic tool, but retained discretion over the consequences flowing from its use. A recurrent theme in the literature relates to the care that needs to be given to the implementation of such systems, particularly where staff resources are stretched and the workplace highly pressurised and a growing consensus regarding the desirability of more individualised, holistic approaches for some of the most disadvantaged customers is evident.

Appendix A

Research process

Introduction

In this appendix, the research design is outlined detailing the five phases of the literature review process undertaken for the two review questions and sub-questions. The methodology for the literature reviews was based on the approach developed by the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre) at the University of London (see EPPI-Centre, 2002⁸⁰). It has been argued that applying the systematic methodology of EPPI is effective, but that its application does not have to be prescriptive to be successful (see Nind, 2006⁸¹).

This methodology has, therefore, been adapted, using experience and knowledge gained from previous literature reviews, to allow for researcher judgement to be applied and to allow the identification of evidence from other sources that would not necessarily be found using an electronic database or online search. For example, experts in the field have been contacted and recommendations on possible evidence sought. By employing this methodology, and using set criteria, a wide range of literature for both review questions has been identified. This method has provided a robust, transparent and comprehensive review of the literature and also provided a detailed account of relevant studies and findings.

Overview of methodology

The process used for the two literature reviews is systematic and comprises a

⁸⁰ EPPI-Centre (2002). *Guidelines for Extracting Data and Quality Assessing Primary Studies in Education Research (version 0.9.7)*. London: EPPI-Centre, Social Science Research Unit.

⁸¹ Nind, M. (2006). 'Conducting systematic review in education: a reflexive narrative', *London Review of Education* 4(2): 183-195.

number of distinct phases:

- Searching: the systematic identification of potentially relevant studies.
- Screening: the application of pre-determined inclusion and exclusion criteria derived from the review question to report titles, abstracts and full texts.
- Data-extraction: the in-depth examination of studies, meeting the pre-determined inclusion and exclusion criteria, to assess the quality of the study and extract evidence in support of the in-depth review.
- Synthesis: the development of a framework for data analysis and identification of key themes.
- Reporting and dissemination: presentation of the review findings.

The strengths and limitations of the systematic review process are discussed in Appendix G.

Phase 1 – Searching

The first phase of the review process involved the identification of papers, research reports and policy documents that were broadly concerned with: firstly, the identification of diagnostic tools developed for measuring skill; and secondly, the identification of screening tools to identify individuals requiring more intensive support and early intervention, together with the influences on employability (including barriers, constraints and enabling factors). Search strategies, together with keywords, were developed in consultation with the critical readers for each review question (see Appendices C and E for more detail). Appropriate electronic databases and websites were identified. The following electronic databases were searched:

- Applied Social Sciences Index and Abstracts (ASSIA);
- Australian Education Index;
- Blackwell Synergy;*
- British Education Index;
- British Humanities Index;
- Business Source Premier;
- Cambridge journals;
- EBSCO;
- Emerald Text;*
- ERIC;
- Ingenta Connect;

- JSTOR;
- Metapress;*
- Oxford Journals Online;*
- Papers First;
- ProArbeit;
- Proquest – ABI/Inform;
- PsycINFO;
- Sage Journals online;
- ScienceDirect;
- Sociological abstracts;
- Springerlink (including Kluwer);
- Taylor and Francis;*
- Wiley Interscience;
- Zetoc.

* Limited searches were undertaken in these databases due to technical difficulties both in searching the databases and importing the references to Endnote. Appendix B provides details of each electronic database searched.

To ensure that all the searches undertaken were consistent and comparable, a search strategy was developed. Keywords and phrases were derived from each of the review questions and in consultation with the critical readers. After a preliminary trawl of two databases, the keyword lists were refined to include only words which had produced successful results. These keywords were then placed into categories and assigned keyword numbers to allow their strategic combination, for instance keyword 1 words were paired with every keyword 2 word once. In addition to the keyword searches, several stand-alone key phrases were found to be effective in searching for relevant literature for both review questions. For the second review question this included specific screening tools and methodologies developed across Europe, North America and Australia.

Where the searches returned a high number of results (that is more than 500), the search was further refined by adding a second and/or third keyword to the search string in order to focus the search more accurately. Boolean logic (for example, appropriate truncations, wildcards and operators) were applied to enhance the search strategy and to allow more efficient searching. It was also used to refine searches producing a high number of irrelevant results which included materials where keywords had an alternative definition in a particular context. For instance, 'diagnostic' included references in the health and justice context which were not relevant to the review. A record of the search strings used and the results for each electronic database were documented. Search records were compared

between researchers to ensure that the terms had been applied consistently to each database. More detail on the search strategy for each review question is included in Appendices C and E.

Where possible, searches were limited to those studies published after 1997 as only empirical studies after this date were to be included in the review. Specific searches were carried out for evidence in French, German and Spanish, so searches were not restricted to English-only publications.

Online searching

In order to undertake the online searching for web resources a similar search strategy was applied. Although the use of Boolean logic was not possible for some websites, it was possible to search using keywords and phrases. The most successful keywords identified during the electronic database searching were used for the online searches. However, websites often contained few references so in some instances all publications were screened online. All results were recorded and references of potential relevance to the review questions were downloaded.

Websites searched for the two review questions included:

- Advice Resources: www.advice-resources.co.uk
- Careers Research and Advisory Centre (CRAC): www.crac.org.uk
- Centre for Guidance Studies, University of Derby: www.derby.ac.uk/cegs
- Chartered Institute of Personal Development (CIPD): www.cipd.co.uk
- Commission for Equality and Human Rights (CEHR): www.cehr.org.uk
- Commission for Racial Equality (CRE): www.cre.gov.uk
- Delicious: del.icio.us
- Department for Innovation, Universities and Skills (DfES): www.dius.gov.uk
- Department for Work and Pensions (DWP): www.dwp.gov.uk
- Disability Rights Commission (DRC): www.drc.org.uk
- Emploi, Travail et Formation Professionnelle: www.travail.gouv.fr/index.asp
- Equal Opportunities Commission (EOC): www.eoc.org.uk
- Eurydice: www.eurydice.org/portal/page/portal/Eurydice
- Institute for Employment Research (IER): www.warwick.ac.uk/ier
- National Centre for Vocational Education Research (NCVER): www.ncver.edu.au
- National Foundation for Educational Research (NFER): www.nfer.ac.uk/
- National Guidance Research Forum (NGRF): www.guidance-research.org
- National Institute for Adult Continuing Education (NIACE): www.niace.org.uk
- National Learning and Skills Council: www.lsc.gov.uk

- OECD: www.oecd.org
- QCA: www.qca.org.uk
- ReferNet: www.refernet.org.uk (utilising European network)
- Scottish Further Education Unit: www.sfeu.ac.uk
- Sector Skills Development Agency (SSDA): www.ssda.org.uk
- Teaching and Learning Research Programme (TLRP): www.tlrp.org
- W.E. Upjohn Institute: www.upjohninst.org

Online searching for review question one, on skills diagnostics and assessment tools, was successful in identifying examples of tools and products used, but little evidence was found by this search process on how these tools are applied or on their effectiveness in practice. A list of selected online tools are presented in Appendix I. In comparison, online searching for methods and tools on identifying individuals requiring further support and early identification was more effective. Research reports and unpublished papers were identified in Europe and America. For the online searching results see Appendixes C and E.

Capturing international evidence

Using the research teams' contacts and networks, together with internal language competencies, national and international evidence was captured for the following languages: English; Spanish; French; and German. In addition, evidence from Scandinavian countries (e.g. Finland, Denmark and Norway), US, Canada and Australia were sought using various contacts and networks. Translated material was undertaken where appropriate which include evidence in French and Portuguese.

International contacts were consulted on the validity of search results and to obtain articles not available through electronic databases, as follows:

Australia:	Dr. Greg Connolly, Director, Economic and Employment Issues Sections, Department for Employment and Workplace Relations
Canada	Professor Kris Magnusson, University of Lethbridge, Alberta Dr. Gulaine Michaud, Université de Sherbrooke, Québec
Denmark	Professor Peter Plant, Danmarks Pædagogiske Universitet
Finland	Dr. Raimo Vuorinen, University of Jyväskylä Kai Koivumäki, Ministry of Labour
Germany	Helmut Rudolph, Institut für Arbeitsmarkt und Berufsforschung, FB Niedrigeinkommen und Verteilung Holger Schütz, Wissenschaftszentrum Berlin für Sozialforschung

	Abteilung Arbeitsmarktpolitik und Beschäftigung Reichpietschufer
New Zealand	Lester Oakes and Susan Kosmala, Careers Services Matt Maua'i, Department of Work and Income Gayleen Robinson, StaffCV 7 jobz4u
Portugal	Iolanda da Silva Ribeiro, Instituto de Educação e Psicologia, Universidade do Minho
Sweden	Dr. Anders Lovén, Malmö högskola
United States	Professor Jim Sampson, Florida State University

German

The German literature database LitDokAB, a part of ProArbeit, was used to search for references related to the two review questions in German speaking countries. The LitDokAB database consists of roughly 30,000 references published between 1996 and 2006.

Keywords identified in the search strategy for both review questions were translated. For the first review these included: method; diagnostic; qualification; key qualification; certificate; level of qualification; need of qualification; qualification matching; qualification deficit; qualification research; qualification criteria; qualification potential; qualification profile; early recognition; and trainability. For the second review question a combination of the following keywords were used: employability; screening; barriers; influences; selection; instruments; employment; unemployment; unemployed; employment prospects; employment chances; method; active labour market programme; profiling; early recognition; case management; and employment barriers. Additional keywords/phrases were added to incorporate current German terminology including: aid and demand (new keyword used in activation); plus JobAQTIV (legislation introduced in Germany in 2001 which made profiling compulsory)⁸².

For review question one on skills diagnostics, 1,239 references were identified, of which 107 were selected and screened using the inclusion/ exclusion criteria. In total, seven references were identified as potentially relevant for the review, but six were unobtainable within the timescale of the project. One paper was available and has been included in the synthesis of review question one. A similar process was undertaken for the second review question and searching revealed 2,885 articles, of which 145 were selected for screening using the inclusion/ exclusion criteria. Two of these articles were selected for background information on the latest developments on the German labour market. A further nine articles were identified for inclusion, but three were unobtainable within the timescale of the project.

⁸² See Appendix K for a summary of recent developments in the German labour market.

Specific German websites were also searched for relevant evidence for the two review questions, including:

- Infoconnex: www.infoconnex.de
- Vascoda: www.vascoda.de

However, no relevant or new evidence was found during these searches.

French

The French government website Ministeré du Travail, des Relations sociales et de la Solidarité <http://www.travail.gouv.fr> was used to search for evidence relevant to both the review questions. This is a governmental site run by the Ministry of Work, Social Relations and Solidarity. It contains a mixture of documents and reports: some are notification of legal issues and ensuing directives; others are discussion or colloquium proceedings; others are research reports. Only documents in this last category were directly relevant to the review questions and a comprehensive search was carried out within this category. This included research reports produced by Direction de l'animation de la recherche, des études et des statistiques (DARES), which is the research, study and statistical arm of the Ministry.

The website was searched using a series of French keywords and appropriate search modifiers. Keywords included: competence; skill; review; risk; assessment; inventory; checklist; validation; accreditation; prior/experiential learning; risk factor; target; formation; orientation; target groups; distance to travel; and personal project.

Three articles relating to skills diagnostics were scrutinised including: Skills Checklist [Le bilan des compétences] (2006); Accreditation of Experiential Learning [La validation des acquis de l'expérience VAE] (2007); and Evolution of professional training [Les évolutions de la formational professionnelle] (2003). Although these articles were clear in articulating an individual's entitlement to the processes involved, and outlined in broad terms what approach could be taken, they failed to provide evidence on what methods and/or tools could be used in practice. As a consequence these articles were excluded from the literature review.

A further three publications by DARES were considered for the screening tools review: Vocational training undertaken by jobseekers in 2005, primarily funded by the Regions (2007); Why do the less qualified do less skills training? (2006); and Measuring the global effect of a personal action plan (2006). Again, closer scrutiny of these articles revealed that they did not satisfy the inclusion criteria, in terms of offering sufficient detail of methods/tools used to identify and support individuals.

Spanish

The search for evidence in the Spanish databases applied translated keywords

for each review question. Translations of the closest equivalent terms as used in the Spanish literature search. For the first review question the keywords included: method; diagnostic; evaluation; competencies; tool; test; and review. For the second review question the keywords used included: employment factors; screening; work; and competencies. Keywords were general to ensure high results, but no evidence was found.

No evidence of skills diagnostic or customer identification tools is due to the fact that these are not commonly used in the Spanish system, or that they are used but evidence of their implementation is not published. At least two of the websites searched make reference to, or directly address, individuals who are inactive in the labour market. However, no reference is made to tools or methods to identify individuals' skills levels or those individuals requiring more intensive support.

Where possible electronic databases were searched specifically for evidence in Spanish. In addition to these database searches, specific Spanish websites were also searched for relevant evidence, including:

- Red de Revistas Científicas de América Latina y el Caribe, España y Portugal: redalyc.uaemex.mx
- Instituto de Empleo, Servicio Público de Empleo Estatal: www.inem.es
- Instituto Nacional de Estadística: www.ine.es
- Investigaciones Económicas: www.funep.es/invecon/sp/sie.asp
- Ministerio de Educación y Ciencia: www.mec.es
- Ministerio de Trabajo y Asuntos Sociales: www.mtas.es

However, no relevant evidence was found during these searches.

Phase 2 – Screening

The results of each search string were assessed on screen in order to ascertain whether the documents were likely to meet the predetermined inclusion and exclusion criteria. Online screening was usually performed on the basis of the title, but in some instances the abstract was used where the relevance was not clear from the title. This process was effective as it enabled researchers to recognise when a database had been comprehensively searched because duplications were identified.

Results from these searches together with the online and international searches were added to the appropriate records (details are reported in Appendices C and E). Each potentially relevant reference was exported to Endnote, which is a bibliographic management system.

The bibliographic information and abstracts for all potentially relevant references were imported to Endnote. Using this management system not only facilitated

searches of, and data capture from, the electronic databases, but more importantly facilitated the storage and retrieval of the bibliographic references and helped in the creation of the bibliography. The majority of the searched databases had the facility to export bibliographic information directly to Endnote. Where this facility was not available, the information was downloaded and imported to Endnote using the appropriate filter. The bibliographic information for relevant articles identified from websites and personal contacts was entered manually into the database. The master Endnote libraries for each review question were checked for incorrect imports and then sorted by author in order to identify duplicates. All duplicates were removed, using the automated Endnote facility.

The process of screening the potentially relevant references in each library was undertaken by applying predetermined exclusion criteria hierarchically. The inclusion and exclusion criteria were derived from concepts inherent in both the main review question and the sub-question for each review (see Appendices C and E). Screening was undertaken by an examination of the title, abstract and full-text of each reference. All references that met one or more of the exclusion criteria were removed from the main library into exclusion libraries that corresponded to each of the exclusion criteria. The exclusion criteria were applied hierarchically and articles were excluded on the basis of the first criterion encountered.

Strict adherence to the EPPI-Centre methodology for systematic literature reviews would have resulted in all evidence that was not empirical being excluded during the screening phase of the review process. However, as limited empirical evidence was found for each of the review questions, some flexibility was applied to this exclusion criterion. Researcher judgement was used to determine whether a non-empirical study would be relevant for data extraction. However, non-empirical studies were only included if all other of the inclusion criterion were met and that the researcher judged it valid.

Other literature reviews and evaluations of the skills diagnostic and screening tools identified during the review process were also included as they not only informed the review process but provided context to the empirical studies included. This evidence would not have been included if the EPPI-Centre methodology had been adhered to.

An additional database entitled 'irrelevant' was created to store irrelevant references that had been unintentionally imported. This database comprised references that did not meet any of the inclusion or exclusion criteria, but had been identified and imported because the title seemed relevant as it shared similar terms to those associated with the in-depth literature reviews. References that met all of the inclusion criteria for the in-depth review were exported into an 'inclusion' database. The full texts for each of the documents were then obtained for data extraction.

Phase 3 – Data extraction

A data extraction instrument was designed to provide a framework for extracting, assessing and analysing the data contained within the included studies (see Appendix D for the skills review and Appendix F for the screening tools review). The instrument was designed to support the process of synthesising and reporting each review's findings and the overall report writing. It was used in this review to reduce any bias from the processes that mediate the research process and production⁸³. Each data extraction instrument included a series of structured questions and comprised five sections:

- bibliographic information;
- focus of the study;
- methodology;
- findings; and
- analysis.

The series of structured questions within each section was designed to ensure that data from each study was consistently extracted.

Each study was assessed for quality through an analysis of its strengths and limitations reported in the methodology section of the data extraction instrument. Using the standards recommended by the EPPI-Centre, the quality of each study was assessed in terms of 'weight of evidence'. This included an analysis of the:

- soundness of studies (internal methodological coherence);
- appropriateness of the research design and analysis used for answering the review question; and
- relevance of the study topic focus (from the sample, measures, or other indicator of the focus of the study) to the review question.

The analysis section of the data extraction instrument facilitated the assessment of the 'weight of evidence' for each study. Each data extraction was used to draw out key themes in the evidence which formed part of the synthesis stage of the review process.

Phase 4 – Synthesis

From the systematic review of the literature, using the keyword search, 29 studies were identified and included in the review of evidence on skills review, identification, assessment and diagnostics. The data were synthesised according to emergent themes that related to the main review question and sub-question. Emergent themes included generic, educational and occupational skills reviews,

⁸³ See for example: Wallace, A., Croucher, K., Quilgars, D. and Baldwin, S. (2004). 'Meeting the challenge: Developing systematic reviewing in social policy', *Policy and Politics* 32(4): 455-470.

identification, assessment and diagnostic tools, together with examples of good practice that accommodate different models of delivery.

For the second review question on screening tools and methodologies for employment, 40 studies were identified and included. These reviews included international evidence and examples. They were synthesised according to emergent themes relating to the identification of individuals requiring further support (including: attitudinal screening; statistical prediction and prescription; and other diagnostic methods); methods for assessing employability; screening tools for people with a disability; practitioner influences; evidence-based screening tools; and influences on employability.

Appendix B

Details of electronic databases

Details of each electronic database are taken directly from the respective websites and edited for the purposes of this report.

Applied Social Sciences Index and Abstracts accessed through CSA Illumina <http://www-md1.csa.com>

Applied Social Sciences Index and Abstracts (ASSIA) provides a comprehensive source of social science and health information for the practical and academic professional. It is an indexing and abstracting tool covering health, social services, psychology, sociology, economics, politics, race relations and education. Sources from 1987 include over 375,000 records from over 500 journals published in 16 different countries, including the UK and US. It is updated monthly.

Australian Education Index accessed through Dialog Datastar <http://www.datastarweb.com>

The Australian Education Index (AEI) consists of more than 130,000 documents relating to educational research, policy and practice. AEI is a specialist database produced by the Cunningham Library at the Australian Council for Educational Research. It is the largest source of Australian education information which is updated monthly. It is comprehensive and reflects trends and practices in teaching, learning and educational management. Sources from 1977 to date include reports, books, journal articles, online resources, conference papers, book chapters and theses.

Blackwell Synergy <http://www.blackwell-synergy.com>

Blackwell Synergy is the online journals service from Blackwell Publishing. It holds the full-text articles of over 850 journals, the majority of which are published by Blackwell on behalf of international scholarly and professional societies. The subjects covered range across Medicine, Science, Social Science and the Humanities.

British Education Index accessed through Dialog Datastar <http://www.datastarweb.com>

The British Education Index (BEI) provides information on research, policy and practice in education and training in the UK which includes aspects of educational policy and administration, evaluation and assessment, technology and special educational needs. BEI's sources from 1975 to date include over 300 education and training journals, mostly published in the UK, plus other material including books, reports, series and conference papers.

British Humanities Index accessed through CSA Illumina <http://www-md1.csa.com>

The British Humanities Index (BHI) is an international abstracting and indexing tool for research in the humanities. It indexes over 320 international humanities journals, weekly magazines published in the UK and other English speaking countries, and quality newspapers published in the UK. It includes sources from 1962 and is updated monthly. Selected areas of coverage include: current affairs; education; economics; gender studies; history; law; philosophy; and political science.

Business Source Premier accessed through EBSCO <http://search.ebscohost.com>
Business Source Premier is a widely used business research database, providing full text for more than 2,300 journals, including full text for more than 1,100 peer-reviewed business publications. There is coverage of all disciplines of business, including: marketing; management; MIS; POM; accounting; finance; and economics. Business Source Premier provides full text for more than 350 of the top scholarly journals dating back to 1922. Additional full text, non-journal content includes market research reports, industry reports, country reports, company profiles and Strengths and Weaknesses Opportunities Threats (SWOT) analyses. This database is updated daily on EBSCOhost.

Cambridge Journals <http://journals.cambridge.org>

Cambridge Journals has over 230 journals indexed which span over 32 subject areas, ranging from Agriculture, Archaeology and Anthropology, Nutrition, to Psychology and Cognitive Science, Religion and Social Studies.

EBSCO Host: Electronic Journals Service <http://ejournals.ebsco.com>

EBSCO Electronic Journals Service (EJS) consolidates over 8,000 e-journals from all major publishers, covering a wide range of disciplines. It has specialised products and services for academic, medical, government, public and school libraries as well as for corporations and other organisations.

Educational Resources Information Center accessed through Dialog Datastar <http://www.datastarweb.com>

The Educational Resources Information Center (ERIC) database is a digital library sponsored by the Institute of Education Sciences of the US Department of Education. It provides a comprehensive, searchable bibliographic and full-text database of research and information increasing the availability and quality of research for educators, researchers and the general public from 1975 to date. Information in the database corresponds to Resources in Education (RIE) and Journals in Education (CIJE). The RIE sub-file includes records of research/technical reports, conference papers, programme descriptions, opinion papers, bibliographies, reviews, legal/

legislative/regulatory materials, dissertations, classification schemes, teaching guides, curriculum materials, lesson plans, course descriptions, pamphlets and guides. CIJE contains journal articles and items in copyrighted serial publications.

Emerald <http://www.emeraldinsight.com>

Emerald publishes a wide range of management titles and library and information services titles from across the world, which includes 160 top management titles, plus a number of engineering, applied science and technology journals. In addition, Emerald Management Xtra is a comprehensive collection of peer reviewed management journals and online support for librarians, faculty, researchers and deans which enables access to 150 full text journals. This includes 75,000 full text articles, 200,000 reviews from the world's leading management journals, plus case studies, literature reviews, book reviews, conference information, interviews, and profiles.

IngentaConnect <http://www.ingentaconnect.com>

IngentaConnect offers access to a comprehensive collection of academic and professional research articles online, including approximately 22.5 million articles from 30,000 publications. Selected areas of coverage include: arts and humanities; economics and business; mathematics and statistics; medicine; nursing; psychology/psychiatry; and social sciences.

JSTOR <http://uk.jstor.org>

JSTOR offers both multidisciplinary and discipline-specific collections. There are currently 729 journals and 3.7 million articles available online. In addition, the JSTOR archive holds digitised back runs of core scholarly journals, starting with the first issues. New titles and disciplines are being added regularly.

Metapress <http://www.metapress.com>

MetaPress provides content management and end-user access websites for e-content from leading publishers. Over 21,000 scholarly publications from 137 leading publishers can be accessed.

Oxford Journals Online <http://www.oxfordjournals.org>

Oxford Journals is an international publisher of academic and research journals which includes over 180 titles. Major subjects covered include: life sciences; mathematics and physical sciences; medicine; social sciences; humanities; and law.

Papers First (part of OCLC FirstSearch) <http://newfirstsearch.oclc.org>

FirstSearch is an online service that gives library professionals and end users access to a collection of reference databases providing access to dozens of databases including Papers First. Papers First covers every published congress, symposium, conference, exposition, workshop and meeting received by The British Library Document Supply Centre. There are over 5,700,000 records from 1993 to the present and it is updated semi-monthly.

ProArbeit

The ProArbeit is an information system for labour market research. It is published by the Institut für Arbeitsmarkt und Berufsforschung (IAB) (Institute for Employment Research), Institut der Deutschen Wirtschaft (Cologne Institute for Economic Research) and the Arbeitsgemeinschaft Berufsbildungsforschungsnetz (AG BFN) (working group network for occupational training). ProArbeit is interdisciplinary and includes over 215,000 references on employment research, from the social sciences, economics, technological science and qualification research. The literature database LitDokAB was used for this literature review. It contains approximately 80,000 references, including scientific articles, books, grey literature, conference documentation and official documents. A CD ROM of ProArbeit (version 2.2006) was used for this research. An internet version is available from Institute für Arbeitsmarkt und Berufsforschung (<http://www.iab.de>), but was under construction at the time of the project. The literature review was limited to references published after 1996.

Proquest – ABI/Inform <http://www.proquest.co.uk>

ABI/Inform through Proquest provides access to over 3,900 business and management journals from around the world. Coverage is from 1992 onwards with backfile coverage to 1971.

PsycINFO <http://www.apa.org/psycinfo>

PsycINFO is an abstract database of psychological literature from the 1800s to the present. It contains more than 2.3 million records from more than 2,150 titles and 98% of journals are peer reviewed. It is updated weekly. For this review, PsycArticles was used to gain access to the full-text of potentially relevant studies.

Sage Journals Online <http://online.sagepub.com>

SAGE Publications publishes over 460 journals in business, humanities, social sciences, and science, technology and medicine. Online access is provided to the full text of individual SAGE journals. The SAGE full-text collections and SAGE's discipline-specific research databases are also available on online.

ScienceDirect <http://www.sciencedirect.com>

ScienceDirect provides access to over 2,000 peer-reviewed journals and around 8 million full-text articles together with hundreds of book series, handbooks and reference works. It offers more than a quarter of the world's scientific, medical and technical information online.

Sociological Abstracts accessed through CSA Illumina <http://www-md1.csa.com>

CSA Sociological Abstracts indexes international literature in sociology and related disciplines in the social and behavioral sciences. The database provides abstracts of journal articles and citations to book reviews drawn from over 1,800 plus serials publications and also provides abstracts of books, book chapters, dissertations and conference papers. The database includes sources from 1952 and is updated monthly. Selected major areas of coverage include: culture and social structure;

economic development; evaluation research; family and social welfare; health and medicine and law; mass phenomena and political interactions; policy, planning, forecast and speculation; sociology of the arts, business, education; and welfare services.

Springerlink (including Kluwer) <http://www.springerlink.com>

SpringerLink is an interactive database for journals, book series, books, reference works and the Online Archives Collection. Selected major subjects covered include: behavioural science; business and economics; humanities, social sciences and law; mathematics and statistics; and medicine. It contains approximately 3.4 million articles.

Taylor and Francis (part of Informaworld) <http://www.informaworld.com>

Informa plc is a provider of specialist information to academic and scientific, professional and commercial communities. It provides access to: all journals from Taylor and Francis, Routledge and Psychology Press; over 180 Informa Healthcare journals; selected encyclopaedias; all Taylor and Francis abstract databases; and more than 10,000 eBooks from Taylor and Francis, Routledge and Informa Healthcare. Selected major subjects covered include: economics, finance, business and industry; education; humanities; information science; interdisciplinary studies; social sciences; and social work.

Wiley Interscience <http://www3.interscience.wiley.com>

WileyInterScience features content from more than 2,500 journals, books, reference works, databases, laboratory manuals and The Cochrane Library. Selected subjects covered include: business; education; law; medicine and healthcare; psychology; and social sciences.

Zetoc <http://zetoc.mimas.ac.uk>

Zetoc provides access to the British Library's electronic table of contents of around 20,000 current journals and around 16,000 conference proceedings published per year. The database covers 1993 to date, and is updated on a daily basis. Zetoc covers science, technology, medicine, engineering, business, law, finance, the arts and humanities.

Appendix C

Search results – skills review, identification, assessment and diagnostic tools

Search results

Using the methodology outlined in Appendix A, a systematic literature search was undertaken to identify evidence on the tools and methodologies used for the review, identification, assessment and diagnosis of individual skills. A search strategy was developed to ensure that the searches across the electronic databases were consistent. This consisted of keywords and phrases derived from the research question (see Table C.1).

Table C.1 Search strategy for literature on skills

Keyword 1	Additional keywords
method?	assessment
tool?	diagnos*
skill?	review
basic skill?	skill?
basic skills assessment	skill? assessment
career guidance	skill? audit
skill? assessment	skill? diagnos*
skill? audit	skill? evaluation
skill? development review	skill? identification
skill? diagnos*	skill? inventory
skill? evaluation	skill? testing
skill? identification	

Continued

Table C.1 Continued

Keyword 1	Additional keywords
skill? inventory	
skill? level?	
skill? measurement?	
skill? needs analysis	
skill? needs assessment	
skill? recognition	
skill? review	
skill? testing	
Key phrases	
accreditation of prior learning	
assessment of knowledge	
assessment of skills	
assessment of understanding	
bilan de competence	
competence assessment	
diagnostic skills review	
Kuder skills assessment	
recognition of prior learning	

? represents one missing character.

* (wildcard) takes the place of several unspecified characters.

Unlike previous reviews conducted by the research team, which followed the process of testing the first keyword and refining it with a second and/or third keyword, the search strategy for this question required a combination of keywords. The use of certain keywords in the databases produced high return results of irrelevant literature as the keywords had multiple usages across different contexts and disciplines. For example, the terms 'diagnostic' (and its variants) and 'assessment' are widely used in the medical context. In addition, searches using the terms 'method(s)' and 'tool(s)', plus a further keyword were not successful. To resolve these difficulties, very specific keywords and phrases were applied producing lower results, but more relevant literature.

Overall, locating evidence for this review question was more difficult than had been anticipated and only 27,629 hits from initial keyword searches were retrieved from the electronic databases (see Table C.2). This was a not only a consequence of the problems with definition but also the lack of indexed research on skills reviews, identification, diagnostics and assessment in the electronic databases.

Table C.2 Number of references searched, included and excluded for literature on skills review, identification, assessment and diagnosis

	Sources		
	Databases (1)	ProArbiet (2)	Websites and others (3)
Initial search and online screening	27,629	1,239	809
Online screening (added to Endnote)	530	117	
Number of duplicates and incorrect imports	69	16	
Abstract and title screened	461	101	17
Not relevant	23	8	2
Total number excluded:			
• exclusion 1	125	0	2
• exclusion 2	132	21	4
• exclusion 3	7	1	
• exclusion 4	92	36	
• exclusion 5	58	28	
Unobtain	5	6	
Final studies for inclusion	19	1	9

(1) See Appendix B for a full list of the databases searched.

(2) ProArbeit is a CD ROM database of German and European employment, education and training literature.

(3) Includes all online searches, the NLRG and sources identified by international contacts and experts.

Online searching of specified websites, listed in Appendix A, employed a selection of the keywords and phrases to identify potential evidence. In contrast to electronic database searching, online searching for evidence produced a significant number of results. However, in this instance, results were specifically related to identifying skills review, diagnostic and assessment tools, rather than empirical evidence on the application and practice of these tools (a list of these tools has been included in Appendix I).

Of the 27,629 electronic database results, 461 references were screened by title and abstract after duplicates and incorrect imports to Endnote were removed from the library⁸⁴. Each reference was screened by title and abstract using the inclusion and exclusion criteria. The inclusion and exclusion criteria are derived from concepts inherent in both the main review and sub-review questions and are as follows:

⁸⁴ Please note that some databases allowed searching to be limited to a specific time period. In the case of this review, searching was undertaken for studies conducted after 1997 which was agreed with the project steering group.

Studies **included**:

- 1 were conducted after 1997;
- 2 draw on empirical research with an explicit documented evidence base;
- 3 focus on identifying tools developed for measuring individual skill levels; and
- 4 focus on measuring individual skill levels and/or skills needed by employers.

Studies **excluded**:

- 1 were conducted before 1997;
- 2 were not based on empirical research;
- 3 were based on single person opinion;
- 4 focus on tools for measuring skill level without reference to use and/or effectiveness of tools; and
- 5 exclusive focus on assessing technical skills.

After the application of the inclusion and exclusion criteria, 24 potential references were identified. Nineteen of those references were data extracted and included in this review. The remaining five references were unobtainable within the project timeframe.

An identical search and screening process was undertaken in the ProArbeit database (German labour market database), with a total of 101 studies screened by title and abstract after duplicates and incorrect imports were removed. The exclusion criteria were applied and seven studies were identified for potential inclusion in the review. However, within the project timeframe, six were unobtainable as they could not be located in the UK and searches abroad would exceed the project timeframe.

In total, 29 studies retrieved from the electronic databases, ProArbeit and online searches were obtained and included in this review (see Appendix H for an annotated bibliography). These studies were synthesised according to emergent themes related to the main review question and sub-question. Particular emphasis was given to identifying tools developed for measuring skills and also reviewing the evidence related to the use and effectiveness of such tools.

Appendix D

Data extraction instrument for evidence on skills review, identification and diagnostics

1. Biographical Information	
Author(s)	
Date of Publication	
Title	
Journal Title	
Journal Volume	
Journal Number	
Page Number	
Place of publication	
Publisher	
Commissioning body	
2. Focus of the Study	
Main topic focus of the study. If the study has a broad focus and this data extraction focuses on just one component, please specify here and provide details:	
Broad aims of the study	
When the study was carried out	
Demographic details of participant population(s)	
Location of the study	
3. Methodology	
Theoretical approach	
Sampling Strategy including sampling frame and sample size	
Data collection methods	

Data analysis methods
Strengths of methodological approach
Limitations of the approach
4. Findings
Results/ main findings
Conclusions
Recommendations
5. Analysis
Summary of the ways in which the article contributes to the literature review.
What tools/ methodologies have been identified for the review of individuals' skills levels?
Are these tools/ methodologies used for reviewing, identifying, assessing or diagnosing skill levels?
What are the aims of these tools/ methodologies? (i.e. identify skills needed by employers, assess individual in terms of further training, help boost confidence, identify possible occupations etc.)
For what purpose is this skills diagnostic used: <ul style="list-style-type: none"> • Individual review (i.e. bilan de competence – no specific purpose, but as a review for the individual) • Organisational skill review • For education or training purposes (general or specific)

Is this skills diagnostic... <ul style="list-style-type: none">• A one off review?• Part of an on-going process?
What evidence is there to demonstrate that these tools/ methodologies are effective in reviewing/ identifying/ assessing/ diagnosing individuals' skills levels?
What evidence is there to demonstrate that these tools/ methodologies are failing to review/ identify/ assess/ diagnose individuals' skills levels?
Are there examples of good practice in how these tools/ methodologies work? (i.e. positive outcomes)
How are there tools/ methodologies delivered (i.e. online, face-to-face)? And are there examples of good practice in these methods of delivery?

Appendix E

Search results for literature on the identification of customers/clients needing intensive support

In order to identify evidence on the tools and methodologies that enable the identification of individuals requiring more intensive support to increase their likelihood of moving into employment, a systematic literature search was undertaken using the methodology outlined in Appendix A. A search strategy was developed to ensure that the electronic database and online searches were consistent and comparable. This consisted of keywords and phrases derived from the research question (see Table E.1).

Searching was undertaken by using five keywords (including method(s), profiling, screening, screening tool(s) and tool(s)) which were refined using a second and/or third keyword. To extend this search further a similar search strategy to that used in review question one (see Appendix C) was applied. This involved searching using a combination of keywords that developed according to the results within a particular database. Successful combinations of keywords were identified and used in every database to ensure consistency in the electronic database searching.

As with the search results for review question one, searching by specific keywords produced a large number of results but much irrelevant literature. Some keywords had very different meanings across the different contexts and disciplines covered by the electronic databases. For example, the terms 'profiling' and 'screening' are used in the medical context and justice sector. To reduce the large number of irrelevant results, Boolean logic was used to ensure searches excluded certain applications of 'profiling' and 'screening'. For instance, searches excluded references including the following key words: crime(s), criminal, diagnosis (and variants) and medicine.

In addition to the keywords and phrases, specific tools and methodologies for identifying individuals requiring more intensive support outlined in Hasluck (2004) were also used as part of the search strategy. These screening tools and methodologies included:

- Active participation model (APM);
- adult decision making readiness tool;
- CAMCRY – Creation and Mobilization of Counselling Resources for Youth;
- client classification levels questionnaire (CCLQ);
- client progress kit (CPK);
- copilote insertion;
- frontline decision support system (FDSS);
- job seeker classification instrument (JSCI);
- JOBMultimeter;
- jobseeker screening instrument (JSI);
- Kansmeter;
- service outcome measurement system (SOMS); and
- worker profiling and reemployment services (WPRS).

While the search for evidence on these specified tools did not yield high results, those identified using this search strategy proved to be highly relevant. Approximately 100 references were identified using this method. In addition, by using the bibliographies of the relevant studies, further evidence was identified.

The search for evidence was also supplemented by using international contacts to learn more about systems across Europe, Australia, New Zealand, America and Canada. These contacts were able to provide valuable information on screening tools and methodologies to inform this review. In cases where empirical studies and evaluations of these tools had taken place, evidence was translated (where required) and added to the review.

Table E.1 Search strategy for literature on the identification of customers/clients needing intensive support

Keyword 1	Keyword 2/ Keyword 3	Exclusions (Boolean logic 'NOT')
method?	barrier?	crim*
profiling	constraint?	diagnos*
screening	employability	health
screening tool?	employment	medic*
tool?	employment factor?	
active labour market	matching applicant	
allocating services	matching client	
barrier?	matching customer	
career assessment?	profiling	
effective intervention?	screening	
employability	transition	
employability	underemployment	
employability	under-employment	
employment program*	unemployment	
employment service?	welfare	
intensive support		
intervention		
job insertion		
matching		
measurement		
placement characteristic?		
worker profile*		
Key phrases		
influence? on employability		
matching applicant to welfare		
reemployment service?		
return to work		
target* employment service?		
transition readiness scale		
welfare to work		

? represents one missing character.

* (wildcard) takes the place of several unspecified characters.

Overall, locating evidence for this review question was easier than for review question one and 76,060 hits from initial keyword searches were retrieved from the electronic databases (see Table E.2).

Table E.2 Number of references searched, included and excluded for literature on the identification of customers/clients needing intensive support

	Sources		
	Databases (1)	ProArbiet (2)	Websites and others (3)
Initial search and online screening	27,629	1,239	809
Online screening (added to Endnote)	530	117	
Number of duplicates and incorrect imports	69	16	
Abstract and title screened	461	101	17
Not relevant	23	8	2
Total number excluded:			
exclusion 1	125	0	2
exclusion 2	132	21	4
exclusion 3	7	1	
exclusion 4	92	36	
exclusion 5	58	28	
Unobtain	5	6	
Final studies for inclusion	19	1	9

(1) See Appendix B for a full list of the databases searched.

(2) ProArbeit is a CD ROM database of German and European employment, education and training literature.

(3) Includes all online searches, the NLRG and sources identified by international contacts and experts.

A selection of the keywords and phrases to identify potential evidence online was carried out in a number of specified websites (see Appendix A for a full listing). Online searching for evidence produced a significant number of results. The majority of the references identified were not empirical evidence or were not related to screening individuals for employment welfare or more intensive support.

Of the 76,060 electronic database results, 957 references were screened by title and abstract after duplicates and incorrect imports to Endnote were removed from the library⁸⁵. Each reference was screened by title and abstract using the inclusion and exclusion criteria. The inclusion and exclusion criteria are derived from concepts inherent in both the main review and sub-review questions, and are as follows:

Studies **included**:

1 were conducted after 1997;

2 draw on empirical research with a documented evidence base;

⁸⁵ Some databases allowed searching to be limited to a specific time period, which for this review included studies conducted after 1997.

- 3 focus on methods/tools for identifying clients/customers who have potential barriers to employment;
- 4 focus on ‘interventions’ aimed at helping individuals prepare for, enter or progress in the labour market;
- 5 are concerned with how individuals were screened/chosen for an intervention.

Studies **excluded**:

- 1 were conducted before 1997;
- 2 were not based on empirical research;
- 3 were based on single person opinion;
- 4 focus on barriers to employment without reference to methods/tools of identifying clients/customers;
- 5 were not focused on ‘interventions’ helping individuals prepare for, enter or progress in the labour market;
- 6 were not concerned with how individuals were screened/chosen for intervention.

After the application of the inclusion and exclusion criteria, 26 potential references were identified. Twenty-two of those references were data extracted and included in this review. Four studies were unobtainable during the timeframe of the project⁸⁶.

Within the ProArbeit database an identical search and screening process was undertaken. A total of 145 studies were screened by title and abstract after duplicates and incorrect imports were removed. The exclusion criteria were applied and nine studies were identified for potential inclusion in the review. Six of those studies were data extracted and three were unobtainable within the project timeframe. Evidence included in the review was retrieved online and through contact with the authors.

In total, 40 studies retrieved from the electronic databases, ProArbeit and online searches were included in this review (see Appendix J for an annotated bibliography). Emergent themes from these studies were synthesised. Themes related to the main review question and sub-question. Particular emphasis was given to examining the evidence on the various screening tools used in practice, identifying individuals requiring intensive support and early intervention, plus highlighting influences on employability (including barriers, constraints and enabling factors). Examples and evidence of good practice in the identification of individuals requiring intensive support is reported.

⁸⁶ This included an edited book from the USA: Eberts, R.W., O’Leary, C.J. and Wandner, S.A. (eds.)(2002). *Targeting employment Services*. Kalamazoo, Michigan: W.E. Upjohn Institute for Employment Research.

Appendix F

Data extraction instrument for evidence on screening tools and methodologies for employment

1. Biographical Information	
Author(s)	
Date of Publication	
Title	
Journal Title	
Journal Volume	
Journal Number	
Page Number	
Place of publication	
Publisher	
Commissioning body	
2. Focus of the Study	
Main topic focus of the study. If the study has a broad focus and this data extraction focuses on just one component, please specify here and provide details:	
Broad aims of the study	
When the study was carried out	
Demographic details of participant population(s)	
Location of the study	
3. Methodology	
Theoretical approach	
Sampling Strategy including sampling frame and sample size	
Data collection methods	

Data analysis methods
Strengths of methodological approach
Limitations of the approach
4. Findings
Results/ main findings
Conclusions
Recommendations
5. Analysis
Summary of the ways in which the article contributes to the literature review.
Describe the screening tool(s) identified.
In what ways do these screening tools identify influences (including barriers, constraints and enabling factors) on employability?
What influences (including barriers, constraints and enabling factors) on employability are assessed/identified by the tool?
What are the aims of these tools and in which context/ setting are they applied?
What evidence is there to demonstrate the effectiveness of these screening tools in identifying: <ul style="list-style-type: none"> influences on employability?

What evidence is there to demonstrate the effectiveness of these screening tools in identifying:

- those individuals requiring more intensive support or early intervention?

What evidence is there to demonstrate that these screening tools are failing to identify:

- influences on employability?
- those individuals requiring more intensive support or early intervention?

Are there examples of good practice in the application of these screening tools? (i.e. positive outcomes)

How are these tools delivered (i.e. online, face-to-face)? And are there examples of good practice in these methods of delivery?

Appendix G

Strengths and limitations of a systematic review process

Introduction

The process used for these reviews was based upon the EPPI-Centre systematic methodology, combined with the research teams' previous extensive experience of literature reviews. The resulting two reviews provide a sound evidence base, firstly on skills review, identification, assessment and diagnosis tools, and secondly on screening tools for identifying individuals requiring intensive support. Whilst the reviews represent in-depth detailed studies of literature on skills diagnostic and screening tools using a systematic approach, it needs to be acknowledged that it is a time consuming and resource intensive process. In addition, capturing international evidence, a requirement for the reviews, can be problematic. In this appendix, the strengths and limitations of the systematic literature review process are considered.

Strengths of the review process

Although the methodology used for these reviews has been considerably adapted from the process developed by the EPPI-Centre, Institute of Education, University of London, this did provide the research team with clear parameters and structure. It has, therefore, enabled the research team to undertake a comprehensive, objective assessment of the available research to provide a sound evidence base for policymakers, managers, practitioners and researchers.

The systematic review methodology is designed to reduce any unintended bias. A key feature is the development and application of the search strategy. This ensures that searches could be monitored and recorded and also that actions taken were transparent and consistent across the research team. For instance, the search terms were consistently applied to each electronic database and, where appropriate, to

the online searches. All members of the research team were, consequently, able to search with the same understanding and were able to moderate the process. This was particularly relevant for this study as the team comprised 12 researchers.

Evidence from the US, Canada, Australia, New Zealand and some of the Scandinavian countries (e.g. Finland, Denmark and Sweden), was sought using various contacts and networks. This has added value to the process as evidence collected has provided invaluable insight to international active labour market programmes and skills assessments. Unpublished international evidence and results of pilot studies obtained as a result of networks and contacts, have been referred to where relevant. The language skills of the research team enabled searches to be undertaken in foreign languages (including German, French and Spanish), which have also added considerable value to the review process.

Online screening of materials by title (and abstract where appropriate) was an effective part of the adapted review process. Firstly, it speeded up the searching and screening phases of the review process, ensuring that it was completed within the specified time. Secondly, and more importantly, it enabled the team to become familiar with the results to help identify, with confidence, when a database had been exhausted. Finally, exclusion criteria could be applied earlier to reduce the number of irrelevant search results exported to Endnote, the bibliographic software programme used throughout this process.

The application of Endnote was an invaluable part of the process as all references and bibliographic details could be imported from the electronic databases, which expedited the search and screening process.

Throughout the review process, researchers have played a significant and critical role. This has varied from making judgements onscreen about the inclusion of evidence, to determining what keywords could be relevant for translation and/or searching in international databases and websites. Researchers have also played a key role in searching and identifying potentially relevant research that is online.

Limitations of the review process

From previous experience of systematic literature reviews, the research team are aware of its limitations and as a consequence were able to address these, such as the technical difficulties with importing references into bibliographic software programmes and the exclusion of non-empirical results.

Whilst the process makes every effort to include all materials relevant to the two review questions and sub-questions, some studies may not have been identified. For instance:

- Firstly, poor key wording imposed by the editorial process in the electronic databases means that some materials would not have been identified, so where possible, searches were carried out on the full text of articles.

- Secondly, unpublished reports and doctoral theses may have provided relevant research evidence but it is a time-consuming process to track down these materials so can be prohibitive. Only one doctoral thesis was identified and was unobtainable.
- Thirdly, materials may not have been identified due to the exclusion of empirical studies conducted pre-1997. Some evidence may have been, specifically, lost on screening tools developed before 1997⁸⁷.

Although every effort was made to obtain materials considered relevant to the reviews, some texts were excluded, as they were unobtainable in the timeframe available for the project. Texts were ordered as soon as they were identified to expedite the process, so this stage of the review process was not discrete or limited to a specified time period. The majority of the materials that were unobtainable in the timeframe of the project were international sources identified in the ProArbeit database. Where possible, authors were contacted directly and requests for materials were made. This was an effective approach but time-consuming.

A further limitation of the review process was, to some extent, the technical difficulties of exporting references from the electronic databases to the bibliographic software programme. This had been a particular problem in previous systematic reviews. However, this effect on the review process was significantly reduced as many of the electronic databases had improved the export function. In total 25 electronic databases were searched for each review question and, of these, limited searches were undertaken in five due to technical difficulties. Although manually importing and correcting bibliographic details for individual references was undertaken, it was a time-consuming part of the process. In instances where exporting was difficult, online screening was carried out by title, abstract and full-text to ensure that those references that had to be manually input were potentially relevant. Overall, the research team did not believe that the review was compromised as extensive searches were carried out in 20 of the 25 electronic databases.

Defining 'tools' and 'methodologies' was complex in this review as much of the research identified used context specific labels that without prior knowledge would not have been searched and identified. The critical readers played a pivotal role in developing the search strategy and identifying specific tools and methodologies to be searched. Searching by some keywords created problems as they were used in different contexts with varied definitions and applications. For instance, keywords such as 'diagnostic' and 'screening' returned high results, which were not relevant to the reviews. However, narrowing searches and excluding context-specific words overcame this problem.

⁸⁷ For example, much of the research evidence on the CAMCRY screening methodology was conducted before 1997 and was consequently excluded from the review.

Translating keywords in order to undertake international searches was difficult as direct translations were often not possible. Researchers undertaking these searches had to have an understanding of the country-specific labour markets, knowledge of the active labour market programmes in operation and appreciate the terminology used in the literature.

Finally, the most significant problems of a systematic literature review are that it downplays the role of the researcher and does not build on other reviews that are useful, even if they have not used such exclusive criteria. Drawing on the research teams' experiences, the 'systematic approach' should be an intention underpinned by research ethics and standards rather than a specific 'regimented approach'. Research judgement played a critical role in decisions regarding what materials should be included in order that good and interesting research findings were included, even though they may be on the periphery of inclusion criteria. For instance, other reviews were used to provide context to the review findings and to inform the search strategy. In addition to the 29 studies included for the first review question on skills assessments and the 40 studies included for the second review question on screening tools, further materials (some of which had been excluded from the main body of evidence) are used in this report to provide context and detail to the findings.

It was also noted that there is a lack of research on the effectiveness of assessment and screening tools in practice or their effects over the longer term; the majority of studies focused on the development of these tools and methodologies. For instance, there was limited empirical data on skills assessment tools as materials on defining these tools were common instead of their application and effectiveness in practice.

Appendix H

Annotated bibliography for skills review, identification, assessment and diagnosis

Balgobin, E., Hutton, C., Rees, G. and Weinstock, W. (2004) *Unqualified Success. A Report on the Development of a Soft Skills Measurement Tool for Employment Projects*. London: Hackney Training and Employment Network. [Available online: <http://www.sfeu.ac.uk/documents/238>]

Bell, B. S. and Ford, J. K. (2007). 'Reactions to skill assessment: The forgotten factor in explaining motivation to learn', *Human Resource Development Quarterly* 18(1): 33-62.

The study presented here examined the effects of trainees' reactions to skill assessment on their motivation to learn. A model was developed that suggests that two dimensions of trainees' assessment reactions, distributive justice and utility, influence training motivation and overall training effectiveness. The model was tested using a sample of individuals (N = 113) enrolled in a truck driving training programme. Results revealed that trainees who perceived higher levels of distributive justice and utility had higher motivation to learn. Training motivation was found to significantly predict several measures of training effectiveness. Trainees' performance on the pretraining assessment and trait goal orientation exhibited direct and interactive effects on their reactions to the skill assessment. Implications of these findings for future research on reactions to skill assessments are identified, along with the practical implications for the design and conduct of training needs assessment.

Betz, N. E., Borgen, F. H., Rottinghaus, P., Paulsen, A., Halper, C. R. and Harmon, L. W. (2003). 'The Expanded Skills Confidence Inventory: Measuring basic dimensions of vocational activity', *Journal of Vocational Behavior* 62(1): 76-100.

A series of studies refined 17 scales of the Expanded Skills Confidence Inventory (N=934) and validated it with an adult sample (N =972). Scales were internally consistent, showed predictable patterns of gender differences and were highly related to predicted Holland confidence themes. Discriminant analyses across eight largest occupational groups indicated large improvements over chance.

Betz, N. E. and Rottinghaus, P. J. (2006). 'Current research on parallel measures of interests and confidence for basic dimensions of vocational activity', *Journal of Career Assessment* 14(1): 56-76.

This article begins with a rationale for and review of parallel measures of self-efficacy (confidence) and interests for basic dimensions of vocational activity. Recent development of and research on the Expanded Skills Confidence Inventory (ESCI), Campbell Interest and Skills Survey (CISS), Kuder Skills Assessment (KSA), and Inventory of Work-Relevant Abilities are described and reviewed. Research on the incremental predictive validity of these measures for understanding and for counseling uses is discussed. Numerous suggestions for further research and for career assessment are provided.

Borghans, L., Green, F. and Mayhew, K. (2001). 'Skills measurement and economic analysis: An introduction', *Oxford Economic Papers* 53(3): 375-384.

Bradley-Johnson, S. (1997). 'Brigance Diagnostic Life Skills Inventory', *Psychology in the Schools* 34(4): 382-384.

As with other Brigance inventories, this is a criterion-referenced measure designed to determine skills that have been learned and those that need to be taught. According to the manual, the Life Skills Inventory (LSI) can be used in adult basic education programmes, secondary special education, vocational education and in programmes with English as a second language. Purposes for using the inventory are to obtain information to plan programmes and to monitor student progress. Skills assessed are those used in everyday situations that involve 'listening, speaking, reading, writing, comprehending, and computing' (p. v). The time required varies considerably from 10 minutes upward depending on the person tested and the amount of information needed for instructional planning. Though primarily administered individually, some parts can be given to groups. Materials include the examiner's manual and a protocol, called the Learner Record Book. The same protocol can be used several times to monitor progress for an individual by using a different colour pencil each time and dating the record book. Depending upon the sections used, some pages may need to be copied for the student. No special training is required for using the inventory, but it is suggested that testing be done under the supervision of a 'professional' (p. v).

Brown, A., Attwell, G. and Bimrose, J. (2002). *Using web-based tools for employee skills self-assessment and practitioner professional development*, Paper presented at the European Conference on Educational Research. University of Lisbon, Portugal. [Available online: <http://www.leeds.ac.uk/educol/documents/00002327.doc>]

The programme involves users reviewing the different sets of skills they currently possess and how they can represent their achievements and aspirations for the future in skill terms. The service involves the provision of a web-based platform to support practitioners as collaborative participants in a dynamic community of practice. The Skills Review programme has been developed in the UK as part of a European Union-funded project. It builds on earlier work on skills profiling and was originally developed as a skills self-assessment tool for employees in small businesses. Since then the programme has been used in a variety of other processes including appraisal and staff development; formative assessment prior to entry on learning programmes and in recruitment. The review provides the user with a detailed self-assessment of their skills and abilities and those skills they wish to acquire. Its greatest benefit is in guiding the user through a process of self-enquiry and reflection on their learning, skills and knowledge.

Campbell, D. (2002). 'The history and development of the Campbell Interest and Skill Survey', *Journal of Career Assessment* 10(2): 150-168.

This article is a brief overview of the history of the CISS, tracing its roots back to the early days of vocational interests inventories, beginning in the 1920s. Many of the important themes of survey construction are discussed, such as the domains assessed, content of items, response format of items, scale construction, conceptual arrangements of the scoring scales and interpretation methods. The 1992 addition of skill items to the interest items is described and evaluated.

Chartrand, J. M., Borgen, F. H., Betz, N. E. and Donnay, D. (2002). 'Using the Strong Interest Inventory(R) and the Skills Confidence Inventory to explain career goals', *Journal of Career Assessment* 10(2): 169-189.

This article describes how interests and self-efficacy constructs contribute to a better understanding of career behaviours and goals. Specifically, the Strong Interest Inventory (SII) and the Skills Confidence Inventory (SCI) instruments are reviewed and research is presented to illustrate their combined theoretical utility. Examples of how collectively to apply these tools in career assessment are presented. Finally, areas for future research are proposed.

Clayton, B., Blom, K., Meyers, D. and Bateman, A. (2003) *Assessing and Certifying Generic Skills: What is Happening in Vocational Education and Training?* Adelaide, South Australia: Australian National Training Authority. [Available online: <http://www.ncver.edu.au/research/proj/nr1008.pdf>]

Trends in assessment and certification of generic skills in vocational education and training (VET) across Australia were examined. Data were collected through the following activities: a literature review; semi-structured interviews with managers of assessment and teachers and learners in six registered training organizations across Australia; and a desktop audit of training packages. The study established wide variations in the coverage of generic skills in training packages and in the approaches taken to assessing their mastery. The following recommendations were offered: (1) augment national VET policy to include a framework for reporting and certification of generic skills; (2) allocate funds to support full implementation of needed policy revisions; (3) promote generic skills to stakeholders more broadly; (4) further develop training packages and assessment resources to help practitioners conduct effective generic skills assessment; and (5) offer professional development programs to practitioners to build their skills and knowledge about delivery and assessment of generic skills. (Eight tables/figures/boxes are included. The bibliography lists 35 references. The following items are appended: the interview schedule and protocols; an overview of the study methodology; results of the desktop audit of training packages; a list of generic skills identified by informants; Mayer's three levels; and an overview of the Centerlink mapping approach.)

CRG Research. (2002) *An Investigation into the Use of the Connexions Assessment, Planning, Implementation and Review (APIR) Framework (Research report RR374)*. London: Department for Innovation, Universities and Skills. [Available online: <http://www.dius.gov.uk/research/data/uploadfiles/RR374.pdf>]

Curtis, D. D. (2004). 'The assessment of generic skills', in J. Gibb (ed.) *Generic Skills in Vocational Education and Training: Research Readings*, pp. 136-156. Adelaide: National Centre for Vocational Education Research.

This chapter is a summary of the report 'The authentic performance-based assessment of problem-solving' (2003). It address the critical issue of the assessment of generic skills. It presents a review of the assessment regimen recommended by the Mayer Committee; it canvasses the several purposes of assessment; and it addresses some of the issues surrounding assessment. Four approaches that have been taken in implementing generic skills assessment are summarised. The paper also presents a novel approach to the assessment of problem-solving in order to illustrate a way in which assessment might be used to enhance generic skills and as a basis for reporting achievement.

Dostal, W. (2003). 'Bedeutung informell erworbener Kompetenzen in der Arbeitslandschaft (Relevance of informally achieved competencies within employment)', in G. Straka (ed.) *Zertifizierung non-formell und informell erworbener beruflicher Kompetenzen: Ergebnisse der Fachtagung 'Erfassen, Beurteilen und Zertifizieren non-formell und informell erworbener beruflicher Kompetenzen'* pp. 103-115. Muenster, Germany: Waxmann.

Certificate of non-formal and informally achieved vocational competencies. Results of the conference: Review, identification and certification of non-formal and informal vocational competencies.

Drew, S., Thorpe, L. and Bannister, P. (2002). 'Key skills computerised assessments. Guiding principles', *Assessment and Evaluation in Higher Education* 27(2): 175-186.

The paper is based on research and evaluation carried out in relation to the development of online Key Skills resources (Key Skills Online). Initial research identified guiding principles on which to base the design of computerised self-assessments, and the evaluation findings supported these principles. The principles have relevance for the design of computerised diagnostic assessments more generally.

Eby, L. T., Johnson, C. D. and Russell, J. E. A. (1998). 'A psychometric review of career assessment tools for use with diverse individuals', *Journal of Career Assessment* 6(3): 269-310.

This paper briefly reviews the career-related issues facing employees with diverse surface characteristics (e.g., race/ethnicity, women, older workers, individuals with physical disabilities) and work status characteristics (e.g., part-time workers, contract employees, unemployed) at career choice and during career development. Following a description of these career issues, a review and evaluation of 44 psychometrically sound career assessment tools is provided that may be useful in individual assessment and career counseling with these targeted groups. The results of this review are discussed in terms of research and practice.

Green, F., Ashton, D. and Felstead, A. (2001). 'Estimating the determinants of supply of computing, problem-solving, communication, social, and teamworking skills', *Oxford Economic Papers* 53(3): 406-433.

We investigate the sources of supply of several core skills, using an innovative approach to skills measurement that involves adapting a job analysis methodology and applying it in a survey context. We then estimate the determinants of skills supply using a production function model. The main findings are: (i) prior education and work experience have generally positive but diminishing marginal impacts on skills, consistent with the earnings function literature; (ii) off-the-job training is productive of most types of skill, while on-the-job training is effective for the generation of problem-solving and team-working skills. Both types of training are transferable from previous employers; (iii) more education enhances

the development of computing skills at work, but with respect to other core skills, less educated workers make up for their lower education through more work-based learning; (iv) there is a strong association between the presence of some new or flexible organisation characteristics and both the level and growth of all types of skills. We argue overall that the contribution of work-based learning to skills development is more important than normally allowed for in the skills policy discourse.

Hasluck, C., Bimrose, J., Barnes, S-A., Brown, J., Marris, L., McGivern, G., Orton, M. and White, R. (2006) *Evaluation of Skills Coaching trials and Skills Passports. A synthesis of qualitative and quantitative evidence (Department for Work and Pensions Research report no. 391)*. Leeds: Corporate Document Services. [Available online: <http://www.dwp.gov.uk/asd/asd5/rports2005-2006/rrep391.pdf>]

Holden, H. and Hinman, J. (2007) *An Evaluation of DfES Skills for Life 'Revised Trial Version' Skills Checks and Initial Assessment Tools and Diagnostic Assessment Materials*. Coventry: The Quality Improvement Agency.

James, R. and Brennan, D. (2003). *The Client Progress Kit: Development, Research Base, and the Use of Work Focused Interviews (DWP Psychology Division Report 788)*. Sheffield: Department for Work and Pensions.

Koumoundourou, G. A. (2004). 'The reliability and validity of the Greek version of the task-specific occupational self-efficacy scale', *British Journal of Guidance and Counselling* 32(1): 75-92.

The present study examined the reliability and validity of the Greek version of the Task-Specific Occupational Self-Efficacy Scale (TSOSS) in a sample of 170 high school students. Drawing on current social cognitive career theory, the validity of the TSOSS is supported by the expected gender differences on the TSOSS factors, and their high correlations with Self-Directed Search summary scores, and vocational choice goals. Additionally, there seems to be some evidence that self-efficacy beliefs, as measured by the TSOSS, may affect choice goals both directly and indirectly. The empirical structure of the instrument examined by a cluster analysis algorithm was perfectly confirmed and its stability is supported by adequate retest correlations and high internal consistency coefficients. On the basis of these findings, a preliminary evaluation of the TSOSS is made when used with a Greek sample. Implications for research and career guidance are discussed.

Laird, C. (2003) *An Evaluation of the Diagnostic Assessment Tool*. Stirling: Scottish Further Education Unit. [Available online: <http://www.sfeu.ac.uk/documents/3107/>]

An evaluation of the diagnostic assessment tool produced by the Clackmannan Consortium ICT project 'Access through core skills: widening access through the production and use of diagnostic assessment software and dissemination of good practice'.

Michaud, G., Dionne, P. and Beaulieu, G. (2006). *L'efficacité du bilan de compétences (The Effectiveness of the Skills Review)* (unpublished).

Des données probantes permettent de conclure à l'efficacité du bilan de compétences pour les bénéficiaires. Cette démarche est satisfaisante et utile pour les personnes qui veulent mieux se connaître, s'orienter vers une formation et élaborer un projet professionnel. Elle est aussi utile pour reconnaître ses compétences. De même, ce type de démarche influe sur les processus psychologiques en permettant une meilleure estime de soi, une plus grande connaissance de soi, une image de soi plus précise et la dynamisation de soi dans les projets professionnels. Enfin, le bilan de compétences permet aux bénéficiaires de mieux vivre leur transition.

Strong evidence leads us to conclude that the skills review is effective. This approach is of significant benefit and usefulness to respondents who want to know themselves better, to decide on future training and to develop a professional project. In addition, it is useful in the recognition of an individual's areas of expertise. This approach also has an impact on psychological processes by increasing self-esteem and self-awareness, by better defining self-image and by leading to the dynamisation of self through professional projects. Finally, the skills review can facilitate professional transitions.

Miller, L., Hillage, J., Newton, B. and Jagger, N. (2005). 'Policies and strategies for workforce development: encouraging a customised approach', *Research in Post-Compulsory Education* 10(3): 287-304.

This article reviews recent policies and government initiatives that have aimed to improve the uptake of vocational qualifications amongst hard-to-reach groups in the working population. The Employer Training Pilots and the Sector Skills Pilots have been designed to trial new ways of engaging employers in training and encouraging the take-up of qualifications and thereby improve the skills base of the working population. A feature adopted by some providers involved in these initiatives, and viewed as instrumental in assisting with take-up, is the approach that has become known as the assess-train-assess (ATA) model. This involves initial assessment of the learner's existing skills, identification of any skills gap and training customised to meet the individual's needs, followed by assessment to establish the extent to which the 'gap' has been filled. Research commissioned by the Department for Innovation, Universities and Skills to explore good practice in ATA is described. Data from the Employer Training Pilots is then analysed to examine the role of ATA in the attainment of awards.

Sachdev, D., Perez-del-Aguila, R., Meyer, B. and Macleod, D. (2007) *Personalisation Literature Review. Final Report to the Quality Improvement Agency*. Coventry: Quality Improvement Agency.

Stasz, C. (2001). 'Assessing skills for work: two perspectives', *Oxford Economic Papers* 53(3): 385-405.

Changes in the nature of work have created demands for new skills and education and training policies to enhance skill development. To successfully accomplish the latter, policymakers must first define and measure skills, then understand how they contribute to economic performance. This paper contrasts two theoretical perspectives for skills measurement: the economic perspective that dominates the policy discussion about skills and the sociocultural perspective. The paper explores the basic assumptions about skills from each perspective and considers how each addresses different issues concerning skill requirements. It argues that the sociocultural perspective has some advantages over the dominant paradigm.

Stout, W. (2002). 'Psychometrics: From practice to theory and back: 15 years of nonparametric multidimensional IRT, DIF/test equity, and skills diagnostic assessment', *Psychometrika* 67(4): 485-518.

The paper surveys 15 years of progress in three psychometric research areas: latent dimensionality structure, test fairness and skills diagnosis of educational tests. It is proposed that one effective model for selecting and carrying out research is to choose one's research questions from practical challenges facing educational testing, then bring to bear sophisticated probability modelling and statistical analyses to solve these questions, and finally to make effectiveness of the research answers in meeting the educational testing challenges be the ultimate criterion for judging the value of the research. The problem-solving power and the joy of working with a dedicated, focused and collegial group of colleagues is emphasised. Finally, it is suggested that the summative assessment testing paradigm that has driven test measurement research for over half a century is giving way to a new paradigm that, in addition, embraces skills level formative assessment, opening up a plethora of challenging, exciting and societally important research problems for psychometricians.

Van Duzer, E. and McMartin, F. (2000). 'Methods to improve the validity and sensitivity of a self/peer assessment instrument', *IEEE Transactions on Education* 43(2): 153-158.

Focuses on a process employing quantitative and qualitative methods which were used to improve the validity and sensitivity of self/peer ratings in assessing teamwork skills. Improvement in the sensitivity of scales in measuring differences between student skill levels; improved validity of the ratings in measuring what the developers intended.

Zytowski, D. G. (2001). 'Kuder career search with person match: Career assessment for the 21st Century', *Journal of Career Assessment* 9(3): 229-241.

A new approach to interest assessment, Kuder Career Search (KCS), is described. The third generation of the Kuder interest inventories, it goes beyond the conventional homogeneous and criterion group scaling to match inventory-takers with each of the individuals in a pool of criterion persons employed in a wide variety of occupations. The rationale for this novel concept is reviewed as is the methodology of person-matching. Selected validity data are reported, along with a case example.

Zytowski, D. G. and Luzzo, D. A. (2002). 'Developing the Kuder skills assessment', *Journal of Career Assessment* 10(2): 190-199.

Reviews some of the distinctive characteristics of several self-reported ability/skill/efficacy measures and discusses the issues that need to be addressed in the construction: temporal dimensions, scaling, concurrent relationships to interest inventories and other criteria. The authors report the development of the KSA, six self-efficacy scales congruent with the career cluster scales of the KCS. It has been axiomatic from the beginning of vocational guidance (Parsons, 1909) that individuals are well advised to include some assessment of aptitudes or abilities in the mix of variables that should be considered in deciding on a career. Almost a century since, such thinking continues to be represented in a number of career theories. The problem, still largely unresolved, is how abilities should be measured and, if measured accurately, whether they have useful validity.

Appendix I

Selected online skills assessment and diagnostic tools

This appendix contains a list of those skills assessment and diagnostic tools identified during the review process. This is not intended to be an exhaustive list. Information on the assessment and diagnostic tools are taken directly from the respective websites and edited for the purposes of this report.

Basic KeySkillbuilder

<http://www.keyskillbuilder.ac.uk>

The Basic KeySkillbuilder has been developed by West Nottinghamshire College. It is an interactive computer-based and paper-based screening and initial assessment for literacy, numeracy ICT basic and key skills. The initial assessment is designed to report on the learner's current working level and directing them to appropriate diagnostics. After completing the diagnostic assessments, a report of a learner's level highlighting skill gaps is produced to help create an individual learning plan. It aims to deliver generic and vocational exercises for developing underpinning skills.

Career Development eManual

<http://www.cdm.uwaterloo.ca/index2.asp>

The Career Development eManual has been developed by the University of Waterloo, Ontario (Canada). The Career Development eManual has been prepared to guide the user through the necessary steps of looking for employment. These include: self-assessment; research; decision-making; networks and contacts; work; and life/work planning. Each step has various assessment exercises for the user to complete offline. It is designed to help the user consider: their future career; how to start their career; changes in direction; finding stable and secure employment.

CareersMatch (Careers Scotland)

<http://www.careers-scotland.org.uk/WhichCareer/CareersMatch/CareersMatchIntro.asp>

CareersMatch is an online interactive tool which aims to match individuals' work preferences to occupations. It is a series of questions about what an individual likes and dislikes about work. The aim of the tool is to help individuals with careers ideas and suggestions for those who do not know where to start. Further information on specific types of work is also provided.

Fast Track

<http://www.dius.gov.uk/readwriteplus/LearningInfrastructureScreening>

The Fast Track Screening Tools for Literacy and Numeracy are available from the Basic Skills Agency. In addition, there is an ESOL screening tools and two additional versions of Fast Track. These versions are firstly for use in general and community settings, secondly for specific use in the workplace. An appropriate approach and materials for use in Family Literacy, Language and Numeracy programmes, in Neighbourhood Nurseries and other community based settings, has been developed in order to help identify potential basic skill needs.

Initial Assessment Pack for Literacy and Numeracy

<http://www.dius.gov.uk/readwriteplus/LearningInfrastructureInitialAssessment>

The initial assessment pack aims to help identify a learner's skills against a level or levels within the national standards. Learners may have different levels of reading, writing, numeracy and language skill. Initial assessment is often used to help place learners in appropriate learning programmes. The initial assessment pack for literacy and numeracy is mapped onto the national standards for adult literacy and numeracy. It is usually followed by detailed diagnostic assessment.

Providers are able to apply whichever initial assessment materials best suit their learners. However, the tools have to result in a reliable assessment of a learner's level in relation to the national standards, to enable accurate placement into provision at a suitable level.

Keyskills4u – practice tests

<http://www.keyskills4u.com/tests>

The keyskills4u practice tests aim to help learners get ready for the tests in application of number, communication and information technology at Levels 1 and 2. There are 12 tests, two at Level 1 and 2 at Level 2 in key skills areas. The tests are undertaken on-screen and contain 40 questions which are approved by the Qualifications and Curriculum Authority (QCA) for each level. The website was launched in 2004 and updated in 2005.

The tests can be accessed online by an individual, downloaded on to a network, but are also available on CD to all state-funded post-16 schools and further education colleges in England.

Prospects Planner

<http://www.prospects.ac.uk/links/Pplanner>

Prospects Planner is a job exploration tool which aims to help the user identify skills, motivations and interests and then to match this information to relevant job types. It has been developed in consultation with university careers services and is a recommend tool for higher education students and graduates wishing to explore and plan their future career. The aim of Prospects Planner is to:

- identify the job aspirations of the user;
- generate and evaluate job ideas;
- identify what skills/experience a user can offer to the job/employer;
- compare options and identify the right types of jobs to apply for; and
- provide useful and relevant information sources.

Skills and Interests Assessment Tool

<http://www.learndirect-advice.co.uk/media/skillsinterests.swf>

The Skills and Interests Assessment Tool helps users to identify their skills in order to manage their career. The assessment is a series of questions based on the user's current skills and interests. The tool generates a list of jobs that could be suitable for the user. It is based on matching skills to job requirements.

Skills profiler, CareerInfoNET

http://www.careerinfo.net.org/skills/skills_list.aspx

The Skills Profiler aims to help the user identify their skills and the occupations related to these skills. The skills and work activities is based on the Occupational Information Network (O*NET), which is a database of occupational requirements and worker attributes defining occupations in terms of the skills and knowledge required, how the work is performed and typical work settings. It is an online self-assessment tool, which once completed, compared skills with a variety of occupation. Alternatively, the user can choose an occupation and check their skills with the occupational skills requirements.

Skills Review and Skills Park

http://www.guidance-research.org//archived/skills_review/index.html

The Skills Review programme was developed by KnowNet as part of a European Union-funded ADAPT project, co-ordinated by the University of East London. The review provides users with a detailed self-assessment of their skills and abilities

and those skills they wish to acquire. It guides the user through a process of self-enquiry and reflection on their learning, skills and knowledge. It is estimated that the programme will take about one hour to complete.

It builds on earlier work on skills profiling, undertaken as part of another ADAPT project co-ordinated by the University of East London on the use of labour market information to enhance careers guidance practice. That project produced a range of careers guidance materials, including a (free) CD ROM on skills development called Skills Park.

Skills Park is a multi-media (or paper-based) skills-based guidance system developed at the University of East London. It uses four skill categories (including: practical, information, people and performance) which can be used to enhance the use of Labour Market Information (LMI) in vocational guidance. It is designed to be used by individuals with advisers to contextualise and help identify how skills are development and where transferable.

Smart Move Skills Check – initial assessment tools as part of the Skills for Life project

<http://www.toolslibrary.co.uk>

Several versions of the literacy and numeracy skills check and initial assessment tools are available to download or order as hard-copies from the website. The development has been led by the Quality Improvement Agency and commissioned by the Department for Innovation, Universities and Skills to further improve the quality of the assessment process, but also to review and redevelop *Skills for Life skills* check, initial assessment and diagnostic tools. The tools have been designed with different audiences in mind including:

- standard assessment tool for general purpose use in a range of contexts;
- workplace assessment tool for standard non-sector-specific workplace usage; and
- contextualised assessment tool for sector-specific workplace usage (including Asset skills working with the cleaning industry, Skills for Health, Skillsmart for retail and GoSkills for passenger transport).

The Smart Move Skills Check tool contains questions set in everyday contexts which are likely to be familiar to users. The initial assessment questions are based on the Adult Core Curricula and national standards. It is designed to indicate whether the user may need further assessment by completing an initial assessment. The aim of the tool is to indicate the approximate skills level of a learner up to, and including, Level 2. It forms part of the Skills for Life learning journey leading on to diagnostic assessments.

A good practice guide is available.

Target Skills

<http://www.targetskills.net>

Target Skills is a set of CD-ROM-based resources which has been designed specifically for the adult literacy and numeracy standards and core curricula, covering Entry 1 up to Level 2. It combines an ICT-based assessment against the standards with ICT material written specifically to help students develop skills, knowledge and understanding in literacy and numeracy.

The initial assessment assesses learners against the standards and curricula in literacy and numeracy and generates a profile which forms the basis for a learning plan. This plan can then be delivered through Target Skills and other materials. The learning materials and activities are set in a variety of contexts: the workplace, leisure activities, citizenship, everyday life and education.

Target Skills aims to support learners and their tutors in a wide range of adult education contexts, such as further education colleges, community and family programmes, training organisations, the workplace and prisons, as well as at Key Stage 4 and for ESOL learners.

Windmills virtual career coach

<http://www.windmillsprogramme.com>

Windmills offers a portfolio of career and life management programmes, together with resources designed to help individuals progress. The process links employability and career management with business and economic growth. It is a range of flexible programmes and resources which can be tailored to a wide variety of individuals and organisations. It is a reflective tool aimed at skills exploration rather than assessing skill levels.

Skills assessment and diagnostic tools available for purchase

Basic Skills Screener

<http://www.ctad.co.uk/content/view/105/195>

The Basic Skills Screener was developed by Tribal CTAD. It is a quick test to show whether a learner is competent at Level 2 relevant National Standards. It is considered ideal for dealing with groups of learners. The screener's customisable management tool collates results and produces instant reports that help assess learners' skills needs. It is available online and on CD-ROM. It contains ten literacy assessments and ten numeracy assessments.

CareerStorm Navigator, CareerStorm

<http://www.careerstorm.com>

CareerStorm Navigator is an online tool (web-based and hosted) for career/life self-reflection. It is currently available in three languages: English, Finnish and Swedish. This product provides a map and compass for navigating career and life. It uses a selection of career tools focusing on: current position; desired destination; unique personal resources (subjects of interest, skills, values, style); and comparing career options for formulating an action plan. It aims to be a systematic process for exploring unique life-experiences, focusing attention on strengths and providing a foundation for a meaningful dialogue.

CASCAiD, Loughborough University

<http://www.cascaid.co.uk>

CASCAiD produces careers guidance software in the UK. Selected products include:

- **CareersMatch** – offers a flexible way of accessing careers matching and information both online and through using a CD ROM. It provides individuals with a personalised list of career suggestions and up-to-date information on over 1,800 career titles. Information can also be transferred quickly and easily between user and adviser and responses can be saved for a later date.
- **Kudos Online** – offers a flexible way of accessing careers matching and information for those aged 13-20 years. It provides individuals with a personalised list of career suggestions and up-to-date information on over 1,700 career titles.
- **Adult Directions** – is a careers package designed to help adults with their career decisions. Based on the individual's work interests and selected occupational level, Adult Directions produces a list of career suggestions. Salary level, employment style and health factors can also be selected to see how they could affect career choice. An extensive database provides detailed information on over 1800 career titles ranging from unskilled to professional level. General information is also provided on issues such as age and employment, access to higher education and alternatives to unemployment.

Key Skills Profiler, Reference Point Ltd.

<http://www.referencepoint.co.uk>

Reference Point offers expertise in the areas of modular qualifications and can develop tailored web-based skills profiling solutions, where individuals are asked about their activities at work and their experience which is mapped to the most suitable units or awards.

Psytech International

<http://www.psytech.co.uk>

Psytech International develops psychometric tests and assessment software. It publishes a range of questionnaires covering personality, interest and values assessments and aptitude and ability tests for use in occupational selection and assessment, vocational guidance and staff development. All Psytech tests can be administered in computer-based, internet-based or conventional formats. The computer-based assessment integrates assessment software which enable users to profile jobs and administer, score and interpret almost any psychometric test.

VT Lifeskills (previously known as Career Progressions)

<http://www.progressions.co.uk>

VT Lifeskills is part of the VT Careers Management group and is a career and lifeskills software company. Customers include schools, colleges, career companies, adult guidance agencies and central government departments. Selected products include:

- **SkillsCheck** takes a skills-based approach to job finding. Users complete two questionnaires, which help them to identify their work-related and key skills (core skills). When these profiles are combined with their level of ability/qualifications, the result is a list of 20 job matches. Interactive features encourage users to explore: what jobs might be open to them when some skills are developed; what jobs they might be suited to if they do not use all or some of their skills. SkillsCheck raises awareness of work-related and key skills, produces skills profiles, matches skills to job suggestions, generates skills certificates and a personal development plan. It also helps users to express and evidence their skills.
- **Pathfinder** combines a psychometric assessment of interests with both a job matching facility and courses in higher education. It helps users to identify broad areas of study that match their interests and gives details of related course titles and the higher education institutions that offer them.
- **Careers Advantage CD** contains the guidance programme, Pathfinder and the job information database, Odyssey. It helps the user understand what occupations will suit their skills and abilities, what training is required and where to find job vacancies.
- **Profile Builder** is a multimedia-profiling system that helps users to create their own pictorial profile of strengths, weaknesses, interests and vocational preferences. Originally designed as a paper exercise to be used with young people with special educational needs, this programme can be used effectively with young people in both special and mainstream education, adults, clients who have learning difficulties, and those for whom English is not their first language.

Appendix J

Annotated bibliography for screening tools and methodologies for employment

Behncke, S., Fröhlich, M. and Lechner, M. (2006) *Statistical Assistance for Programme Selection - For a Better Targeting of Active Labour Market Policies in Switzerland*. Switzerland: Department of Economics, University of St Gallen. [Available online: [http://www.vwa.unisg.ch/org/vwa/web.nsf/SysWebRessources/VWA_2006_09/\\$FILE/DP09_behncke_lechner_ganz.pdf](http://www.vwa.unisg.ch/org/vwa/web.nsf/SysWebRessources/VWA_2006_09/$FILE/DP09_behncke_lechner_ganz.pdf)]

In this paper the motivation and various concepts of statistical systems for assisting case workers in assigning unemployed persons to active labour market programmes (ALMP) are examined and the particular implementation of such a statistical system in Switzerland, which was introduced in the form of a randomized pilot study, is discussed.

Berger, M. C., Black, D. and Smith, J. A. (1999), in M. Lecher and F. P. O. Pfeuffer (eds.) *Econometric Evaluations of Active Labour Market Policies in Europe*, pp. 59-84. Mannheim, Germany: Physica Verlag.

Birkin, R., Halnes, V., Hitchcock, D., Fox, D., Edwards, N., Duckworth, S., Gleeson, R., Navarro, T., Hondroudakis, A., Foy, T. and Meehan, M. (2004). 'Can the activity matching ability system contribute to employment assessment? An initial discussion of job performance and a survey of work psychologists' views', *Journal of Occupational Psychology, Employment and Disability* 6(2): 51-66.

The Activity Matching Ability System (AMAS) assesses job activities and individuals' abilities and provides information about the match. The current version of AMAS, its background, recent and ongoing development are outlined.

Employment Assessment is concerned with enabling individuals to predict their performance in job opportunities. These descriptions suggest AMAS may contribute to Employment Assessment. To explore this possibility further the role of the AMAS job activity assessment is discussed and a survey of the views of Work Psychologists is presented. Job performance and its analysis are key concerns for organisational psychology, although generally discussed in relation to employment selection. A survey was run in parallel with a sample of Work Psychologist (WP) interviews (n = 238). Questions explored (a) the contribution of AMAS to Employment Assessment, and (b) whether other significant factors might improve Employment Assessment. Interviewee characteristics (age, ethnic background, etc.) and WP estimates (impact of disability, probability of obtaining employment) indicated a varied group, younger than other samples. WPs reported that AMAS would enhance Employment Assessment for one-fifth of the sample. They considered AMAS could contribute by aiding exploration of physical and cognitive factors, by providing a focus for assessment, by reviewing what individuals can do at work and by helping confidence. They suggested Employment Assessment would be improved by developing assessments of interpersonal skills, team working, job specific skills and aptitudes, and work placements. Cross tabulation of the data indicated that WP views were not significantly associated with any of the factors researched.

Birkin, R. and Meehan, M. (1999). 'Introducing a framework for evaluating Psychological Assessment Materials (PAM) for use in employment assessment situations', *Journal of Occupational Psychology, Employment and Disability* 2(1): 49-55.

This paper introduces a framework pro forma which aims to assist practitioners review or evaluate Psychological Assessment Material (PAM) used for employment assessment (EA) purposes, and particularly with disabled jobseekers. It is hoped this will enable EA practitioners to question/assess PAM instruments and hence consider the quality of the information provided. The information gleaned from using the framework should complement and add to information from other sources (e.g. test manuals, research papers, BPS review of level A tests, etc).

Black, D. A., Smith, J. A., Berger, M. C. and Noel, B. J. (2003). 'Is the threat of reemployment services more effective than the services themselves? * evidence from random assignment in the UI system', *The American Economic Review* 93(4): 1313-1327.

We examine the effect of the Worker Profiling and Reemployment Services system. This program "profiles" Unemployment Insurance (UI) claimants to determine their probability of benefit exhaustion and then provides mandatory employment and training services to claimants with high predicted probabilities. Using a unique experimental design, we estimate that the program reduces mean weeks of UI benefit receipt by about 2.2 weeks, reduces mean UI benefits received by about \$143, and increases subsequent earnings by over \$1,050. Most of the effect results from a sharp increase in early UI exits in the treatment group relative to the control group.

Bonner, A. (2006). 'Come in from the cold: A review of the screening and assessment strategies for working with the socially excluded', *Clinical Effectiveness in Nursing* 9(Supplement 3): e243-e252.

Summary This paper reviews the main strategies for screening and assessing the needs of the diverse range of socially excluded clients who come into contact with statutory and non-statutory agencies. A high level aim of contemporary UK health and social policy is to engage with those who are hard to reach with traditional health service provision. The initial contact and screening processes, therefore, are central to developing a relationship with the client and engaging him/her with the main stream community services. Many homeless and socially excluded people have multiple and complex needs but seeking accommodation provides a good opportunity to begin to engage the client with support services. Although substance misuse and mental health problems might not be immediately apparent, screening and subsequent assessment of these aspects of dual diagnosis should be provided in order for appropriate help to be made available. Ongoing monitoring of the client's progress will provide an insight into the cues which indicate relapse. However, an important aspect of inclusion often involves gaining access to meaningful work. The neurocognitive ability of the client to undertake work and become socially integrated may be limited by problems in decision making and other cognitive skills. Appropriate support, in these cases, might involve an evaluation of neurocognitive deficits and the guidance to appropriate employment tasks. The encouragement of positive health behaviours, including improvements in nutritional status will all add to the increased possibility of coming in from the cold.

Bonney, K. and Stammers, R. B. (2006). 'Exploring the impact of psychological assessment for disabled job seekers', *Journal of Occupational Psychology, Employment and Disability* 8(1): 147-152.

This study (Bonney, 2004) explored the impact of psychological assessment for disabled jobseekers through an experimental approach using clients registered under the New Deal for Disabled People (NDDP). The experimental group were offered psychological assessment in addition to general advice under NDDP. Their work status, and associated actions and attitudes, were compared to those of a control group after a 20 week period. Not all the experimental group accepted the offer, but for those who did, a range of tools was used, including work focused vocational interviews, and individually selected vocational interest and psychometric ability tests. Tests were selected after initial interviews, according to the participants' identified needs. Overall, the results supported the proposal that there is value in offering psychological assessment to all disabled job seekers. The benefit from the intervention was seen most clearly through measuring job entry rates in each group. People who declined assessment also had job entry rates higher than the control group, probably because they were already clearer about the type of work they should seek. Some measures of attitudes towards job searching also showed positive trends over time for the experimental group, but mostly below the criterion for significance. Patterns of job seeking activity were not so clear, but this measure was influenced by successful applicants

stopping job seeking, reducing the overall amount of activity. Analysis of the results suggest that motivation and capacity to overcome barriers may be the factors that are influenced by identifying vocational strengths and weaknesses through psychometric testing. These, in turn, appear to result in job seeking success. Further study would be needed to confirm these relationships, but they could have great significance for the type of services provided by organisations helping people with disabilities into work.

Brown, A. (2001) *Beyond Work First: How To Help Hard-to-Employ Individuals Get Jobs and Succeed in the Workforce*. New York, USA: Manpower Demonstration Research Corporation. [Available online: <http://www.mdrc.org/publications/15/full.pdf>]

This guide distills lessons from an extensive body of research into practical advice for policymakers and practitioners concerned with helping hard-to-employ individuals find jobs and succeed in the work force. Part 1 examines the following topics: characteristics of the hard-to-employ; the prevalence of various barriers to employment; and the effectiveness of past welfare-to-work efforts for hard-to-employ individuals. Part 2 explores the following aspects of policy and design: implications for state and local policy; techniques for identifying and assessing barriers; staff development and interagency partnerships; program models; and best practices. Part 3 consists of six sections that are each devoted to one of the following employment problems faced by hard-to-employ individuals: multiple barriers; substance abuse; domestic violence; physical disabilities and chronic health problems; depression and other mental health problems; criminal records; very low basic skills and learning disabilities; and language barriers. Each section contains the following items: overview; screening and assessment guidelines; service strategies; labor market strategies; guidelines for staff development and interagency partnerships; and best practices. Seventeen text boxes are included. The appendix contains lists of the following items: 63 programs, organizations, and contact information; 113 references and suggested publications; and 113 recent publications on Manpower Demonstration Research Corporation projects.

BSRM/Jobcentreplus/Royal College of Physicians. (2004) *Vocational Assessment and Rehabilitation after Acquired Brain Injury: Inter-Agency Guidelines*. London: Royal College of Physicians. [Available online: <http://www.rcplondon.ac.uk/pubs/books/voc-assess-abi/voc-assess-abi.pdf>]

Collins, D., Gray, M., Purdon, S. and McGee, A. (2006) *Lone Parents and Work: Developing New Survey Measures of the Choices and Constraints* (Department for Work and Pensions Working Paper 3). Leeds: Corporate Document Services. [Available online: <http://www.dwp.gov.uk/asd/asd5/WP34.pdf>]

Corbiere, M., Mercier, C. and Lesage, A. (2004). 'Perceptions of barriers to employment, coping efficacy, and career search efficacy in people with mental illness', *Journal of Career Assessment* 12(4): 460-478.

The Barriers to Employment and Coping Efficacy Scale (BECES) and the Career Search Efficacy Scale (CSES) were designed to assist people in their work integration process. The BECES was specifically developed for people with mental illness. Although the CSES was not specifically designed for people with mental illness, its items appear relevant for such clients seeking work. This article reports the construct and convergent validities of these two questionnaires as well as the internal consistency pertaining to each of their subscales. The BECES and CSES demonstrated satisfactory results regarding their validity and reliability with people suffering from mental illness registered in vocational programs. Practical guidelines based on this experience are discussed.

DeVinney, D. J., Tansey, T. N., Ferrin, J. M. and Pruett, S. R. (2005). 'The mini-mental status examination: A screening tool for rehabilitation counselors and vocational evaluators', *Journal of Applied Rehabilitation Counseling* 36(3): 16-23.

With an aging workforce, the likelihood of persons applying for services with undiagnosed dementias or other substantial cognitive impairments are likely to increase. Identifying persons that may require additional evaluation prior to plan development will promote individual plans for employment that are consistent with individual needs. The focus of this article is to explain the benefits of incorporating the assessment of mental status into vocational evaluation systems. Specifically, the authors describe the benefits of using the Mini-Mental Status Examination (MMSE) in rehabilitation counseling and vocational evaluation. Suggestions as to how to incorporate this assessment instrument into rehabilitation services and the psychometric properties of the MMSE are reviewed.

Eberts, R. W. (1997) *The Use of Profiling to Target Services in State Welfare-to-Work Programs: An Example of Process and Implementation*. Kalamazoo (MI), USA: W.E. Upjohn Institute for Employment Research. [Available online: <http://www.upjohninstitute.org/publications/wp/98-52.pdf>]

A pilot project was designed to test the efficacy of profiling welfare recipients and referring them to welfare-to-work services targeted toward their specific work histories and skills. The general framework of Michigan's Work First program was used to illustrate how profiling can be designed and administered. A profiling model was proposed that uses the personal and work history information provided by welfare recipients during their enrolment interviews to identify those who are most likely to find jobs with minimal (if any) intervention. Among the items included in the model were level of educational attainment, prior employment, and non-compliance with program regulations. The model's predictive validity was tested by using it to estimate the 90-day employment of 1,546 welfare-to-work clients who were divided into 50 groups of approximately 30 individuals each. Overall, the model classified 66.24% of cases correctly. The model's predictive power proved comparable to that of Michigan's Unemployment Insurance profiling model and consistent with previous studies on welfare recipients' propensity to leave welfare and maintain employment.

Eberts, R. W. (2001). 'Targeting welfare-to-work services using statistical tools', *Employment Research* 8(4): 1-3.

In January 1998-March 2000, a new statistical assessment and referral system to improve the job retention of welfare recipients participating in welfare-to-work programs was piloted in the welfare- to-work program serving two counties in south-western Michigan. The assessment and referral system is based on statistical methods and uses administrative data. It is designed to be integrated into an existing intake process, require minimal (if any) additional staff, and comply with the procedures and practices of existing welfare-to- work programs. During the pilot, more than 6,000 welfare recipients participated in the program. Rather than providing all clients with essentially the same set of services, staff evaluated each client individually by collecting information about each new client's educational and employment histories and analyzing that information with a statistical assessment tool based on the statistical relationship between an individual's attributes and job retention. Clients' scores were used to determine the level and type of employment services that might help the individual find employment. An evaluation based on a random assignment design established that the statistical assessment tool yielded retention rates that were 25% higher than when participants were randomly assigned to providers. The difference in retention rates between the best and worst referral combinations was 56%.

Eberts, R. W. (2002). 'Using statistical assessment tools to target services to work first participants', in R. W. Eberts, C. J. O'Leary and S. A. Wandner (eds.) *Targeting Employment Services*, pp. 221-244. Kalamazoo (MI), USA: W.E. Upjohn Institute for Employment Research.

Eberts, R. W. (2005). 'After the doors close: Assisting laid-off workers to find jobs', *Economic Perspectives* 29(2): 75-85.

During the past four years, more than five million long-term workers (those with at least three years of tenure with their employer) have lost their jobs through no fault of their own. Behind these numbers are people of many different backgrounds, many of whom face financial hardship and emotional pain due to their layoff. They include highly skilled computer technicians and low-skilled food service workers. They are young and old, male and female, African-American and white. Many have worked for the same employer their entire careers, and others have held jobs with multiple employers. What can displaced workers do to find employment? The purpose of this article is to explore the steps that people typically take to find a job after being laid off. I examine how people search for jobs and what services and types of support are available to help job seekers find employment. I place considerable emphasis on publicly provided services, but recognize that the public employment service and training programs are but one means that workers use to connect with employers. I also consider what works and what doesn't work in helping workers find jobs and examine some current cutting-edge approaches. The perspective offered in this article is that of an organization that both pursues research on worker displacement and administers programs to help displaced workers find employment. In addition to

conducting research on ways to improve the reemployment of displaced workers, the Upjohn Institute is the administrative entity for the Kalamazoo/St. Joseph Michigan Works Area. In this role, the institute administers all of the federal and state employment programs for the two-county area of over 300,000 people.

Eberts, R. W. and O'Leary, C. J. (2002) *A Frontline Decision Support System for Georgia Career Centers*. Kalamazoo (MI), USA: W.E. Upjohn Institute for Employment Research. [Available online: http://www.upjohninst.org/publications/wp/02_84.pdf]

The Workforce Investment Act requires local areas receiving funding to establish one-stop centers where employment service providers in a local labor market are assembled in one location. Challenges facing center staff are the expected large volume of customers resulting from relaxed program eligibility rules and limited resources for assessment and counseling. To help front line staff quickly assess customer needs and properly target services, the Frontline Decision Support System (FDSS) offers tools based on statistical techniques that use administrative data to estimate the chance of returning to work in the prior industry, reemployment earnings prospects, related occupations, and likely outcomes of alternative reemployment services. FDSS is comprised of the Systematic Job Search Module (SJSJ) and Service Referral Module (SRM). SJSJ contains tools that can be used to inform the customer about probability of returning to the prior industry; likely employment growth in the prior occupation; likely reemployment earnings; available suitable job vacancy listings; and occupations related to the prior one. SRM provides frontline staff with two tools: ranking of core and intensive services estimated most effective for clients with similar characteristics and information about effectiveness of alternative types of job training for clients with similar employability characteristics. Georgia pilot sites are field testing FDSS.

Ekbladh, E., Haglund, L. and Thorell, L.-H. (2004). 'The worker role interview - preliminary data on the predictive validity of return to work of clients after an insurance medicine investigation', *Journal of Occupational Rehabilitation* 14(2): 131-141.

The aim was to investigate the predictive validity of the Worker Role Interview (WRI) for return to work at a 2-year follow-up of clients who attended an insurance medicine investigation center. The WRI identifies psychosocial and environmental factors that influence a person's abilities to return to work. Forty-eight of 202 consecutively selected clients constituted the study group. The Mann-Whitney U test was used to test the statistically significant differences in WRI ratings between those who were working (n=6) and those who were not (n=42) 2 years after their investigations. Five of the 17 items in WRI had a tentative predictive validity of return to work. The content area "personal causation" in WRI, had the best predictive validity. The results emphasize the importance of considering the unique individual's beliefs and expectations of his/her effectiveness at work when assessing clients' work ability and planning for further rehabilitation.

Escovitz, K. and Donegan, K. (2005). 'Providing effective employment supports for persons living with HIV: The KEEP project', *Journal of Vocational Rehabilitation* 22(2): 105-114.

Project KEEP, a 3-year Special Demonstration Project, was charged with identifying effective employment service strategies for people living with HIV/AIDS in Philadelphia, PA. Strategic outreach was done to ensure that participants would reflect the demographics of HIV/AIDS in urban settings. Individualized employment services, based in principles of psychosocial rehabilitation, were provided to 148 individuals. Longitudinal data were collected to track services, employment experiences, disclosure, self-reported health measures, and quality of life. This paper discusses the results of the project, giving particular attention to the strong employment outcomes and the value of "rapid-attachment", intensive support once working, and the impact of work on self-reported quality of life. Implications for service delivery as well as directions for future services research are discussed.

Frölich, M. (2003). *Programme Evaluation and Treatment Choice. Lecture Notes in Economics and Mathematical Systems 524*. Berlin: Springer.

Policy evaluation and programme choice are important tools for informed decision-making, for the administration of active labour market programmes, training programmes, tuition subsidies, rehabilitation programmes etc. Whereas the evaluation of programmes and policies is mainly concerned with an overall assessment of impact, benefits and costs, programme choice considers an optimal allocation of individuals to the programmes. This book surveys potential evaluation strategies for policies with multiple programmes and discusses evaluation and treatment choice in a coherent framework. Recommendations for choosing appropriate evaluation estimators are derived. Furthermore, a semi parametric estimator of optimal treatment choice is developed to assist in the optimal allocation of participants.

Goldberg, H. (2002). *Improving TANF Program Outcomes for Families with Barriers to Employment*. District of Columbia, USA Center on Budget and Policy Priorities/Center for Law and Social Policy. [Available online: <http://www.cbpp.org/1-22-02tanf3.pdf>]

A significant number of current and former Temporary Assistance for Needy Families (TANF) recipients have various barriers to finding and maintaining employment. Among the most common barriers are physical and mental health problems, domestic violence, low skill levels, lack of adequate or affordable housing, and limited proficiency in English. Research has shown that recipients with work barriers are less likely to find jobs, have lower earnings on average, and are more likely to lose assistance because of a sanction for program non-compliance than families without barriers. Poor outcomes are especially likely for families that experience more than one barrier to employment. Welfare reauthorization offers an opportunity to improve services and outcomes for these disadvantaged families. Changes that could be made to TANF to

improve program outcomes for families with work barriers are allowing states to count individuals placed in “barrier removal” activities toward the federal work participation rates; developing sanction procedures that address barriers and increase compliance; improving service delivery for families with barriers; giving states flexibility to grant extensions; and funding innovative strategies to improve employment outcomes for recipients with barriers.

Gooden, S., Doolittle, F. and Glispie, B. (2001). *Matching Applicants with Services: Initial Assessments in the Milwaukee County W-2 Program*. New York, USA: Manpower Demonstration Research Corporation. [Available online: <http://eric.ed.gov/ERICWebPortal/contentdelivery/servlet/ERICServlet?accno=ED465037>]

The initial client assessment procedures used by case managers in the Wisconsin Works (W-2) program in Milwaukee County, Wisconsin, were examined. Data were collected through the following activities: (1) observations of 100 financial and employment planner (FEP)-applicant intake interviews; (2) an examination of administrative data to learn how characteristics of the entering caseload and their initial tier placements may have changed over time; and (3) focus group sessions and interviews with FEPs and other agency staff to understand the approach to assessing clients. The following were among the key findings: (1) the initial tier placements for W-2 applicants changed substantially over the program’s first 2 years, reflecting changing state policy, agency practice, and applicant characteristics; (2) some agencies differ in approach to client assessment, but much of the variation is by case manager; (3) case managers rely primarily on informal assessment to make initial tier placement decisions; (4) case managers face multiple demands on their time when conducting initial intake interviews and assessment and respond to those time pressures by relying on some simple guiding practices; and (5) case managers have no road map for assessing applicants with multiple, complex, long-term barriers to employment.

Hasluck, C. (2004). *Targeting Services in the Individual Customer Strategy: The Role of Profiling. A Review of Research Evidence*. London: Department for Work and Pensions. [Available online: <http://www.dwp.gov.uk/jad/2004/192rep.pdf>]

Lechner, M. and Smith, J. (2007). ‘What is the value added by caseworkers?’ *Labour Economics* 14(2): 135-151.

This paper examines the efficacy of caseworkers in allocating individuals to government programs and to services within those programs. We investigate caseworker allocation of unemployed individuals to subprograms within Swiss active labour market policy in 1998. Our analysis compares the caseworker allocation to alternatives including random assignment to services and allocation via statistical treatment rules based on observable participant characteristics. Using unusually informative administrative data, we find that Swiss caseworkers obtain roughly the same post-program employment rate as random allocation to services, while statistical treatment rules, even when subject to capacity constraints, do substantially better.

Lipp, R. (2005). *Job Seeker Profiling: The Australian Experience*. Nuremberg: Keynote EU-Profiling seminar. [Available online: http://doku.iab.de/veranstaltungen/2005/profiling2005_Lipp_Australia_folien.pdf]

A review of the development, implementation, refinement and evaluation of the Job Seeker Classification Instrument (JSCI) in Australia. It concludes that whilst by no means a perfect instrument, the JSCI is a relatively good predictor of the chance of a job seeker becoming long-term unemployed and a better approach than targeting services to job seekers without regard to profiling information. The main success of the JSCI to date has been to stream job seekers to appropriate forms of assistance and levels of funding, depending on the level of disadvantage. This in turn has helped to reduce deadweight costs, but also to provide assistance to 'at risk' job seekers early in their unemployment, before barriers become entrenched.

Lohmann, B. (2005). *Neue Arbeit - Neues Leben. Evaluation eines Arbeitsmarktprojekts zum Einsatz von neuen Coaching- und Qualifizierungskonzepten für ältere Arbeitslose mit dem Ziel der Vermittlung in den 1. Arbeitsmarkt in der Region Ostwestfalen von Juni 2002 bis Juli 2004*. Germany: REGE mbH, Bielefeld. [Available online: <http://www.rege-mbh.de/download/NeueArbeit-NeuesLeben.pdf>]

(New Work - New Life. Evaluation of a labour market project using new coaching concepts and concepts to qualify older unemployed people (over 45 years))

Montoya, I. D., Atkinson, J. S. and Struse, H. M. (2001). 'A comparison of psychosocial barriers among welfare recipients: Implications for drug treatment', *Substance Use and Misuse* 36(6-7): 771-788.

Implementation of Temporary Assistance for Needy Families (TANF) presents welfare recipients with time-limited benefits and work requirements. However, it is estimated that over 140,000 welfare recipients meet the Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV) criteria for "drug dependence." In this study, 216 chronic drug using and 32 non-drug using female TANF recipients (aged 18-79 yrs) were compared with regard to: current employment, psychological functioning, self-perceived employment skills, barriers to employment, and need for help in seeking employment. Study participants were assessed using the Attitudes, Behaviors, and Skills Assessment and the Multidimensional Addictions and Personality Profile. It was found that non-drug using study participants were significantly more likely to be employed and reported significantly higher self-perceived work skills than users. Chronic users reported significantly greater barriers to seeking employment.

OECD (1998) *Early Identification of Jobseekers at Risk of Long-term Unemployment. The Role of Profiling*. Paris: OECD.

Peck, L. R. and Scott Jr, R. J. (2005). 'Can welfare case management increase employment? Evidence from a pilot program evaluation', *Policy Studies Journal* 33(4): 509-533.

Welfare reform has increased the importance of employment over simple eligibility determination. Research has focused on strategies for enhancing employment among welfare recipients, and this article adds to the literature by examining specifically the effects of using an assessment tool to assist case managers in targeting services to a heterogeneous client population. Analysis indicates that clients of case managers who used the screener, compared with a set of clients of case managers who did not use it, received more services and had higher program participation rates but experienced no improvement in short-term employment outcomes. This suggests that the instrument as a tool in case management is effective at identifying client needs, which is the first step to achieving more favorable employment-related outcomes in the long run.

Rottinghaus, P. J., Day, S. X. and Borgen, F. H. (2005). 'The Career Futures Inventory: A measure of career-related adaptability and optimism', *Journal of Career Assessment* 13(1): 3-24.

The purpose of this study was to provide initial results on the development and validation of the Career Futures Inventory (CFI), a new 25-item measure of positive career planning attitudes. Items were originated using the rational method. Results from an item analysis of scale homogeneity and exploratory factor analysis in a sample of 690 undergraduates from a large Midwestern university revealed three subscales: Career Adaptability, Career Optimism, and Perceived Knowledge. Confirmatory factor analyses indicated that the three-factor model provided an excellent fit to the data. Additional analyses established high internal consistency, temporal stability, and construct validity through examination of correlates with dispositional optimism, Big Five personality characteristics, generalized problem solving, vocationally relevant self-efficacy, interests, and numerous career-relevant attitudes and outcomes. Implications for future research and counseling practice are discussed.

Rudolph, H. (2001). 'Profiling as an instrument for early identification of people at risk of long-term unemployment', in P. Weinert, M. Baukens, P. Bollerot, M. Pineschi-Gapenne and U. Walwei (eds.) *Employability: From Theory to Practice*, pp. 25-49. Edison (NJ), USA: Transaction Publishers.

This chapter focuses on profiling as a particular technique for early identification of people at risk of long-term unemployment (LTU). Improving employability is the first of the pillars in the European Employment Strategy defined in the 1998 European Union Employment Guidelines. The guidelines put emphasis on the prevention of LTU. According to the objectives of profiling, there are different instruments to characterize profiling instruments. These elements include the kind of risk assessed through profiling, the method to define the risk, and the timing when the risk is assessed.

Rudolph, H. and Müntnich, M. (2001). 'Profiling' zur Vermeidung von Langzeitarbeitslosigkeit. Erste Ergebnisse aus einem Modellprojekt (The use of profiling to avoid long-term unemployment. First project results)', *Mitteilungen zur Arbeitsmarkt- und Berufsforschung* 34(4): 530-553.

Sachdev, D., Perez-del-Aguila, R., Meyer, B. and Macleod, D. (2007). *Personalisation Literature Review. Final Report: The Quality Improvement Agency.*

Schuetz, H. and Oschmiansky, F. (2006). 'Arbeitsamt war gestern. Neuausrichtung der Vermittlungsprozesse in der Bundesagentur fuer Arbeit nach den Hartz Gesetzen', *Zeitschrift fuer Sozialreform (Journal for Social Reform)* 52(1): 5-28.

Title translation: Yesterday we went to the job office. Changes within the job placement of the Federal Agency for Employment following the Hartz legislation

Thompson, T. S., Van Ness, A. and O'Brien, C. T. (2001). *Screening and Assessment in TANF/Welfare-to-Work: Local Answers to Difficult Questions.* Washington, USA: Administration for Children and Families/Offices of the Assistant Secretary for Planning and Evaluation, US Department of Health and Human Services. [Available online: <http://www.urban.org/UploadedPDF/410523.pdf>]

van der Heijde, C. M. and van der Heijden, B. I. J. M. (2005). 'The development and psychometric evaluation of a multi-dimensional measurement instrument of employability and the impact of aging', *International Congress Series* 1280: 142-147.

The employability of workers enables organizations to meet their fluctuating demands for numerical and functional flexibility, two very important factors for organizations to remain competitive in today's dynamic markets. Clear definitions and measurement instruments for the concept of employability are needed to facilitate this process, and are a prerequisite for different HRM policies and activities to stimulate the employability of employees. Aging workers are extra at risk to meet the modern and faster changing demands of today's (labor) market. In the present study, a valid and reliable instrument for measuring employability is presented and the employability of different age groups is studied. Supervisors do rate over-fifties less employable as these employees rate themselves.

Veloza, C. A., Kielhofner, G., Gern, A., Lin, F.-L., Azhar, F., Lai, J.-S. and Fisher, G. (1999). 'Worker Role Interview: Toward validation of a psychosocial work-related measure', *Journal of Occupational Rehabilitation* 9(3): 153-168.

Three studies were conducted to examine the validity of the Worker Role Interview (WRI), a semi-structured interview and rating scale designed to assess psychosocial capacity for return to work in injured workers. The first Rasch analysis study of 119 work-hardening clients with low back pain showed that scale items worked together to measure unidimensional construct, except for two work-environment items (work setting and boss); and the items were logically ordered representing the least to most psychosocial capacity for return to work. The second Rasch analysis study involved a refined scale (including redefinition of environment items to reflect the worker's perception of the environment) applied to 55 work-hardening clients with diverse injuries. All items except perception of boss defined a unidimensional construct. The ordering of items was similar to that in the first study and similar across two different

diagnostic groups (low back and upper extremity injuries), indicating the scale was sample invariant. The third study of 42 work-hardening clients examined the predictive validity of the WRI. A logistic regression, which included demographic variables (chronicity, diagnosis, number-of-surgeries, attorney involvement and age), showed that none of the variables predicted return to work (odds ratio ranged from 0.3–1.0). This initial series of studies present a theoretically based instrument, which shows promising psychometric qualities. While the predictive study indicated that the WRI was not useful in predicting return to work, this finding may have been a function of the small n-size in the study or that the WRI may mediate its effect through other variables.

Waddell, G., Burton, A. K. and Main, C. J. (2003). *Screening to Identify People at Risk of Long-term Incapacity for Work*. London: Royal Society of Medicine Press Ltd.

The aim of this book is to inform policy decisions on whether and how the Department for Work and Pensions (DWP) might be able to develop practical methods of screening that could perhaps also be linked to rehabilitation programmes or other work-focused interventions. It collates and lays out the evidence on a number of issues: the conceptual and scientific basis for screening; whether screening can be applied to all conditions; policy and ethical implications; the practicality of screening in a DWP setting; the distinction between screening to identify those at risk of long-term incapacity and assessing obstacles to coming off benefits in those at risk, and so identifying what can be done to help return to work; and the relative value and role of administrative data (i.e. socio-demographic, DWP file data) vs. clinical and psycho-social data.

Wandner, S. A., Messenger, J. C. and Schwartz, S. (1999). *Worker Profiling and Reemployment Services Policy Workgroup: Final Report and Recommendations*. District of Columbia, USA: Employment and Training Administration/Office of Policy and Research. [Available online: <http://wdr.doleta.gov/opr/fulltext/document.asp?docn=6153>]

The Worker Profiling and Reemployment Services (WPRS) was a program established in states by regulation of the federal government to profile Unemployment Insurance (UI) recipients who were most likely to exceed their time limits for UI and to give those recipients training in job search methods. The WPRS Policy Workgroup was established in January 1998 to examine the WPRS system as it had evolved from 1994-98 and to provide recommendations to improve its quality and to make it more effective in achieving its ultimate goal-enabling dislocated workers to find new jobs as rapidly as possible at wages comparable to their prior wages. The workgroup developed recommendations for improvement in WPRS to address seven major topics: (1) modeling and model use; (2) how to profile; (3) who and when to refer to reemployment services; (4) what services and how many services to provide; (5) program linkages between the Unemployment Insurance, Wagner-Peyser Act (employment service) and dislocated worker programs; (6) adequacy of funding; and (7) communication, feedback systems, and reporting.

Williams, J. M., Dunn, P. L., Bast, S. and Giesen, J. (2006). "Factors considered by vocational rehabilitation professionals in employability and earning capacity assessment", *Rehabilitation Counseling Bulletin* 50(1): 24-34.

Appendix K

Summary of recent developments in the German labour market

Recent German labour market reforms

Job AQTIV was introduced in 2001. In this programme, job placement officers are required to evaluate strengths and weaknesses of unemployed people immediately after registration for welfare. This evaluation is based on an assessment of the: jobseeker's qualification; mobility, flexibility; motivation; behaviour; and specific barriers to employment. Profiling criterion includes:

- qualification: educational attainment and its market relevance, job specific knowledge and skills, work experience, experience in management of personnel, language skills, extracurricular activities;
- mobility: flexibility, regional and national mobility, market relevance and variety of desired employments, working time, desired pay;
- motivation and behaviour: individual job search efforts, application behaviour and documents, own initiative.
- barriers to employment: health problems, drug abuse, indebtedness, etc.

(Rudolph and Müntnich, 2001)

The assessment also includes an evaluation of the client/customer's risk of becoming long-term unemployed (Wunsch, 2005) in which individuals are classified as:

- job-ready: fully employable, no barriers to employment (no services required);
- counselling: address minor barriers to employment (proposed services include: measures to increase mobility or flexibility, basic job search assistance, minor adjustment of skills through short training);

- counselling support: substantial deficits with respect to qualification intensive training (proposed services include measures to increase mobility or flexibility); and
- intensive service: severe or multiple barriers to employment, high risk of becoming long-term unemployed (proposed services include assignment to relevant employment programmes and measures to support social integration).

(Bundesministerium fuer Arbeit und Soziales, 2006)

The Hartz commission (official title 'Commission for Modern Labour Market Services' (Kommission für Moderne Dienstleistungen am Arbeitsmarkt)) was introduced in February 2002 to work out strategies for new employment and job placements legislation. The law contains a comprehensive set of specific policy measures that came into force at various points in time during the period 2003-2005 (Jacobi and Kluge, 2006), and was merged into a three-part reform strategy designed to:

- improve employment services and policy measures;
- activate the unemployed; and
- foster employment demand by deregulating the labour market.

Reforms, such as the Hartz commission and JobAQTIV, were brought about by continued high levels of unemployment, the risk of the social security system collapsing and the need for a comprehensive reform of the institutional setting. The previous benefit system was criticised for creating adverse work incentives and increasing long-term unemployment, deteriorating skills and, thus, increasing mismatch in the labour market. In 2006, the Federal Employment Agency made a profit due to economic trends and the new employment policy legislation.

Selected new rules and their evaluation outcome

The Public Employment Services (PES) were modernised along the lines of New Public Management meeting quantitative goals which are agency specific whilst having some scope for discretion on the choice of policy mix (Jacobi and Kluge, 2006). Within this new service, results-based accountability and controlling of local employment agencies is important.

The former hierarchical-organised employment offices are now customer-orientated one stop centres offering a range of services. For instance, every jobseeker is assigned a case worker. The range of services, previously provided by the jobcentres, include advice and counselling services to social services and administration of benefit payments (Jacobi and Kluge, 2006). An evaluation of these services concluded that:

- vouchers for job placements allow unemployed people to get advice and careers guidance from private recruiters, whereas previously, unemployed people could only be advised by the state-run placement agencies. Vouchers for job placements were seen as an instrument to increase chances for unemployed people;
- the use of third persons or scheme providers in job placement was not regarded as successful;
- the introduction of competition in job placement, advice and careers guidance has resulted in many new possibilities. The competition will continue and best practices are currently being identified;
- Virtual Labour Market, a uniform database for employers and employees, was introduced to increase job placements.

Overall, the labour market reforms aim to improve the targeting of active measures and the allocation of measures and resources. As a consequence, the statutory regulation of eligibility conditions is reduced. The assignment of clients to measures is now based on a profiling process. This profiling system has, however, been criticised for not being standardised enough. (Schuetz and Oschmiansky, 2006). The case worker assesses a client/customer's abilities, problems and potential labour market chances in an interview in order that they can be assigned to one of the following:

- I. 'market clients' (Marktkunden) are considered to have the highest chances of finding employment;
- II. 'clients for counselling and activation' (Beratungskunden Aktivieren) range second and mainly need to be activated in their job search;
- III. 'clients for counselling and support' (Beratungskunden Fördern) need more attention and will likely be assigned to a programme; and
- IV. 'clients in need of supervision' (Betreuungskunden) need special attention since they face the lowest chances of re-employment (Jacobi and Kluge, 2006).

Each type is linked to an action programme, defining the available measures for that type of jobseeker. For instance, type I clients are expected to reintegrate without special assistance, and types II and III have the most of the active labour market policy measures available to them. Type IV clients receive financial assistance but do not have access to any active labour market measures as the system has limited resources and these individuals are deemed unlikely to have immediate labour market integration (Jacobi and Kluge, 2006).

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