

ASSESSMENT OF PRIOR LEARNING

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OpenUniversiteitNederland

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ISBN: 978-90-79447-07-7.

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Printed by Datawyse, Maastricht, the Netherlands

ASSESSMENT OF PRIOR LEARNING

PROEFSCHRIFT

ter verkrijging van de graad van doctor
aan de Open Universiteit Nederland
op gezag van de rector magnificus
prof. dr. ir. F. Mulder
ten overstaan van een door het
College voor promoties ingestelde commissie
in het openbaar te verdedigen

op vrijdag 10 oktober 2008 te Heerlen
om 15.30 uur precies

door

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Geboren op 30 januari 1967 te Zevenaar

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Voorwoord

Afgelopen vier jaar heb ik met veel plezier gewerkt aan mijn proefschrift. Aan het einde van deze periode wil ik graag de mensen bedanken die belangrijk zijn geweest bij de totstandkoming van dit proefschrift.

Ten eerste Marcel, Wesley, Rianne en Joëlle. Jullie gaven mij de mogelijkheid om gezin en werk optimaal te combineren. Mijn afwezigheid door congressen in het buitenland was voor jullie niet altijd even leuk, maar dat maakte het thuiskomen altijd weer speciaal. Zoals jullie weten zou ik wel zeven dagen per week willen werken, maar wil ik ook zeven dagen per week thuis zijn.

De Open Universiteit, Otec, wil ik bedanken voor de mogelijkheid die zij mij hebben geboden om mijn eigen promotieonderwerp te kiezen en twee dagen per week te besteden aan mijn onderzoek. Dat ik dat de laatste twee en een half jaar gelijker tijd kon uitvoeren met een inhoudelijk direct verwant implementatieproject stel ik ook zeer op prijs.

Een speciaal woord van dank gaat uit naar mijn begeleiders Dominique Sluijsmans en Saskia Brand en mijn promotor Wim Jochems. Dominique heeft mij in de afgelopen vier jaar op een hele prettige manier voorzien van opbouwende feedback op de plannen, ideeën en uiteindelijk de artikelen. Ook als ik wat kort door de bocht ging, wist zij me weer te overtuigen van het belang van structuur. In de periode van het zwangerschapsverlof van Dominique heeft Saskia als zeer enthousiast begeleider de rol van Dominique perfect overgenomen. Die soepele overgang van mijn begeleiders blijkt ondermeer uit de professionele manier waarop het eerste gepubliceerde artikel tot stand kwam. Wim Jochems wil ik bedanken voor zijn volledige vertrouwen dat hij mij gaf in het uitvoeren van mijn onderzoek. Ondanks zijn overstap van de Open Universiteit naar de School of Education in Eindhoven zette hij zijn begeleiding op dezelfde prettige manier voort. Dominique, Saskia en Wim, bedankt voor de prettige samenwerking.

In de beginfase van mijn onderzoek heb ik veel gehad aan de ondersteunende en stimulerende opmerkingen van Freek Gastkemper, Jan Beijering, Gerard van de Boom en Paul Kirschner. Tijdens mijn onderzoek heb ik dankbaar gebruik gemaakt van de kritische opmerkingen van mijn collega-onderzoekers, zowel de huidige als oud-aio's. Ik bedank Mieke Haemers voor de correcties op de laatste versies van de artikelen en Ingrid Jonkman voor het invoeren van data en het uittypen van een deel van de interviews. Allen bedankt!

Uiteraard wil ik iedereen bedanken die betrokken is geweest bij de ontwikkeling van de EVC-procedure van de Open Universiteit Nederland. We zijn begonnen in november 2005 en kregen in november 2007 de erkenning als EVC-aanbieder. De pilots in deze ontwikkelperiode waren een belangrijke basis voor mijn onderzoek. In verschillende samenstellingen (projectteam, begeleidingsgroep, themagroepen, CvE, facultaire toetsingscommissies, decanen, assessoren en begeleiders) hebben jullie een geweldige bijdrage geleverd. Karel Lemmen, Miewies Stijnen, Evert van de Vrie, Marcel van der Klink, Frank Wester, Dymphy Kees, Maddy Rothkranz, Hans Quaadvlieg, Ankie Versteeg-Eussen, Johan van den Boomen, Brigitte de

Craene, Monique Slangen, Janine Voncken, Wilfried van der Meeren, Mireille Wathes, Daniëlle Haegens, Kathleen Schlusmans, Bert Zwaneveld, Jaap van Marle, Peter Brouwers, Aart Mudde, Jan Koelman, Henk Frederiks, Frank Wester, Koos Baas, Cecile Crutzen, Ton Smeets, Bart Pauw, Jikke van Wijnen, Annemiek van Herrewijn, Rene Bakker, Lex Bijlstra, Silvie Spreeuwenberg, Max van Luik, Peter Nederlof, Herman van den Bosch, Marjan Specker, Nanda Boers, Rene van Hezewijk, Marion Timmerman, Fred de Roode, Maurice de Volder, George Moerkerke, Olga Firsova, Maaïke Hendriks, Willeke Kerstjens, Els Boshuizen, Jef Leinders, Paquita Perez, Tonnie Starren, Dick van Ekelenburg, Berna Gademann, Jac Rinkes, Ine van Haaren, Huub Spoormans, Dick Disselkoen, Paul van de Boorn, Herman Simissen. Allemaal heel erg bedankt!

Mijn paranimfen, Frank Verheggen en Saskia Brand bedank ik omdat jullie op 10 oktober, en in de aanloop naar 10 oktober, achter mij zullen staan.

Tot slot bedank ik familie, vrienden en collega's die ik hierboven niet met naam heb genoemd voor hun getoonde interesse in mijn promotietraject.

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Chapter 1

Introduction

1.1 BACKGROUND

Lifelong learning places heavy demands on higher education. Learners have to be prepared for a labour market in which changing jobs is increasingly common. Consequently, the demands of lifelong learners in formal learning are changing: Curricula need to be more learner oriented and tailor made (Jongbloed, 2002). Competence-based education, a leading concept that presently fits well with lifelong learning (Dutch Educational Council, 2003; Stoof, Martens, Van Merriënboer, & Bastiaens, 2002), is characterised by high student responsibility and the use of assessment methods based on competence levels rather than separate knowledge and skills (Ritzen & Köster, 2001). Acquired competences enable learners to apply skills and attitudes in a variety of situations throughout life (Van Merriënboer, 1999). In line with the demands of lifelong learning, a competence-based curriculum enables learners to make flexible choices in their personal competence development. This implies a tailor made approach in which learners are no longer dependent on predefined learning paths; based on their acquired competences, they are able to plan their own learning paths to reach the desired competence standard. For more than a decade, formal educational programmes have been taking the role of prior knowledge into account to make education more efficient and effective (Dochy, 1992), but these programmes previously did not admit learners on competences acquired outside the formal learning environment. Lifelong learning, however, demands a transformation in higher education towards the recognition of learners' competences acquired in different situations and contexts (Colardyn & Bjørnavold, 2004).

Assessment of prior learning (henceforth indicated as APL) supports the lifelong learning paradigm which recognises similarities between experiential (i.e., non-formal and informal) and academic learning, and APL assumes that possible differences between the two can be readily overcome (Harris, 2006). Bjørnavold (2001) and Cedefop (1996) distinguish between the three categories of learning – formal, non-formal and informal learning – based on the learning context, intention and structure, and the availability of certification. Formal learning, based on the achievement of competences with related certificates, is intentional; that is, that learning is the goal rather than an incidental outcome. Similarly, non-formal learning is characterised by an intentional learning objective within a structured context, such as a school or classroom, but there is no legally or socially recorded certification. Examples include workplace-based training and non-accredited courses such as home typing courses. Informal or non-sponsored learning (Blinkhorn, 1999) is unintentional, unstructured and does not lead to certification. Learning is undertaken at one's own initiative, individually or collectively, without externally imposed criteria or the presence of an institutionally authorised instructor (Livingstone, 2000a). Examples include volunteer activities, life experiences, self-instruction, family responsibilities and hobbies.

Formal learning enables learners to deliver easily evidence of their learning, but the experiences of informal and non-formal learning environments are more difficult to

substantiate (Colley, Hodkinson, & Malcolm, 2002). APL, however, is a learner-centred, structured procedure in which prior learning (knowledge, skills and/or competences) acquired through informal, non-formal and formal learning can be identified, assessed and recognised (Klarus, 2003). A portfolio, a purposeful collection of work that demonstrates prior learning (Barrett, 2003), is used to present evidence and self-assess prior learning (Bjørnavold, 2001; Clarke & Warr, 1997). The admission of learners based on APL is an important step in the development of lifelong learning as it takes into account and visualizes the entire scope of learners' knowledge, skills and competences. Appreciation and recognition of prior learning will motivate learners to continue learning at an adequate level (Andersson & Fejes, 2005; Bélanger & Mount, 1998; Thomas, Broekhoven, & Frietman, 2000). Its use in higher education in the Netherlands, however, continued to falter until a joint financial push in 2005 from the Dutch Ministry of Economic Affairs and the Dutch Ministry of Education, Culture and Science had an enormous impact on the number of APL procedures in vocational higher education. The APL initiatives in university education still stay behind. All these initiatives have been confronted with the same problems and considerations which may find some resolution in this thesis.

1.2 AIM OF THIS THESIS

The learner-centred character of APL entails high learner responsibility as candidates are responsible for gathering and presenting evidence of their own prior learning. Additionally, APL candidates – as potential rather than present students of the higher education institute – are not familiar with the existing competence profiles or standards. This makes comparing prior learning with formalised learning (i.e., formal curricula) a complex task; APL candidates indicate particular difficulties in delivering evidence from informal and non-formal learning environments (Colley et al. 2002). Clearly, then, the need for support is worth investigating. Thus the main research question of this thesis is: How can lifelong learners be supported in the prior learning recognition process? This need is influenced by many aspects, such as the candidate's general skills as well as instrument quality. We explore the following aspects: the capability of learners to self-assess their prior learning; the perception of APL by its main participants; and portfolio assessment as the major part of prior learning assessment. The relationship between these aspects and the main research question is discussed in the following sections.

Self-assessment of learning

A key portfolio component is candidates' self-assessment of their learning experiences in relation to the educational programme they aim to join (Evans, 2003). This self-assessment, however, is complicated; learners may not realise the extent of their knowledge or its relevance, and experience difficulty in determining whether past job experiences actually involved engagement in learning. In addition, research on the reliability of self-assessment has shown inconsistent results ranging from acceptable (Galson & Oliner, 1976) to unacceptable (Boud & Falchikov, 1989;

Ward, Gruppen, & Regehr, 2002). These findings point to the question of whether overconfidence, domain specificity and differences between low- and high-expertise candidates apply to APL, and thus indicate a need for support. A list of relevant sources, for example, may help candidates illustrate their prior learning experiences (Spencer, Briton, & Gereluk, 2000).

Portfolio assessment

The use of a portfolio is a common assessment method in APL. Bjørnavold (2001) considers the portfolio as one of the best methods for visualising and evaluating competences acquired in informal or non-formal contexts. To use the portfolios successfully, learners must receive clear guidelines on their purpose, content and structure (McMullan et al., 2003). Likewise, assessors' approaches to portfolio assessment must be clear and expectations of APL candidates explicit (Baume & Yorke, 2002). Because portfolio assessment is a delicate task, a clear assessor approach will lead to transparency and decreased need for candidate support.

Candidates', tutors' and assessors' perceptions

Individuals' perceptions of instruments or methods influence both their motivation to use it and the need for support (Lee, 2001). In general, APL involves three main actors: the candidates, educational institute and employer (Sluijsmans, 2003). In this thesis, we focus on the relationship between the first two. First, candidates contact the tutor responsible for their personal support; and second, assessors evaluate the candidates' prior learning. All these people (candidates, tutors and assessors) have expectations about the procedure and its possible outcomes and benefits. To enhance motivation, a positive perception is necessary.

1.3 CONTEXT

The context of this thesis is twofold. The broad context is the context of APL in higher education. Presently, higher education institutes in different countries are changing their policies towards lifelong learning and using procedures that enhance recognition of prior learning from various contexts. Although APL was introduced in the UK in the late 1970s, attempts to make accessible adult education a political objective in the Netherlands only began in earnest with the 1994 Wijnen commission, which concluded that a procedure enabling the recognition of non-formal learning was feasible (Dutch Ministry of Education, 1994). After that, the lifelong learning national action plan of 1998 builds further on these Assessment of Prior Learning (APL) initiatives to better implement the competence-based approach. In 2000, the importance of lifelong learning was finally recognised with the adoption of APL (Dutch Ministry of Economic Affairs, 2000).

The narrower context is the context of the Open University of the Netherlands, a higher education institute in which the studies in this thesis are conducted. OUNL caters to lifelong learners of 18 and older with no admission requirements. Initially, OUNL developed an APL procedure primarily based on the credit exchange model

(Butterworth, 1992; Trowler, 1996) in which learners receive credit points if informally or non-formally acquired competences match the learning outcomes of an accredited educational programme. Since 2006, this procedure has been shifting from credit exchange to a more developmental approach in which reflections on the acquired competences in relation to future learning are stimulated (Butterworth, 1992). A basic general portfolio template has been developed for each educational programme which candidates fill in and submit, in duplicate, for assessment. Assessors decide whether the portfolio contains sufficient information for a final decision on exemption provision; should they deem it insufficient, assessors can request (a) a criterion-oriented assessment interview, (b) an additional assignment, or (c) both an assignment and an interview. Once complete, the assessor then takes his or her advice to the examination committee, who determines which parts of the programme the candidate must still undertake. The validated result is committed in a formal statement and the candidate receives a study plan specifying the remaining study path.

1.4 CHAPTER OVERVIEW AND RESEARCH QUESTIONS

In Chapter 2, a theoretical overview is presented based on the following question: How is APL elaborated in the literature, and what is the relationship between APL and the quality framework for competence assessments? Seven general characteristics are analysed in the context of the quality framework for assessment programmes put forth by Baartman, Bastiaens, Kirschner, and Van der Vleuten (2006); thus, this chapter lays the foundation for subsequent chapters by setting out APL's general characteristics and setting out a new view on quality requirements for APL. It concludes with implications of the quality criteria for APL procedure design.

Chapter 3 addresses the research question of whether a self-assessment instrument can be used effectively to support candidates in gathering evidence. This study is conducted with learners who wanted to attend a starting course in one of the six domains of the Open University of the Netherlands. Candidates' self-assessment of their prior learning is analysed with the aim of examining its suitability. Because prior research (Spencer et al., 2000) advises to use lists of relevant sources to help candidates illustrate their prior learning experiences, we first identified, in an explorative study, the main sources for self-assessment and the relationship between sources and study domain. The chapter illustrates how information about the candidates' knowledge level is related to the indicated sources. Secondly, using a pre-test/post-test research design, we examine the hypothesis that candidates' self-assessment of prior learning related to a certain course changes after studying a domain-specific course. With a questionnaire and the performance scores on the domain-specific course, the effect of the candidates' expertise on self-assessment is explored.

Chapter 4 reports on an evaluation study of APL from the perspective of candidates, tutors and assessors in view of the following research question: How do APL candidates, assessors and tutors perceive the quality of APL? First, the participants evaluate the APL procedure in Computer Science, in which 23 candidates from a

police software company, four assessors and four tutors participated. Based on the evaluation results the procedure is adjusted and re-evaluated in the context of Educational Science, with nine candidates, two tutors and two assessors. The evaluation results are compared and discussed using the theoretical framework by Baartman et al. (2006).

To gain better understanding of the assessment of prior informal and non-formal learning, Chapter 5 addresses assessors' approaches in APL portfolio assessment. Candidates requested exemptions from educational programme courses or admission to programmes based on portfolio presentation of their prior learning; subsequently, assessors judged the portfolios according to set rating criteria. With an interview and a questionnaire, ten assessors individually discussed their approaches. Key elements in this discussion include their decision-making processes, deciding factors, perception of portfolio use in APL and use of the rating criteria.

Chapter 6 explores the desired support in APL from the institute's and candidates' perspective. The institute was represented by APL tutors, educational scientists, and an expert online support group. Institute and candidates evaluate the embedded and personal support possibilities on the criteria of added value and efficiency. This chapter identifies the APL phases in which support is expected, and the most appropriate support type, medium and functions. An overview of the highest added value and support efficiency is provided, concluding with an elaboration of efficient support with high added value in APL.

To conclude, Chapter 7 presents a general discussion of the studies undertaken. A review of the conclusions is followed by a discussion of the implications for practice and suggestions for future research.

The studies presented in Chapters 2 to 6 have been submitted to or published in international journals and can be read separately. As a consequence, some information, especially that pertaining to the procedure and research context, appears repeatedly.

In this thesis, we distinguish between lifelong learners, candidates and students. The concept of lifelong learners is used as a general concept for every one in society (sometimes abbreviated to learners), candidates are lifelong learners involved in an APL procedure and students are lifelong learners registered in formal learning environments.

Chapter 2

Quality of Assessment of Prior Learning (APL): Implications for design

This chapter is based on Joosten-ten Brinke, D., Sluijsmans, D. M. A., Brand-Gruwel, S., & Jochems, W. M. G. (2008). The quality of procedures to assess and credit prior learning: Implications for design. *Educational Research Review*, 3, 51-65.

ABSTRACT

The ever-changing requirements of working life require individuals to develop their competences throughout their life cycle. This lifelong learning paradigm requires a renewed vision concerning assessment in which, besides formal learning, informal and non-formal learning experiences are also recognized. To support this lifelong learning paradigm, procedures have been developed worldwide to assess and credit prior learning experiences (APL). While research on APL stresses the importance of a high-quality standard, so far literature has applied only a psychometric quality framework. However, from the perspective of APL, where, besides prior knowledge and skills, competences need to be measured, it is more appropriate to use a combination of psychometric and edumetric quality criteria. In this chapter, we analyse and describe the relationship between quality criteria and APL characteristics. Results have revealed that quality criteria based on both are fundamental for APL, but that some criteria are more recognized than are others. Based on this analysis, design guidelines for APL have been formulated.

2.1 INTRODUCTION

This chapter describes procedures for assessing and crediting prior learning (APL) in relation to quality criteria for assessment from the perspective that these procedures are assessment programmes in which all kinds of prior learning can be assessed. We will first discuss the context of these procedures as well as the literature on assessment quality. This will be followed by the results of a literature review on the APL characteristics and implications for design in relation to the quality criteria. Finally, conclusions and directions for further research will be formulated.

Lifelong learning requires a belief in the value of learning in all phases of life (Koper, Rusman, & Sloep, 2005). Consequently, learners should be enabled to enter educational programmes at various levels adjusted to their existing competence profiles in order to acquire competences at their own pace by selecting appropriate learning tasks and applying for assessment when ready (Cretchley & Castle, 2001). In such a learning environment, lifelong learners will plan their own learning path in order to make flexible choices in their personal development and to reach desired standards of competence.

When entering a new educational programme, most learners have, to a certain extent, already acquired competences in different learning settings. Three types of learning foster this acquisition of competences (The Calibre group of Companies, 2003). Formal learning, based on the achievement of competences with related certificates, is intentional, which means that learning is a goal rather than an incidental outcome. Non-formal learning, similar to formal learning, is characterized by an intentional learning objective within a structured context, such as schools or classes, but there is no legally or socially recorded certification. Examples of this are workplace-based training and non-credit courses such as a home course on typing. Informal learning, or non-sponsored learning (Blinkhorn, 1999), is not intentional, not structured and does not lead to certification. Learning is undertaken on one's own initiative, individually or collectively, without externally imposed criteria or the presence of an institutionally authorized instructor (Livingstone, 2000a). Examples of this are volunteer activities, life experiences, self-instruction, family responsibilities and hobbies.

Up until a few decades ago, educational institutions recognized only formal learning. Nowadays educational institutions also endorse the value of informal and non-formal learning by enrolling learners in educational programmes at various levels. The development of assessment procedures that allow learners to enter educational programmes based on their prior informal and non-formal learning is an important step towards lifelong learning (Evans, 2003). In general, these assessment procedures have seven main characteristics: 1. Different types of learning are recognized (Evans, 2003; Nyatanga, 1993); 2. Procedures have a clear structure and time schedule (Human Resource Development, 1995; Nyatanga, 1993); 3. The outcome of each procedure can differ (credit points, exemptions, study plan) (Challis, 1996); 4. Procedures are beneficial for the learner, the educational institution and the community (Aarts et al., 2003); 5. A combination of methods (simulations, knowl-

edge tests, performance assessments, interviews) is used to provide evidence of prior learning (Fjortoft & Zgarrick, 2001); 6. Procedures require a high level of responsibility from candidates and a sufficient level of support (Donoghue, Pelletier, Adams, & Duffield, 2002); 7. Procedures are time-consuming (Bélanger & Mount, 1998; The Calibre group of Companies, 2003; Thomas et al., 2000; Wheelahan, Miller, & Newton, 2002).

In this chapter, we focus on these procedures in relation to their opportunity to allow learners to enter formal educational programmes based on all kinds of prior learning, although APL also is used outside the context of educational programmes, for example in workplaces. Many terms are available for these kind of procedures, but because we analysed them with the accent on assessment, we will use the English term Assessment of Prior learning (henceforth indicated as APL).

Research on APL stresses the importance of a high-quality standard for assessing and crediting prior learning (Bateman & Knight, 2003; Duvekot, 2001; Freed, 2006; Dutch Ministry of Economic Affairs, 2000; Nyatanga, Forman & Fox, 1998; The Calibre group of Companies, 2003; Thomas et al., 2000; Vanhoren, 2002). These quality standards are mainly based on psychometric quality criteria like reliability and validity. However, for APL – a procedure to which learners' competence level is central – a definition of quality is required that is in line with current views on competence assessment. This view supports a combination of assessment methods to assess competences. According to Duvekot (2001) and the Scottish Qualifications Authority (1997), traditional psychometric criteria should be expanded for APL by adding criteria that are in line with APL goals. Because APL uses combinations of assessments (mentioned in characteristic five), it is more appropriate to evaluate such assessment programmes using both psychometric and edumetric criteria (Baartman et al., 2006; Baartman, Bastiaens, Kirschner, & Van der Vleuten, 2007). The difference between psychometric and edumetric criteria is that psychometric criteria focus on measuring the differences between learners, while edumetric criteria focus on measuring within-learner growth. The psychometric criteria are more directed at quantitative establishment of stable characteristics. Standardization is therefore essential. Edumetric criteria should do more justice to competence assessment characteristics, by emphasizing flexibility and authenticity of assessments and integration of assessments.

In this chapter, we report the analysis of literature on APL to gain insight into the quality of these procedures and to develop guidelines for optimizing this quality. We will use the quality framework of Baartman et al. (2006), who built their framework on work of other assessment researchers (see e.g., Benett, 1993; Dierick & Dochy, 2001; Gulikers, Bastiaens, & Kirschner, 2004; Hambleton, 1996; Linn, Baker, & Dunbar, 1991; Sluijsmans, Straetmans, & Van Merriënboer, 2008). This framework includes 12 quality criteria, briefly described in Table 2.1.

In their framework, Baartman et al. (2006) distinguish four levels. Fitness for purpose, the first level, is the basis for the development of all competence assessment programmes. The next level of assessment quality consists of the criteria transparency, acceptability, reproducibility of decisions, and comparability. These four criteria are more commonly used in actual practice for assessments' evaluation. According to Baartman et al. (2006), the third level consists of the quality criteria of fairness, cognitive complexity, fitness for self-assessment, meaningfulness and

authenticity. In general, these criteria are newer and are expected to be less commonly used in practice than are transparency, acceptability, reproducibility of decisions and comparability. The second level tends to be a prerequisite for the third level of criteria. Finally, the criteria of educational consequences and costs and efficiency are conditional criteria. If an assessment is negatively evaluated based on one of these conditional criteria, implementation is definitely not advised.

Table 2.1. Definitions of the quality criteria

Quality criteria	Definition
Fitness for purpose	The assessment fits the educational purpose and educational programme's objectives.
Transparency	The assessment method and criteria are clear to all participants – learners, staff members, programme management, examination committee, and labour market.
Acceptability	Participants' acceptance of assessment method and instruments.
Reproducibility of decisions	The assessment programme has several assessment moments and should use different perspectives to make a final decision.
Comparability	The assessment is consistent, standardized and comparable for all learners.
Fairness	Bias does not influence the assessment process.
Cognitive complexity	Learners prove their acquisition of higher cognitive skills, which represent the educational programme's level.
Fitness for self-assessment	The assessment stimulates self-assessment and reflection.
Meaningfulness	The assessment has a surplus value for both educational institution and learners.
Authenticity	The tasks that a learner has to fulfil should have a direct link with future practice (Gulikens et al., 2004).
Educational consequences	The assessment is implemented only if positive effects are expected and negative aspects can be minimized.
Costs and efficiency	The assessment is feasible in terms of costs and time investment.

To design APL procedures in higher education that meet the criteria of the quality framework outlined in Table 2.1, our main question is: How are the characteristics of APL elaborated in the literature, and what is the relationship between APL and the quality framework for competence assessment? Based on this analysis, design guidelines for APL can be formulated.

2.2 METHOD

In order to answer the research question, a literature search was conducted using the databases of the Academic Search Elite, Psychinfo, Educational Resources Information Center (ERIC), Psychlit and Electronic Journal Service. This search was restricted to the period 1990–2007, using the following keywords: “prior learning,”

“assessment,” “recognition” and “accreditation.” This search resulted in 122 articles. Abstracts of these articles were analysed using the seven characteristics of APL: 1. type of learning, 2. structure of APL, 3. possible outcomes of APL, 4. benefits, 5. methods, 6. learner support and 7. time investment. An article was selected when information was found on at least one of these characteristics. This selection resulted in 42 documents. Through the so-called snowball method, references in these articles were checked for other relevant studies, resulting in a total of 59 articles. These studies were subsequently analysed using these characteristics as indicators for the quality framework of Baartman et al. (2006). Design guidelines were formulated based on this analysis. Only a small minority of the articles was empirical, the majority of them were descriptive.

2.3 RESULTS

In the following, literature on APL is specified for each characteristic. Subsequently, the relationship to the quality criteria can be described.

Type of learning

Table 2.2 gives an overview of the used terms and abbreviations for procedures to assess and credit prior learning and the type of learning (learning contexts and contents) that is assigned to that term by different authors. Although there is a large variety in terms to define APL, there is not a one-to-one relation between term and type of learning. For example, if we look up the second column for ‘skills and knowledge’ we see that Bélanger and Mount (1998) use that type of learning in combination with PLAR and Day (2001b), Evans (2003), Fjortoft and Zgarriick (2001) and Human Resource Development (1995) use the same type of learning with PLA. The reason for this is that terms and abbreviations used originate in different countries (Clarke & Warr, 1997; Day, 2001a; Nyatanga, 1993) and there are country-specific differences (Bélanger & Mount, 1998). In Scotland and France, for example, it is used to bridge the gap between acquired learning and needed or desired learning, while in Canada and the United States, it is used to credit prior learning as part of a final academic credential.

Table 2.2. Overview of terms and abbreviations in relation to type of learning

Term / abbreviation	Description of learning contexts and contents
Accreditation of Prior learning (APL)	<p>Learning that has occurred at some time in the past in a programme of study, or experience gained at work, or during voluntary activities (Day, 2001a; Scottish Qualifications Authority, 1997)</p> <p>Learners' previous learning in a programme of study (Harvey, 2004)</p> <p>Prior experiential learning or prior certificated learning (Quality Assurance Agency for Higher Education, 2004)</p> <p>Academic output by non-accredited institutions (Starr-Glass & Schwartzbaum, 2003)</p>
Assessment of Prior learning (APL)	Learning not restricted to academic settings or curricula (Starr-Glass, 2002)
Prior learning Assessment (PLA)	<p>Prior learning, acquired through study, work, and other life experiences, not recognized through formal mechanisms (Blinkhorn, 1999)</p> <p>All acquired learning: knowledge, skills, values or competences (Day, 2001b; Evans, 2003; Fjortoft & Zgarlick, 2001; Human Resource Development, 1995)</p> <p>Learning acquired outside the formal educational setting (Freed, 2006)</p>
Accreditation of Prior Experiential Learning (APEL)	<p>1. Prior experiential learning, which is recorded in some way, 2. personal experience (Cleary, Whittaker, Gallacher, Merrill, Jokinen, & Carette, 2002)</p> <p>Learning from their past achievements and experiences, usually from experience unrelated to an academic context (Fahy, Periin, & Ferrer, 1999; Harvey, 2004)</p> <p>Existing competences (Nyatanga et al., 1998)</p> <p>Learning for which no certification has been awarded by an educational institution or another education/training provider (Konrad, 2001)</p> <p>Non-formal and informal learning (Wilcox & Brown, 2002)</p>
Accreditation of Prior Certificated Learning (APCL)	Learning for which certification has been awarded by an educational institution or another education/training provider (Konrad, 2001)
Prior learning Assessment & Recognition (PLAR)	<p>Learning acquired outside known public educational institutions (Aarts et al., 2003; The Calibre Group of Companies, 2003)</p> <p>Skills, knowledge and attitudes through a variety of formal and informal channels (Bélanger & Mount, 1998)</p> <p>Competences required in non-formal learning. (Scholten & Teuwsen, 2002)</p>
Recognition of Prior learning' (RPL)	<p>Any combination of formal or informal training and education, work experience or general life experience (Bateman & Knight, 2003; Harvey, 2004; Thomson, Saunders, & Foyster, 2001)</p> <p>Prior learning and experience (Cantwell & Scevak, 2004; Donoghue et al., 2002)</p> <p>Learning arising from their experiences in a variety of contexts outside educational institutions (Cretchley & Castle, 2001)</p> <p>Learning that occurred before the assessor became involved (New Zealand Qualification Authority, 2001)</p> <p>Non-credentialed or informal learning (Taylor & Clemans, 2000; Wheelahan et al., 2002)</p>

Table 2.2. continued

Term / abbreviation	Description of learning contexts and contents
Validation	<p>Competences already gained through earlier experiences, even if these are not formally documented (Andersson & Fejes, 2005)</p> <p>The entire scope of knowledge and experience irrespective of the context where learning originally took place (non-formal and informal learning) (Colardyn & Bjørnavold, 2004; Pouget & Osborne, 2004)</p> <p>Non-formal learning, which takes place outside formal education and training institutions (Bjørnavold, 2001)</p>
Valuation of Prior learning (VPL)	What has been learned in every possible learning environment (Duvekot, 2005)
Erkennung Verworven	Informal learning (Dutch Ministry of Economic Affairs, 2000)
Competenties (Dutch; EVC)	<p>Competences of an individual (Dutch Educational Council, 2003; Scheltema, 2002; Vanhoren, 2002)</p> <p>Competences acquired elsewhere, outside of regular education (Thomas et al., 2000)</p>

The distinction between formal, non-formal and informal learning is clearly expressed in “Accreditation of Prior Experiential Learning” (APEL), but this distinction is not clear for “Prior learning Assessment” (PLA), “Prior learning Assessment and Recognition” (PLAR), “Recognition of Prior learning” (RPL), “Accreditation of Prior learning” (APL), “Assessment of Prior learning” (APL) and Valuation and Validation of Prior learning (VPL). These terms differ as to the type of prior learning in terms of competence or skills and knowledge. “Recognition of Acquired Competences” (in Dutch: EVC, Erkennen van Verworven Competenties) emphasize on competence assessment. Bateman and Knight (2003) use also the concept Recognition of Current Competence to stress that these competences must be of current interest and they use “Skill Recognition” (SR) if the emphasis is on skills. Although Andersson and Fejes (2005) use the term RPL in their article, they prefer to use the term “Validation”, based on the French term “Validation des Acquis de l’Expérience” (VAE). Colardyn and Bjørnavold (2004) define validation as the process of identifying, assessing and recognizing a wider range of skills and competences that people develop throughout their lives and in different contexts.

As shown in Table 2.2, authors use the same terms and their abbreviations in different ways. Day (2001a) and Aarts et al. (2003) both use PLAR, but Day uses a broader view on the prior learning’s subject than do Aarts et al. (2003), in the sense that the definition of Aarts et al. is limited to learning acquired outside known public educational institutions, while the definition of Day also includes formal study. According to Harvey (2004), APEL is similar to APL in recognizing prior learning, but is broader in that it allows any form of prior experience.

In conclusion, many types of learning are object of assessment (formal, non-formal and informal) with differing meanings (skills, competences). It is not directly possible to deduce the type of learning involved from the used term of abbreviation. With respect to the quality criteria of Baartman et al. (2006), this conclusion relates to the criteria of fitness for purpose and transparency. Transparency is not always

met, because sometimes terms not covering the procedure's objective are used and, therefore, fitness for purpose is not obvious.

Structure of APL

In many of the definitions, the word process is used (see Table 2.2). In APL this progression proceeds in several phases. Evans (2003) divides the procedure into identifying, articulating and organizing learning with the aim of formulating clear statements of claims for knowledge and skill, which can then be recognized, assessed and accredited. These phases are also included in the definition of Human Resource Development (1995). The New Zealand Qualification Authority (2001), Scottish Qualifications Authority (1997), The Calibre group of Companies (2003), Thomas et al. (2000), Wilcox and Brown (2002), and Vanhoren (2002) distinguish the following phases:

1. In the candidate-profiling phase, the institution gathers information about the candidate's personal characteristics and needs. The resulting profile often provides the basis on which institutions select candidates for APL. In this phase, the institution can inform candidates about steps and procedure's expectations. This phase is also referred to as "identification and initiation."
2. In the phase of evidence-gathering (also called "documentation and preparation"), candidates collect evidence about previous qualifications and experience in order to support a claim for credit with respect to the new qualification they are seeking. An important role is given to the candidate. Often, a self-assessment is required in this phase. All APLs have one thing in common: Candidates have to prove that they have acquired knowledge, skills or competences that meet the requirements of the course or learning programme they wish to follow (Evans, 2003).
3. In the phase of assessing the evidence, assessors review the quality of candidate's evidence using assessment standards. The assessment results should be an answer to the question whether the candidate should gain recognition (see "possible outcomes"). Independent of the assessor, assessment should produce the appropriate outcome. The outcome should not be influenced by differences between, for example, assessors or tutors.
4. The final phase of accreditation (or "recognition") involves the verification or endorsement by the department responsible for awarding the credit or recognizing the assessment outcome (see also "possible outcomes"). Pouget and Osborne (2004) emphasize the slight difference between the concept of "accreditation" and "validation." The latter is more general in the sense of "giving value."

The Dutch Ministry of Economic Affairs (2000) distinguishes between the phases for an institution and the phases for a candidate. For an institution, phases consist of target definition, awareness development and a general process preparation. For a candidate, the phases consist of an assessment and a follow-up advisory consultation. Also, after accreditation, the candidate may be supported by a follow-up in the development of a "personal development plan" or a "learning path" (Scholten & Teuwsen, 2002; Thomas et al., 2000).

With respect to the structure of APL, quality criteria of transparency, comparability and self-assessment are important. According to the literature, the institution must

have clear and operationalized educational programme's descriptions before starting the first phase. In other words, the structure must be transparent. The learning objectives must be clearly described in terms of competences, skills and knowledge. The procedure should directly match the educational programme. The availability of assessment standards and trained assessors relates to comparability. Evidence should be in line with the type of learning objectives. If a self-assessment is used in the second phase that will be used by assessors in the third phase, fitness for self-assessment will increase.

Possible outcomes of APL

The outcome of APL may be identification, recognition, assessment, accreditation or recommendation and can be assigned as results of the different phases in the process. Most of the procedures are aimed at assessing a candidate so as to fit a preconceived outcome (Challis, 1996). Konrad (2001) relates these possible outcomes to levels of qualifications, varying from "competence in the performance of a range of varied work activities, most of which may be routine and predictable" (p. 1) to "competence which involves the application of a significant range of fundamental principles and complex techniques across a wide and often variety of contexts" (p. 1). Clarke and Warr (1997) distinguish four possible outcomes of APL: specific credit, modified specified credit, general credit and alternative credit. Specific credit can be claimed if a practitioner's learning matches a unit of learning. Modified specified credit can be claimed if a practitioner's learning can be captured through matching their learning with learning outcomes from a variety of units. General credit can be claimed when a practitioner identifies his or her own learning from unaccredited study, professional experience and personal experience. Finally, alternative credit is appropriate if a candidate has been awarded credit in another institution of higher education. This corresponds with outcomes of the Scottish Qualifications Authority (1997), namely entry into a course or programme, credit within a programme or course leading to a qualification, a certification of competence or a tailored-learning programme for learning needs. In general, this means that APL can be used to admit candidates to different stages in the educational programme; it can be a function of entrance (at the start), positioning (during) or certification (at the end).

In relation to the quality criteria of Baartman et al. (2006), clarity about possible outcomes in the institution will increase fitness for purpose and transparency. The quality criterion of costs and efficiency is influenced by the possible outcomes. For example, if certification is to be the result, there will be no income from selling modules. Possible outcomes also influence meaningfulness. If the profit is to be a certificate for one module, the surplus value for a candidate is less than if the profit were to be an exemption from a larger part of the educational programme. Assessment should be implemented only if positive effects are expected. Possible outcomes are part of these effects and are therefore related to educational consequences.

Benefits

APL is used to increase accessibility to education (Duvekot, 2001; Evans, 2003; Konrad, 2001; Scholten & Teuwsen, 2002; Scottish Qualifications Authority, 1997; Thomas et al., 2000; Wheelahan et al., 2002), to reduce drop-out rates (Pearson, 2004), to optimize the learning environment by introducing more facilities (Bjørnavold, 2001; Dutch Ministry of Economic Affairs, 2000; Scholten & Teuwsen, 2002), for summative (certification) and formative reasons of assessment (Colardyn & Bjørnavold, 2004; Thomas et al., 2000; Vanhoren, 2002; Wheelahan et al., 2002), for a better connection between educational programmes and labour market (Andersson & Fejes, 2005; Bélanger & Mount, 1998; Duvekot, 2001; Thomas et al., 2000) and to emphasize lifelong and flexible learning (Bélanger & Mount, 1998; Blinkhorn, 1999; Dutch Ministry of Economic Affairs, 2000; Duvekot, 2001). Some researchers (Aarts et al., 2003; Andersson & Fejes, 2005; Blinkhorn, 1999; Konrad, 2001; Taylor & Clemans, 2000) stress the benefit of important efficiencies for part-time adult learners by shortening their programmes, reducing course loads and reducing costs. Pires (2005) concludes that when learners have mixed motives, benefits are personal rather than work-related.

In relation to the quality criteria of Baartman et al. (2006), these benefits are important for meaningfulness, fitness for purpose, educational consequences and costs and efficiency. Meaningfulness increases if APL has a surplus value for both institution and candidates. Fitness for purpose increases if information supply for prospective candidates only describes those benefits that are relevant for the institution's purpose. If there are no benefits to be expected, an institution should consider implementation of APL to meet the criterion of educational consequences. Benefits relate to costs and efficiency, because APL can lead to income for the institution, and time and effort for the learner.

Methods

In the phase of assessing the evidence (see "the structure of APL"), institutions use a variety of assessment methods. In this context, APL can be seen as a competence assessment programme. Examples of applied assessment methods are: portfolio reviews, standardized commercial available exams, exams developed by college faculty, transcript reviews, essays, non-academic course reviews, simulations, oral presentations, interviews, performances, demonstrations and course analogues (Fjortoft & Zgarrick, 2001; Starr-Glass, 2002; Starr-Glass & Schwartzbaum, 2003; Taylor & Clemans, 2000). In APL it is important to select good methods for assessing who is competent enough to be admitted into a learning programme (Andersson & Fejes, 2005). Assessment methods need to be appropriate to the subject matter under evaluation (Abbott, 1992).

The most common method for presenting evidence is the portfolio (Bjørnavold, 2001; Clarke & Warr, 1997). A portfolio is a composition of work that a candidate has selected and collected to show knowledge, skills or competences, and includes candidate's reflections on the selected and collected work (Barrett, 2003). A portfolio, in other words, presents evidence of a candidate's prior learning. It is regarded as being one of the best instruments for visualizing and evaluating competences acquired in informal or non-formal contexts (Bjørnavold, 2001). According to

Clarke and Warr (1997) a portfolio document is well received by advisors and assessors as one approach to structuring evidence. In support of candidates in APL, a clear portfolio template and worked out examples are helpful for structuring the candidate's claim (McMullan et al., 2003; Nyatanga et al., 1998). The portfolio should be clear and appropriately organized, and it is important that candidates receive clear guidelines as to its purpose, content and structure. The portfolio's structure serves as a guide that supports candidates through the process and it should fit candidate's prior formal, informal and non-formal learning and competences required by the institution (Baume & Yorke, 2002; Bjørnavold, 2001; McMullan et al., 2003; Scholten, 2007; Wilcox & Brown, 2002). In its relationship to the qualification the candidate wants to achieve, evidence should fit the following criteria:

- Educationally relevant. There should be a clear relationship between evidence and educational programme's aims (Aarts et al., 2003; Scottish Qualifications Authority, 1997).
- Transferable. Evidence should incorporate different kinds of requisite experiences (Cantwell & Scevak, 2004).
- Appropriate level. The level should match the formal educational programme (Aarts et al., 2003).
- Valid. Evidence should focus on the appropriate competences, knowledge and skills specified in the educational programme's standards (Bateman & Knight, 2003; Colardyn & Bjørnavold, 2004; Day, 2001a; Fahy et al., 1999; Starr-Glass, 2002);
- Authentic. Evidence needs to relate to prior learning and the candidate must have undertaken what is claimed (Day, 2001a; Konrad, 2001; Scottish Qualifications Authority, 1997).
- Specific, identified and categorized and recent. Evidence should be appointed to candidate's specific situation, task and activity and recent means that it should be current for the learning objectives involved (Konrad, 2001; Scottish Qualifications Authority, 1997; Thomson et al., 2001).
- Sufficient. The amount of evidence should match what is necessary to demonstrate competences, knowledge or skills. Sufficiency depends on the objective. To proof a specific quality, one piece of evidence might be sufficient, to proof work in several environments needs a minimum of two pieces of evidence (Scholten & Teuwsen, 2002; Scottish Qualifications Authority, 1997).

Assessors play an important role in the assessment phase. Content area expertise and an understanding of and agreement with the philosophy and process of the procedure are crucial requirements (Abbott, 1992).

Methods that are used in APL concern the quality criteria fitness for purpose, transparency, acceptability, comparability, cognitive complexity, reproducibility of decisions and fitness for self-assessment. For the most part, methods referred to in literature fit the objective of APL. In these cases, fitness for purpose has been met. Literature also addresses the availability of assessment criteria and trained assessors. This will increase transparency, acceptability, comparability and reproducibility of decisions. Some of the literature mentions that candidates should be involved in self-assessment. In that case, fitness for self-assessment would be satisfied. The assessor must determine whether the informal learning experience is at an appropri-

ate level (Abbott, 1992) because “the learning is important, but the quality of the learning as ascertained via comprehensive evaluation is paramount” (Freed, 2006, p. 11). This relates to the criterion of cognitive complexity: Candidates prove the acquisition of higher cognitive skills, which represent the educational programme’s level.

Support of APL candidates

APL requires a high level of responsibility on the part of the candidates. They are responsible for providing evidence for acquired competences, based on a description of competences and criteria for presentation in a portfolio (Colley et al., 2002). Therefore, candidates should be able to articulate learning needs and achievements (Cretchley & Castle, 2001), reflect on their own competences and prepare their own competence profile (Dutch Educational Council, 2003). However, Shapiro (2003) shows that candidates find it difficult to give good descriptions of former learning. They are not always aware of the extent of what they know or lack the language skills to articulate this knowledge adequately (Wheelahan et al., 2002). Moreover, perception of informal learning is subjective, not all learners learn well from experience and it is difficult to assess whether past job experiences actually contribute to the acquisition of competences or skills (Colley et al., 2002; Fahy et al., 1999; Shapiro, 2003; Spencer et al., 2000; Wheelahan et al., 2002). Finally, it is only the learning that has to be demonstrated and awarded with credit, not the experience itself (Andersson & Fejes, 2005; Day, 2001b).

Because of this difficult process of self-evaluation of non-formal and informal prior learning experiences and composing a portfolio, candidates need support in gathering the appropriate evidence (Dutch Ministry of Economic Affairs, 2000; Scholten, Teuwsen, & Mak, 2003; Scottish Qualifications Authority, 1997; Thomas et al., 2000; Wheelahan et al., 2002). Cleary et al. (2002) state that it is important that learners feel confident about the process of learning, especially if learners are adult returnees or other types of learners who lack self-confidence. Self-assessment and reflection provide a better understanding of one's own learning in relation to educational programme’s learning objectives. Reflecting on experiences means that people learn not only about themselves, but they also discover what was significant about the experiences they are investigating (Evans, 2003). This will lead to increased self-knowledge and more self-confidence. According to Colardyn and Bjørnavold (2004), proper support is required for all methods of collecting evidence of learning, such as examination, observation and simulation. Support of candidates must be organized in such a way that the criteria for the evidence are feasible. In a pilot study of Scheltema (2002), candidates indicated that they knew what was expected of them, but it appeared that assessors needed to give more advice in adapting the evidence supplied so it would form appropriate evidence.

Different kinds of support are outlined by Cleary et al. (2002), varying from candidates who work by themselves with minimal contact with a tutor, to procedures organized through regular meetings with a tutor. Some institutions oblige candidates to participate in a formal educational course if the latter apply for some sort of exemption. Clarke and Warr (1997) describe how preparatory workshops are effective and a vital part of the accreditation process. Day (2001b) is explicit in the sup-

port for candidates: Help candidates to identify relevant learning, agree to and review an action plan for demonstration of prior learning, and help candidates to prepare and present evidence for assessment. Donoghue et al. (2002) describe extensive assistance strategies including writing skills workshops, library orientations, acknowledgment of candidate needs in the classroom, invitations to discuss with the staff, critical thinking and analysis, literature searches, application of literature findings, development of a position and use of argument and referencing procedures. The style of support should be focused on directing, encouraging, setting deadlines and discussing (Clarke & Warr, 1997). Meetings might be on a one-to-one basis or could involve groups of candidates meeting with a tutor to discuss common issues. Peer support can also be of importance. Although the process is based on the personal nature of some of the experiences, reflection can be carried out with others in a group setting. The advisability of this approach has to be carefully considered by tutors and may depend on the types of candidates involved. Ideally, candidates themselves should be offered a choice of approach. Cleary et al. (2002) state that “perhaps the most important issue in relation to support and guidance is that of structure. If a clear structure of support and guidance is in place candidates will be much clearer about how the process works in general” (p. 14). This statement underlines the relevance of transparency in student support in APL. The way the candidate’s role is described is in line with the criterion of fitness for self-assessment.

Time investment

Although there is no accurate information about the amount of time needed for candidates and institutions when using APL, the overall impression is that it is time-consuming (Bélanger & Mount, 1998; The Calibre group of Companies, 2003; Taylor & Clemans, 2000; Thomas et al., 2000; Wheelahan et al., 2002). Aarts et al. (2003) point at the need for renewed emphasis on training that supports development of cost-efficient and valid assessment tools. Especially in the phase where the institution has to assess evidence, time can be saved if evidence presented is in conformity with the qualitative requirements of the institution (Thomas et al., 2000). In spite of these negative arguments, one of the benefits is that APL represents important efficiencies for part-time adult learners by shortening their programmes, reducing course loads and reducing costs (Aarts et al., 2003; Blinkhorn, 1999; Konrad, 2001). According to Blinkhorn (1999), by going through the portfolio process, candidates viewed their prior learning as a way to decrease time necessary to complete their programmes. Writing a portfolio reduces duplication of learning if the portfolio is successful and if an individual receives academic credit. In addition, Clarke and Warr (1997) conclude that the time-consuming nature of portfolio preparation did not apply to portfolio construction in APL if the time allotted for advice was adequate.

Successful implementation of APL requires a solution for time-consuming and bureaucratic procedures, otherwise it will reduce access to the procedures (Duvekot, 2001; Thomas et al., 2000). Costs of these procedures depend on the procedure and the available experience and tools (Thomas et al., 2000). Aarts et al. (2003) show that there can be a balance between the result of APL and the effort delivered, thereby satisfying the quality criterion for costs and efficiency.

Summary

Results presented in the previous give an overview of APL characteristics: type of learning, structure of the procedure, possible outcomes, benefits, methods, candidate's support and time investment. At the end of each characteristic's description, the relationship to the quality framework of Baartman et al. (2006) was outlined. Table 2.3 gives an overview of this relationship. A bullet indicates that the quality criterion (row) is influenced by the characteristic (column).

Table 2.3. *Characteristics of APL (columns) related to the quality criteria for assessment (rows)*

	Type of learning	Structure	Possible outcomes	Benefits	Assessment methods	Support for the candidate	Time investment
Fitness for purpose	•		•	•	•		
Transparency	•	•	•		•	•	
Acceptability	•	•	•		•		
Reproducibility of decisions		•			•		
Comparability		•			•		
Fairness	•	•	•				
Cognitive complexity	•				•		
Fitness for self-assessment		•			•	•	
Meaningfulness		•	•	•			
Authenticity							
Educational consequences		•	•	•			
Costs and efficiency			•				•

2.4 IMPLICATIONS FOR DESIGNING APL

In the following section, the relationship between characteristics and quality criteria will be discussed by giving guidelines for designing APL procedures that comply with the quality framework of Baartman et al. (2006; 2007).

1. Fitness for purpose

Fitness for purpose is the basis for the development of all competence assessment programmes (Baartman et al., 2006). This means that APL must be aligned with the educational programme's goal. The criterion "fitness for purpose" will improve if institutions choose those benefits and outcomes of APL that suit the educational

institution's purpose, and a term and abbreviation that suit the procedure's intention. To assess fitness for purpose it is necessary to have information about the combination of used term and a definition. In addition, the choice of assessment methods should fit the educational programme's purpose. In spite of the literature that shows portfolio assessment as the most common way of compiling evidence of prior learning, it is not obligatory to use a portfolio assessment. In other words, if competences are to be measured, competence assessment should be expected; if knowledge is to be measured, a knowledge test would probably be more appropriate. Overall, it is clear that the procedure is not a goal in itself, but simply an instrument that helps to support people's lifelong personal development (Fjortoft & Zgarrick, 2001). If this is the purpose of an educational programme, then APL might be a suitable method.

2. Transparency

Many aspects of the APL characteristics are related to the quality criterion of transparency. First, designers should be clear about what type of learning (formal, non-formal and informal) and what kind and level of content (knowledge or competences or skills) are required and what possible outcomes of this procedure can be for the candidate. Transparency increases when using a term for the procedure to assess and credit prior learning that covers the procedure's purpose. The whole procedure for selecting and presenting evidence should be transparent and candidates should be supported in their portfolio construction and self-assessment. The following needs to be clear to candidates: 1. the prior learning required described in terms of competences, knowledge and skills; 2. the possible outcomes; 3. the form in which evidence should be presented; 4. the assessment method and assessment standard; 5. the support that is offered to candidates by the institution for self-assessment and portfolio construction. The assessors and other people concerned, such as a tutor, should be trained. If transparency is guaranteed, participants will be more inclined to accept the procedure and evaluate it as fair because the procedure's expectation will correspond with reality.

3. Acceptability

Acceptability is about the acceptance of all stakeholders (assessors, tutors, management, workfield, ...) of the procedure's structure, the relationship between investment in the procedure and benefit from the procedure, the instruments, the selected assessment methods and the persons' responsibilities. If it is decided that besides a portfolio assessment, a knowledge test is part of APL, APL designers should focus on the acceptance of these assessment instruments by assessors and candidates. Acceptability increases if APL is transparent and decisions are reproducible because the procedure's expectation will correspond with reality.

4. Reproducibility of decisions

According to Baartman et al. (2007), reproducibility of decisions address the fact that (high-stakes) decisions made about students should be based on multiple assessments, carried out by multiple assessors and on multiple occasions. Abbott

(1992), Baume and Yorke (2002) and Cretchley and Castle (2001) support this criterion by emphasizing the availability of several assessment methods. Besides, assessment criteria should be available and described properly, and assessors should be trained. Use of external assessors from labour market in addition to internal assessors, as well as learners as assessors, might improve reproducibility of decisions. The procedure's structure should be the same for all participants so as to increase reproducibility of decisions.

5. Comparability

To improve comparability, it is important that the structure of APL is consistent and standardized. The conditions under which APL is carried out should be the same for all candidates and scoring should be consistent. Assessment standards must therefore be available. For the implementation of APL in an educational context, it is important to plan assessor sessions in which assessors exchange their assessment experiences, assess the same portfolio and share their judgements to reduce differences in assessment judgements.

6. Fairness

Fairness will increase if transparency is satisfied. Candidates will evaluate APL as fair if the procedure's expectation corresponds with reality. The methods used to assess prior learning should not disadvantage candidates in their delivering of appropriate evidence. Generally speaking, existence of APL depends on the criterion of fairness: "If experienced adults had gained academically equivalent learning through work, volunteer activity, and independent study, that learning should be formally acknowledged. [...] APL was simply one more version of the ways in which students had always demonstrated their college-level learning: essays and term papers, demonstrations, interviews with faculty, and course-specific and standardized exams." (Michelson, 1997, p. 41).

7. Cognitive complexity

Cognitive complexity is related to the quality criterion of fitness for purpose, because the evidence candidates deliver should represent the educational programme's level. The expected level of prior learning should be clear to candidates, yet literature gives many examples of difficulties in delivering this evidence at the appropriate level. In this context, Shalem and Steinberg (2002) mention the difference between retrospective and prospective assessment. In retrospective assessment, the candidate demonstrates the competence already acquired, while prospective assessment refers to the readiness of the candidate to join a qualification or to learn at an appropriate level in an educational programme. APL should cover both to support this cognitive complexity. Designers should choose only those assessment methods that match the educational programme's cognitive level.

8. Fitness for self-assessment

The quality criterion of fitness for self-assessment is important in the second phase of APL, namely in selecting and presenting evidence. In this phase, an important

role is assigned to the candidate, because a self-assessment is often required. Self-assessment provides a better understanding of one's own learning in relation to the educational programme's learning objectives. This will lead to increased self-knowledge and more self-confidence. Moreover, guidance and support are needed because the evidence-gathering consists of several sub-skills, namely identifying relevant learning, evaluating one's own experiences, reflecting on one's own competences and preparing one's own competence profile. The support should be directed towards the identification of relevant learning, reflection on one's own competences, gathering of appropriate evidence, and presentation of the evidence in line with the assessment demands of the institution. This might consist of preparing a demonstration or a presentation, but in most cases, it is the composition of a portfolio with the appropriate evidence. In addition, extra study-skills support can be given such as writing skills workshops, library orientations, critical thinking and analysis, and literature searches to improve the connection to the formal learning environment. For example, Bowling Green State University has designed an online writing course for adults in a prior learning assessment programme (Blair & Hoy, 2006).

9. Meaningfulness

APL is only meaningful if the procedure has a surplus value for the institution as well as for the candidates. If there are no benefits to be expected for the institution or for the candidate, the procedure should not be implemented. It is important here to be aware that what is meaningful for one person is not always meaningful for another person. For the design of APL, this means that benefits for both candidate and institution must be described in clear and transparent terms. The procedure's phases should be developed in a way that is meaningful for all people involved.

10. Authenticity

Literature on APL provides little information related to the quality criterion of "authenticity." A reason for this might be that APL is organized at the start of an educational programme. Candidates are often experienced workers. If this work experience is relevant to the educational programme, they can start the APL procedure. However, one of the evidence criteria is that it should be authentic, which means that it belongs to the prior learning and the candidate has undertaken what is claimed (Konrad, 2001). This definition differs from that of Baartman et al. (2006), who states that the tasks a learner has to fulfil should have a direct link with future practice (Gulikers et al., 2004).

11. Educational consequences

At the start of an APL procedure, educational consequences should be clear and negative effects should be prevented. According to Andersson (2006), an educational consequence of the implementation of a new assessment method like APL is that the institution should be open to change in its way of thinking about learning and assessment, and about what could and should be assessed. This consequence

should be taken into account by designers in processes in which educational innovation is desired.

12. Costs and efficiency

The quality criterion of costs and efficiency has received little attention in literature, contrary to the oft-mentioned importance of an efficient and effective procedure. The overall impression is that APL is time-consuming (Bélanger & Mount, 1998; The Calibre group of Companies, 2003; Taylor & Clemans, 2000; Thomas et al., 2000; Wheelahan et al., 2002), but can be made efficient by differentiation in procedure and through the availability of experience and proven tools (Thomas et al., 2000). Giving support to candidates is an important factor in the time spent by tutors on APL. According to Thomas et al. (2000), the institution can reduce the time it invests in the phase of evidence assessment if the presented evidence fits the institution's desired level. To reach this prerequisite (advancing the presented evidence to a higher level), the institution should focus on the candidates' support in the evidence-gathering phase. The choice of a certain outcome involves the costs of the procedure for the candidate as well as the institution. A right balance between the result of APL and the effort delivered by the candidate and the institution can optimize costs and efficiency. For the institution this means, for example, an increase in student numbers and for learners this means a reduction in learning period.

2.5 CONCLUSION AND DISCUSSION

This study focused on the following research question: How are characteristics of APL elaborated in the literature and what is the relationship between APL and the quality framework for competence assessment programmes? Based on this study, design guidelines for APL can be formulated.

Regarding the characteristics of APL, we can conclude that, although differences in terms, types of learning and possible outcomes were described, a large overlap was found in the structure of APL procedures and the used assessment methods to provide evidence of prior learning. Many of the benefits of APL are known, in contrast to the oft-mentioned inefficiency of APL. APL procedures require a high level of responsibility from candidates and support in the complex task to compose a portfolio.

A second conclusion is that the quality framework of Baartman et al. (2006) is useful for APL, but that some of the criteria are more relevant than others. Authenticity, defined by Gulikers et al. (2004) and used by Baartman et al. (2006) has a different perspective in APL than in competence assessment programmes during formal education. By optimizing the quality of APL, lifelong learning will be stimulated.

A point of discussion is that Baartman et al. (2006) stated that there was interdependency between the second level of criteria (transparency, acceptability, reproducibility and comparability) and the third level of criteria (fairness, cognitive complexity, fitness for self-assessment, meaningfulness and authenticity). The question

is if this interdependency is really as clear as Baartman et al. (2006) stated. Acceptability, for example, seems to be dependent on transparency and comparability of decisions. If transparency is satisfied for all aspects of APL and decisions are comparable, participants will be more inclined to accept the procedure and evaluate it as fair. Interdependency could be a problem if one wants to investigate APL with these criteria empirically. In point of fact, the distinction between reproducibility of decisions and comparability of decisions is difficult. The emphasis on reproducibility of decisions about the availability of more than one type of assessor leads to an increase in comparability. On the other hand, to improve comparability, it is important that the structure of APL is consistent and standardized. The introduction of more assessors complicates the standardization in work processes.

For APL, as well as for other competence assessment programmes, fitness for purpose is an important basic criterion. This is where the role of the designer starts. The designer has the complex task of developing an APL procedure that meets the quality framework. The cost and efficiency criterion is essential because an APL procedure “can be correctly designed according to all criteria, but if it cannot be implemented and used because of prohibitively high costs or low efficiency, the development has been a waste of time” (Baartman et al., 2006, p. 167).

The literature about APL is mainly descriptive. In order to learn more about the quality of APL it is important to put APL on the empirical research agenda. What will be the effect of APL on the long term? Do students admitted to an educational programme in the traditional way differ after certification from students admitted to the programme through APL? In addition to this literature review, perceptions of candidates, tutors, assessors and designers should be explored in depth in future research in order to design high-quality APL procedures. Finally, how candidates can be supported in these procedures also needs to be investigated, since one important result of this study was that candidates are not automatically able to evaluate their own experiences and to present these in a portfolio.

Chapter 3

Self-assessment in university Assessment of Prior Learning procedures

This chapter is based on Joosten-ten Brinke, D., Sluijsmans, D. M. A., & Jochems, W. M. G. (in press). Self-assessment in university assessment of prior learning procedures. *International Journal of Lifelong Education*.

ABSTRACT

Competence-based university education in which lifelong learning and flexible learning are key elements, demands a renewed vision on assessment. Within this vision, Assessment of Prior Learning (APL), in which candidates have to show their prior learning for recognition goals, becomes an important element.

The study presented in this chapter focuses on a first step in APL, namely students' self-assessment of their prior learning before entering university education. The main aim of the presented study is to examine the suitability of the use of self-assessment in APL. First, in an explorative study, the main sources for self-assessment are derived and the relation between sources and domain of study is investigated. Second, in a pre-test post-test research design, the hypothesis is tested that students' self-assessment of prior learning related to a course changes after studying a domain-specific course.

Pre-test results reveal that students indicate that they have prior knowledge related to the chosen university programme. In general, this prior learning is obtained from study experience, work experience, books, newspapers, magazines, and internet, TV, radio, film or video. A relation is found between the type of source and the university programme. The hypothesis that students change their self-assessment after a study period could not be confirmed. Based on these results, it is concluded that self-assessment in APL might be a suitable tool. Implications for further research are discussed.

3.1 INTRODUCTION

University education still aims at individual achievement of learning objectives with related certificates. In this intentional goal-oriented learning, students conduct organized educational activities to achieve the learning objectives. Different assessment methods are used to measure students' performance and certificates are granted when this performance meets the standards of the learning objectives. However, learning goes far beyond this formal learning. Non-formal and informal learning are two other important categories of learning that deserve more attention within the formal education system (Bjørnavold, 2001; Cedefop, 1996; Colardyn & Bjørnavold, 2004; Cretchley & Castle, 2001). Non-formal learning is, similar to formal learning, characterized by an intentional learning objective in a structured context, like schools or classes, but there is no legally or socially recorded certification involved. An example is typing lessons. Informal learning is not intentional, not structured and does not lead to certifications. An example is being a chairperson of a sports club. Marsick and Watkins (2001) emphasize that informal learning is at the heart of adult education because of the lessons that can be learned from life experiences. In its most generic sense, learning involves the acquisition of competences, understanding, knowledge, or skills, anytime and anywhere (Livingstone, 2001).

Because university education has been focusing for many years on knowledge construction rather than on competence development, the value of informal and non-formal learning was not recognized. In the context of lifelong learning however, it should not matter how something is learned exclusively, but it matters what is learned in relation to further personal development (Spencer et al., 2000). The importance of establishing systems for the recognition and accreditation of various forms of prior learning, and in particular informal and non-formal learning, has been recognized as a key issue in lifelong learning policy within Europe in recent years (European Commission, 2000). In this study, we therefore focus on the use of non-formal and informal learning for students who want to attend university education. This is defined as the credit exchange model in which achieved and proven competences are exchanged for course credits by giving exemption from part of the educational programme (Butterworth, 1992). In this model, it is assumed that there is a knowledge equivalence between formal and informal learning environments and therefore credit exchange is possible.

The admittance of students based on formal, non-formal and informal prior learning experiences is referred to as Assessment of Prior Learning (APL). APL is 'the process of identifying, assessing and recognizing skills, knowledge, or competences that have been acquired through work experience, unrecognized training, independent study, volunteer activities, and hobbies. APL may be applied towards academic credit, towards requirement of a training programme, or for occupational certification' (Human Resource Development, 1995, p. 1). In APL, prospective students provide evidence of prior learning that relates to the learning objectives of the formal academic programme and they have to present this evidence to the academic

institute. APL acknowledges that adults learn in a variety of contexts outside educational institutions and that this learning may be broadly equivalent to that gained in formal education (Cretchley & Castle, 2001). In general, APL consists of four phases (New Zealand Qualification Authority, 2001; Wilcox & Brown, 2003): 1. identification and initiation, 2. evidence gathering, 3. assessing the evidence, and 4. recognition and accreditation.

The first phase is rather general; the institute communicates what is expected from the candidate. In the second phase, the student collects evidence about previous qualifications and experiences to support a claim for credit with respect to the new qualification students are seeking. In phase three, the students' prior learning is assessed. If the prior learning is suitable for the educational programme, it will be recognized in phase four.

This study addresses the second phase of evidence-gathering of prior learning. A common tool in this phase is a portfolio (Clarke & Warr, 1997; Bjørnavold, 2001). Mostly, a key component of a portfolio is students' self-assessment of their learning experiences in relation to the educational programme they like to attend (Evans, 2003). This self-assessment however is delicate and complicated for two reasons.

First, adult students appear to easily deliver evidence from formal prior learning, but their experiences from informal and non-formal learning environments are more difficult to indicate for them (Colley et al., 2002). A list of sources may help students to illustrate prior learning experiences (Spencer et al., 2000). For example, Shapiro (2003) explored the informal learning experiences in the domain of teacher education and distinguished five sources, of which the first two are domain specific: 1. Learning through non-teaching jobs; 2. Emulating one's past teachers; 3. Learning in museums, science centres, and similar institutions; 4. Learning through community or volunteer work; and 5. Learning through reading, internet use, and television. In the domain of non-profit organizations, Sousa and Quartier (2003) found sources like meetings, reading, internet, correspondence, fundraising, telephone calls, workshops, attending conferences, study or sabbatical leave and certification. Livingstone (2000b) related informal learning to community work, to household work, and to other, general interests like sports or recreation, leisure or hobby skills, community activities or housework and others. Learning in the workplace has emerged as an important source for adults' informal and non-formal learning (Beckett & Hager, 2000). The sources mentioned in the previous are especially applicable for adult students, who in general have a broad life and many years of working experience.

A second reason that makes the self-assessment of prior learning complicated is the requirement to have the skill to self-assess. In APL, students should ask themselves questions as: "Is what I have learned enough?", "Does my prior learning meet the criteria?", or "What have I really learned in the past?" Shapiro (2003) confirms that it is difficult for students to give good descriptions of former learning experiences based on memories. Students may not realize the extent of what they know, or miss the language to articulate that. Besides this, the perception of informal learning is subjective and it is difficult to self-assess whether past job experiences actually engage in the learning. In general, research on self-assessment of adult students is ambiguous with respect to the reliability of self-assessment. While some research reveals that the reliability of the students' self-assessment is acceptable (Galson &

Oliker, 1976) which implies that students are able to self-assess accurately (Gentle, 1994), other research findings reveal that there is little or no relationship between actual performance or ability and self-rated performance or ability (Boud & Falchikov, 1989; Ward, Gruppen, & Regehr, 2002). Especially low-expertise students tend to overrate themselves, while the reverse is the case for high-expertise students. Koriatic and Bjork (2005) argue that candidates are susceptible to bias in predicting what they will know in the future based on their actual knowledge. They conclude that overconfidence in self-assessment is higher if the correct answer is available. Regehr and Eva (2006) conclude that self-assessment skill is tied to expertise in specific domains. These findings on self-assessment lead to the question whether overconfidence, domain specificity, and differences between low-expertise and high-expertise students apply to APL. In APL, for example, no correct answer is available beforehand. Therefore, the overconfidence might be less than expected in other testing situations. Based on the literature, it is expected that 1. students' self-assessment changes over time if they have to self-assess their basic knowledge before and after an intervention, and 2. the self-assessment will be biased by the expertise of the students.

The main question in the present study is whether self-assessment as a key component of the portfolio is a suitable tool to support students in evidence-gathering in university APL procedures. This question is investigated in a two-step approach. In the first step, it is explored which sources are interesting for demonstrating. Specific research questions are:

1. Do students indicate prior learning experiences related to a particular university programme?
2. If so, through which sources is this prior learning obtained?
3. Is there a difference in the sources mentioned between students with a low knowledge-level and students with a high knowledge-level?
4. Are the sources students use to indicate prior learning related to the chosen university programme they start with?
5. Do university programme, study motivation, gender, age and fulfilled education influence the self-assessment of prior learning?

In the second part of the study, it is empirically investigated how students self-assess their prior learning before and after a domain-specific course. Specific research questions are:

1. Is the self-assessment of students stable over time?
2. Does the result of the self-assessment differ between low-expertise students and high-expertise students?

3.2 METHOD

Participants

1,105 Adult students, who subscribed for a university starting course (200 hours study load) at the Open University of the Netherlands, were sent a web-based questionnaire before the start of the programme (pre-test) and after one and a half year

(post-test). Between the two measurements, participants took a domain-specific starting course that they could study time and place independent. The adult student at the Open University is characterized as a mature person, with the minimum age of 18, with work and life experiences who wants to develop themselves at a Life-long Learners University. The university is an open and flexible institute in which education is offered not only to certificate, but also to have the possibility for recognition of relevant prior learning. Prior learning obtained by formal learning is recognized with prescribed exemptions, prior learning obtained by informal and non-formal might be recognized by an APL procedure. The admissions policy allows every adult to start studying at the Open University. There are no entrance requirements for the bachelor programmes. The starting courses are designed from the principle that students have to learn how to study and to learn the basics of the educational domain.

In total 503 students participated. The mode age of this group was 36-45 year. This participation is divided in students who took the pre-test ($N = 428$; mode = 36-45 year; response rate of 38.7%) and students who took the post-test ($N = 167$; mode = 36-45 year; response rate of 15.1%). 92 of these students participated in both measurements. The distribution of the students across the six university domains is given in Table 3.1 for each measurement. In addition, the numbers and percentages are given of students who passed the starting course and participated in both measurements.

Table 3.1. Distribution of the students across the six university domains, numbers of exam participation and exam passes at the pre-test (start of the course), at the post-test (after one and a half year) and the responses on both measurements.

Domain	Pre-test					Post-test					Pre-test and Post-test				
	<i>n</i>	Male	Female	Exam partici- pation	Exam passes	<i>n</i>	Male	Female	Exam partici- pation	Exam passes	<i>n</i>	Male	Female	Exam partici- pation	Exam passes
Cultural Science	63	23	40	33	31	31	14	16	24	24	16	7	9	16	16
Management Science	34	19	14	7	6	10	4	6	5	5	5	3	2	4	4
Natural Science	23	16	7	11	10	10	8	2	7	7	7	6	1	6	6
Dutch Law	83	35	47	31	23	36	14	22	24	21	16	6	10	13	11
Psychology	196	42	151	61	51	71	17	53	37	35	42	12	29	26	25
Computer Science	29	21	7	14	13	9	4	3	6	6	6	2	3	5	5
Total	428	156	266	157	134	167	61	102	103	98	92	36	54	70	67

Table 3.2. Example of a Question in the Domain of Management Science

-
- q.3. Do you have knowledge of consumer behaviour, producer behaviour and the market?
- a. I know nothing about consumer behaviour, producer behaviour and the market.
 - b. I know a little about consumer behaviour, producer behaviour and the market.
 - c. I know relatively a lot about consumer behaviour, producer behaviour and the market.
 - d. I know a lot about consumer behaviour, producer behaviour and the market.
 - e. I do not know.
-

If the students gave b, c, or d as an answer, they got the following question:

q.3.1. Here you see a list of sources out of which you could have learned about consumer behaviour, producer behaviour and the market. Which of the following sources did you use (you can mark more than one)?

- ☐ 'Work experience or on-the-job training'
 - ☐ 'Symposia or workshops'
 - ☐ 'Museum visit'
 - ☐ 'Internet, TV, radio, film or video'
 - ☐ 'Household and family'
 - ☐ 'Hobbies'
 - ☐ 'Study experience'
 - ☐ 'Social activities or clubs'
 - ☐ 'Sabbatical leave'
 - ☐ 'Voluntary work'
 - ☐ 'Correspondence (mail, letters)'
 - ☐ 'Books, newspapers, magazines'
 - ☐ 'Executive functions'
-

q.3.2. Give extra information to these sources if you want to.

q.3.3. Did you use another source that is not mentioned in the list? If so, which source is this?

Questionnaires and procedure

For the pre- and post-test, a self-assessment online questionnaire on prior learning, consisting of 33 questions, was developed. This questionnaire was pre-tested by educational developers and researchers and people that represented the sample of this study.

This final questionnaire included an instruction how to fill in the questionnaire and some background questions regarding age, gender, prior fulfilled education, motivation to start the university programme, and acquired knowledge related to the concept 'Assessment of Prior Learning' (APL). Both closed and open-ended questions were included regarding participants' prior learning in relation to the learning objectives of the academic programme they intended to start and the sources they brought forward for this learning. These questions were derived from the questionnaire of Shapiro (2003) who investigated the informal learning of teachers. Participants had to indicate on a four point scale if they had prior knowledge about the learning objectives (0 = I know nothing about 'learning objective x'; 1 = I know a

little about 'learning objective x'; 2 = I know relatively a lot about 'learning objective x'; 3 = I know a lot about 'learning objective x'). For the twelve learning objectives, the students could indicate if they had learned something about the learning objective from relevant sources in informal and non-formal learning (Livingstone, 2000a; Shapiro, 2003; Sousa & Quarter 2003). Students could also insert a new source that was not included in the list. Students could only indicate the use of a source when they previously had indicated that they had learned more than nothing according to a learning objective. An example of a question is in Table 3.2.

Because of the retrospective character of the post-test, the questions in the post-test were changed in 'Did you at the moment of the start of the course really have that knowledge'. For example, the first question in Table 3.2 was 'Did you at the moment of the start of the course really have knowledge of consumer behaviour, producer behaviour and the market?'

3.3 DATA ANALYSIS

To investigate the research questions one to five, only the data of the pre-test were selected for analysis. To investigate the sixth and seventh research question, the post-test data were also included.

To answer the first research question ('Do students indicate prior learning experiences that are related to a particular university programme?') frequencies were calculated for the questions that focused on the obtained knowledge and skills of the student in relation to the learning objectives.

For analyzing the second research question ('Through which sources is this prior learning obtained?'), the questions in which students could mark all the sources that contributed to the learning objectives, were used for analysis. For these sources sum scores were calculated to indicate how often sources were mentioned. Analyses of variance with post-hoc tests for the university programmes were used to indicate significant differences between the university programmes.

To compare the used sources with the knowledge base of the students (third research question: 'Is there a difference in the sources between high level knowledge and low level knowledge students?') first correlations were calculated between the number of sources and knowledge level. For this, a median split was used to define a high knowledge group and a low knowledge group. If the students marked "I know nothing about 'learning objective x'" they got zero points, if they marked "I know a little about 'learning objective x'", they got one point, if they marked "I know relatively a lot about 'learning objective x'", they got two points, and if they marked "I know a lot about 'learning objective x'", they got three points. Sum scores were calculated for these 12 items. The median sum score was 14. The students with a sum score equal to 14 or less was labelled as the 'low knowledge group', and the students with a sum score higher than 14 as the 'high knowledge group'. After testing the correlation between knowledge-level and number of sources it was investigated if the sources depend on the knowledge level of the students, by an independent-samples t-test was conducted.

To answer the fourth question ('Are the sources students use to indicate prior learning, related with the university programme they start with?') a univariate analysis of variance is used with post-hoc tests to compare the group means of the sources in the pre-test for the university programmes.

To answer the fifth research question ('Which variables (university programme, study motivation, gender, age and fulfilled education) influence the self-assessment of prior learning?'), univariate analyses of variance in the pre-test were used with post-hoc tests with the university programme as the between subject factor, the sources as the dependent variable and the background variables as the factors.

To answer the sixth question ('Is the self-assessment stable over time?'), the mean scores on items on the learning objectives in the pre-test were compared with the mean scores on the items on the learning objectives in the post-test. The data of the participants who passed the starting course and filled in both questionnaires were selected for this analysis. The domain-generic learning objectives were analysed with a t-test. Because the number of observations per domain are low, Wilcoxon signed ranks test is used.

For the data analysis of the seventh question ('Does the result of the self-assessment differ between the low-expertise students and high-expertise students?'), we selected a representative sample of students who filled in both questionnaires. For this sample, correlational analyses were conducted between the self-assessment on both measurements and the marks on the starting course.

3.4 RESULTS

Student characteristics

Before the start of the study, 3.8% of the students expected to complete the starting course within 2 months, 65.3% within 6 months, 27.6% within a year and 3.1% within one year and half. After one year and a half, 44.3% of the students have taken the exam. 38.4% of this group passed this exam. The motivation of the students to start the university programme mainly was to develop their (intellectual) capabilities (38.4%), and to increase their chance on the labour market (28.8%). The daily activities of the participants consists of a fulltime job (64.6 %), part time job (less than 36 hours per week) (31.5 %), retired (2.3 %), household activities (31.7 %), take care of children (24.1 %), fulltime student (13.2 %), or part time student (25.0 %). The daily activities of the participants consists of a fulltime job (64.6 %), part time job (less than 36 hours per week) (31.5 %), retired (2.3 %), household activities (31.7 %), take care of children (24.1 %), fulltime student (13.2 %), or part time student (25.0 %). The highest fulfilled educational programme of the students was Higher Vocational Education (bachelor) 24.9%, Secondary Vocational Education 14.3%, or University Education (master) 13.2%.

The majority of the students (76.5%) is acquainted with the exemption policy of the institute; only 4.4% is acquainted with APL-procedures, although 17.5% had heard about it, without knowing the meaning of APL.

The reasons mentioned for attending APL are ‘to save time’(51.8%), ‘to receive study points’(33.3%), ‘to save money’ (31.0%), ‘to combine work and study better’(27.4%), ‘to follow less courses’(11.9%), ‘to change my career’ (9.5%), and ‘to satisfy the requirements of my employer’(3.0%).

Research question 1

The first research question was whether students indicate prior learning experiences related to a particular university programme. From the total group 97.2% indicated that they know a little to a lot about the learning objectives. Therefore, the first question can be answered positively. 35.9% of the students feel they could be considered for exemptions based on their prior informal learning. Only 32.3% of the students indicated that they thought that their prior learning was at the required academic level.

Research question 2

The second research question focused on the sources that students indicate as relevant for their prior learning. In Figure 3.1, sources and frequencies are presented. The source that the students mentioned most frequently was study experience ($M = 4.8$; $SD = 3.91$), followed by work experience or on-the-job training ($M = 4.5$; $SD = 3.58$), books, newspapers, magazines ($M = 4.5$; $SD = 3.75$), and internet, TV, radio, film or video ($M = 3.6$; $SD = 3.39$). Sources that were mentioned less frequently were sabbatical leave ($M = 0.2$; $SD = 1.03$), voluntary work ($M = 0.6$; $SD = 1.74$), executive functions ($M = 0.6$; $SD = 1.68$), and museum visits ($M = 0.7$; $SD = 1.48$).

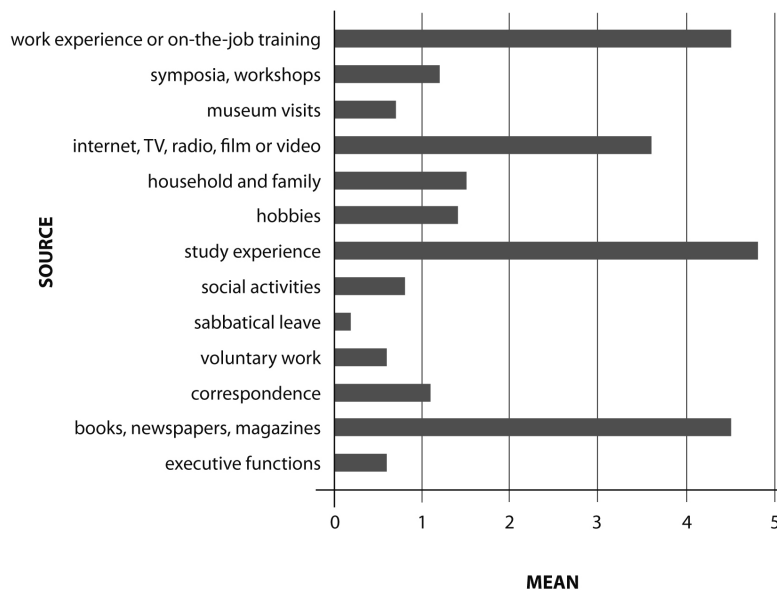


Figure 3.1. The means of the sources indicated by the students

Research question 3

A significant correlation is found between students' knowledge level and the number of sources that they indicate ($r = 0.632$, $p < 0.001$). Subsequently, the differences between the high- knowledge group and low-knowledge group are compared. By scoring the answers of the students with three or less points for their knowledge level, it was possible to evaluate the knowledge-level of the students for the two groups. The maximum score is 36 ($M = 14.05$, $SD = 7.12$). The skewness value (0.028) indicates a normal, symmetric distribution. Results of the independent-samples t-test shows no significant differences for 'Sabbatical leave', 'Voluntary function' and 'Museum visit'. For all the other sources a significant differences between high knowledge group and the low knowledge group students is found: 'Work experience or on-the-job training' $t(336) = -11.54$, $p < .01$, 'Symposia, workshops' $t(282) = -5.69$, $p < .01$, 'Internet, TV, radio, film or video' $t(344) = -7.33$, $p < .01$, 'Household and family' $t(356) = -2.15$, $p < .05$, 'Hobbies' $t(286) = -4.14$, $p < .01$, 'Study experience' $t(331) = -10.69$, $p < .01$, 'Social activities, clubs' $t(312) = -3.53$, $p < .01$, 'Correspondence' $t(307) = -2.50$, $p < .05$, 'Books, newspapers, magazines' $t(360) = -8.72$, $p < .01$ and 'Executive functions' $t(248) = -3.45$, $p < .01$. Figure 3.2 shows these significant differences.

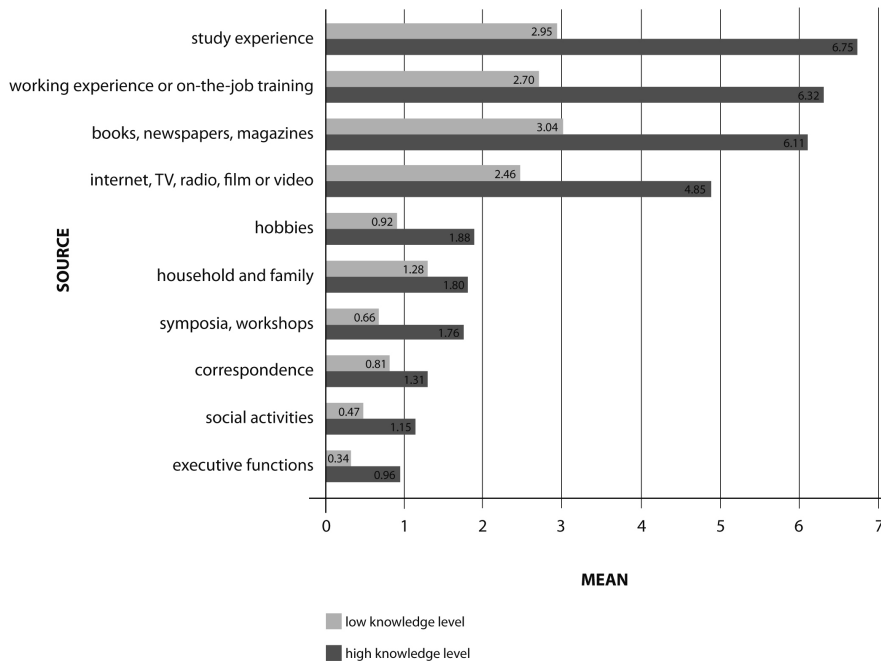


Figure 3.2. Significant differences in the use of the different sources between the 'low knowledge-level group' and the 'high knowledge-level group'

Research question 4

The fourth research question was whether the sources students use to indicate prior learning, is related to the university programme they start with. The results show that there is a significant difference between the university programmes for use of 'Work experience or on-the-job training' $F(5) = 15.71, p < .01$, 'Symposia or workshops' $F(5) = 7.29, p < .01$, 'Museum Visit' $F(5) = 48.84, p < .01$, 'Internet, TV, radio, film or video' $F(5) = 6.37, p < .01$, 'Household and family' $F(5) = 9.87, p < .01$, 'Hobbies' $F(5) = 8.10, p < .01$, 'Study experiences' $F(5) = 2.54, p < .05$, 'Sabbatical leave' $F(5) = 3.05, p = 0.01$, 'Books, news papers and magazines' $F(5) = 3.64, p < .01$.

Table 3.3. Summary of the results of univariate analysis of variances on the sources. Homogeneous subsets' are sets of the university programmes that do not differ significantly.

	Cult	Comp	Nat	Man	Psy	Law	Homogeneous subsets
Work experience	1.84	7.52	3.09	5.35	5.09	4.13	Comp > (Man + Psy + Law) > (Psy + Law + Nat) > (Nat + Cult)
Symposia	.67	1.66	.87	.74	1.73	.49	(Psy + Comp + Nat + Man + Cult) > (Comp + Nat + Man + Cult + Law)
Museum	2.71	.03	1.22	.06	.28	.23	Cult > Nat > (Psy + Law + Man + Comp)
Internet	4.00	3.62	6.57	2.97	3.73	2.41	Nat > (Cult + Psy + Comp + Man + Law)
Household	.84	1.31	1.22	1.18	2.28	.48	(Psy + Comp + Nat + Man) > (Comp + Nat + Man + Cult + Law)
Hobbies	1.94	2.93	2.17	.56	1.41	.46	(Comp + Nat + Cult) > (Nat + Cult + Psy) > (Psy + Man + Law)
Study experience	4.17	5.10	5.70	3.21	5.26	4.34	(Nat + Psy + Comp + Law + Cult) > (Psy + Comp + Law + Cult + Man)
Sabbatical	.16	.14	.91	.00	.27	.06	Nat > (Psy + Cult + Comp + Law + Man)
Books, ...	4.75	3.72	6.30	4.06	4.85	3.28	(Nat + Psy + Cult + Man) > (Psy + Cult + Man + Comp + Law)

Note: In the cells, the mean scores of the sources per university programme are mentioned. Subsets are made for programmes that do not differ significant from each other. Comp = Computer Science, Man = Management Science, Psy = Psychology, Law = Dutch Law, Cult = Cultural Science, Nat = Natural Science.

Table 3.3 shows the identified homogeneous subsets of the means that are not different from each other for each of the significant sources. This means for example that for 'Work experience or on-the-job-training' the university programmes of Cultural Science and Natural Science do not differ significantly, even as the university programmes of Natural Science, Dutch Law, and Psychology, and the university programmes of Dutch Law, Psychology and Management Science. This means that these clusters tend to use the same sources.

Research question 5

The fifth research question was whether university domain, age, gender, fulfilled education and motivation are related with the students' self-assessment. There are less significant relations found.

Table 3.4. Significant relations between the sources and background variables

Source	Variable	<i>F</i>	<i>df</i>
'Work experience ...' *	Motivation	4.32	7
'Symposia ...' *	Education	8.30	20
'Household and family' *	Education	1.96	20
'Hobbies' *	Education	2.67	20
'Study experience' *	Age	4.44	5
'Voluntary work' *	Education	2.29	20
'Correspondence ...' *	Education	3.70	20
'Executive functions' *	Age	3.80	5

* $p < .01$

Table 3.4 shows that motivation is associated with the number of the times the source 'Work experience' is mentioned. Education as background variable is related with the number of the sources 'Symposium', 'Household and family', 'Hobbies' and 'Voluntary work'. Age is related with the number of the source 'Study experience'.

Research question 6

The sixth question was whether students differ in their self-assessment after following a domain-specific course. Only for one domain-specific learning objective (Psychology, 'knowledge on personality, pathology and therapy') a significant difference is found by the Wilcoxon signed ranks test between the pre-test ($M = 2.55$; $SD = 0.83$) and the post-test ($M = 2.10$; $SD = 0.82$): $Z = -2.555$, $p = 0.011$. All the other analyses show no significant difference between the two measurements.

Research question 7

The second question focused on the relation between the self-assessment of knowledge and the expertise of the student. Correlations between the pre-test and the marks on the starting course are not significant. This is also the case for the correlation between the post-test and the marks. One significant correlation is found between the post-test and the marks for Natural science ($r = 0.823$, $p < 0.1$). The hypothesis is that students with low expertise (low mark on the test) have a low self-assessment score of their prior knowledge. The data confirm this hypothesis. Students with a low mark, did have a low self-assessment score.

3.5 CONCLUSION AND DISCUSSION

Main aim of this study was to explore the role of self-assessment as a suitable tool to support students in evidence-gathering in university APL procedures. A first conclusion is that although almost every student indicates to have prior learning experiences related to the subject of the university programme, only one third of the students is confident that this prior learning is sufficient to gain exemptions for the university programme. This gap may be explained by students' awareness of the educational worth of their learning experiences; only 32.3% had indicated that the prior learning was at an academic level. Another explanation is that students underestimate their knowledge. This seems to be in line with the conclusion of Wheelahan et al. (2002), who state that students need time and support to translate their prior learning into the educational discourse. However, this research shows that students' do not change in their self-assessment before and after a domain specific starting course. This means that their self-assessment is stable over time. Even in the case that students are more aware of the content of the course, the self-assessment does not change. This result is crucial for the use of self-assessment in APL. If the self-assessment of prior learning before the start of the university programme would differ significantly with the self-assessment after the start of the university programme (one and a half year later), then the use of self-assessment in APL would be questionable. Now, we are positive about the value of self-assessment in APL. The conclusion of Dunlosky and Nelson (1992) that the prediction of knowledge is far more accurate if the self-assessment is made at a delay following learning than if the self-assessment is made immediately after the learning is not important in the context of APL, because the self-assessment of the prior learning in APL is not directly after the learning took place.

Our study does not confirm the result of Boud and Falchikov (1989) who showed that high-expertise students tend to underestimate themselves and low-expertise students tend to overestimate themselves. In the underlying research, no differences are found in the pre-test and post-test between the high-expertise group and the low-expertise group. However, the gap between the general finding that 96.9% of the students expect to complete the course within one and a half year and the observation of only 38.4% of the students who really complete the course seems to indicate some overestimating. Although the drop out rate is comparable with the normal drop out rate of the distance university (students mention the following reasons for drop out: lack of time, personal and work-related circumstances (Joosten, 2003)), the power of the conclusions is reduced.

In this research, students were asked about their prior learning experiences. Besides the question if students are able to indicate their own prior learning, it is questionable if the students use the same criteria to give a specific score on the four-point scale.

A second conclusion of this research is that students use different sources to demonstrate prior learning and that the sources students use in their prior learning is related with the university programme they start. The homogeneous subsets define which programmes are comparable by the used sources and which are not comparable. For example, a comparable source for five of the educational domains was

‘Study experience’. ‘Museum visit’ is an example of a source in which the programmes are not comparable. Students of Cultural Science use Museum visits significantly more as a source than students of Natural Science and they use this source significantly more often than the other students. This is not surprising because of the nature of Cultural Science and the existence of many Science Centres who try to make young children already interested in this domain. The high use of internet, TV, radio, video or film of the Natural Science can be attributed to the many documentaries about the domain of Natural Science (i.e., the popularity of Discovery Channel). The high use of work experience for students of Computer Science might be explained by today’s society, in which ICT is common in the workplace. The level of comparison can be used to structure the portfolio’s students have to make in an APL-procedure. University programmes within the same subset can use a comparable structure. The structure of the portfolio should suit the student’s prior formal, informal and non-formal learning and the competences required by the institute (Baume & Yorke, 2002; Bjørnavold, 2001; McMullan et al., 2003; Nieweg, 2002; Wilcox & Brown, 2002). Therefore, an institute must be aware of the possible prior learning experiences a student will use and the evidence the student will present of this prior learning. In line with the conclusion of Livingstone (2001) that the kind of sources are broad, but related to the study a student wants to start, we recommend to inform students in the structure of the portfolio about the relevant sources. This is especially important for low-expertise students, because they mention fewer sources by oneself.

A practical advantage of this study is that if a university wants to support students in their recognition of prior learning, they should refer them to the relevant sources for their domain. This could be done by giving worked out examples of sources that deliver evidence for a specific domain. A portfolio for Cultural sciences might contain a more detailed structure on the source of Museum visit, while a portfolio for Computer science might contain a more detailed structure for Work Experience. More research on the relation between the sources and the portfolio structure is necessary, because being too prescriptive will have a negative impact for the APL-candidates (Michelson & Mandell, 2004). Especially for higher education, the results of this study can be used to develop online tools for students that can be used in preservation of freedom of place, time and pace.

For future use, some improvements of the questionnaire are in order. The questionnaire could be improved by splitting up the sources. For example, one source was ‘Internet, TV, radio, film or video’; analyses that are more specific are possible if this source is split up in five separate sources. Only then, a conclusion can be drawn if it was the internet, the TV, the radio, the film or the video that distinguishes Natural Science from the other university programmes. A last improvement of the questionnaire is that it should be defined what is meant by prior learning. Does it cover all the prior learning, or only the prior learning of the last few years? Are students capable to know if their prior learning is outdated?

Further research should focus on the other assessment instruments that are used in APL, especially the portfolio. Can we consider a structure for the portfolio that supports the students and is efficient in use? Furthermore, it is interesting to investigate the perceptions of the participants in APL towards the self-assessment instruments and the use of a portfolio.

Chapter 4

Assessment of Prior Learning (APL) in university programmes: Perceptions of candidates, tutors and assessors

This chapter is based on Joosten-ten Brinke, D., Sluijsmans, D. M. A., & Jochems, W. M. G. (in press). The quality of Assessment of Prior Learning (APL) in university programmes: Perceptions of candidates, tutors and assessors. *Studies in Continuing Education*.

ABSTRACT

Formal diplomas and certificates have been accepted as proof that students may receive exemption for parts of their educational programme. Nowadays, though, it is socially desirable that informal and non-formal learning experiences are also recognised. Assessment of Prior Learning (APL) addresses this issue. In APL, the candidate's knowledge, skills or competences required in informal and non-formal learning are measured against a standard to determine whether they match the learning objectives. Although APL is frequently used in workplaces and vocational education, it is practised less in universities, and research lacks in this context.

This study aims to evaluate the first APL procedure in an academic Computer Science programme, and an adjusted APL procedure in an Educational Science master's programme. This is done from the perspective of the APL candidates, tutors, and assessors, using the theoretical framework by Baartman et al. (2006).

From the Computer Science programme, 23 candidates from a police software company, four tutors and four assessors participated. From the Educational Science programme, nine candidates, two tutors and two assessors participated.

The results show that the APL procedure in Educational Science is viewed significantly more positively than that in Computer Science; further, the Computer Science assessors differ considerably from the other participants in their perceptions relating to the quality criterion 'cognitive complexity'. Explanations for the difference between the two programmes are discussed and assessor and tutor training highly recommended.

4.1 INTRODUCTION

Formal diplomas and certifications are accepted as proof that candidates can be exempted from parts of the educational programmes they plan to attend. The developments of contemporary society, however, emphasise that informal and non-formal learning experiences can provide candidates with competences, knowledge and skills that match the profile of their prospective educational programme (Collardyn & Bjørnavold, 2004). Assessment of Prior Learning (APL) in this sense is expected to enhance candidates' motivation. In this study, we address the perceptions of candidates, tutors, and assessors towards procedures for assessing and crediting prior learning in university education. We first elaborate on the theoretical background of recognising prior learning and quality requirements, then describe the context of this study and examine the perceptions of the main actors towards these procedures. Finally, in view of our findings we provide recommendations for the design of procedures to assess and credit prior learning.

Until recently, university policies and procedures did not address the issue of recognising informal and non-formal learning. However, the importance of establishing systems for doing so has been acknowledged as a key issue in lifelong learning policy within Europe (European Commission, 2000). The entire scope of individuals' knowledge and experience, irrespective of where the learning took place, should be taken into account. The underlying idea is that there are similarities between experiential (i.e., non-formal and informal) and academic learning, and that possible differences between the two can be readily overcome (Harris, 2006). Non-formal learning is characterised by an intentional learning objective within a structured context, such as in schools or classes, but without legally or socially recorded certification. Examples may include workplace training and non-accredited courses such as a non-certified typing course. Informal or non-sponsored learning (Blinkhorn, 1999), is unintentional, unstructured and does not lead to certification. Learning is undertaken on one's own initiative, individually or collectively, without externally imposed criteria or the presence of an institutionally authorised instructor (Livingstone, 2000a). Examples include volunteer activities, life experiences, self-instruction, family responsibilities and hobbies.

Procedures for assessing and crediting prior formal, informal, and non-formal learning enable lifelong learners to enter educational programmes at a level adjusted to their existing competence profiles. These procedures are known by many different terms with varying explanations of their exact meaning (see Chapter 2). For example, the emphasis on non-formal and informal learning is clearly expressed in Accreditation of Prior Experiential Learning (APEL), but not explicitly for Prior Learning Assessment (PLA), Prior Learning Assessment and Recognition (PLAR), Recognition of Prior Learning (RPL), Accreditation of Prior Learning (APL), Assessment of Prior Learning (APL) and Valuation and Validation of Prior Learning (VPL). Although Andersson and Fejes (2005) use the term RPL in their article, they prefer that of "validation", based on the French *Validation des Acquis de l'Expérience* (VAE). As shown in Chapter 2, authors use the same terms and their

abbreviations in different ways (see e.g. Bélanger & Mount, 1998; Blinkhorn, 1999; Cleary et al., 2002; Cretchley & Castle, 2001; Donoghue et al., 2002; Duvekot, 2005; Freed, 2006; Harvey, 2004; Konrad, 2001; Nyatanga et al., 1998; Scholten & Teuwsen, 2002; Starr-Glass & Schwartzbaum, 2003; Pouget & Osborne, 2004). It is clear that many types of learning can be the object of assessment (formal, non-formal and informal) with differing meanings (skills, competences); moreover, it is not directly possible to deduce the type of learning involved from the abbreviation used.

In this study, we use the term Assessment of Prior Learning (APL), and the definition put forth by Colardyn and Bjørnavold (2004) of identifying, assessing, and recognising a wider range of skills and competences that people develop throughout their lives and in different contexts. For formal learning, there is a separate credit exchange programme; occasionally, though, it can only be recognised in combination with informal learning. In such cases, candidates must first apply the credit exchange procedure on formal learning before turning to the APL procedure.

APL consists of four stages (see also Chapter 2), set out below.

1. In the candidate profiling (or identification and initiation) phase, the educational institute gathers information about the candidate's personal information and needs. This profile is often the basis on which institutes select candidates for the procedure. To create the profile, the institute must have transparent and operationalized descriptions of the educational programme; that is, the learning objectives (competences, skills and knowledge) must be clearly set out. In this first phase, the institute also informs the candidate of the steps and the expectations of the procedure.
2. In the evidence-gathering (or documentation and preparation) phase, candidates collect evidence about previous qualifications and experience to support their claim. This means assessment standards derived from the learning objectives should be available, and the evidence presented by the candidate should meet these standards. This is usually shown by means of a portfolio.
3. In the assessment phase, a trained assessor evaluates the candidate's portfolio based on the given assessment standards to determine whether accreditation of prior learning should be considered.
4. The final 'recognition' phase involves verification by the relevant department. The slight difference between the concept of 'accreditation' and 'validation' emphasised by Pouget and Osborne (2004) should be noted here. The latter is more general, in the sense of 'giving value'. The validated result will then be set out in a disposition.

APL has increasingly been used and acknowledged in industry and vocational education, but is still in its infancy in university education (Thomas et al., 2000). Until now, little research has been available on APL's organisation for academic purposes, its effects on exemption policy, the time investment of universities and the experiences of candidates, tutors and assessors.

The purpose of this article is to evaluate the first APL procedure in a Computer Science programme and an adjusted APL procedure in an Educational Science master's programme from the perspective of the candidates, tutors and assessors. The evaluation design is based on the following question: How do APL candidates,

assessors and tutors perceive their task fulfilment and the quality of the APL instruments?

Before addressing this question, we first define the concept of quality, then describe the context of this study and the development and organization of the Computer Science and Educational Science APL procedures.

Quality criteria for APL

APL is a specific form of assessment that learners take prior to the formal start of an educational programme. Naturally, it should satisfy quality requirements such as reliability and validity. According to Johnston (2004), the interpretative reliability approach best suits APL assessment, given that the ideal, objective assessment of an APL portfolio is virtually impossible. Discussion between assessors about local values and standards is important, as is consequential validity (i.e., the consequences of the interpretation of scores in relation to the impact on further learning of the APL candidate). Johnston (2004) argues that reliability and validity are better used as warrants rather than final guarantors. In addition, Baartman et al. (2006) argue in favour of edumetric rather than psychometric quality criteria; the former do more justice to the characteristics of competence assessment by emphasizing flexibility and authenticity as well as the integration of assessments. Baartman et al. (2006) built their framework on findings from other assessment researchers (see e.g., Benett, 1993; Dierick & Dochy, 2001; Hambleton, 1996; Linn et al., 1991), who used the psychometric quality requirements of reliability and validity. Their framework consists of 12 basic quality criteria, set out here in the context of APL:

1. Fitness for purpose: APL fits the purpose and objectives of the educational programme.
2. Transparency: Internal procedures should be clear to the candidates, and assessments transparent and convincing. This means that candidates should be aware of the assessment criteria, its organization and objective, and the possible results.
3. Acceptability: APL participants – candidates, assessors, tutors, programme managers, examination committee members and the labour market – accept the APL procedure, instruments, and results.
4. Comparability: The procedure is consistent, standardised and comparable for all candidates.
5. Fairness: Bias may not influence the process. Candidates from different backgrounds should be treated equally.
6. Cognitive complexity: Candidates must demonstrate the acquisition of higher cognitive skills at level of the educational programme.
7. Costs and efficiency: APL should be feasible and practicable, and the costs involved realistic.
8. Reproducibility of decisions: APL has various assessment times and should make use of different perspectives to reach a final decision.
9. Fitness for self-assessment: The assessment type stimulates self-assessment and reflection.
10. Meaningfulness: APL should meet the needs of the candidates but also have surplus value for the educational institute.

11. Educational consequences: APL should be implemented only if positive effects are expected and negative aspect can be minimised.
12. Authenticity: In general terms, the tasks candidate have to fulfil should have direct links with the future practice (Gulikers et al., 2004). In APL, this means candidates should be assessed on the extent to which they have fulfilled certain tasks in practice related to their educational programme of choice. According to Andersson (2006), authentic assessment is the central method in APL given its aim to assess competences in a natural setting.

APL at the Open University of the Netherlands (OUNL)

The OUNL has developed an APL procedure primarily based on the credit exchange model (Butterworth, 1992; Trowler, 1996); students may receive credit points if informally or non-formally acquired competences match the learning outcomes of an accredited educational programme. The OUNL caters to lifelong learners of 18 years and older, with no admission requirements. If they completed formal higher education, students can receive exemptions for parts of the curriculum. The APL procedure, in which informal and non-formal learning is also recognised, started in 2006. With respect to the quality criteria, content specialists, members of the support department, a member of the examination committee, a legal advisor and an APL researcher first developed an APL procedure for the Computer Science programme. Based on its evaluation, an adjusted APL procedure for the Educational Science programme was also designed. We first describe the Computer Science APL procedure, then outline the revisions that led to the Educational Science procedure.

Figure 4.1 shows the APL procedure and the timeline for both programmes. The Computer Science APL procedure starts with a general information session in which all necessary procedural information is given. Subsequently, interested candidates can request an advisory consultation with a tutor to analyse the programme's final attainment levels in relation to the candidate's capabilities, and discuss the options for evidence provision. The candidate then starts compiling the portfolio: the first part includes evidence of their formal learning; the second of their informal and non-formal learning. The following information must be included: a. a curriculum vitae, b. description of evidence and arguments for its use in relation to the final attainment levels (e.g., the final attainment level might be: 'The candidate has thorough knowledge of and insight in analysis and modelling computer systems'), c. a short description of the relevant workplace/s, and d. products or artefacts that serve as evidence. At this stage of the procedure, the tutor supports the candidate by answering questions and helping decide what information can be used as evidence.

The portfolio is then sent to the support department to evaluate diplomas and certificates for possible exemptions and to check the portfolio for completeness. Two trained assessors evaluate each portfolio using set assessment criteria, and note questions about its content to bring up in the assessment conversation attended by the candidate. The aim of this assessment conversation is to examine certain aspects of the portfolio in depth; the assessors may also ask for additional evidence, such as an essay or programme analysis. In view of all this information, the assessor then

takes his or her advice to the examination committee, who determines which parts of the programme the candidate must still undertake. The validated result is committed in a disposition and the candidate receives a study plan specifying the remaining study path.

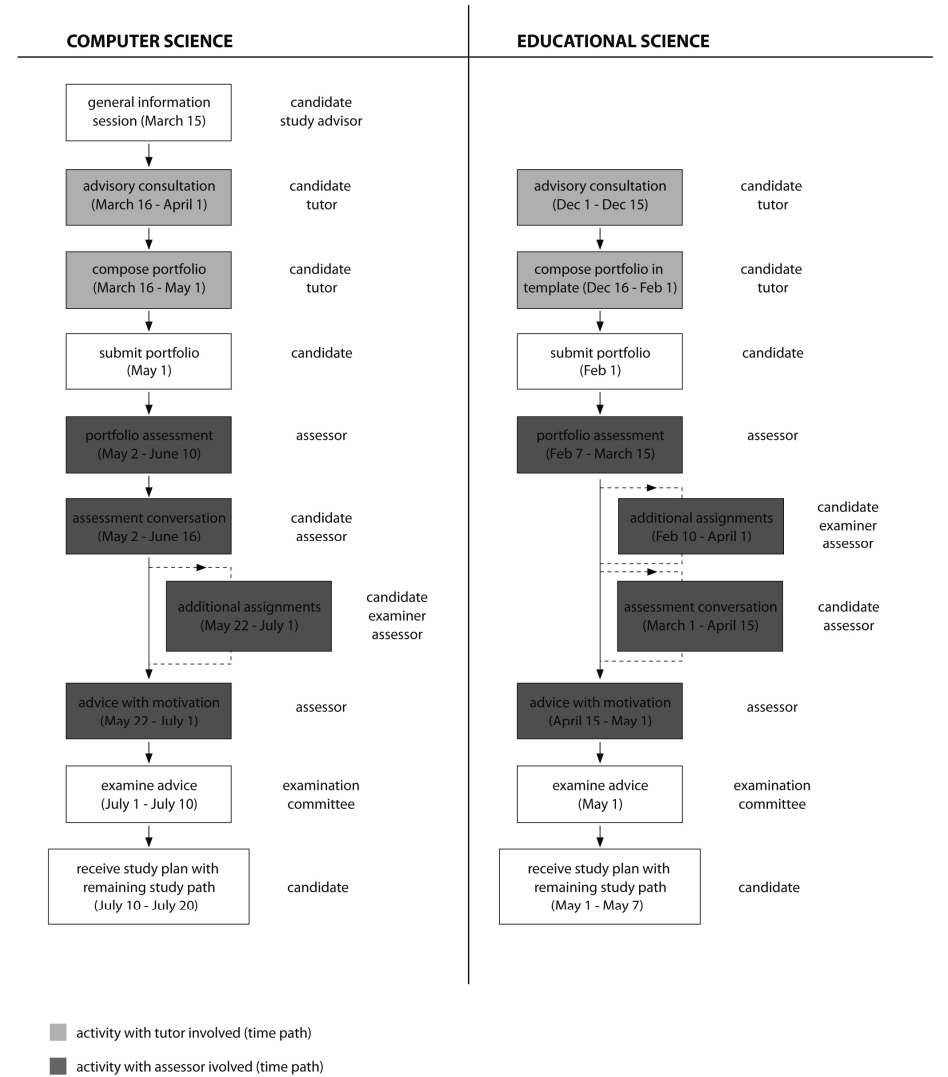


Figure 4.1. APL procedure for Computer Science and Educational Science

After evaluating this APL procedure for Computer Science, the following revisions were suggested: 1. tutors ought to be cautious about voicing their expectations of the result to the candidate to avoid influencing the rest of the procedure; 2. the portfolio structure should be simplified to encourage more appropriate evidence and

arguments; 3. the additional assignment, if necessary, should be given before the assessment conversation; 4. candidates should only be invited to an assessment conversation if the portfolio assessment gives cause; and 5. the assessment criteria should be described more transparently.

4.2 AIM OF THE STUDY

The main players in the APL procedure are the candidate, the tutor and the assessors. In order to evaluate the quality of the procedure from their perspective, the following question needs addressing: How do APL candidates, assessors and tutors perceive their task fulfilment and the quality of the instruments?

4.3 METHOD

Participants

Two domains in which APL was used were available for evaluation: Computer Science and Educational Science.

Computer Science. 23 employees (19 men and 4 women) of a police software company who had signed up for the bachelor's programme in Computer Science (for which there are no admission requirements) participated voluntarily in the first APL procedure. The APL procedure resulted in exemptions ($M = 2.96$ modules; $SD = 2.70$). Four tutors (2 men and 2 women) were available for support, while 4 assessors (3 men and 1 woman) evaluated the candidates.

Educational Science. Nine candidates (4 men and 5 women) participated in the second, adjusted APL procedure. These candidates were selected on the basis of their request for admission to the program. The results of the APL procedure were as follows: not admitted ($n = 1$), admitted without exemptions ($n = 2$), and admitted with exemptions ($n = 6$; number of exemptions: $M = 2.7$ modules, $SD = 1.25$). Two tutors (2 women) and two assessors (2 women) were involved.

Materials

Questionnaires. Both an intake questionnaire and a post-APL questionnaire were developed. The intake questionnaire was used to gain insight into the candidate's knowledge of and experience with APL, expected support and experience with portfolio assessment, and to rank their expectation of the required skills of an assessor and tutor. It consisted of 16 open-ended questions, 36 multiple choice questions, two ranking questions and three numeric questions.

The post-APL questionnaire was developed to evaluate the procedure and consisted of statements indicating the quality criteria in relation to its procedure, and the task fulfilment of the participants. Items included from the questionnaire used by Baartman et al. (2006) were adjusted for APL. This questionnaire included open-ended and numeric questions as well as questions on a five-point Likert scale varying from

‘strongly disagree’ to ‘strongly agree’. Table 4.1 provides examples of items for each quality criterion and Cronbach’s alpha.

Time registrations. The candidates, tutors and assessors registered the time they spent on APL activities.

Procedure

After showing interest in the APL procedure, candidates, tutors and assessors were asked to fill in the intake questionnaire. Candidates were then instructed to contact the tutor for an individual advisory consultation, and given six weeks to compose their portfolio; meanwhile, the assessors were being trained. After the assessment conversations, the candidates, tutors and assessors filled in the online post-APL questionnaire. The time registrations were updated throughout the procedure.

4.4 DATA ANALYSIS

First, the quality criteria scales were analysed for reliability using Cronbach’s alpha (see Table 4.1). Items reducing reliability were removed from the scales. Per quality criterion, mean scores and standard deviations were calculated for each educational programme and group of participants (candidates, tutors and assessors). An independent sample t-test was done to compare the mean scores of the groups. Means are calculated with respect to time registrations.

Table 4.1. Examples of Likert-scale items related to quality criteria in the questionnaire

Quality criteria (no. of items; Cronbach’s alpha)	Example of Likert-scale items in questionnaire
1. Fitness for purpose (# = 4; $\alpha = .81$)	The type of assessment in this procedure fits the objectives of the educational programme.
2. Transparency (# = 25; $\alpha = .91$)	The structure of the portfolio was clear.
3. Acceptability (# = 12; $\alpha = .89$)	There is a social basis for APL.
4. Comparability and 8. Reproducibility of decisions (# = 5; $\alpha = .91$)	Differences in procedures are well-founded.
5. Fairness (# = 7; $\alpha = .83$)	I had the possibility to complain.
6. Cognitive complexity (# = 4; $\alpha = .68$)	The candidates were capable of delivering evidence at the required level.
7. Costs and efficiency (# = 6; $\alpha = .76$)	The instruments were available on time.
9. Fitness for self-assessment (# = 5; $\alpha = .72$)	My expectation was realistic.
10. Meaningfulness (# = 4; $\alpha = .64$)	The goal of APL is known.
11. Educational consequences (# = 2; $\alpha = .50$)	I have faith in the educational consequences.
12. Authenticity (# = 1)	The APL standard is a reflection of my work.

4.5 RESULTS

Three tutors and two assessors from the Computer Science programme and two tutors and two assessors from Educational Science filled in the intake questionnaire. They had worked an average of 18.8 and 8.3 years respectively for the institute. Thirty candidates (83.3% male, 16.7% female) for Computer Science and eight candidates (62.5% male, 37.5% female) for Educational Science filled in the intake questionnaire. The average age of the Computer Science candidates was 37.2 years ($SD = 6.9$), their average working time per week 35.8 hours ($SD = 4.8$) and average study time per week 10.4 hours ($SD = 3.6$). The average age of the Educational Science candidates was 44.0 years ($SD = 17.7$), the average working time per week 33.1 hours ($SD = 13.0$) and average study time per week 12.4 hours ($SD = 6.9$).

Answers to the questions about familiarity with APL, reasons for using APL, experience with portfolio assessment and expected amount of support are given in Table 4.2.

Most Educational Science tutors, assessors and candidates were already familiar with APL and portfolio assessment. Gaining credit for their experience was the most frequently mentioned reason candidates from both programmes used APL. The tutors and assessors in both domains expect more need for support than the candidates do, although some candidates in both domains did not know in advance what to expect.

Table 4.2. Results of intake questionnaire: percentages per group

Question	Computer Science		Educational Science	
	Staff (%)	Candidate (%)	Staff (%)	Candidate (%)
	$N = 5$	$N = 30$	$N = 4$	$N = 8$
Are you familiar with APL?				
not familiar at all	20.0	90.0	0.0	12.5
heard of it	80.0	10.0	50.0	12.5
used it before	0.0	0.0	75.0	75.0
Why do candidates use APL?				
gain credits for experience	100.0	80.0	75.0	62.5
combine work/study	100.0	53.3	75.0	37.5
shorten study path	80.0	23.3	50.0	37.5
save time	80.0	73.3	50.0	25.0
save money	40.0	0.0	50.0	12.5
satisfy employer	0.0	6.7	25.0	0.0
change career	0.0	0.0	25.0	50.0
Prior experience with portfolio assessment	0.0	0.0	50.0	25.0
Preference for portfolio assessment	40.0	3.3	25.0	75.0
How much support do you expect candidates need?				
no support	0.0	0.0	0.0	0.0
limited support	0.0	43.3	25.0	62.5
reasonably high support	100.0	33.3	75.0	25.0
a lot of support	0.0	3.3	0.0	0.0
don't know	0.0	20.0	0.0	12.5

Table 4.3. Ranking of required skills of assessors and tutors in APL

Required skill	Ranking*		Mean SA-score**	
	Computer Science	Education Science	Computer Science	Education Science
Domain knowledge and skills (assessor/tutor)	1.60/1.40	0.50/0.50	3.60/3.40	2.75/2.75
Judgemental skill (assessor)	1.40	2.75	3.60	3.75
Communicative skill (tutor)	1.40	1.00	3.80	3.25
Motivation (tutor)	1.20	0.75	3.60	3.50
Knowledge of APL procedure (tutor)	1.00	1.50	2.80	3.00
Feedback skills (assessor/tutor)	0.60/0.60	0.25/1.50	3.40/3.60	2.75/3.00
Observational skill (assessor)	0.40	0.75	3.20	4.00
Motivation of decisions (assessor)	0.40	0.25	3.60	2.50
Portfolio development support (tutor)	0.40	0.75	2.60	2.50
Interview skill (assessor)	0.20	0.00	3.20	3.50
Evaluation skill (assessor)	0.20	1.25	3.40	3.25
Giving follow-up advice (assessor)	0.00	0.00	3.20	2.75
Writing motivational reports (assessor)	0.00	0.00	3.00	2.25
*no. of respondents x ranking/# answers				
**answers given on 5-point Likert scale varying from ‘weak’ to ‘very good’; SA = self-assessment				

The tutors and assessors were asked to rank the importance of their skills in APL and also to self-assess them. The last column of Table 4.3 shows the mean score (weak = 1, lower than mean = 2, mean = 3, above mean = 4, very well = 5) of this self-assessment, as well as a full overview. The Computer Science participants rated domain knowledge and skills as most important, while those from Educational Science rated the judgemental and evaluation skills highest. Giving follow-up advice was rated as having low importance for both domains, and both ranked writing motivational reports as the lowest. The mean scores on the self-assessment for these skills varied little. The highest score for the Computer Science participants was domain knowledge and skills, judgemental skills and motivation of decisions; the Educational Science participants scored themselves highly on observational and judgemental skills.

The results of the post-APL questionnaire are presented in Table 4.4. For both programmes, the mean score and standard deviation are given for each quality criterion for all participants. The results of the independent sample *t*-test show that the Educational Science APL procedure is perceived significantly more positively than that for Computer Science.

Table 4.4. Mean scores and standard deviations on quality criteria scales

Quality criterion	Computer Science			Educational Science			<i>t</i>	<i>df</i>
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>		
1. Fitness for purpose	21	3.31	1.09	9	4.03	.51	-2.46*	27.7
2. Transparency	21	3.23	.79	9	4.08	.28	-4.28*	27.4
3. Acceptability	21	3.14	.90	9	4.09	.86	-2.69*	28
4. Comparability and 8. Reproducibility	8	3.28	.95	4	4.31	.28	-2.82*	9.0
5. Fairness	17	3.66	.70	7	4.68	.69	-3.24*	22
6. Cognitive complexity	21	3.05	.96	8	4.19	.39	-4.52*	26.7
7. Costs and efficiency	21	3.49	.78	9	3.93	.45	-1.94*	25.1
9. Fitness for self-assessment	21	3.38	.77	9	4.19	.41	-2.95*	28
10. Meaningfulness	21	3.39	.79	9	4.56	.68	-2.19*	28

* $p < .01$ **Table 4.5.** Mean scores on Likert-scale items related to quality criteria ‘educational consequences’ and ‘authenticity’

Quality criterion and items	Computer Science			Educational Science		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
11. Educational consequences						
I have faith in the educational consequences.	19	3.42	1.17	1	5.00	.00
APL is suitable for future use.	19	3.89	1.10	9	4.56	.53
12. Authenticity						
The APL standard is a reflection of my work.	10	2.90	1.45	5	4.20	.45

Because of the low reliability of the educational consequences scale ($\alpha = .50$) and the number of items for authenticity ($\# = 1$), these criteria were analysed on item level. The mean scores and standard deviations are presented in Table 4.5. The results of the independent sample t-test show significant differences on these items between Computer Science and Educational Science: ‘I have faith in the educational consequences’ ($t(18) = -1.32, p < .01$), ‘APL is suitable for future use’ ($t(26) = -1.69, p < .01$) and ‘The APL standard is a reflection of my work’ ($t(11) = -2.60, p < .01$).

The analyses were repeated separately for each group of participants: candidates, tutors and assessors. The candidates’ perceptions differed significantly on transparency ($t(15.4) = -3.58, p < .01$), fairness ($t(16) = -2.40, p < .01$), cognitive complexity ($t(17.7) = -3.69, p < .01$), fitness for self-assessment ($t(16) = -2.52, p < .01$) and authenticity ($t(11.8) = -2.60, p < .01$). At the same time, the tutors’ perceptions differed significantly on transparency ($t(4) = -2.99, p < .01$) and educational consequences ($t(3.0) = -4.70, p < .01$). The assessors’ perceptions are only significantly different on cognitive complexity ($t(4) = -2.82, p < .01$). The mean scores and standard deviations for these scales are presented in Table 4.6.

Table 4.6. Significant differences between educational programmes per domain and participant group

Participant group	Quality criterion	Computer Science			Educational Science		
		<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Candidates	Transparency	13	3.42	.67	5	4.14	.18
	Fairness	13	3.56	.78	5	4.54	.80
	Cognitive complexity	13	3.33	.82	5	4.33	.33
	Fitness for self-assessment	13	3.39	.67	5	4.24	.53
	Authenticity	10	2.90	1.45	5	4.20	.45
Tutors	Transparency	4	3.33	.39	2	4.21	.06
	Educational consequences	4	3.88	.48	2	5.00	.00
Assessors	Cognitive complexity	4	1.83	.88	2	3.75	.00

Within the Computer Science programme, significant differences were found between participant groups. On cognitive complexity the candidates and the assessors' perceptions differ significantly ($t(15) = -3.16, p < .01$), as do that of the tutors and assessors ($t(6) = -3.00, p < .01$). In addition, on meaningfulness there is a significant difference between the candidates and tutors ($t(15) = -3.28, p < .01$). Within the Educational Science programme, no significant differences were found between the participant groups. Table 4.7 shows the means and standard deviations of the participant groups per programme.

Table 4.7. Means and standard deviations for participant groups on significant results

Programme	Quality criterion	Candidates			Assessors			Tutors	
		<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>SD</i>
Computer Science	Cognitive complexity	13	3.33	.82	4	1.83	.88		
	Cognitive complexity				4	1.83	.88	4	3.33
	Meaningfulness	13	3.52	.69				4	4.75

The time registrations showed that the assessors spent their time on portfolio assessment, preparation for the assessment conversation, the assessment conversation itself, and the composing of its result. An overview of assessors' time investment is shown in Table 4.8. The total time for the Computer Science assessors was 2.37 hours per candidate; for the Educational Science assessors it was 4.79 hours per candidate.

Table 4.8. Time investment of assessors in APL (in minutes)

Activity	Computer Science			Educational Science		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Portfolio assessment	3	80.7	68.1	2	165.0	21.2
Preparation for assessment conversation	3	12.0	9.8	2	60.0	.00
Assessment conversation	3	45.0	25.9	2	52.5	10.6
Writing motivational reports	2	7.5	3.5	2	10.0	.00
Total	3	142.7	107.9	2	287.5	10.6

4.6 CONCLUSION AND DISCUSSION

Assessment of Prior Learning aligned with the educational programme is expected to enhance the candidates' motivation in starting such programmes. The candidates in these studies were typical APL candidates, characterised by years of work experience and a positive attitude to learning (based on average study hours per week). APL motivates such candidates by giving them the opportunity to gain credit for experience, combine work and study, and save time by shortening the study path.

This presented study addressed the perceptions of the three groups of actors in APL procedures: the candidates, tutors and assessors. Our primary conclusion is that the perception of the Educational Science APL procedure is significantly more positive for all three groups than that for the Computer Science participants. It may be that the procedural revisions undertaken for Educational Science were successful, and that the Computer Science procedure needs improvement. In addition, there should be more training for tutors and assessors in the required knowledge and skills for APL, such as supporting portfolio development, giving follow-up advice, writing motivational reports and generally understanding the whole APL procedure. In the following, these conclusions are discussed in relation to the quality criteria for assessment by Baartman et al. (2006).

Our conclusion that APL is perceived more positively in Educational Science than in Computer Science, is based on comparing the perceptions on the different quality scales. The mean perception scores of the Computer Science participants are all between 3 and 4, and with the given standard deviations, we know that there are participants with a negative perception. Still, one might question what indeed a desirable score is. Mean scores of 3 or lower represent non-supportive perceptions; scores higher than 3 are supportive. Although scores between 3 and 4 tend to represent supportive perception, they remain inconclusive.

One explanation for the lower perceptions in Computer Science could be related to the criterion fitness for purpose. Compared to those in Educational Science, the Computer Science participants were unfamiliar with APL and portfolio assessment. Yet the Educational Science candidates with less knowledge of APL and portfolio assessment still scored higher on the perception scales. It should be noted that the procedural revisions – one of them involving portfolio structure – supported the fitness for purpose criterion. The portfolio for Computer Science was based on the APL credit exchange approach, which implies that achieved and proven competences are exchanged for course credits by way of exemption from part of the programme. The adjustments to the Educational Science portfolio took a more developmental approach, emphasising the reflection on the achieved competences in relation to future learning (Butterworth, 1992).

We recommend to structure future portfolios according to Bloor and Butterworth (1990): 1. summary of APL application; 2. overview of competences; 3. reflective writing piece evaluating experience in light of programme criteria; and 4. evidence to support APL application. That step 3 was not part of the APL procedure in the Computer Science programme may have affected the procedure's perceptions.

An alternative explanation for the more positive Educational Science perceptions may be that its participants were in general more positive than their Computer Science counterparts. However, the intake questionnaire does not provide evidence of this. In relation to acceptability, however, it should be taken into account in developing APL procedures. In both domains, candidates, assessors and tutors knew why APL was being used, and supported it. However, in Computer Science there was less acceptance of the assessment criteria and instruments. Revisions of these aspects as well as learning objective comprehensibility had been made for Educational Science, which therefore improved the fitness for self-assessment in that the candidates were better equipped to provide self assessment.

These revisions also particularly influenced the transparency of the procedure. The portfolio structure for Educational Science gave more transparency to appropriate evidence and reflections on it, and described the assessment criteria more clearly than for Computer Science. Furthermore, training for assessors and tutors made clearer the issue of where the tasks of the tutor stop and those of the assessor start. Educational Science tutors were trained to be cautious in voicing their expectations of the result for the candidate so as not to influence the rest of the procedure and APL's meaningfulness in general.

Fairness was perceived less favourably in Computer Science than in Educational Science. This may be due to less congruent cooperation between assessors and the tutor. In the revised procedure, the candidates undertook an assessment conversation only if their portfolio gave cause for it. In a follow-up study (see Chapter 5), assessors evaluate this revision as both important and fair.

The decision to carry out an assessment conversation also directly influenced the costs effectiveness. In both domains, time investment by the tutors and assessors is perceived as too high. Undertaking assessment conversations only when necessary made the procedure more efficient. Further, it might be possible to erect certain barriers for candidates entering APL procedures such as a motivation test or a minimum of work experience. Additionally, the benefits of a general information session at the start of the procedure may be subject to follow-up research, given that the absence of this session in the Educational Science procedure did not seem to influence perception of it.

Finally, the ratings of the assessors and tutors' skills and knowledge differed greatly between the two domains, though the mean self-assessment scores varied little. Both domains scored lowest the skill 'writing motivational reports'. Given that many skills appear to be important to competent assessors or tutors, it would be desirable to select people for these roles who already have certain competences, or to train them in these. Training will positively influence the comparability and reproducibility of decisions.

Some considerations with regard to the set up of our study are in order. First, a main shortcoming was the small number of participants. Although this small sample size enabled us to make revisions in the Educational Science APL procedure, we aim to replicate this study with a larger sample. Second, one may question whether the results are indeed the consequence of revision. The Educational Science participants showed more faith in the educational consequences of APL, and evaluated it more favourably as a suitable instrument for future use. Revisions will be undertaken for Computer Science and their effect investigated in the near future.

Chapter 4

This study has shown that APL is perceived as an instrument that positively effects learner motivation in university education. However, support for candidates in composing their portfolios and arguments (including the use of portfolio examples) as well as portfolio assessment in APL need more research. Similarly, further development of APL procedures in the university context is desirable. Should these procedures meet the quality criteria, students will benefit from educational programmes built on the results of an optimally designed APL procedure. It is up to universities to use these procedures.

Chapter 5

Assessors' approaches to portfolio assessment in Assessment of Prior Learning procedures

This chapter is based on Joosten-ten Brinke, D., Sluijsmans, D. M. A., & Jochems, W. M. G. (2008). *Assessors' approaches and use of criteria in the portfolio assessment of learners' prior learning*. Manuscript submitted for publication.

ABSTRACT

In an effort to gain better understanding of the assessment of prior informal and non-formal learning, this study explores assessors' approaches to portfolio assessment. Through this portfolio assessment, candidates had requested exemptions from specific courses within an educational programme or admission to the programme based on their prior learning. The assessors judged the portfolios according to set rating criteria, and subsequently discussed their approaches. Their decision-making processes, perception of portfolio use in APL, deciding factors in portfolio evaluation and use of the rating criteria were key elements in this discussion. The results show that they do use the rating criteria as an indicator in decision making, but have mixed perceptions regarding the fairness of APL portfolio assessment. They perceive the portfolio evidence in combination with sound argumentation as the deciding elements in portfolio assessment.

5.1 INTRODUCTION

Portfolio assessment is a complex task (Baume & Yorke, 2002; Driessen, Overeem, Van Tartwijk, Van der Vleuten, & Muijtjens, 2006; Tigelaar, Dolmans, Wolfhagen, & Van der Vleuten, 2005; Van der Schaaf & Stokking, 2008) given that the content is often descriptive, context-bound, personal, and requires much interpretation (Delandshere & Petrosky, 1998; Moss, 1994). In procedures in which prior formal, non-formal and informal learning is assessed (henceforth indicated as Assessment of Prior Learning and abbreviated as APL), the portfolio is the most common method for presenting the evidence of prior learning (Bjørnavold, 2001; Clarke & Warr, 1997).

In this study, we investigate assessors' approaches to portfolio assessment in the context of APL. Approach is defined as the steps taken in the decision-making process, the perception of portfolio use in APL in terms of fairness, usability and relevance, the deciding factors in portfolio evaluation, and the use of rating criteria. We first elaborate on the background and quality criteria for portfolio assessment. Then we describe portfolio design in the context of our research on APL at the Open University of the Netherlands and present a study in which assessors' approaches to portfolio assessment are investigated. Finally, we use the findings of this study as a starting point for recommendations about portfolio assessment in APL.

Quality of portfolio assessment

It is argued that in measuring learning of knowledge, skills and attitudes, it is often better to use a combination of assessment methods (e.g., Baartman et al., 2006; Dierick & Dochy, 2001; Sluijsmans et al., 2008). Evans (1993) states that academic staff is responsible for selecting the most appropriate assessment methods for judging the submitted evidence of prior learning. In the context of APL, a variety of assessment methods can be used, such as interviews, demonstrations and simulations (Michelson & Mandell, 2004). However, portfolio assessment is the most common method. A portfolio is a compilation of work by a learner to demonstrate acquired knowledge, skills and competences, and includes the learner's reflections on this work (Barrett, 2003). It is seen as one of the best instruments for visualising and evaluating competences acquired in informal or non-formal contexts (Bjørnavold, 2001). Portfolios actively engage learners in understanding the relationship between the culture of academic knowledge in higher education and that required in the workplace (Michelson & Mandell, 2004). At the same time, they are well received by tutors and assessors as a structured approach to the presentation of evidence (Clarke & Warr, 1997), and allow full appreciation of the holistic nature of competences and the personal character of individuals' work over long periods. Composing a portfolio requires that candidates assess their own prior learning, and present it by way of evidence and argument. Several types of evidence are appropriate; Barrett (2003) distinguishes between artefacts, reproductions, attestations

(references) and productions (documents specially prepared for the portfolio). This evidence should meet quality criteria such as educational relevance, transferability, validity, authenticity, currency and sufficiency (Joosten-ten Brinke, Sluijsmans, Brand-Gruwel, & Jochems, 2008).

Research on portfolio use in APL mainly has focused on the difficulties of APL candidates in gathering and presenting evidence of prior learning (e.g., Colley, Hodgkinson, & Malcolm, 2002; Cretchley & Castle, 2001; Shapiro, 2003). The assessors' role in assessing this evidence of prior learning, however, is underexposed. For example, it is unclear how assessors can gauge the level of candidates' prior learning (Trowler, 1996). Osman (2006) argues that in general, assessors feel competent in the assessment of formal learning, which is directly linked to the academic educational programme, but in contrast, they are unfamiliar with the assessment of prior informal and non-formal learning. What strategy do they use in assessing this prior informal and non-formal learning? Research in the context of formal learning has shown that objective and unambiguous portfolio assessment is difficult (Tigelaar et al., 2005; Van der Schaaf, Stokking, & Verloop, 2005). Although portfolio assessment should meet quality requirements such as reliability and validity, in practice it is often difficult to sufficiently address these criteria. Portfolio reliability (i.e., the extent to which its assessment remains consistent over repeated measurements under identical conditions) is a complex issue given its interpretative, context-bound and personal character (Delandshere & Petrosky, 1998; Moss, 1994). Johnston (2004) suggests using reliability and validity within an interpretative approach which allows discussion of values and standards, and bridging between the local context and the curriculum. Driessen et al. (2006) found in their research on validity of portfolio assessment that assessors are able to use only relevant criteria in their judgements and to neglect irrelevant criteria. With that conclusion, validity of the assessment is supported. Still, portfolio assessment particularly affects consequential validity; interpretation of assessment scores may not damage candidates' future learning paths. An essential step in portfolio assessment is the need to improve agreement amongst assessors as to the rating criteria and the use of rating forms (Tigelaar et al., 2005).

It remains unclear as to whether the assessors use these rating criteria and forms appropriately, even if they are trained in their use (Baume, Yorke, & Coffey, 2004; Tigelaar et al., 2005; Van der Schaaf & Stokking, 2008). Assessors' actual decision-making processes (i.e., processes that seeks an appropriate, but not necessarily optimal, solution to a problem (Simon, 1957)) in the assessment of prior learning are largely undocumented. Van der Schaaf et al. (2005) showed, in the context of portfolio assessment of formal learning in teacher education that judgements were influenced by previous ratings and experience, and that despite agreeing on ratings there remains a difference in portfolio interpretation. In addition, intuition, as a domain-specific competence to reach an appropriate decision, is mentioned as a crucial component of a decision making process by professionals (Harteis & Gruber, 2008). Intuition makes use of knowledge-resources secured through individuals' professional experiences. Baume et al. (2004) analysed assessors' rationale behind their portfolio judgements in a course completion setting in which portfolio assessment was the only assessment method. They also concluded that assessors interpret the same rating criteria in different ways. Some are rather stringent, stating

that evidence must be clearly and accurately labelled and in the proper place, while others are prepared to dig about for evidence within the portfolio. Despite the differences between assessor approaches, studies by Van der Schaaf and Stokking (2008) and Baume et al. (2004) show also that assessors are capable of articulating the reasons behind their judgements, which helps us gain more insight into decision making in portfolio assessment.

APL portfolio assessment at the Open University of the Netherlands (OUNL)

The presented study took place in the context of the Open University of the Netherlands (OUNL). The OUNL caters to lifelong learners of 18 years and over with no admission requirements. Learners at the OUNL are adults who have many learning experiences obtained from informal and non-formal learning. In a previous study (Joosten-ten Brinke, Sluijsmans, & Jochems, 2008), one third of the population of learners indicated that they thought that their prior learning was at the required academic level and exemptions were appropriate. Initially, the OUNL developed an APL procedure primarily based on the credit exchange model (Butterworth, 1992; Trowler, 1996; see also Chapter 2) in which learners received credit points if competences acquired either in- or non-formally matched the learning outcomes of an accredited educational programme. Since 2006, though, the procedure has shifted to a more developmental approach (Butterworth, 1992). The credit exchange approach implies that proven competences are exchanged for course credits by allowing exemption from part of the educational programme. A developmental approach, however, focuses more on reflection of the achieved competences in relation to future learning (Butterworth, 1992).

Based on this second approach, a general portfolio template was designed containing the following components (Bloor & Butterworth, 1990): 1. summary of the APL application; 2. overview of the competences; 3. reflective writing on how the candidate's experience produced learning which meets the programme criteria; and 4. evidence to support the application. If content experts deemed it necessary, the basic elements of the template were then refined for each educational programme according to its specific domain and standards. Likewise, the rating forms and criteria were first designed for all educational programmes and subsequently refined to meet the domain-specific criteria of each educational programme.

Figure 5.1 shows the rating form used by the assessors. The criteria enclosed in this form are derived from Joosten-ten Brinke, Sluijsmans, Brand-Gruwel, and Jochems (2008). Each numbered criterion is a verbal description and involves a number of criteria. The assessors have to judge whether the verbal descriptions correspond with the described learning experiences in the portfolio by giving a fail (insufficient) or pass (sufficient) decision. Sadler (2005) refers to this method of grading as the 'qualitative assessor judgement'.

Portfolio assessment form for [name candidate]	
1. The candidate describes his/her prior learning experiences (describing Situation, Tasks, Activities, and Results). Candidate reflects on these experiences and provides information on the value of this experience for the educational programme.	Insufficient/sufficient
Assessor comments:	
2. The candidate's competences, knowledge or skills are on the level of higher vocational education ^a .	Insufficient/sufficient
Assessor comments:	
3. The evidence should be educationally relevant, transferable from the experiential to academic environment, valid (i.e., focused on the appropriate competences, knowledge and skills specified by the educational programme), authentic (i.e., the candidate must have undertaken what is claimed), recent and sufficient.	Insufficient/sufficient
Assessor comments:	
4. [Domain-specific criteria]	Insufficient/sufficient
Assessor comments:	
<p>If failing one of the criteria, additional information is necessary. This additional information will be gained by (tick where appropriate)</p> <p><input type="checkbox"/> Give candidate an additional assignment: Fill in type of assignment and passing requirements: _____</p> <p><input type="checkbox"/> Assessment conversation: Fill in subjects (questions) and appropriate answers for passing: _____</p>	
The assessors' final decision is:	

^a A description of 'higher vocational education' is derived from the European Qualifications Framework (European Union, 2008): 'Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles; advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study; [ability to] manage complex technical or professional activities or projects, taking responsibility for decision making in unpredictable work or study contexts; and [ability to] take responsibility for managing professional development of individuals and groups' (p. 16).

Figure 5.1. *The rating form for portfolio assessment in APL*

During the APL procedure, candidates fill in the portfolio template for their intended educational programme and submit it, in duplicate, for assessment. The assessors (at least two academic employees of the educational programme) fill in the rating form and then decide whether the portfolio contains sufficient information for a final decision on the provision of exemptions. If not (i.e., as one of the criteria of the rating form is negatively judged), the assessors can request (a) an assessment conversation (i.e., a criterion-oriented interview), (b) an additional assignment, or (c) an assessment conversation and an additional assignment. Before the additional assignment and the assessment conversation, the assessors have to communicate how these additional assessments support their decision making. Based on the portfolio and any additional assessments, a decision is then made as to exemptions. In summary, the APL assessment process involves decisions both on the portfolio's quality in relation to the rating criteria, and on the need for additional assessments. The present study focuses on the question of 'What are assessors' approaches to portfolio assessment in APL?' Our approach involves investigation of four aspects: 1. the decision-making process, 2. perception of portfolio use in terms of fairness, usability and relevance, 3. the deciding factors in evaluation, and 4. the use of rating criteria.

5.2 METHOD

Participants

Ten assessors affiliated with six educational domains – Educational Science ($n = 2$), Cultural Science ($n = 2$), Computer Science ($n = 2$), Dutch Law ($n = 1$), Management Science ($n = 2$), and Psychology ($n = 1$) – were involved in the portfolio assessment. Each assessor had judged three up to six portfolios before the interview. For each candidate at least two assessors judged the portfolio. The assessors are experienced and qualified teachers (more than ten years) with content knowledge, skills in constructing tests, knowledge of criteria and standards in their domain, judgemental skills and feedback skills.

Materials

To investigate assessors' approaches, a retrospective, open-ended interview and questionnaire was administered.

Retrospective interview. This consisted of open-ended questions about the following topics: the decision-making process (level of judgement, assessor types, procedure and assessment method, moment for final decision making), the fairness of portfolio assessment alone, the deciding factors in evaluating a portfolio, and the extent to which the portfolios meet the rating criteria.

Questionnaire. The questionnaire consisted of 42 items divided into three parts on a five-point Likert scale ('strongly disagree' to 'strongly agree'). The items were derived from previous research; the first part (10 items; see Table 5.1), for example, is derived from Baume et al. (2004), who investigated assessors' rationale in the decision-making process. For example, the statement 'It doesn't matter too much

where it is or how it's labelled as long as it's there' (which served in Baume et al. (2004) as a rationale for a judgement) on our questionnaire became 'In assessing the portfolio, it doesn't matter too much where the evidence is or how the evidence is labelled as long as it is there'.

Table 5.1. Means and standard deviations on the items derived from Baume et al. (2004)

No	Item	<i>N</i>	<i>M</i>	<i>SD</i>
B1	It does not matter much how it is labelled as long as it is there (recoded).	8	3.13	1.25
B2	In assessing the portfolio, it doesn't matter too much where the evidence is or how the evidence is labelled as long as it is there (recoded).	10	4.10	.88
B4	A course requirement must be addressed explicitly to achieve a positive judgement.	10	4.50	.71
B5	A judgement can be lifted to reflect other good material in the portfolio.	10	3.60	.84
B6	The assessor should be prepared to use their common sense and judgement.	9	4.11	1.36
B7	A claim (APL application) must be made in addition to the provision of evidence.	10	4.50	.71
B8	Assertion without evidence is just acceptable.	10	2.60	1.08
B9	An assertion must be clear. I must not read into what is given.	10	4.40	1.08
B10	An overall judgement is more important than a slavish adherence to the rules.	9	3.67	.71

The second part of the questionnaire (19 items; see Table 5.2) is based on Van der Schaaf's (2005) questionnaire in which portfolio use (relevance, usability and fairness) is investigated. The questions were adapted to the context of our study – for example, the question 'The portfolio elements are relevant for teaching students research skills', became 'The portfolio elements are relevant to the competences of the educational programme'. Van der Schaaf (2005) distinguished reliable Likert scales for the relevance of the portfolio elements (Cronbach's alpha .85; 8 items, $M = 4.20$; $SD = .49$; $N = 8$), usability (Cronbach's alpha .89; 7 items, $M = 4.13$; $SD = .59$; $N = 8$) and fairness (Cronbach's alpha .91; 4 items, $M = 4.03$; $SD = .75$; $N = 8$).

The third part of the questionnaire (13 items; see Table 5.3) is derived from the study described in Chapter 4, which measures candidates' perceptions of portfolio use. Examples of the items on portfolio assessment to be answered on the five-point Likert scale are 'The structure of the portfolio was clear.' and 'The candidates were capable to deliver evidence at the required level.' After removing four items from the analyses (one item based on Baume et al., one on Van der Schaaf, and two on the questionnaire from Chapter 4), the reliability of the whole questionnaire was .76 (38 items; $N = 10$).

Table 5.2. Means and standard deviations on the items derived from Van der Schaaf (2005)

No	Item	<i>N</i>	<i>M</i>	<i>SD</i>
V1	The portfolio elements are relevant for the assessments of the competences in the educational programme.	10	4.80	.42
V2	The portfolio elements are in congruence with the content standards.	10	4.30	.95
V3	The portfolio elements reflect the activities during informal and formal learning related to the educational programme.	10	4.60	.52
V4	The portfolio elements fit the content standards.	10	3.90	.57
V5	The portfolio reflects the salient tasks of the learners' work.	10	3.50	.71
V6	Less competent learners will score lower on the portfolio assessment than learners who are more competent in the domain of study.	10	4.30	.48
V7	The portfolio shows the learner's competences.	10	4.00	.47
V8	The portfolio shows the work conducted by the learner in relevance with the educational programme.	10	4.10	.32
V9	The information given by a portfolio is sufficient for raters to judge the competences.	10	3.60	.70
V10	The information given by a portfolio is sufficient for raters to give candidates feedback on their strong and weaker points.	9	3.67	.50
V11	The portfolio elements suit the learners' everyday practice.	10	4.60	.52
V12	It is clear to learners how to develop a portfolio.	9	3.56	.73
V13	It is clear to learners what the content of the portfolio is.	10	3.70	.48
V14	It is clear to learners what the assessment standards are.	10	3.70	.68
V15	It is clear to learners how the assessment results are used.	10	3.80	1.03
V16	The portfolio causes learners to be judged incorrectly (recoded).	7	4.00	1.00
V17	It is fair to use the portfolio model for prior learning assessment.	10	4.10	.57
V18	It is fair to give learners feedback on their prior learning based on the portfolio elements.	10	4.30	.68

Procedure

The portfolio assessments took place in the Summer of 2007. After completing the assessments, the assessors were interviewed by the researcher in a pre-structured and audio-taped session. The interviews averaged 33.5 minutes ($SD = 6.38$ minutes). During the interviews, the assessors had two of their last assessed portfolios at hand for reference and to illustrate their responses with examples from the portfolios. Directly after the interview they filled in the questionnaire.

Table 5.3. Means and standard deviations on the items derived from the study described in Chapter 4

No	Item	<i>N</i>	<i>M</i>	<i>SD</i>
J2	The structure of the portfolio is clear.	10	4.40	.52
J3	Portfolio assessment is suitable for measuring candidates' prior learning.	10	4.10	.57
J4	The rating criteria are clear.	10	3.90	.57
J5	All APL candidates have the right to an assessment conversation in addition to portfolio assessment.	10	2.80	1.75
J6	APL candidates did not pay enough attention to portfolio composition.	9	3.78	1.09
J7	Some portfolios provide sufficient information for assessors to make a final decision.	10	4.10	.99
J8	Some portfolios provide insufficient information for assessors to make a final decision.	10	4.00	.94
J10	The prior learning level could be judged through portfolio assessment.	10	3.70	.68
J11	Interviews not necessarily based on the outcome of portfolio assessment were held.	5	2.00	1.73
J12	An assessment conversation always yields additional information for judgement.	8	2.75	1.04
J13	The assessment conversation led to adjustments to the final decision.	4	3.75	1.26

5.3 DATA ANALYSIS

The audio-taped interviews were transcribed, and two researchers (i.e., the first two authors) coded the transcriptions into categories relating to information about the assessors in general and the decision-making process specifically. The first column of Table 5.4 shows these categories. This coding was undertaken according to nominal scales, and agreement between the two researchers analysed using Cramer's V. No significant difference was found between them; therefore, the coding of just one researcher was used for further analysis. The coded data were analysed by calculating frequencies, while the transcriptions, which served as explanations and examples, were analysed qualitatively.

The questionnaires were analysed by mean scores and standard deviations. Mean scores of three or lower represent non-supportive opinions; scores higher than three represent supportive opinions. Scores between two and four with a standard deviation higher than 1.0 remain inconclusive. These items are therefore qualitatively analysed on their meaning.

5.4 RESULTS

Table 5.4 shows the interview results concerning information about the assessors and the decision-making process. Three different types of assessors could be distinguished: course examiners, APL assessors and assessment committees.

Two assessors assessed at individual course level (Psychology and Dutch Law) and eight assessed course clusters. They established that the candidates usually submitted clear applications, indicating that they were clear as to their own objectives for taking part in APL.

Assessors' decision-making processes

Eight assessors (excluding assessors B and H) indicated that they first individually assess the portfolios, then discuss this assessment with a co-assessor and finally collaboratively (with the two assessors or in a team) decide whether additional assessments are necessary. After the portfolio assessment, four (D, E, F and J) decided in favour of an assessment conversation, and four (B, F, I and J) in favour of an additional assignment. Whether the candidate was to receive exemptions was decided at different moments. Six assessors (A, B, C, G, H and I) reached the final decision in collaboration with co-assessors in a general session. For two of these six (B and H), the decision was made based on the assessor's initial judgement. The other four assessors (D, E, F and J) reached the final decision directly after the assessment conversation, based on discussion with the second assessor. Half of the assessors amended their initial decision on the basis of additional assessments or the second opinion of a colleague (I and J).

Part 1 of the questionnaire involved items on the argumentation used in the decision-making process. Table 5.1 gives an overview of the mean scores and standard deviations of the items derived from Baume et al. (2004). The answers to the Baume et al. (2004) items on judgement rationale are similar to those on the following items: that requirements be addressed explicitly to achieve a positive judgement (B4); applications must be made in addition to evidence provision (B7); assertions must be clear; assessors must not read into what is given (B9); and assessors should be prepared to use common sense and judgement (B6). To the assessors, it does matter how evidence is labelled (B1) and where it is placed in the portfolio (B2). Assertion without evidence (B8) is viewed in a negative light.

Assessors' perceptions of portfolio use in APL

The interviews show that three assessors (C, D and E) believe it is unfair to make decisions based solely on the portfolio. The other assessors take the opposite view. One of them, Assessor I, said "That is just the point. You are not influenced by other factors, such as knowing the person. There is a certain distance." Although the majority see this as fair, they also provided the following reasons for requesting additional assessments: candidates failed to relate their experience to the learning objectives (assessor B); candidates lacked academic writing style (G and J); and to clarify ambiguity (D, E, H and I).

Assessor I did not see any benefits in organising an assessment conversation given its lack of objectivity "even when there are multiple conversations with the same candidate." The questionnaire results also show the difference between the assessors' opinion on the role of the assessment conversation. Item J11, J12 and J13, concerning the assessment conversation ('Interviews not necessarily based on the outcome of portfolio assessment were held', 'An assessment conversation always

yields additional information for judgement' and 'The assessment conversation led to adjustments to the final decision' respectively) show high standard deviations.

Table 5.4. Interview results: general assessor information and the decision-making process

Assessor*	A	B	C	D	E	F	G	H	I	J
Interview question										
Level of judgement	2	1	2	2	2	2	2	1	2	2
1= Judgement at course level										
2= Judgement of course clusters										
Assessor types	3	1	3	2	2	2	3	1	3	2
1= Course examiners		3		3	3	3		3		3
2= APL assessors										
3= Assessment committee										
Procedure	1	2	1	1	1	1	1	2	1	1
1= Individually assess portfolio then make group decision										
2= The sum of the results of each course examiner										
Assessment methods	1	1	1	1	1	1	1	1	1	1
1= Portfolio assessment		3		2	2	2			3	2
2= Assessment conversation										
3= Assignment										
Moment for final decision making	1	1	1	2	2	2	1	1	1	2
1= In general session with fellow assessors										
2= Directly after assessment conversation										
* The assessors have been labelled with a letter (A–J). References to these letters are given in the text.										

Part 2 of the questionnaire included items on portfolio relevance, usability and fairness. Table 5.2 gives an overview of the mean scores and standard deviations of the items derived from Van der Schaaf (2005), who distinguished three scales. The scale for relevance of the portfolio elements (items V1 to V8) has a mean score of 4.23 and a standard deviation of .30; that for usability (V9 to V15) has a mean of 3.66 and a standard deviation of .32; and that for fairness (V16 to V19) has a mean of 3.92 and a standard deviation of .57. The mean scores are comparable with those of Van der Schaaf. Item V15 ("It is clear to learners how the assessment results are used") shows an inconclusive result. A mean score of 3.80 indicates that most assessors find it clear to learners how the assessment results are used. A standard deviation of 1.03 however indicates that there are assessors who disagree with this perception.

Table 5.3 gives an overview of the mean scores and standard deviations on the items derived from Chapter 4. The assessors found portfolio structure and the rating criteria clear, and portfolio assessment suitable for measuring candidates' prior learning. However, they indicated that the portfolio does not always provide sufficient information, and there are mixed perceptions ($M = 2.80$; $SD = 1.75$) with respect to the assessment conversation as a candidate's right.

The deciding factors in portfolio evaluation

Assessor F found the arguments to be the most important part of the portfolio; three assessors (A, B and C) rated evidence as most important; the other six saw the combination of both argument and evidence as most important. The assessors judge the portfolios as convincing in the event of overlap between job and curriculum content (A, C and I), the descriptions of experience being rendered in terms of the learning objectives (B and G), theoretical foundations to the argumentation (B), in terms of the duration, complexity and level of experience (C). A supporting element, but not decisive, was if candidates already had reached the level of higher vocational education level. Moreover, the evidence (artefacts, reproductions, attestations and productions) in itself could be convincing, particularly scientific articles. Other characteristics mentioned included portfolio style, accuracy and structure.

Use of the rating criteria

Table 5.5. General rating criteria and assessors' perception of the extent to which these are met in candidates' portfolios

The evidence is ...	Most of the time	Sometimes	No	I don't know
Relevant	8	2		
Valid	6	3		1
Authentic	8	1		1
Recent	4			3
Transferable	1	1		3
Sufficient	7			1
At least at higher vocational level	6			3

The same general rating criteria were used for all educational domains. Table 5.5 presents the assessors' perceptions of the extent to which these criteria were met. The assessors experienced few problems in using the criteria, although some (transferability, recent and higher vocational education) were difficult to interpret. The former is often rated as 'not transferable' or 'difficult to say'. Assessor F reported, "Transferability is a difficult criterion; candidates like to study programmes that will help them acquire theory related to their practice. So at a stretch there is some transfer, but it remains difficult to judge." Remarkably, some of the assessors asked: "What is recent?" This often depends on the domain. Assessor A said broadly, "It was not made before World War II, so I regard it as recent." The word is usually interpreted as 'learned in the past and still in use'.

The definition of 'at least at vocational higher education level' is also variable, although the assessors attest to being aware of its written definition in the rating criteria. Three assessors (D, I and J) explain that this is more intuitive than rational. In an attempt to describe vocational education level, assessors A, B, C, G and I mention different candidates' characteristics, such as holding a position normally only reached through having completed education at that level or higher; already having a certificate at that level; being an independent problem solver; working with theoretical models; or using theoretical portfolio argumentations. In addition,

the nature of the evidence, its similarities with the curriculum, the CV, writing style and linguistic usage all help to decide whether vocational higher education level has been achieved. Two assessors (B and H) mentioned additional criteria: academic writing style and theoretical foundation.

5.5 CONCLUSION AND DISCUSSION

The purpose of this study was to gain insight into assessors' approaches to APL portfolio assessment to provide guidelines for its appropriate use. Although assessors' perceptions were found to be positive in Chapter 4, how they actually deal with portfolio assessment remains an issue of interest. We therefore conducted interviews with ten assessors and administered a questionnaire to investigate how they reach their final decisions, how they perceive the portfolio use in terms of fairness, usability and relevance, what the deciding factors are in portfolio evaluation and how they use the rating criteria.

First, it appears that the decision-making process is identical for assessors in the same domain, but differs for those in different domains. Assessors in all domains can opt to request additional assessments. In this study, the assessors used the same arguments in their decision-making processes as the assessors in Baume et al.'s study, such as 'candidates should address criteria explicitly to achieve a positive judgement', 'applications must be made in addition to evidence provision', 'assertions must be clear'. Further, the decision-making is influenced positively if evidence is labelled in a proper way and the portfolio is logical and convenient arranged.

The positive mean scores in the second part of the questionnaire show that the assessors found portfolio assessment relevant, fair and useful, while the third part also shows that assessors tend towards a supportive perception of the assessment. The low scores on three statements ('APL candidates have the right to an assessment conversation,' 'Interviews not necessarily based on the outcome of portfolio assessment were held' and 'An assessment conversation always yields additional information for judgement') may indicate that the assessment conversations were not superfluous, but rather provided additional information. An assessment conversation, however, is not a candidate's right; it simply provides another avenue for assessors in gathering information.

The questionnaire showed that assessors perceive the possibility to request additional assessments not only as fair but also helpful, especially when the portfolio is ambiguous or shows a lack of academic writing skills. However, this last argument may be negated given that academic writing skills and style as well as appropriate linguistic usage and theoretical argumentation is a necessary characteristic of a vocational higher education level. The assessors deemed portfolio assessment suitable for judging the level of prior learning, but consider the criterion of a minimum higher vocational education level difficult. Thus, in future practice it might be useful to translate this criterion into the characteristics mentioned earlier, such as holding a position normally only reached through having completed education at that level, or having already worked with theoretical models. The observed need for

assessors to independently interpret such criteria will then conceivably reduce, and transparency for the candidates will increase. The finding that differing interpretations exist in APL portfolio assessment is in line with the work of Van der Schaaf and Stokking (2008).

Several other criteria also require elucidation. Based on differing definitions of the term 'recent', we concluded that this criterion is not clear. Surprisingly, however, the questionnaire results do not reflect this: the item 'the rating criteria are clear' showed general assent. This may indicate that assessors find these criteria transparent, but that they interpret them differently. These and the interview results confirm conclusions from Baume et al. (2004), Tigelaar et al. (2005), and Van der Schaaf and Stokking (2008) that although assessors use rating forms and criteria, they may not, in fact, use them appropriately. As Baume et al. (2004) reported, the criteria are often interpreted differently. It is important to communicate the interpretation of the criteria with the co-assessors and candidates. The interviews, however, give some insight into the assessors' understanding and use of the criteria, while in turn rendering them more transparent for the assessors and thus also the candidates. A disciplinary difference between the understanding of the criteria is obvious. Although the criteria are largely derived from literature, refining specific elements according to domain appears to have been useful. The definition of recent evidence could in Dutch Law, for example, specify that 'the evidence should meet present regulations'. For Cultural Science, it may be that 'the evidence is still related to present work activities'. In both cases, the evidence may be older than ten years but still in use. In any event, it should be clear how the criteria are to be used in relation to the final decision. Moreover, the interviews suggest that holistic portfolio judgement overruled any analytical judgement regarding separate criteria.

The convincing portfolio characteristics may play a role in this, though they directly relate to the general criteria. For example, the assessors found portfolios convincing when the candidate's job overlapped the curriculum, and when the duration, complexity and level of experience was deemed adequate. This seems to support the idea that the criteria should be as specific, not as general, as possible.

An important issue in APL portfolio assessment is that assessors may request further assessment in cases where they judge this to be necessary. This brings about more efficient assessment than situations in which the final decision is taken based solely on a portfolio. Still, our interview results show that 70 percent of the assessors deem making decisions on a portfolio basis alone as fair, with some arguing that assessment conversations decrease objectivity. This contrasts with the quality framework for competence assessment programmes put forth by Baartman et al. (2006) which includes quality criteria such as reliability and validity, but takes also alleges that a professional judgement is more important than objective, standardised measures. One criterion in their framework – reproducibility of decisions – means that assessment quality will increase if different perspectives are used to reach a final decision. In the present study, this view is not supported by assessor I.

With regard to the set up of this study, its main shortcoming is the small number of interviewed assessors. Therefore, we only could report descriptive statistics. This restricted size, however, enabled us to collect more in-depth data on their approaches to APL portfolio assessment than would otherwise have been feasible, and therefore could be used to improve new methods of portfolio assessment.

Chapter 5

This study has shown that although the assessors' approaches to portfolio assessment differed and the need to interpret criteria was observed, the majority of assessors found the process fair. Moreover, this fairness will continue to increase in line with growing criteria transparency. Additional research on assessors' perceptions and approaches is still needed. However, if we accept the existence of interpretation in portfolio assessment and trust in assessors' competences, portfolio assessment in APL will enjoy a positive future.

Chapter 6

Assessment of Prior Learning: Efficient and highly valued support

This chapter is based on Joosten-ten Brinke, D., Sluijsmans, D. M. A., & Jochems, W. M. G. (2008). *Assessment of Prior Learning: Efficient and highly valued support*. Manuscript submitted for publication.

ABSTRACT

Assessment of Prior Learning (APL) offers significant benefits to adult learners, such as better connection between educational programmes and the labour market as well as the possibility to shorten study programmes, but it also demands support in gathering appropriate evidence for recognition of prior learning. This study aimed to investigate the support possibilities for APL candidates by evaluating embedded and personal support with APL tutors and educational scientists, an online support expert group and APL candidates.

The results show that all participants expect support in the evidence-gathering phase. From the institute's perspective, embedded support is most appropriate, while candidates prefer a combination of embedded and personal support; at the same time, the institute identifies more support mediums than do the candidates. The types and functions of this support confirm previous research. APL candidates prefer email support, given its personal, to-the-point and time independent character. An overview of the highest added value of support as well as support efficiency is provided; unfortunately, though, the highest added value is not always the most efficient. Thus, an elaboration of efficient support with high added value in APL is also given.

6.1 INTRODUCTION

Adult learners are mature, experienced, motivated and take responsibility for their own learning (Knowles, 1990). Often, their life experiences are worthy of recognition. Specific entry routes in higher education characterize these adult learners (Schuetze & Slowey, 2002). Assessment of Prior (Experiential) Learning (APL) procedure acknowledges that the individual's self-concept and life experiences constitute an avenue for further learning (Cretchley & Castle, 2001). It also offers significant benefits to adult learners (Wihak, 2007): It provides a better connection between educational programmes and the labour market, emphasises lifelong and flexible learning, and increases efficiency for part-time adult learners by shortening their programmes and reducing course loads and costs (see Chapter 2, p. 26).

Despite these benefits and the extensive use of a credit framework, universities are traditionally reserved when it comes to implementing APL (Wihak, 2007), and, although APL fits the lifelong learning agenda, universities have to rethink their educational programmes (Jongbloed, 2002). Prior informal and non-formal learning (that is, learning that takes place outside formal institutes) do not receive due recognition and appreciation. Institutes tend to see APL as time-consuming (Bélanger & Mount, 1998; Thomas et al., 2000; Wheelahan et al., 2002) and feel that candidates need support in gathering the appropriate evidence (Scholten et al., 2003; Thomas et al. 2000; Wheelahan et al., 2002). This is caused by APL's reliance on candidates' abilities to articulate learning needs and achievements; many indicate that it is difficult to give adequate descriptions of former learning experiences (Shapiro, 2003). Firstly, learners do not always realise the extent of their knowledge and competences, and might lack the appropriate language to articulate them (that is, they need support translating their knowledge and skills into educational discourse). Furthermore, the perception of informal learning is subjective, which makes it difficult for APL candidates to assess whether past job experiences have actually contributed to their learning (Colley et al., 2002; Wheelahan et al., 2002). Currently, little research is available as to how candidates could best be supported in this process; the presented study will thus focus on the issue of support for APL candidates. Before addressing support definitions and functions, we first describe APL procedures.

Assessment of Prior Learning

In general, APL consists of four phases. In the first, candidate profiling phase, the institute provides information about APL possibilities and its procedure. In the second phase of evidence-gathering, candidates collect evidence about previous experience to support a claim for credit with respect to the qualification they want to achieve. In the third, assessment phase, assessors review the quality of the candidate's evidence using set assessment standards. The final phase, recognition, involves verification of the assessment outcome through, for example, the issuing of

credits. Candidates intending to start an educational programme then receive a study advice.

Commonly, candidates present their prior learning evidence in a portfolio. To this end, it is important that they receive clear guidelines on the purpose, standards, content and structure of strong portfolios (Van der Schaaf & Stokking, 2008). Scheltema (2002) showed that candidates know what is expected of them, but need more support in ‘translating’ the collected material into appropriate evidence. They need help reflecting on their own competences and preparing a competence profile, gathering the appropriate evidence and composing the portfolio (Scholten et al., 2003; Scottish Qualifications Authority, 1997; Dutch Ministry of Economic Affairs, 2000).

However, support for candidates in the context of APL has not been elaborated and explored extensively in literature. Earlier studies in regular education, however, indicate that the availability and acceptability of support is crucial in minimising dropout levels (Jacklin & Robinson, 2007; Tait, 2000).

Definition and functions of learner support

In general, support for learners implies that education be organised such that all aspects of the processes in which the learner is involved facilitate high-quality learning (Thorpe, 2002). In the context of open and distance learning, Tait (2000) defines support as ‘... the range of services [...] which complement the course materials or learning resources’ (p. 289). Jacklin and Robinson (2007) define support as ‘help of some kind [...] related to the needs of the learners’ (p.117), and identify three general types: resource support (e.g., a personal tutor, website or library service); guidance, direction, or advice; and encouragement by fellow learners. Day (2001a) refers to the specific functions of APL support: It should help candidates identify relevant learning, make action plans to demonstrate this learning, and prepare and present evidence for assessment. According to Clarke and Warr (1997), support should also take the form of direction and encouragement; similarly, Macdonald and McAteer (2003) identify the following functions of support: administration, encouragement, assignment preparation/feedback, and reinforcement of course concepts.

Support mediums

Learner support can be provided through several mediums. Donoghue et al. (2002) describe assistance strategies including writing skills workshops, library orientations, acknowledgment of learners’ classroom needs, discussions with staff, critical thinking and analysis, literature searches, application of literature findings, development of a position, and use of argument and referencing procedures. Preparatory workshops are also effective and play a vital part in the accreditation process (Clarke & Warr, 1997). Evaluations of the support mediums that candidates expect to need in an APL procedure encompass general information sessions, print, email and telephone support, peer candidates, personal communication with the tutor, and eventually group advice, skype, forums, frequently asked questions (FAQs) or elaborated examples (Joosten-ten Brinke, 2007).

A distinction can be made here between embedded and personal support. Embedded support consists of techniques incorporated in printed or electronic instructional material, such as entrance level tests, prior knowledge assessments, examples, FAQs and elaborated criteria (Martens & Valcke, 1995). Macdonald and McAteer (2003) describe personal support as that given by a person (e.g., tutor or study adviser) in real time or asynchronously either in a group (e.g., face-to-face tutorials) or individual context (telephone, email, etc.). Tigelaar, Dolmans, Wolfhagen and Van der Vleuten (2004) mention personal support as the facilitator of learning processes as developer, counsellor and evaluator. Macdonald and McAteer (2003) have evaluated the potential value of combining the available mediums to enhance learner support for distance and campus-based universities, and stress the importance of creating a balance between embedded support, such as online conferences, and personal tutor support. This combination of support types has proven to be helpful to learners (Mason, 2003).

Based on the definitions and functions of support and its mediums provided above, we are interested in the optimal balance between embedded and personal support in APL in a distance education context. In the present study, we investigate three questions:

- In which APL phase is embedded and/or personal support desired?
- Which specific types of personal and embedded support and support mediums are most desired in APL?
- Which type of support has the highest added value and is the most efficient?

6.2 METHOD

Research context

The Open University of the Netherlands (OUNL) caters to lifelong learners of 18 years and older with no admission requirements. Learners can receive exemptions for parts of the curriculum if they already have completed formal higher education. In addition, OUNL has developed an APL procedure primarily based on the credit exchange model (Butterworth, 1992; Trowler, 1996), in which learners receive credit points if their informally or non-formally acquired competences match the learning outcomes of an accredited educational programme. The first APL procedure was undertaken in 2006, with support for each phase organised as follows:

In the candidate profiling phase, embedded support consisted of a standardised email providing basic information including the web and email address of a general tutor, a website with general information about the procedure, standard (work experience) requirements for the different phases, a manual and a sample portfolio format. Personal support consisted of individual email, telephone, and face-to-face sessions on request.

In the evidence-gathering phase, embedded support consisted of a portfolio format, a standardised example of argumentation and the educational programme's learning objectives. Personal support comprised email, telephone, face-to-face sessions on request and portfolio feedback.

In the assessment phase, embedded support consisted of standardised invitations for (parts of) the assessment. No personal support was provided.

In the recognition phase, embedded support consisted of a standardised letter of recognition. Personal support was supplied by way of personal study advice on request.

The results of a previous study (Joosten-ten Brinke, Sluijsmans, Brand-Gruwel, & Jochems, 2008; see Chapter 2) revealed that OUNL tutors and candidates expect that APL support can be provided through general information sessions, in writing, by email or telephone contact with the tutor or peers, and by the provision of solid examples. It also showed that candidates expect support from their employer and colleagues.

Participants

Three groups of participants were involved: a focus group, an expert group and an APL candidates' group. The first consisted of seven tutors with more than five years of learner support experience in open and distance learning and with knowledge of APL; three educational scientists with learner support expertise in open and distance learning also participated in a focus group session. The second group comprised three experts in online support who reviewed the first results of the focus group and provided an overview of support functions and mediums (Rusman & Ebrecht, 2007; Wigman & Spoelstra, 2008). The third group consisted of eight APL candidates (5 men, 3 women) distributed over five domains: Educational Science ($n = 2$), Law ($n = 1$), Management Science ($n = 2$), Psychology ($n = 1$) and Computer Science ($n = 2$). Five of these candidates completed the APL procedure successfully, one returned a negative result and two did not complete the procedure.

Materials

A focus group session aimed to identify the types of APL support desired by the institute. A question scheme for this session is presented in Table 6.1. An electronic Group Support System (eGSS), or computer-based information processing system designed to facilitate group processes, was used to support the session. This allows collaborative and individual activities such as the brainstorming, sorting, rating and clustering of ideas via computer communication. All participants are seated in front of a laptop connected to a network and facilitator computer. Input generated from the expert meeting was collected and saved in the eGSS, which delivers anonymous results.

A structured interview scheme was used for the individual candidate interviews. This scheme was similar to that used in the focus group session, with the exception that the results of the focus group session were included. The interviews were audiotaped.

Table 6.1. Interview scheme for focus group session

Personal support
In which APL phases should personal support be available?
What types of personal support can be given in each phase?
Which personal support has the highest added value for the candidate?
Which personal support is the most efficient?
Embedded support
In which APL phases should embedded support be available?
What types of embedded support can be given in each phase?
Which embedded support has the highest added value for the candidate?
Which embedded support is the most efficient?

Procedure

At the start of the focus group meeting, the researcher gave broad definitions of both APL and support. In accordance with the interview scheme (see Table 6.1), the focus group was then asked to vote within five minutes for the phase (candidate profiling, evidence-gathering, assessment and recognition) in which support was most desired. Next, they had seven minutes to think individually about different types of support, which were gathered by the eGSS and listed (anonymously) on the screen. They were then asked to review this list for each APL phase and to combine or erase duplicates. On the remaining list, they had to indicate the two types of support with the highest added value, and the two with the greatest efficiency. The results of this focus group session were discussed in person by a review group of three online support experts, who were instructed to make relevant additions to the list of support options.

Two weeks after the focus group session, APL candidates were interviewed using a structured interview scheme to check whether the support mediums suggested by the institute matched those desired by APL candidates.

6.3 DATA ANALYSIS

Because the contribution of each participant in the focus group meeting was anonymous, it is not possible to trace the results to individuals. Therefore, these analyses are descriptive in terms of percentages and qualitative overviews.

The first research question ('In which APL phase is embedded and/or personal support desired?') was analysed by way of the percentage of desired support in each phase. To answer the second ('Which specific types of personal and embedded support and support mediums are most desired in APL?'), the answers collected in the focus group sessions were divided into support functions, and for each phase the number of participants who indicated that type of support function were counted. Subsequently, the embedded and personal support mediums mentioned were listed,

and each of the participant groups were analysed as to whether these mediums were seen as desirable. This allowed the opinion of the expert group to be taken into account. Finally, a list of support topics mentioned by the focus and candidate groups was generated. To answer the third research question ('Which type of support has the highest added value and is the most efficient?'), the focus group votes were listed and compared with the answers of the interviewed candidates.

6.4 RESULTS

In which APL phase is embedded and/or personal support desired?

Table 6.2 gives an overview of the percentage of institute participants and candidates who desire support in the different APL phases. In the evidence-gathering phase, all candidates desire both personal and embedded support. In contrast, only 70% of the focus group desires personal support in this phase, and 80% were in favour of embedded support. In the assessment phase, no candidate desires embedded support; in the recognition phase, desired support for the focus group as well as the candidates is low.

Table 6.2. Phases with support desired by institute and candidates indicated as percentages

APL phase	Personal support		Embedded support	
	Institute	Candidates	Institute	Candidates
1. Candidate profiling	40%	66%	100%	66%
2. Evidence-gathering	70%	100%	80%	100%
3. Assessment	40%	33%	50%	0%
4. Recognition	10%	16%	50%	0%

Which specific types of personal and embedded support and support mediums are most desired in APL?

Analyses of the focus group answers led to three main aspects of support: functions, mediums and topics. Table 6.3 describes the support functions, with the first column giving these functions as actions in terms of verbs suggested by the focus group participants. In the second column, the number of phases is given for which this function is mentioned. The third column identifies the functions mentioned for each particular phase.

Table 6.3. Support functions in APL phases of embedded support (ES) and personal support (PS)

	# phases *	1. Candidate profiling		2. Evidence- gathering		3. Assessment		4. Recognition	
		ES*	PS	ES	PS	ES	PS	ES	PS
		6	6	6	9	6	4	4	7
Advise	4		•	•	•	•	•	•	•
Answer questions	4	•		•	•	•		•	•
Supply	4	•	•	•	•	•		•	
Inform	3	•	•			•	•		•
Give examples	3	•		•		•			
Amplify	2				•				•
Be available	2		•						•
Discuss	2				•				•
Go through	2	•			•				
Explain	1					•	•		
Comment	1				•				
Compare	1						•		
Describe	1							•	
Encourage	1			•					
Guide	1			•					
Enquire	1				•				
Log	1	•							
Motivate	1				•				
Solve problems	1		•						
Refer	1								•
Register	1		•						
* Number of phases in which the function is mentioned									

Table 6.4 classifies the appropriate support mediums, which can be divided into 1. mediums for embedded and personal support; and 2. those that support the individual versus the group. Each group named the website, FAQs, manuals and printed materials as appropriate types of embedded support. They all mentioned emails to individuals, face-to-face contact, telephone conversations and a general information session as relevant personal support. The expert group suggested more topical mediums such as virtual classrooms, telephone conferences and mailing lists.

Table 6.5 shows the support topics which can be given in each phase, including both embedded and personal support. Which type of support has the highest added value and is the most efficient?

Table 6.4. Appropriate support mediums according to institute, expert group and APL candidates

		Medium	Institute	Expert group	Candidates
Embedded support	Electronic	Computer system	•	•	
		Self-assessment instrument to test if APL procedure could be worthwhile	•		
		Search engine	•	•	
		Automatic alerts	•	•	
		Automatic email	•	•	
		Video (interviews with former APL candidates)	•	•	
		Website	•	•	•
		FAQs	•	•	•
	Written	Candidate newspaper	•	•	
		Leaflet (APL manual; study guide)	•	•	•
		Portfolio format	•		•
		Printed examples of good and bad practice	•	•	•
		Feedback		•	
		Jurisprudence for similar cases	•		
		Letter to individuals		•	
Personal support	Individual	Email	•	•	•
		Face-to-face	•	•	•
		Telephone	•	•	•
	Group	Workshop	•	•	
		General information session	•	•	•
		In-company training	•	•	
		Virtual classroom/computer conference		•	
		Telephone conference		•	
		Email lists		•	
		Letters		•	

Table 6.5. Overview of topics in each phase for embedded or personal support

Topics for support	Embedded support	Personal support
1. Candidate profiling		
Whole procedure	•	
All information sources		•
Educational programme standards/competences	•	
Portfolio structure		•
Lack of clarity in embedded support		•
2. Evidence-gathering		
Possible standard outcome		•
Examples of evidence	•	•
Composition of portfolio (in view of assessment criteria)	•	•
Overview of competences	•	•
APL procedure		•
CV suggestions		•
Employer's certificate	•	•
Analogous cases	•	
Standardised CV	•	
Types of evidence	•	•
3. Assessment		
Procedure	•	
Criteria and standards	•	
Information about assessment phase	•	
Strategies in assessing competences	•	•
Assessment possibilities		•
Protocol	•	
Good and bad portfolios for competence assessment	•	
Former assessment results (jurisprudence)	•	•
Assessment phase in view of criteria		•
4. Recognition		
Standard recognitions		•
Phase procedure	•	
Explanation of (possible) recognition result	•	•
Competences lacking		•
Civil effect		•
Comparable results (jurisprudence)	•	•
Alternative studies available for recognition		•
Recognition opportunities		•
Alternatives to continuation/study advice	•	•
Relevant studies		•
Complementary activities		•
Upon negative result		•

The first column of Table 6.6 provides an overview of possible support for each APL phase, comprising combinations of support types and mediums per phase as

given by the focus group. In the second and third columns, the scores are given for the highest added value and efficiency of personal support, while those for embedded support are shown in the fourth and fifth columns.

Table 6.6. Overview of highest added-value support and scores for efficiency

Support possibilities	Embedded support		Personal support	
	Highest value*	Efficiency*	Highest value*	Efficiency*
1. Candidate profiling				
General information session			4	2
Initial individual face-to-face conversation			3	0
Standard individual face-to-face conversation			3	2
Information by telephone			2	0
Meeting with former APL candidates			2	2
List of information sources (links, websites) by email			0	5
APL manual	5	4		
Self-assessment to test if APL procedure could be worthwhile	5	3		
FAQs	4	6		
Website	4	4		
Good and bad examples with clarification	3	2		
Interviews with former APL candidates	1	2		
Portfolio format	1	1		
Jurisprudence for similar cases	1	1		
Overview of competences per educational programme	1	0		
Study guide/flyer	0	4		
Standards	0	1		
2. Evidence-gathering				
Individual support for composing portfolio			4	1
Written comments on portfolio			4	1
Discussion of portfolio in view of assessment criteria			4	0
Workshop on how to compose portfolio			2	2
CV suggestions			2	1
Discussion of evidence examples			2	4
Answering of questions by phone or email			1	4
Mind-manager system with portfolio format	9	7		
Good and bad examples with clarification	8	5		
Manual on how to compose portfolio	4	2		
Electronic seeking and presenting of analogous cases	3	2		
Standardised CV	2	2		
FAQs	1	4		
Electronic portfolio format	1	3		
List with evidence examples	1	1		
Overview of assessment criteria	0	3		
Email alerts	0	1		

Table 6.6. continued

Support possibilities	Embedded support		Personal support	
	Highest value*	Efficiency*	Highest value*	Efficiency*
3. Assessment				
Individual face-to-face conversation re. assessment criteria			6	3
Discussion of former assessment results			3	3
Assessment criteria	9	6		
Elaboration of assessment protocol	7	2		
Good and bad examples with clarification of portfolios	5	4		
Assessment results (jurisprudence)	2	5		
4. Recognition				
Availability for individual explanation (after recognition)			6	1
Answering of questions by email			4	4
Group discussion to compare results			2	1
Referral to others			1	4
Examples of cases in which recognition was (not) given	6	3		
Standard recognitions	4	6		
Phase procedure	4	4		
Graphic overviews of recognisable programme elements	4	2		

* The maximum score is 10 (= number of focus group participants).

Seven out of the eight APL candidates described the combination of personal and embedded support as having the highest added value. The most efficient method, it appears, is to first read all the information supplied on the website and in manuals (embedded support) and then, if necessary, ask any remaining questions by email. The preference for email is explained by the opportunity to formulate one's question/s adequately, receive a written answer and do so time-independently. The expert group believes the virtual classroom to be a useful instrument. This is a private, online space offering all the activities that tutors might use to support APL candidates in a real-world classroom. Especially in the context of distance education, this medium offers a solution to many efficiency problems.

6.5 CONCLUSION AND DISCUSSION

Given the need to support APL candidates, we investigated the support functions and mediums desired in each phase of the procedure, and the mediums with the highest added value and efficiency. According to the focus groups (which represent the institute perspective) it is possible to provide support in all phases of APL, though embedded support is seen as more appropriate than personal support. Still, all candidates showed interest in personal as well as embedded support in the evidence-gathering phase. The difference between the institute's desired embedded support and that of the candidates in the assessment and recognition phases is re-

markable: Candidates did not expect embedded support in these two phases. Candidate interviews showed, however, that they appreciate personal support after the recognition phase, for example in the form of study advice. The second, evidence-gathering phase is mentioned most; this is in line with earlier research (Colley et al., 2002; Cretchley & Castle, 2001; Fahy et al., 1999; Shapiro, 2003; Spencer et al., 2000; Wheelahan et al., 2002).

The results to the second question revealed that different support functions were mentioned by the institute. These could be given as both embedded and personal support. For example, advice can be provided both through prescribed embedded support in a manual or by personal telephone contact. The support functions mentioned as appropriate in three phases or more are giving advice, answering questions, supplying information, informing and giving examples. The second phase, evidence-gathering, is appropriate for most of the support functions. In relation to those described by Day (2001a) (i.e., helping the candidate to identify relevant learning, preparing and presenting evidence for assessment), the functions mentioned in our study are more general. They are consistent with Jacklin and Robinson's (2007) classifications of direction, advice or information, guidance and encouragement, though the latter two are rarely mentioned in our study. Their first type of support – material resources such as people, equipment and services – is found in the embedded and personal support classification.

Functional classification is followed by classification in terms of appropriate support mediums. Tutors and educational technologists see more possibilities for support than the APL candidates desire or are familiar with. Candidates prefer email support after exhausting avenues for embedded support on the website and in manuals, and gave the following reasons for this preference: It can be given personally, and is to-the-point and time independent. The expert group identified the virtual classroom as a useful instrument, especially in the context of distance education. The combination of embedded support and the availability of personal support has, according to the candidates, the highest added value.

With a view to the third research question, Table 6.6 provided an overview of the highest added-value and efficient support possibilities. Unfortunately, but not surprisingly, the highest added-value support is not always seen as the most efficient. For example, discussing the candidates' portfolios according to the assessment criteria was seen as having high added value by four focus group participants, yet none of them found it efficient. The question thus arises as to what to do with this kind of support: We suggest exploring the expected results of such support and examining which achieves the same result most efficiently. Portfolio discussions, for example, can be held in a virtual classroom or through group sessions, both of which are more efficient than individual, face-to-face sessions. Moreover, personal support is less efficient for the institute than embedded support; it is therefore important to embed support as far as possible. In some cases, however, the development of embedded support will mean high investment costs. One must then weigh the extent to which the result would be worthy – in other words, its added value. For example, the mind-manager system within the portfolio format scores highly on both added value and efficiency. The value of implementing it, then, is obvious. However, if such a system is not available, its purchase or development must be taken into account. To decrease the time required of the institute, it is also necessary

to identify the functions which can be done by computer, such as online self-assessment of prior learning.

Based on the results presented in Table 6.6 and the candidates' perceptions, we propose a new support framework. We have selected support possibilities with a minimum score of 2 on both highest added value and efficiency. This would imply that in the candidate-profiling phase, general information sessions could be held once or twice a year with the possibility for face-to-face conversation. Embedded support in this phase should consist of at least an APL manual, a self-assessment instrument to test whether the procedure is likely to be meaningful, a website with FAQs and information about APL, and finally good and bad examples of portfolios with clarification.

In the second phase, that of evidence-gathering, personal support should preferably consist of discussions about examples of evidence. Embedded support can include a mind-manager system with a portfolio format and strong versus poor examples; a 'how to compose a portfolio' manual; the opportunity to electronically seek and present analogous cases, and a FAQs list. In addition, instead of a face-to-face workshop on portfolio composition, we propose using a more efficient virtual classroom workshop. This could be offered a few times a year, with candidates from all over the country applying by email.

In the assessment phase, personal support should comprise an individual, face-to-face conversation based on the assessment criteria and former assessment results. Embedded support should consist of a list of assessment criteria, an elaboration of assessment protocol, examples of good and bad portfolios for competence assessment, and an overview of assessment results jurisprudence. Finally, in the recognition phase, questions can be answered by way of personal emails; embedded support should include examples in which recognition was and was not given, descriptions of standard recognitions and the phase itself, and graphic overviews of the educational programme.

Based on the comments of APL candidates, we suggest providing them with the email address of a tutor available to deal with interim questions. Some contact opportunities can also be gleaned by way of the virtual classroom. In Table 6.7, the existing framework for APL support is given alongside the proposed framework. The proposed framework in Table 6.7 highlights the more technical implementation of second-phase support, embedded support in the third and fourth phases and the constant possibility for personal email contact for interim questions.

Table 6.7. Comparison of existing and proposed frameworks for APL support

Existing framework		Proposed framework	
Embedded support	Personal support	Embedded support	Personal support
1. Candidate profiling			
Standardised email with basic information and reference	Email	Self-assessment instrument	General information session once or twice a year
Website with general information about procedure and general requirements	Telephone	Website with all APL information	Voluntary face-to-face standard conversations
APL manual	Face-to-face sessions on request	APL manual	Personal email for interim questions
Portfolio format		Good and bad examples with clarification FAQs	
2. Evidence-gathering			
Portfolio format	Email	Mind manager system with portfolio format	Discussions about evidence examples
Standardised, elaborated example of argumentation	Telephone	Good and bad examples with clarification	Workshop by virtual classroom
Learning objectives of educational programme	Face-to-face session on request Portfolio feedback	Manual: How to compose a portfolio Electronic seeking and presenting of analogous cases FAQs	Personal email for interim questions
3. Assessment			
Standardised invitations for (parts of) assessment support	No personal support	List of criteria Elaboration of protocol Good and bad portfolio examples for competence assessment Overview of jurisprudence on assessment results	Individual face-to-face conversation based on assessment criteria Discussion about former assessment results Personal email for interim questions
4. Recognition			
Standardised letter for recognition	Study advice on request	Examples of cases in which recognition was and was not given Description of standard recognitions and recognition phase Graphic overviews of the recognisable programme elements	Personal email for interim questions

Chapter 7

General discussion

7.1 INTRODUCTION

In the previous chapters, five studies were presented on the Assessment of Prior Learning (APL). These studies provide answers to the question of how lifelong learners can be supported in the process of recognising prior learning. Firstly, we conducted a literature study in which APL's main characteristics, such as its procedural structure and recognition of informal, non-formal and formal learning, were discussed in relation to quality requirements for competence assessments. Secondly, we carried out a retrospective study on the role and appropriateness of self-assessment in APL. Thirdly, the perceptions of APL's three main actors – candidates, tutors and assessors – of APL instruments and procedures were evaluated in two university domains, Computer Science and Educational Science. Fourthly, we analysed the assessors' approaches in portfolio assessment in APL to gain better understanding of the assessment of prior informal and non-formal learning. Finally, we evaluated the support possibilities in APL and presented a support framework which integrates the highest added value and efficiency of support.

Each study was conducted in the context of APL in university education. In this chapter, the main findings and conclusions are summarised and some methodological reflections and practical implications discussed. Finally, we present some recommendations for future APL research.

7.2 MAIN FINDINGS AND CONCLUSIONS

Our literature study (Chapter 2) outlined APL's general characteristics including types of recognisable learning, structure, assessment methods, outcomes, benefits, candidate responsibility and time investment. We now briefly revisit these.

Different kinds of learning can be recognised in APL. These can include formal learning (intentional and structured learning based on the achievement of competences with related certificates), non-formal learning (similar to formal learning but without legally or socially recorded certification) and informal learning (unintentional, unstructured and without certification). APL structural procedure consists of an information phase, an evidence-gathering phase, an assessment phase and a recognition phase. Self-assessment and portfolio assessment are the most commonly used assessment methods. APL leads to a number of prescribed outcomes (e.g., exemptions, remaining study path, certification) and benefits the candidate, educational institution and community by increasing accessibility to education, reducing dropout rates, connecting educational programmes with the labour market, shortening study programmes, and reducing course loads and costs. The procedure requires a high level of candidate responsibility, as each candidate must appropriately evaluate his or her personal, context-bound prior learning. Therefore, a sufficient level of candidate support is desirable.

We subsequently analysed these general characteristics according to the quality framework of Baartman et al. (2006). This encompasses traditional quality criteria, such as reliability and validity, but also those more in line with the APL characteristics. The 12 criteria are: fitness for purpose, transparency, acceptability, reproducibility of decisions, comparability, fairness, cognitive complexity, fitness for self-assessment, meaningfulness, authenticity, educational consequences, and costs and efficiency. For a detailed description of these criteria, see Table 2.1 in Chapter 2 (p. 18).

The quality framework has been found useful in APL; its criteria provide clear guidelines which improve the procedure's quality. However, some criteria are more relevant to APL than others. Authenticity, for example, should be interpreted differently for APL than for general competence assessment programmes in formal education. In the latter, authenticity refers to the representativeness of assessment tasks for future professional practice, while in APL it relates to the authenticity of the evidence provided. Additionally, we found dependencies between the criteria; for example, acceptability in APL seems to depend highly on transparency. It also proved difficult to distinguish between reproducibility and comparability of decisions. On the one hand, reproducibility implies the use of multiple assessors and assessment tasks to prevent decisions that depend on the assessor personally or specific assessment situation. On the other hand, comparability requires a standardised procedure and consistent use of assessment tasks and evaluation criteria. However, an increase in assessors and assignments could decrease procedural consistency by complicating standardisation. Reproducibility of decisions, meanwhile, is also associated with the costs and efficiency criterion. Decreasing costs requires a balanced decision about the use of different assessment methods and the intensity of the decision-making process (see also Chapter 5). Perfectly designed procedures with high costs or low efficiency are unacceptable for APL providers and candidates. Finally, the literature study also showed that transparency, fitness for purpose, and costs and efficiency are perceived as the essential criteria for a qualitatively sound APL procedure.

Chapter 3 addressed the APL phase in which candidates collect evidence about prior formal, informal and non-formal learning to support their claims for credits. Because self-assessment is required to prove that candidates have acquired knowledge, skills or competences that meet the course or programme requirements, candidate responsibility is high (Evans, 2003). The study presented here investigated whether self-assessment is a suitable tool in university APL procedures. We posed this question because APL research often refers to difficulties in the evidence-gathering process (e.g., Colley et al., 2002; Shapiro, 2003); for example, candidates have trouble describing their prior learning and assessing whether past experiences actually contributed to their knowledge and skill acquisition. In addition, research showed ambiguous results about the reliability of self-assessment (e.g., Boud & Falchikov, 1989; Galson & Olikar, 1976; Gentle, 1994; Ward, Gruppen, & Regehr, 2002).

We chose a two-step approach in which we first explored the prior learning sources, and then investigated candidates' self-assessment according to the set learning objectives before and after the course. In total 503 learners participated. The results revealed that almost all learners indicated having relevant prior learning experi-

ences, but only one-third were confident that these were sufficient to gain exemptions from the university programme. A second conclusion was that learners use different, domain-related sources to demonstrate prior learning. Thus, the portfolio templates may become more transparent through the use of domain specific sources as indicators.

Learners' self-assessment on the learning objectives before and after the course differed not very much; the course had no influence on the self-assessment of prior knowledge, skills and competences. Given this stability over time, self-assessment is clearly a suitable method for APL.

Chapter 4 aimed to investigate the main actors' perceptions of APL: candidates, tutors and assessors. A questionnaire was designed consisting of statements based on Baartman et al.'s (2006) quality criteria. Two domains were available for evaluation: Computer Science and Educational Science. In Computer Science, 23 police software company employees who had signed up for the bachelor's programme participated in the APL procedure. Once this was complete, the procedure was revised based on the evaluation data. Nine candidates then participated in the revised procedure for Educational Science. They were selected on the basis of their request for admission to the programme. Because Computer Science has no admission requirements (anyone over 18 years can take part), the procedure results were converted into exemptions for parts of the programme. Educational Science, however, does have admission requirements; thus the results were used for admitting candidates with or without exemptions for parts of the programme. In both domains tutors were available for support and assessors for the assessment.

The results of the perception questionnaire showed that APL was viewed positively in both domains, but significantly better by tutors, assessors and candidates for Educational Science on all quality scales. This may be due to use of the revised procedure for Educational Science based on evaluation of the Computer Science procedure: 1. tutors were instructed to be cautious about voicing their expectations of the result to the candidate to avoid influencing the procedure; 2. the portfolio structure was altered to encourage more appropriate evidence and reflection; 3. an additional assignment, if necessary, was given before the assessment conversation; 4. candidates were only invited to an assessment conversation if the portfolio assessment gave cause; and 5. the assessment criteria were described more transparently.

Another explanation may be the familiarity with APL and portfolio assessment inherent in Educational Science. From the start, APL fits better with Educational Science than with Computer Science. It received a higher score on the first quality scale of fitness for purpose in Educational Science, while the Computer Science participants perceived the acceptability of its assessment criteria and instruments as negative. The subsequent revisions improved the transparency of the procedure. The Computer Science participants, however, also perceived fairness less favourably than those from Educational Science. This may be due to less cooperation between the assessors and tutors; it may also have resulted from the procedural structure, which was later revised to make use of assessment conversations only if the portfolio gave cause for it. Our study results from Chapter 5 confirm that this revision increased perceived fairness. We thus conclude that the revised APL procedure is sound, but must take domain-specific characteristics into account.

The study reported in Chapter 4 also evaluated required assessor and tutor knowledge and skills for APL. The Computer Science participants rated domain knowledge and skills as most important, while those from Educational Science rated judgemental and evaluation skills highest. Participants from both domains rated the skills ‘giving follow-up advice’ and ‘writing motivational reports’ as less important. It may be that participants rated highly skills which were familiar to them from daily teaching practice, and rated lower those more specific to APL and therefore less familiar. The mean scores on the self-assessment for these skills varied little. However, as many skills were perceived as important for competent assessors or tutors, it would be desirable to select people for these roles who already have certain competences, or to train them in these.

In Chapter 5 we investigated assessors’ approaches in portfolio assessment specifically in the APL context, as research in other contexts (e.g., teacher education) has shown that portfolio assessment is difficult (Tigelaar et al., 2005; Trowler, 1996; Van der Schaaf et al., 2005). We defined ‘approach’ as the steps assessors take in decision-making, their perception of portfolio use in APL in terms of fairness, usability and relevance, the characteristics they found convincing, and their use of rating criteria. Ten assessors from six educational domains were involved in the portfolio assessment, and were retrospectively interviewed and surveyed about their approach. We found that the decision-making process differs in different domains, but is similar within each domain. Thus different steps are taken to reach a final decision, such as use of additional assessment after the portfolio assessment. Although assessors in all domains could request additional assessments, not all actually did so.

Another finding was that all assessors found the portfolio relevant, fair and useful. This is in line with the findings of the Chapter 3 study. Assessment conversations were not superfluous, but provided valuable additional information; assessors see these conversations not as the candidate’s right, but simply another opportunity to gather information. In addition, they see the possibility to request additional assessments not only as fair but also helpful, especially when the portfolio is ambiguous or shows a lack of academic writing skills. However, given that academic writing skills, style, linguistic usage and theoretical argumentation are necessary characteristics of vocational higher education level, the validity of this view is debatable.

The assessors indicated that portfolio assessment is suitable for judging the level of prior learning, but found some of the criteria difficult to interpret; for example, the ‘minimum higher vocational education level’. They prefer to break these complex criteria down into more detailed descriptions – thus, ‘minimum higher vocational education level’ becomes ‘holding a position normally only reached through having completed education at that level, or having already worked with theoretical models’. The observed need for assessors to independently interpret such criteria will then conceivably reduce, and transparency for the candidates will increase. Several other criteria, too, required elucidation; in view of the differing definitions of the term ‘recent’, we concluded that this criterion is also unclear. The finding that differing interpretations exist in APL portfolio assessment is in line with previous research (e.g., Van der Schaaf and Stokking, 2008), and our results confirm conclusions from Baume et al. (2004), Tigelaar et al. (2005) and Van der Schaaf and

Stokking (2008) that assessors may not use rating forms and criteria appropriately given these different interpretations.

The interviews gave some insight into the assessors' understanding and use of the criteria. Assessors found portfolios convincing when the candidate's job overlapped the curriculum, and when the duration, complexity and level of experience were adequate.

Portfolio assessment in APL differs with portfolio assessment for a grade in that assessors may request further information in cases where they deem it necessary. An additional assignment can be given, or the candidate may be invited for an assessment conversation. These additional assessments are not obligatory, but represent an opportunity for the assessors. Our interview results show that 70 percent of the assessors feel that making decisions based on only portfolios is fair, and that assessment conversations could decrease objectivity. This contrasts with Baartman et al.'s (2006) quality framework for competence assessment programmes which includes quality criteria such as reliability and validity, but also alleges that professional judgement is more important than objective, standardised measures. One criterion in their framework – reproducibility of decisions – implies that assessment quality increases if different perspectives are used to reach a final decision. In the present study, this view is not supported by all assessors.

The study in Chapter 6 focused on desired support for APL candidates. As stated previously, APL requires a high level of candidate responsibility, as they have to evaluate their prior learning appropriately. Therefore, a sufficient level of support is desired. We thus investigated the support functions and mediums desired in each phase of the APL procedure, and the mediums with the highest added value and efficiency. Three participant groups were involved: a focus group of experienced tutors and educational scientists, an online support expert group and an APL candidates' group. According to the focus group, providing support in all APL phases is feasible, though embedded support is more appropriate than personal support. Embedded support consists of printed or electronic instructional material (Martens & Valeke, 1995) while personal support is given by a person in real time or asynchronously (Macdonald & McAteer, 2003). All candidates showed interest in both types of support in the second, evidence-gathering phase of the APL procedure; this can take the form of giving advice, answering questions, supplying information and giving examples. This phase appeared to be appropriate for most of the support functions.

Functional classification is followed by classification in terms of appropriate support mediums. Candidates prefer email support because it is personal, to-the-point and time independent. Tutors and educational technologists, however, see more possibilities for support than APL candidates desire or are familiar with. For example, the expert group identified the virtual classroom as a useful instrument, especially in the distance education context. The candidates themselves indicated that the combination of embedded support and the availability of personal support would be of the highest added value; unfortunately, though, the highest added-value support is not always seen as the most efficient. The study concludes by presenting a support framework for APL setting out the desired embedded and personal support for each phase.

This thesis set out to investigate how to support lifelong learners in the process of recognising prior learning. In summary, support is most needed in the second, evidence-gathering phase. Self-assessment is a suitable tool to use in this phase for candidates to evaluate their prior learning. To optimise this self-assessment and prepare appropriately for the portfolio assessment, the criteria used should be domain specific. Finally, most support can be embedded, though telephone and email contact should be guaranteed.

7.3 METHODOLOGICAL CONSIDERATIONS

Some remarks with regard to the design, sample sizes and set-up of the separate studies are in order.

Study design

The studies are mainly explorative in character. This was a conscious choice, taken because past research on APL is mainly descriptive. The context was an ecologically valid environment in which APL procedures were designed and rapidly improved; the use of a fully experimental research design was therefore not yet feasible. We chose instead a contextual approach grounded in both theory and the real world, and made use of collaboration among researchers and practitioners. We did not explicitly use a design-based approach a priori, though the characteristics of our study fit Wang and Hannafin's (2005) definition of design-based research:

A systematic but flexible methodology aimed to improve educational practices through iterative analysis, design, development, and implementation, based on collaboration among researchers and practitioners in real-world settings, and leading to contextually-sensitive design principles and theories (p. 6).

Sample sizes

A main shortcoming is the rather small sample size in the studies reported in Chapters 3 to 6, which makes generalising our conclusions a bit difficult. Still, the small samples equal more than 50 percent of the whole population (i.e., all OUNL assessors, tutors and candidates); in Chapter 4, almost all available actors participated. Therefore, there is little bias in the sample as such. In Chapters 5 and 6, samples were taken from the groups of assessors and APL candidates respectively. Both samples consisted of equal distribution over all domains of participants and number of candidates, and the small sample size enabled us to make efficient revisions. We considered involving other APL procedures (APL procedures in higher vocational education) in the studies to increase the number of participants. However, these procedures differ in assessors' freedom in the decision making process and in the type of learning that might be recognized. In addition, another consideration, asking people to become an APL candidate special for the research, is not explored, because of the expected unnatural effects and the high time investment. In view of the

relevance of the topic and the shortcoming of research, we have chosen to fulfil this research giving a starting point for further research on APL.

Other limitations

The self-assessment study (Chapter 2) is subject to three limitations. First, learners were asked to explain their prior learning experiences. Therefore, the question is not only as to whether learners are able to evaluate their own prior learning, but also whether they use the same criteria for the four-point scale. One person may be more inclined to be more optimistic than the next; this may have implications for our conclusions. Second, the questionnaire could be improved by splitting up the answer categories to the question ‘Which of the following sources did you use?’ The list that followed, grouped ‘internet, TV, radio, film or video’ together, which made more detailed analysis of the sources impossible. Only by splitting this group into separate answers conclusions can be drawn as to whether the internet, TV, radio, film or video specifically distinguished Natural Science from other university programmes. Third, the questionnaire did not include a definition of ‘prior learning’; it may therefore have been interpreted differently by different learners. For example, it is not clear whether it covers all prior learning, or only that of recent years. In addition, it is questionable whether learners in fact know when their prior learning is outdated.

In the perception study in Chapter 4, we compared two APL procedures carried out in succession. Due to the nature of the procedure, it was not possible to assign candidates, tutors and assessors randomly to one of the two procedures. In addition, no tutor or assessor was available to participate in both. Therefore, the interpretation of the results is debatable.

Finally, in Chapter 6 the final support framework was constructed based on the opinions of the institute and candidates, but not subsequently submitted for their approval. This will be done in the practical implementation phase.

In spite of these study design limitations, our findings in combination with more general previous research provide sufficient basis for generalisation of the results.

7.4 PRACTICAL IMPLICATIONS

APL is an innovative method of acknowledging formal, informal and non-formal prior learning. Because the use of APL procedures in higher education settings is rather new, the number of completed procedures remains low. Moreover, individuals learn and develop even during the APL procedure; eventually, this learning too will need recognising by way of a new APL procedure. APL is thus not a one-time event that can take place at fixed moments before or during formal learning. Rather, it represents the start of further learning in line with the lifelong learner’s objectives. In that respect, an APL certificate can be used in a second APL procedure in combination with new evidence of learning to obtain another APL certificate.

Our studies yielded many practical insights that can be used as guidelines for the development of APL procedures in university settings.

Guidelines for the design of university APL procedures

The guidelines can be organised per APL phase: 1. the information phase, in which the institute provides information about APL possibilities and its procedure; 2. the evidence-gathering phase, in which candidates collect evidence about previous experience to support a claim for credit with respect to the qualification they want to achieve; 3. the assessment phase, in which assessors review the quality of the candidate's evidence using set assessment standards; and 4. the recognition phase, involving verification of the assessment outcome through, for example, issuing credits. The chapter from which each guideline is derived is given in parentheses below.

In the first phase, all information must be available for the institute to be ready for APL. Because several assessments take place, the APL procedure should meet Baartman et al.'s (2006) quality criteria for competence assessment programmes (Chapter 2).

- APL should fit the educational purpose and learning objectives of the academic programme; i.e., the profile and assessment methods used in APL should suit the programme's profile and assessment philosophy (Chapter 2).
- The possible prior learning types and outcomes should be realistic (Chapter 2).
- The procedure, objectives, possible results, assessment criteria and instruments should be transparent (Chapter 2).
- The institute should strive for APL acceptance by all participants: candidates, assessors, tutors, programme managers, examination committees, the labour market (Chapter 2).
- The procedure should be consistent, standardised and comparable for all candidates (Chapter 2).
- The procedure should be fair and treat all candidates equally. Differences in outcome should only depend on differences in prior learning in relation to the academic programme (Chapters 2 & 5).
- APL should be practicable, and the costs involved realistic. The candidates' and organisation's time investment should be reasonable and feasible. If necessary, some conditions could be defined as to the candidate's motivation level or minimum number of work experience years (Chapter 2).
- APL should use different perspectives to make a final decision. This means that different stakeholders (candidates, assessors, examination committees, the labour market) may be involved in casting judgement (Chapter 2). However, there should be a balance between the use of different perspectives and efficiency in decision making (Chapters 2 & 5).
- APL should be implemented only if positive effects are expected and negative aspects can be minimised (Chapter 2).

Both embedded and personal support should be provided on how to prove the acquisition of higher cognitive skills at the educational programme level (Chapter 2). In the first phase, the following support instruments would help: a self-assessment instrument, website with APL information, APL manual, good and bad portfolio examples with clarification, FAQs, general information session once or twice a year, voluntary face-to-face standard conversations, and personal email for interim questions (Chapter 6).

Furthermore, tutors and assessor training is essential. It should involve required knowledge and skills for APL such as supporting portfolio development, giving follow-up advice, writing motivational reports, and understanding overall APL theory and procedure and the differences between individuals' roles (Chapter 4).

Support is particularly desired in the evidence-gathering phase, in which most responsibility falls upon the candidate. The portfolio structure should suit the candidate's prior formal, informal and non-formal learning in relation to the required learning outcomes (Chapters 2 & 3); ideally, it should be pre-structured and contain a summary of the APL application, competences overview, personal reflection evaluating the experiences in light of the programme criteria, and evidence to support the application (Chapter 3). In the pre-structuring stage, it is necessary to identify relevant prior learning experiences to stimulate portfolio composition (Chapter 3). Elaborated examples of appropriate evidence for specific domains should help candidates in this regard (Chapter 3). The criteria should include clear descriptions; the institute should thus translate complex criteria into observable characteristics, and give specific criteria for each domain (Chapter 5). A self-assessment example should be provided (Chapters 2 and 3), and the following embedded and personal support available: a mind manager system with portfolio format; good and bad examples with clarification; a manual on how to compose a portfolio; help in electronically seeking and presenting analogous cases; FAQs; discussions about evidence examples; virtual classroom workshop; and personal email correspondence for interim questions (Chapter 6).

Third, in the assessment phase, assessment conversations should only be undertaken when necessary to enhance costs and efficiency (Chapters 2 and 5). The embedded and personal support should consist of a list of criteria, elaboration of the protocol, good and bad portfolio examples, an overview of jurisprudence on assessment results, individual face-to-face conversation based on assessment criteria, discussions about former assessment results, and personal email correspondence for interim questions (Chapter 6).

Fourth and finally, the following embedded and personal support should be implemented in the recognition phase: examples of cases in which recognition was and was not given, a description of standard recognitions, graphic overviews of the programme, and personal email for interim issues (Chapter 6).

7.5 Suggestions for further research

The literature on APL is mainly descriptive and as yet has hardly any scientific basis. This thesis is an attempt to bridge this gap from a more scientific perspective. To investigate empirically APL's quality, it is important to formulate a research agenda. First, some parts of our studies beg a more experimental research design in which comparisons between APL procedures are more objective and the conclusions carry more weight. Though it may not be feasible, it would be interesting to use the same assessors, tutors and uniform portfolio structures in different domains. Also, the research in Chapter 5 about assessors' approaches could be more experimental by dividing the assessors into two groups based on their approaches and having them assess the same portfolios.

An important avenue for future research relates to the APL's long-term effects in lifelong learning. Do learners admitted to educational programmes in the traditional way (i.e., without APL) differ in their knowledge, skills and competences after

certification from learners admitted by way of APL? Cantwell and Scevak (2004) researched this topic in a high school setting and concluded that a difference does in fact exist; whether their findings are generalisable to the context of distance university education is unclear. In addition, such longitudinal research would be complex given the current small candidate samples.

Our studies focused on two main actors in APL: the candidate and the institute. A third actor, the employer, should be included in further research (see Sluijsmans, 2003) to investigate APL's impact on learner development in the professional context. As concluded in Chapter 2, workplace learning is an important source for APL.

In view of Chapter 3, more research is also necessary on the relationship between prior learning sources and portfolio structure; being too prescriptive about these sources will negatively impact APL candidates, because evidence will not always come from the expected sources (see Michelson & Mandell, 2004).

Finally, especially for higher distance education, the results of our studies can be used to develop online tools for candidates to assure freedom of location, time and study pace. Future studies should focus on alternative assessment instruments. We lack research on support for APL candidates using modern techniques such as interactive learning environments, semantically enhanced content and social software (e.g., wikis, weblogs, ePortfolios, social bookmarks, and social networks like YouTube, Facebook and Flickr). Whether these techniques would stimulate and support individuals in recognising their competences could be an interesting path for future research.

Summary

Lifelong learning and flexible education are high on the social and political agenda for higher education (Dutch Ministry of Education, 2006). Learning, in which individuals' needs are the focus, can take place in formal, informal and non-formal learning environments. These differ in their contexts, purpose, structure and availability of certificates (Bjørnavold, 2001; Cedefop, 1996). Formal learning, based on the achievement of competences with related certificates, is intentional: that is, learning is the goal rather than an incidental outcome. Similarly, non-formal learning is characterised by an intentional learning objective within a structured context, such as a school or classroom, but there is no legally or socially recorded certification. Examples include workplace-based training and non-accredited courses such as home-typing courses. Informal or non-sponsored learning (Blinkhorn, 1999) is unintentional, unstructured and does not lead to certification. Learning is undertaken at one's own initiative, individually or collectively, without externally imposed criteria or the presence of an institutionally authorised instructor (Livingstone, 2000a). Examples include volunteer activities, life experiences, self-instruction, family responsibilities and hobbies.

Particularly in non-formal and informal environments, learning is not recognised through certification (Colardyn and Bjørnavold, 2004). Thus, to suitably weigh learning in these contexts, procedures for recognising formal, informal and non-formal learning experiences is desirable. Assessment of Prior Learning (APL) is such a procedure. Evidence for formal learning is easily shown with accredited diplomas or certificates; proving informal and non-formal learning, however, is much more complicated (Colley et al., 2002). APL candidates are generally unfamiliar with the criteria, competence profiles or standards that are used to appraise prior learning. The need for support in APL is therefore evident, and is the focus of this dissertation. A number of aspects that influence the need for support are studied in detail: the self-assessment skills of APL candidates, the perceptions of APL participants and the use of portfolio assessment.

What is Assessment of Prior Learning?

APL is a procedure in which candidates' prior learning in relation to a certain learning objective is assessed, independent of the environment in which the learning took place. The aim is to suitably recognise prior learning. APL supports the lifelong learning paradigm which recognises similarities between experiential (i.e., non-formal and informal) and academic learning, and that possible differences between the two can be readily overcome (Harris, 2006). Prior learning involves knowledge, skills or competences – anything relevant to the personal future learning objective. We use the term competences generally, and also if the constituent components (knowledge, skills or attitude) are mentioned.

APL involves four phases: 1. the candidate profiling phase, in which the institution informs candidates about steps and procedural expectations, 2. the evidence-gathering phase, in which candidates collect evidence about prior learning to support their claim for credit, 3. the assessment phase, in which assessors review the quality of candidates' evidence using set standards, and 4. the recognition phase, involving verification by the department responsible for awarding credit or recognising the assessment outcome.

Because APL uses different assessment methods and multiple assessors it is important that the procedure meets certain quality criteria. Baartman et al.'s (2006) quality framework, which allows evaluation of the quality of competence assessment programmes, is used in this thesis to investigate APL's quality. This framework comprises traditional quality criteria such as reliability and validity, but also criteria that better suit APL's assessment methods. The 12 quality criteria are: fitness for purpose, transparency, acceptability, reproducibility of decisions, comparability, fairness, cognitive complexity, fitness for self-assessment, meaningfulness, authenticity, educational consequences, costs and efficiency. For APL these criteria ensure that APL fits with the educational profile, leads to the same results after repetition, is transparent to and accepted by all participants, is equal and fair for the APL candidates and provides a meaningful contribution to the educational programme. Also, APL takes into account the cognitive complexity of the programme and the educational consequences for learning and teaching; it requires authentic evidence and is feasible in terms of costs and time. Finally, APL stimulates self-assessment and self-organised learning.

The research

This thesis focuses on APL in the context of higher education, and answers the following research questions:

1. How are APL characteristics elaborated in the literature, and what relationship exists between APL and the quality framework for competence assessments?
2. Is self-assessment – a key portfolio component – a suitable tool to support candidates in gathering evidence for university APL procedures?
3. How do APL candidates, assessors and tutors perceive their task fulfilment and the quality of the APL instruments?
4. What are assessors' approaches in APL portfolio assessment?
5. Which support is desired in APL, has the highest added value and is the most efficient?

Literature study

We dealt with the first question by way of a literature study (Chapter 2). This led to an overview of APL's many terms and abbreviations, such as Accreditation of Prior learning (APL), Assessment of Prior Learning (APL), Prior Learning Assessment (PLA), Accreditation of Prior Experiential Learning (APEL), Accreditation of Prior Certificated Learning (APCL), Prior Learning Assessment & Recognition (PLAR), Recognition of Prior learning (RPL), Validation, and Valuation of Prior learning (VPL). We chose to use Assessment of Prior Learning (APL) in this thesis. From the literature, we identified the following general characteristics of APL: 1. different types of prior learning (formal, informal, and non-formal), 2. systematic procedure (information, evidence-gathering, assessment and recognition), 3. combination of assessment methods (self-assessment, portfolio assessment, ...), 4. variety of outcomes (exemptions, certificates, career advice), 5. high candidate responsibility to evaluate their own personal, context-bound prior learning, 6. time investment, and 7. benefits for the candidate, institute and society. APL can improve access to

education, decrease dropout rates, shorten study programmes and improve connections to the labour market; it also emphasises lifelong and flexible learning. We then analysed the general characteristics according to Baartman et al.'s (2006) quality requirements. First, this revealed differences in the relevance of APL criteria compared to criteria for general competence assessment programmes. Authenticity, for example, has to be interpreted differently in the APL context than in the formal learning context. In the latter, authenticity means that assessment tasks represent future practice (Gulikers et al., 2004). In APL, however, authenticity is related to evidence of prior learning. Second, we found a relationship between criteria. Acceptability, for example, is related to transparency. Acceptance rates will be lower if information about APL and its instruments are less transparent. Third, it is difficult to distinguish between the reproducibility and comparability of decisions. Reproducibility implies the use of more than one assessor or assessment situation to guarantee their independence. Comparability, however, requires a consistent and standardised APL procedure and consistent use of assessment methods and criteria. But consistency and standardisation are more difficult to maintain if the number of assessors increases. Further, reproducibility of decisions also relates to the time and costs criterion. To make sure that APL is affordable and controllable, a balanced decision should be taken about the use of different assessment methods and the intensity of the procedure. Perfectly designed but prohibitive APL procedures are unacceptable for candidates and institutes. Finally, transparency, fitness for purpose as well as costs and time are essential to the design and development of a strong, qualitative APL procedure.

Self-assessment and APL

In Chapter 3 we present a study that specifically addresses the second APL phase, in which candidates gather evidence of their prior informal, non-formal and formal learning. Self-assessment of competences in relation to the required competences of a specific profile is a potential method here; this study investigates whether it is a suitable instrument for APL. The responsibility for self-assessment falls upon the APL candidate (Evans, 2003). Two phenomena prompted this study. The first was the proven difficulties of candidates in gathering evidence (see Colley et al., 2002; Shapiro, 2003) – candidates have trouble describing their prior learning and assessing its value in acquiring competences. The second was that prior self-assessment research showed different results in the reliability of self-assessment (e.g., Galson & Oliner, 1976; Gentle, 1994; Boud & Falchikov, 1989; Ward, Gruppen, & Regehr, 2002).

The research was carried out in two steps. In the first, explorative step, we considered the sources for self-assessment in prior learning. In the second step, candidates' self-assessments were investigated before and after a course. In total, 503 students participated in this study. Results showed that although almost every student indicated having relevant prior learning (97%), only one third saw this as valuable in terms of course exemptions. In addition, students use different, domain-related sources to demonstrate their prior learning. This is important for the design of portfolio templates, which will better guide candidates if advice about domain specific sources is provided. The candidates' self-assessments of their competence

levels before the course were equal to those after the course. This means that following the course did not affect the self-assessment of prior learning, and that students are capable of evaluating their prior knowledge in relation to learning objectives. Students who failed the test mentioned before the course that they knew nothing of its subject. Therefore, we can conclude that self-assessment is a suitable method for APL.

Candidates', assessors' and tutors' perceptions

The goal of the study in Chapter 4 was to investigate the perceptions of APL participants: the candidates, tutors and assessors. To measure these perceptions we developed a questionnaire based on Baartman et al.'s (2006) quality criteria by translating the scales and items into the APL context. Perceptions were measured in two domains of the Open University of the Netherlands: the Computer Science bachelor's programme and the Educational Science master's programme. In Computer Science, 23 software company employees participated in APL with the aim of shortening the programme (which had no admission requirements). After evaluating this procedure, we made certain adjustments; nine Educational Science candidates who had requested admission to or exemptions from the programme then participated in the revised procedure. In both domains, assessors to carry out the evaluation and tutors for support were available.

The results showed positive perceptions in both domains. However, perceptions in the Educational Science domain were significantly more positive than those in Computer Science on all quality scales for candidates, assessors and tutors. This may be due to the revisions made in the APL procedure. It may also be that Educational Science candidates and staff are more used to concepts such as APL and portfolio assessment than those in Computer Science. This explanation is supported by the higher score on the first quality scale of fitness for purpose. Acceptance of assessment criteria and instruments was negative in Computer Science; the adjustments, however, influenced the procedure's transparency. Fairness scored also lower in Computer Science, which may be the result of incongruence between assessors and tutors in Computer Science and APL's structure. We subsequently adjusted the structure by holding assessment conversations only when the portfolio assessment gave cause.

The results of the Chapter 5 study confirm that the revision contributed to the perceived fairness of APL. Based on this study we conclude that the revised APL procedure is a sound procedure, but that in designing APL domain-specific characteristics should be taken into account.

Portfolio assessment

In Chapter 5, we investigated assessors' approaches in portfolio assessment. Research in other educational contexts – for example, teacher education – has shown portfolio assessment to be difficult (e.g., Driessen et al., 2006; Tigelaar et al., 2005; Trowler, 1996; Van der Schaaf et al., 2005). The assessors' approach is defined as the steps taken in the decision-making process, the perception of portfolio use in APL in terms of fairness, usability and relevance, the deciding factors in portfolio evaluation, and the use of rating criteria. Ten assessors, divided over six educational

domains, participated in this study. A few weeks after the portfolio assessment and completion of APL, the assessors were individually interviewed and filled in a questionnaire about their assessment approaches.

The results showed that the decision-making process differed for assessors in different domains, but was the same within domains. This means that different steps are taken to come to a final decision; the difference was in the choice of additional assessment methods after the portfolio assessment. Although all assessors could use additional assessments, not all did.

The assessors found portfolio use relevant, fair and useful. This corresponds with the results in Chapter 3. In those cases in which assessment conversations were held, the conversations were not redundant, but presented valuable additional information. However, the assessors see these conversations not as the right of the candidate, but an extra opportunity for assessors to gather information. They feel that this is fair as well as useful, especially if the portfolio is unclear or the writing style poor. However, it is doubtful whether this last argument is valid, because writing skills and correct use of language are characteristics of the candidates' expected level in APL.

The assessors found portfolio assessment to be suitable for assessing prior learning, but that the assessment criteria are subject to interpretation. They would prefer these complex criteria to be elaborated into more detailed descriptions of requirements; interpretation would then decrease and transparency increase for the assessors as well as candidates. The finding that differences exist between interpretations in portfolio assessment supports previous research (e.g., Van der Schaaf & Stokking, 2008). In addition, inadequate use of the criteria, in spite of the assessors' use of assessment forms and criteria descriptions, corresponds with the conclusions of Baume et al. (2004), Tigelaar et al. (2005), and Van der Schaaf and Stokking (2008).

An important difference between portfolio assessment in the context of APL compared with that in formal education is that assessors can request additional assessments if necessary. In our research, seven out of ten assessors found making decisions based only on the portfolio to be fair. One felt that assessment conversations would decrease objectivity. This result is surprising as it does not fit with the quality criterion of reproducibility of decisions (Baartman et al., 2006), which indicates that quality will increase if different perspectives are used to reach a decision. This view was not supported by some assessors in the present study.

Support for APL candidates

The last study, described in Chapter 6, deals with the desired support for APL candidates from the perspective of the institute and the candidate. As mentioned before, APL requires a high level of responsibility from candidates to evaluate their prior learning appropriately. Support, therefore, is necessary. We thus investigated which support functions and media are desired in each APL phase, and which has the highest added value and efficiency. Three groups participated: a focus group with experienced tutors and educational scientists, an expert group on online support, and the candidates. According to the focus group, it is feasible to give support in every APL phase, with embedded support more appropriate than personal support. Em-

bedded support consists of techniques embedded in written or electronic material (Martens & Valcke, 1995), while personal support is given by a person in real time or asynchronously (Macdonald & McAteer, 2003). Candidates require personal and embedded support particularly in phase two of APL. Both support types take on functions like giving advice, information and examples, and answering questions. Candidates prefer support by email because it is personal, direct, specific and time independent. In addition, they found a personal helpdesk important. The focus group, however, mentioned more support media than the candidates. This is due not only to the candidates' needs, but also their unfamiliarity with certain media. The online support expert group suggested the virtual classroom as a suitable instrument, especially in distance education. The highest added value for the candidates was the combination of embedded support with the availability of personal support by email and telephone. Based on these results, a support model for APL is provided in this chapter.

Practical implications and future research

The central question in this research was how to support APL candidates in higher education. Self-assessment is a suitable method for the procedure; but to support self-assessment and help candidates compose their portfolios, the criteria needs to be clear and examples provided of useful sources of evidence. Most support can be embedded, although the availability of telephone and email support should be guaranteed. We provide guidelines for desired and efficient support in the various APL phases; yet certain areas for future research remain.

Because the existing APL literature is mainly descriptive, more experimental research would be useful. An important research question concerns APL's long-term effect, taking as a starting point the fact that graduates who begin their studies with APL do not deviate in their competences from other graduates. Another interesting issue is the relationship between APL and the labour market. While our studies focused exclusively on APL candidates and educational programmes, the labour market should be involved in future research to determine APL's influence on the development of lifelong learning in a professional context. Finally, consideration of modern techniques such as interactive learning environments and social software in relation to APL support possibilities could also be of interest.

Nederlandse samenvatting

Leven lang leren en vraaggestuurde onderwijstrajecten staan hoog op de agenda voor het hoger onderwijs in Nederland (Ministerie van OC&W, 2006). Dit leren, waarbij de individuele behoeften van de lerende centraal staan, kan zich voltrekken in zowel formele, informele en non-formele leeromgevingen. Deze leeromgevingen onderscheiden zich van elkaar door hun context, intentie, structuur en de aanwezigheid van certificering (Bjørnavold; 2001; Cedefop; 1996). Bij formeel leren is het leren doelbewust en gebaseerd op het verwerven van kennis, vaardigheden of competenties met bijbehorende certificaten of diploma's (bijvoorbeeld opleidingen, trainingen). Bij non-formeel leren is het leren ook doelbewust en vindt het plaats in een gestructureerde omgeving, maar er is geen algemene erkenning van afgegeven certificaten (bijvoorbeeld een typecursus). Informeel leren ten slotte voltrekt zich onbewust, is ongestructureerd en leidt niet tot certificering (bijvoorbeeld leiding geven aan een tennisclub).

In met name non-formele en informele leercontexten wordt het leren dus lang niet altijd gewaardeerd met een certificaat of diploma (Colardyn en Bjørnavold, 2004). Om echter het leren ook in deze contexten te waarderen, zijn procedures voor het erkennen van formele, informele en non-formele leerervaringen wenselijk. Erkenning van Verworven Competenties (EVC) is zo'n procedure die de mogelijkheid biedt om zowel formele, als informele en non-formele leerervaringen te betrekken in de beoordeling van de competenties van een lerende. Hoewel formeel leren vrij eenvoudig aan te tonen is met geaccrediteerde diploma's of certificaten, is het veel complexer informeel en non-formeel leren te vertalen naar bewijzen (Colley et al., 2002). EVC-kandidaten zijn namelijk in het algemeen niet bekend met de gehanteerde criteria, competentieprofielen of standaarden die gebruikt worden als uitgangspunt voor de beoordeling van het eerdere leren. Behoeftte aan ondersteuning voor EVC-kandidaten is daarom gewenst. Dit proefschrift heeft tot doel te onderzoeken hoe EVC-kandidaten ondersteund kunnen worden in een EVC-procedure. Een aantal aspecten van EVC dat de behoefte aan ondersteuning beïnvloedt is nader bestudeerd: de zelfbeoordelingvaardigheid van EVC-kandidaten, de beelden van betrokkenen over EVC en de inzet van portfoliobeoordeling bij EVC.

Wat is Erkenning van Verworven Competenties?

In Nederland heeft EVC vanaf de jaren negentig aandacht gekregen, aanvankelijk door de commissie Wijnen om de toegankelijkheid van het onderwijs te bevorderen (Ministerie van OC&W, 1994). In het Nationaal Actieplan Levenlang Leren (1998) waarin het belang van competentieleren centraal stond, werd EVC verder benadrukt. Vanaf 2000 werd in het kader van een leven lang leren EVC daadwerkelijk geadopteerd en wordt EVC gestimuleerd op alle onderwijsniveaus, dus ook in het hoger onderwijs (Ministerie van Economische Zaken, 2004; Ministerie van OC&W, 2006).

EVC past bij een leven lang leren omdat het erkent dat er overeenkomsten zijn tussen enerzijds informeel en non-formeel leren en anderzijds formeel leren en dat eventuele verschillen tussen die twee te overbruggen zijn (Harris, 2006). EVC is een procedure waarin wordt beoordeeld wat een kandidaat kan en weet, in relatie tot een opleiding die hij/zij wil gaan volgen. Het doel van EVC is dit eerdere leren, onafhankelijk van de wijze waarop het geleerd is, te waarderen en te erkennen. Dit

eerdere leren kan gaan om kennis, vaardigheden of competenties. In het vervolg van deze samenvatting zullen we spreken over competenties, waarbij het ook betrekking kan hebben op de losse componenten van competenties (kennis, vaardigheden of attitudes). Er zijn vier fasen in een EVC-procedure te onderscheiden: 1. de informatiefase: Het informeren van potentiële kandidaten over de procedure zodat kandidaten vooraf goed weten waar ze aan beginnen, wat ze kunnen verwachten en moeten aanleveren en wat de kosten en baten zijn; 2. de bewijsverzamelingsfase: Het samenstellen van een portfolio door het verzamelen, structureren en presenteren van authentieke bewijzen die inzicht bieden in de competenties van kandidaten; 3. de beoordelingsfase: Het beoordelen van de competenties waarbij meerdere beoordelaars aan de hand van vooraf gedefinieerde criteria en standaarden via een scala aan beoordelingsmethoden zoals portfoliobeoordeling, criteriumgericht interview of specifieke opdrachten een oordeel geven; 4. de erkenningsfase: Het formeel erkennen van het eerdere leren waarbij bij erkenning de kandidaat een bewijs van eerder leren ontvangt.

Omdat EVC gebruik kan maken van verschillende beoordelingsmethoden en meerdere beoordelaars is het belangrijk is dat EVC voldoet aan kwaliteit. Het kwaliteitskader van Baartman et al. (2006) waarmee de kwaliteit van competentie assessment programma's (CAP) kan worden geanalyseerd, is in dit proefschrift leidend om de kwaliteit van een EVC-procedure te onderzoeken. Het kwaliteitskader van Baartman et al. (2006) omvat traditionele kwaliteitscriteria, zoals betrouwbaarheid en validiteit, maar ook criteria die beter aansluiten bij beoordelingsmethoden zoals EVC. De twaalf kwaliteitscriteria zijn: geschiktheid voor onderwijsdoelen, herhaalbaarheid van beslissingen, transparantie, acceptatie, vergelijkbaarheid, eerlijkheid, betekenisvolheid, cognitieve complexiteit, onderwijsgevolgen, ontwikkeling van zelfsturend leren, authenticiteit en tijd en kosten. Voor EVC betekent dit dat het aansluit bij het profiel van de opleiding, bij herhaling dezelfde resultaten oplevert, transparant is voor alle betrokkenen, geaccepteerd wordt door alle betrokkenen, voor alle kandidaten gelijk en eerlijk is en dat EVC een waardevolle bijdrage levert aan de uitgangspunten van de opleiding. Tevens wordt rekening gehouden met de cognitieve complexiteit van de opleiding en met het effect van EVC op leren en onderwijs, wordt er om authentieke bewijzen gevraagd en is de procedure haalbaar gezien de tijd en de kosten. Tenslotte stimuleert EVC zelfbeoordeling en de ontwikkeling van zelfsturend leren.

Het onderzoek

In dit proefschrift wordt EVC in de context van hoger onderwijs aan een nadere analyse onderworpen. De volgende onderzoeksvragen worden gesteld:

- Wat zijn de algemene kenmerken van EVC en hoe zijn deze kenmerken gerelateerd aan de kwaliteitscriteria voor competentie assessment programma's?
- Is zelfbeoordeling, dat centraal staat in het opstellen van het portfolio, een geschikte methode om kandidaten te ondersteunen bij het verzamelen van bewijzen?
- Hoe percipiëren EVC-kandidaten, beoordelaars en begeleiders de kwaliteit van EVC?
- Wat is de aanpak van beoordelaars in portfoliobeoordeling?

- Welke ondersteuning is gewenst bij EVC en welke ondersteuning heeft de hoogste meerwaarde en efficiëntie?

Literatuurstudie

De eerste vraag is beantwoord door middel van een literatuurstudie (zie Hoofdstuk 2). Dit leidde tot een overzicht van een groot aantal begrippen en bijbehorende afkortingen voor EVC, zoals Accreditation of Prior learning (APL), Assessment of Prior learning (APL), Prior learning Assessment (PLA), Accreditation of Prior Experiential Learning (APEL), Accreditation of Prior Certificated Learning (APCL), Prior learning Assessment & Recognition (PLAR), Recognition of Prior learning (RPL), Validation, en Valuation of Prior learning (VPL). Op basis van deze verzameling is de keuze gemaakt in het vervolg van de studies het Erkennen van Verworven Competenties aan te duiden als Assessment of Prior Learning (APL). Uit de literatuur zijn de volgende algemene kenmerken van EVC afgeleid: 1. de verschillende vormen van eerder leren (formeel, informeel en non-formeel), 2. de systematische fasering in de structuur van een EVC-procedure (informeren, bewijs verzamelen, beoordelen en erkennen), 3. de mix van beoordelingsmethoden (zelf- en portfoliobeoordeling), 4. de diversiteit aan uitkomsten van EVC (vaststellen van een resterend studiepad, vrijstellingen, certificering, of loopbaanadviezen), 5. de hoge verantwoordelijkheid die kandidaten moeten nemen om hun eigen persoonlijke, context gebonden, eerder leren te evalueren, 6. de tijdsinvestering en 7. de voordelen van EVC voor de kandidaat, de onderwijsinstelling en de maatschappij. EVC kan bijdragen aan een verbetering van de toegankelijkheid van onderwijs, uitvalpercentages verlagen, studieprogramma's inkorten, zorgen voor een betere aansluiting naar de arbeidsmarkt en het benadrukt levenlang en flexibel leren.

Na het definiëren van deze algemene kenmerken, hebben we deze geanalyseerd aan de hand van de kwaliteitseisen van Baartman et al. (2006). De analyse liet op de eerste plaats zien dat er verschillen zijn in de relevantie van de criteria tussen EVC en competentie assessment programma's. Authenticiteit, bijvoorbeeld, moet in het kader van EVC anders geïnterpreteerd worden dan in een formele opleiding. Bij formeel onderwijs verwijst authenticiteit naar de mate waarin taken representatief zijn voor de toekomstige praktijksituatie (Gulikers et al., 2004). Bij EVC echter verwijst authenticiteit naar de authenticiteit van de bewijzen die vanuit eerder leren aangeleverd worden. Op de tweede plaats blijkt dat criteria samenhangen. Het criterium 'acceptatie' is binnen EVC gerelateerd aan het criterium 'transparantie'. De acceptatie van gebruikers van EVC zal lager zijn als de informatie over EVC en de gebruikte instrumenten minder transparant zijn. Op de derde plaats is het moeilijk om het onderscheid tussen herhaalbaarheid van beslissingen en vergelijkbaarheid van beslissingen te hanteren. Herhaalbaarheid van beslissingen impliceert het gebruik van meerdere beoordelaars of meerdere beoordelingsmomenten om ervoor te zorgen dat de beslissingen niet teveel afhankelijk zijn van een assessor of een specifiek beoordelingsmoment. Vergelijkbaarheid vraagt echter om een consistente en gestandaardiseerde EVC-procedure en het consistent gebruiken van beoordelingsmethoden en beoordelingscriteria. Consistentie en standaardisatie zijn echter moeilijker te handhaven bij het gebruik van meerdere beoordelaars. Herhaalbaarheid van beslissingen is ook gerelateerd aan het criterium van kosten en tijd. Om ervoor te

zorgen dat EVC betaalbaar en beheersbaar blijft moet een uitgebalanceerde beslissing genomen worden over het gebruik van verschillende beoordelingsmethoden en de intensiteit van het beoordelingsproces. Perfect ontworpen EVC-procedures die onbetaalbaar zijn, zijn onacceptabel voor de kandidaten en instellingen. Een laatste conclusie van de analyse is dat transparantie, geschiktheid voor gebruik en kosten en tijd de essentiële voorwaardelijke criteria zijn voor het opzetten van een bruikbare en kwalitatief sterke EVC-procedure.

Zelfbeoordeling en EVC

Een moeilijke fase voor EVC-kandidaten is de fase waarin de kandidaten bewijzen moeten verzamelen en presenteren van hun eerder informeel, non-formeel en formeel leren. In Hoofdstuk 3 wordt een studie gerapporteerd die zich specifiek richt op deze fase en dan met name de rol van zelfbeoordeling daarin. De studie onderzoekt of zelfbeoordeling een geschikte methode voor EVC-procedures is. Zelfbeoordeling van de eigen competenties in relatie tot de vereiste competenties van een gewenst profiel is daarbij de gangbare methode. De verantwoordelijkheid voor deze zelfbeoordeling ligt bij de EVC-kandidaat (Evans, 2003). We waren om twee redenen geïnteresseerd in de zelfbeoordeling binnen EVC. De eerste reden betrof de ervaren moeilijkheden in het proces van bewijs verzamelen (zie Colley et al., 2002; Shapiro, 2003). Kandidaten geven bijvoorbeeld aan dat ze het moeilijk vinden om hun eerdere leren te beschrijven en te beoordelen of hun ervaringen daadwerkelijk hebben bijgedragen aan het verwerven van competenties. Een tweede reden voor de uitvoering van dit onderzoek was dat eerder onderzoek naar zelfbeoordelingen verschillende resultaten laat zien over de betrouwbaarheid van de zelfbeoordelingen (zie bijvoorbeeld Galson & Olikier, 1976; Gentle, 1994; Boud & Falchikov, 1989; Ward, Gruppen, & Regehr, 2002).

Het onderzoek is uitgevoerd in twee stappen. In de eerste explorerende stap hebben we gekeken welke bronnen van eerder leren worden aangegeven. In de tweede stap zijn de zelfbeoordelingen van de kandidaten onderzocht vóór en na het doorlopen van een kennismakingscursus. In totaal hebben 503 studenten aan dit onderzoek deelgenomen. De resultaten lieten zien dat ondanks dat bijna elke student aangeeft te beschikken over eerdere relevante leerervaringen (97%), slechts een derde van deze studenten er vertrouwen in heeft ook daadwerkelijk voor vrijstelling van een cursus in aanmerking te komen. Een tweede conclusie was dat studenten verschillende, domein gerelateerde bronnen gebruiken om hun eerder leren aan te tonen. Dit resultaat is van belang voor het ontwerp van de portfolio templates. Deze templates zouden voor kandidaten meer sturend kunnen zijn als er adviezen in staan over domeinspecifieke bronnen.

De zelfbeoordelingen van de kandidaten vóór de start van de cursus op hun beheersing van de leerdoelen als gevolg van eerder leren waren gelijk aan de zelfbeoordeling ná de cursus. Dit resultaat betekent dat het volgen van de cursus geen invloed heeft op de zelfbeoordeling van het eerdere leren en dat de studenten dus vooraf al goed inschatten wat zij al weten in relatie tot de leerdoelen. De studenten die onvoldoende scoorden op de toets hadden naar verwachting vooraf aangegeven niets tot nauwelijks iets van het onderwerp te weten. Hierdoor konden we de conclusie trekken dat de zelfbeoordelingen geschikt zijn voor het gebruik bij EVC.

Perceptie van kandidaten, beoordelaars en begeleiders

Het doel van de studie die wordt gerapporteerd in Hoofdstuk 4 was het onderzoeken van de percepties van de belangrijkste betrokkenen bij EVC. Deze betrokkenen zijn de kandidaten, de begeleiders en de beoordelaars. Voor het meten van de percepties is een vragenlijst ontwikkeld, gebaseerd op de kwaliteitscriteria van Baartman et al. (2006). De schalen en items zijn vertaald naar de context van EVC. De percepties zijn in twee inhoudelijke domeinen gemeten: de Bacheloropleiding Informatica en de Masteropleiding Onderwijskunde (Actief Leren). Bij Informatica hebben 23 medewerkers van een softwarebedrijf deelgenomen aan de EVC-procedure met als doel verkorting van hun bachelor programma (een programma waar geen toelatingseisen voor zijn). Na de evaluatie van de EVC-procedures bij Informatica is de EVC-procedure aangepast. De negen kandidaten voor Onderwijskunde namen vervolgens deel aan de gereviseerde EVC-procedure. Deze kandidaten hadden zich aangemeld voor toelating tot de Masteropleiding. Het resultaat van EVC zou toelating tot de opleiding en/of eventueel verkorting van het schakelprogramma kunnen zijn. In beide domeinen waren begeleiders en beoordelaars betrokken. De resultaten van de vragenlijst liet in beide domeinen een positieve perceptie ten aanzien van de kwaliteitsschalen zien. De perceptie in het domein Onderwijskunde was echter significant positiever dan bij Informatica op alle kwaliteitsschalen voor zowel de kandidaten, begeleiders als beoordelaars. Een verklaring kan worden gezocht in revisies in de EVC-procedure. Deze revisies waren de volgende: 1. het geven van een instructie aan de begeleiders om voorzichtig te zijn met het melden van verwachtingen over de mogelijke uitslag; 2. het aanpassen van het portfoliotemplate om reflectie toe te voegen en bewijsvoering te verbeteren; 3. eventuele aanvullende toetsing die moet plaatsvinden voor het beoordelingsgesprek; 4. kandidaten worden alleen uitgenodigd voor een beoordelingsgesprek als het portfolio daartoe aanleiding geeft; en 5. een meer transparante beschrijving van de beoordelingscriteria. Een tweede verklaring voor de hogere scores bij Onderwijskunde kan zijn dat de kandidaten en medewerkers bij Onderwijskunde meer gewend zijn aan het concept EVC en portfoliobeoordeling dan de kandidaten en medewerkers van Informatica. Al vanaf de introductie van het concept EVC, leek het beter te passen bij Onderwijskunde dan bij Informatica. De hogere score op de eerste kwaliteitsschaal van 'geschiktheid voor het onderwijsdoel' sluit daarbij aan. De acceptatie van de beoordelingscriteria en de instrumenten was bij Informatica negatief. De doorgevoerde aanpassingen beïnvloedden deels de transparantie van de procedure. Eerlijkheid scoorde ook lager bij Informatica dan bij Onderwijskunde. Dit kan het gevolg zijn van een incongruentie tussen de beoordelaars en de begeleiders bij Informatica en van de structuur van de EVC-procedure. De structuur is aangepast bij de revisie door alleen beoordelingsgesprekken te voeren als het portfolio daar aanleiding voor geeft. Resultaten van de studie die beschreven wordt in Hoofdstuk 5 bevestigen dat deze revisieslag bijgedragen heeft aan de ervaren eerlijkheid van EVC. Op grond van deze studie concluderen we dat de gereviseerde EVC-procedure gebruikt kan worden als een deugdelijke procedure, maar dat bij het ontwerp van deze procedures rekening gehouden moet worden met specifieke domeinkenmerken. Naast de percepties zijn in deze studie ook de vereiste kennis en vaardigheden van de beoordelaars en begeleiders geëvalueerd. De medewerkers van Informatica be-

oordeelden domeinkennis en –vaardigheden als de belangrijkste vaardigheden, terwijl de medewerkers van Onderwijskunde de vaardigheid om te beoordelen en te evalueren als belangrijkste beoordeelden. In beide domeinen werden vaardigheden als het geven van adviezen voor vervolg en het schrijven van onderbouwingen bij EVC als minder belangrijk beoordeeld. Een verklaring hiervoor kan zijn dat de medewerkers de vaardigheden waar ze al bekend mee zijn in hun dagelijkse werk als belangrijker beoordelen dan vaardigheden die specifiek voor EVC van belang zijn.

De medewerkers moesten ook zichzelf beoordelen op deze vaardigheden. De gemiddelde scores op deze zelfbeoordelingen verschilden nauwelijks tussen de domeinen. Bij de selectie van beoordelaars en begeleiders is het zinvol om al te kijken of de beoordelaars en begeleiders beschikken over de vereiste vaardigheden. Indien dat niet het geval is, zal training moeten plaatsvinden.

Portfoliobeoordeling

In hoofdstuk 5 hebben we onderzocht wat de aanpak van de beoordelaars is bij portfoliobeoordeling. Onderzoek in andere onderwijscontexten naar portfoliobeoordeling - bijvoorbeeld bij de lerarenopleidingen - heeft aangetoond dat portfoliobeoordeling moeilijk is (Driessen et al., 2006; Tigelaar et al., 2005; Trowler, 1996; Van der Schaaf et al., 2005). Bij de aanpak van beoordelaars hebben we gekeken naar de stappen die de beoordelaar uitvoert in het besluitvormingsproces, de percepties van de beoordelaars in termen als eerlijkheid, bruikbaarheid en relevantie, naar de overtuigende kenmerken van de portfolio's om te komen tot een besluit en het gebruik van de beoordelingscriteria. Tien beoordelaars, verdeeld over zes inhoudelijke domeinen, waren bij dit onderzoek betrokken. Een paar weken na de portfoliobeoordeling en de afronding van de EVC-procedure zijn zij individueel geïnterviewd en hebben zij een vragenlijst over hun beoordelingsaanpak ingevuld.

Een eerste resultaat was dat het besluitvormingsproces niet hetzelfde was voor alle beoordelaars in de verschillende domeinen, maar dat het binnen één domein wel gelijk was. Dit betekent dat er verschillende stappen genomen worden om tot een definitieve beslissing te komen. De verschillen zaten in het gebruik van aanvullende beoordelingsmethoden na de portfoliobeoordeling. Ondanks dat alle beoordelaars gebruik konden maken van aanvullende toetsing, werd dit niet door alle beoordelaars gedaan.

De beoordelaars vonden het gebruik van het portfolio relevant, eerlijk en bruikbaar. Dit komt overeen met het resultaat van de studie waarover in Hoofdstuk 3 wordt gerapporteerd. In die gevallen waar beoordelingsgesprekken gehouden zijn waren die gesprekken niet overbodig, maar boden zij waardevolle aanvullende informatie. Volgens de beoordelaars is een beoordelingsgesprek echter geen recht van de kandidaat, maar biedt het een extra mogelijkheid voor de beoordelaars om informatie in te winnen. Beoordelaars ervaren de mogelijkheid tot een aanvullende beoordeling niet alleen als eerlijk, maar ook als nuttig, vooral als het portfolio onduidelijk of de schrijfstijl gebrekkig is. Het is echter twijfelachtig of dit laatste een valide argument is, aangezien schrijfvaardigheid en correct taalgebruik kenmerkend zijn voor het niveau dat bij de kandidaten van deze EVC-procedures verwacht wordt.

De beoordelaars gaven aan dat portfoliobeoordeling geschikt is voor het beoordelen van eerder leren, maar dat beoordelingscriteria wel gevoelig zijn voor interpretatie. Zij hebben de voorkeur om deze complexe criteria uit te werken naar gedetailleerde kenmerken waar een kandidaat aan moet voldoen. Het criterium ‘minimaal hbo-niveau’ kan bijvoorbeeld worden vertaald in ‘heeft een functie die normaal gesproken alleen maar uitgevoerd kan worden door iemand met een hbo-diploma’ en ‘heeft gewerkt met verschillende theoretische modellen’. Interpretatie van de criteria zal daarmee afnemen en de transparantie zal zowel voor de beoordelaars als voor de kandidaten toenemen. De conclusie dat er verschillen bestaan in interpretaties bij portfoliobeoordeling komt overeen met eerder onderzoek (zie bijvoorbeeld Van der Schaaf en Stokking, 2008). Dat de beoordelaars de beoordelingscriteria nog niet op de juiste manier hanteren, ondanks dat de beoordelaars gebruik maken van beoordelingsformulieren en een beschrijving van de criteria, komt overeen met conclusies van Baume et al. (2004), Tigelaar et al. (2005), en Van der Schaaf en Stokking (2008).

Een belangrijk verschil tussen portfoliobeoordeling in de context van EVC en portfoliobeoordeling bij formele opleidingen is dat de beoordelaars aanvullende beoordelingen kunnen aanvragen wanneer zij dat nodig achten. In ons onderzoek vonden zeven van de tien beoordelaars het eerlijk om op grond van alleen het portfolio een beslissing te nemen. Eén beoordelaar vond dat ook de enige manier om objectief te blijven en gaf aan dat beoordelingsgesprekken altijd leiden tot een afname van de objectiviteit. Dit resultaat is verrassend, omdat het niet aansluit bij het kwaliteitscriterium van herhaalbaarheid van beslissingen (Baartman et al., 2006). Dit criterium stelt dat de kwaliteit zal toenemen als verschillende perspectieven gebruikt worden om te komen tot een definitief oordeel. Deze kijk op beoordelen wordt niet door alle beoordelaars in deze studie ondersteund.

Ondersteuning voor EVC-kandidaten

De laatste studie die is beschreven in Hoofdstuk 6 beschrijft de gewenste ondersteuning voor EVC-kandidaten vanuit het perspectief van de instelling en van de kandidaat. Zoals eerder aangegeven, vereist EVC een hoge verantwoordelijkheid van de kandidaten om op een juiste manier hun eerder leren te evalueren. Ondersteuning is daarbij noodzakelijk. Gegeven deze behoefte aan ondersteuning, hebben we in deze studie onderzocht welke ondersteuningsfuncties en ondersteuningsmedia in elk van de vier EVC-fasen gewenst zijn en welke ondersteuning dan de hoogste meerwaarde heeft en tevens efficiënt is. Drie groepen namen deel: een focusgroep bestaande uit ervaren begeleiders en onderwijskundigen, een expertgroep op het gebied van online begeleiding en de kandidaten. Volgens de focusgroep is het wenselijk om ondersteuning te bieden in elke EVC-fase, waarbij ingebouwde ondersteuning meer geschikt is dan persoonlijke ondersteuning. Ingebouwde ondersteuning bestaat uit technieken die ingebouwd zijn in geschreven of elektronisch materiaal (Martens & Valcke, 1995), terwijl persoonlijke ondersteuning gegeven wordt door een persoon in ‘real time’ of asynchroon (Macdonald & McAteer, 2003). De kandidaten prefereren persoonlijke en ingebouwde begeleiding in met name in de tweede fase van EVC, de fase van bewijsverzameling. Beide vormen

van ondersteuning kunnen zorgen voor functies als het geven van advies, beantwoorden van vragen, verstrekken van informatie, en het geven van voorbeelden. Op de vraag welke media geschikt zijn voor het bieden van ondersteuning, gaven de kandidaten aan dat zij de voorkeur hebben voor ondersteuning via e-mail. De reden hiervoor is dat e-mail persoonlijk is, direct, specifiek en tijdsafhankelijk. Daarnaast vonden de kandidaten het belangrijk dat er een telefonische helpdesk beschikbaar is. De begeleiders en onderwijskundigen noemden meer ondersteuningsmedia dan de kandidaten. Dit heeft te maken met de behoefte van de kandidaten maar ook met de onbekendheid van de kandidaten met bepaalde media. De expertgroep kwam met de virtuele klas als voorbeeld van een geschikt instrument, met name in het geval van afstandsonderwijs. De hoogste meerwaarde voor de kandidaten werd gezien in een combinatie van ingebouwde ondersteuning en de beschikbaarheid van persoonlijke ondersteuning via e-mail en telefoon. Helaas, maar niet verrassend, is dat de ondersteuning met de hoogste meerwaarde niet altijd de meest efficiënte ondersteuning is. Gebaseerd op de resultaten van meerwaarde en efficiëntie is een model voor ondersteuning in de verschillende fasen van EVC opgesteld.

Praktische implicaties en verder onderzoek

In dit onderzoek naar het erkennen van eerder leren in de context van hoger onderwijs, stond de vraag centraal hoe EVC-kandidaten in het kader van een leven lang leren kunnen worden ondersteund in het doorlopen van een EVC-procedure. Zelfbeoordeling is daarbij een geschikt methode. Om deze zelfbeoordeling te ondersteunen en kandidaten te helpen bij het samenstellen van hun portfolio is het belangrijk om duidelijk te zijn in de criteria en voorbeelden te geven van zinvolle bronnen. De meeste ondersteuning kan ingebouwd worden, maar bereikbaarheid via telefoon en email moet gegarandeerd worden. Het onderzoek geeft richtlijnen voor gewenste en efficiënte begeleiding in de verschillende fasen van EVC.

Tenslotte worden er suggesties voor toekomstig onderzoek beschreven. Aangezien de literatuur voor EVC tot nu toe vooral beschrijvend is, is het zinvol om meer experimenteel onderzoek in te zetten op EVC. Daarmee kunnen objectievere conclusies getrokken worden. Een belangrijke onderzoeksvraag is wat het effect van EVC zal zijn op de lange termijn. Het uitgangspunt van EVC is dat afgestudeerden die met EVC een opleiding begonnen zijn, niet afwijken in hun competenties van afgestudeerden die zonder EVC aan de opleiding begonnen zijn. Een andere interessante onderzoeksvraag gaat in op EVC en de arbeidsmarkt. Onze studies waren alleen gericht op EVC-kandidaten en opleidingen. De derde belangrijke partij, de arbeidsmarkt, zal in vervolgonderzoek betrokken moeten worden om te kijken wat de invloed is van EVC op de ontwikkeling van levenlang lerenden in hun professionele context. Tot slot is het interessant om verder te kijken naar ondersteuningsmogelijkheden bij EVC. Vooral voor afstandsonderwijs is het interessant om te kijken hoe moderne technieken, zoals interactieve leeromgevingen en social software, van waarde kunnen zijn bij het herkennen van eerder leren.

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Curriculum Vitae

Desirée Joosten-ten Brinke was born 30 January 1967 in Zevenaar, the Netherlands. She studied Applied Educational Science at the University of Twente and graduated in 1990. Since 1990, she works at the Open University of the Netherlands (OUNL). Initially, she worked as an adviser at the service centre on the design, development and analyses of testing. In 1997, she changed position to the Educational Technology Expertise Centre of the OUNL. Her main work field is testing and assessment. She was involved in projects on the development of a conceptual assessment model, the design and development of an online learning environment for formative assessments in teacher education and the design and development of assessment in methodology education. She also consulted many educational institutes in higher education on competence based curriculum development and assessment. In October 2004, she started her PhD-project on Assessment of Prior Learning. Currently, she is involved in the implementation process of APL at the Open University of the Netherlands and in related projects on APL beyond the context of the OUNL.

List of publications

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- Joosten-ten Brinke, D., Sluijsmans, D. M. A., Brand-Gruwel, S., & Jochems, W. M. G. (2008). The quality of procedures to assess and credit prior learning: Implications for design. *Educational Research Review*, 3, 51-65.
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