



**Career Management Skills:
assessing *for* learning
—Briefing Note for WP1 of the ELGPN—**
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Introduction

This Briefing Note outlines a number of issues related to the assessment of learning of Career Management Skills in both education and labour market sectors. From the evidence that the ELGPN has in hand, it can be safely claimed that the assessment of career learning is not very high on the agenda of EU Member States. This is an important policy issue, not least because the lack of a formal policy on assessment may transmit the message that CMS is not an important area within the learning programme, with a consequent drop in motivation for it, both on the part of programme providers, and of learners.

This Briefing Note is therefore meant to draw attention to the issue of career learning, and is structured around three main concerns:

1. First, we will focus on the value of assessment *for* learning and assessment *as* learning, and consider the range of assessment strategies available, as well as which strategies are suitable in which context and for what purpose.
2. Second, we will cover in some detail the use of portfolio approaches in assessing career learning, both because portfolios are widely considered to be very suitable for assessing career learning, and in preparation for the Peer Learning visit to Toulouse, France. Both paper-based and digital portfolios will be considered.
3. Third, we will present three critical issues concerning the use of portfolios for the assessment of career learning in education and PES settings, thus maintaining the reflexive stance that we have adopted throughout our activities in WP1.

A set of references and resources is also presented in order to support Member State efforts in developing policy and practice in the assessment of Career Management Skills.

1. Assessing for career learning

- 1.1. Assessment serves a number of functions in learning, including
 - [a] informing learners about their progress, and indicating next steps
 - [b] informing others (such as parents and employers) about the new or improved competences of an individual
 - [c] providing credentials that formally signal a competence profile, and
 - [d] encouraging engagement and motivation—here assessment and feedback is most effective when it is timely, specific, personalised, and constructive.
- 1.2. Given that learning, whether in education or training settings, entails the use of public or/and private resources (in terms of time, effort, and money), those providing and

receiving learning services are often under an obligation to demonstrate outcomes. In many cases, such evidence of learning is provided through formal or informal assessment. There is a whole range of assessment methods that can be drawn upon, including, but not limited to: self-assessment, peer assessment, formal examinations, synoptic testing, interviews, simulation, practical demonstration of competence, skills samples, projects and assignments, mixed media demonstrations, logs and reflective journals, records of achievement, competence-based transcripts, monitoring of Individual Learning Plans, portfolios, and so on. The choice of one or more assessment strategy depends on a number of factors, including the nature of the learning task, the reason for which the assessment is being carried out, the characteristics of the learner (e.g. his or her learning style, age, developmental concerns, life situation), and the context in which learning takes place.

1.3. In the case of CMS, the choice of assessment strategies presents specific challenges and issues given that both process and outcomes are important, and because career learning can be diffused throughout the curriculum. In an infusion approach, it becomes essential that learners are able to identify the CMS elements integrated in a range of subjects, and to make links between the career development learning acquired across the curriculum, with an important role for a 'career development coordinator'. Furthermore, teaching and learning of CMS can be "so embedded in the classroom activities that neither teachers nor students are aware that something other than content is being conveyed. Focusing on the need to assess these skills helps teachers and school counselors, as well as administrators, students, and parents, place equal value on process and product" (Gfroerer, 2000, p.125). Some assessment strategies, such as portfolios, therefore, can serve to link various career services, inputs and resources throughout the career path of an individual.

1.4. A major distinction that is increasingly made in the evaluation of learning is whether the assessment is *of* learning, or *for* learning. The former considers assessment as the destination of learning (the focus is thus on outcome), while the latter sees assessment as part of learning (assessment is important inasmuch as it supports the learning process). Traditionally, this distinction used to be articulated by differentiating between *summative* and *formative* assessment. Assessment is summative when the goal is to provide a formal profile of where a learner is at in terms of the mastery of a pre-determined knowledge base or competence. Summative assessment often leads to formal credentialing, and is meant to signal achievement both to the learner and to external parties (e.g. further and higher education institutions, employers). In most cases, summative assessment shows achievement in relation to a comparable group of learners, and may be a high-stakes exercise in that it can include or exclude the individual from opportunities (e.g. further education and training, employment). Formative assessment, on the other hand, is primarily aimed at the learner himself or herself, who is invited to consider his or her progress in learning in relation to his or her own past achievement. Such assessment is usually continuous in nature and scope, open-ended, and leaves the learner in charge of the learning process. It is also linked to the notion of assessment *as* learning, i.e. critical reflection on one's own learning progress in order to plan next steps, with the help of mentors and tutors. Such learning to learn strategies can be strengthened through the use of personal learning plans, for instance. Some assessment strategies are more amenable to

summative assessment (e.g. examinations), while others are more likely to be used when the assessment goal is formative (e.g. portfolios, reflective diaries).

1.5. One can represent summative and formative assessment strategies as being in tension with each other (e.g. with the former being underpinned by behaviourist learning theories, the latter by constructivist ones). In this Briefing Note, however, it is suggested that the choice of both assessment form and strategy depends on function: i.e. the mix and match from equally legitimate alternatives depends on what is being assessed, and why. The concern therefore is around the choice of assessment modalities that are 'fit for purpose'. It is however also proposed that when it comes to career learning, formative modes of assessment are likely to be more suitable and to open up more opportunities for powerful learning, whether with adolescents, youths, or adults. This should not exclude the judicious use of summative forms of assessment if and when the situation warrants it. A concern here is that many learners, especially in examination-oriented education systems, only take seriously that which is credited, examined, or formally assessed, to the extent that even in higher education settings, we note a trend for CMS learning to be given credit weighting.

1.6. Here are some reasons as to why career learning lends itself to formative types of assessment:

[a] Career learning is arguably a different kind of area of knowledge than 'mainstream' curricular subjects, which tend to be more tightly 'framed' in terms of disciplinary content. A CMS programme is typically multi-disciplinary, drawing its knowledge and skills base from such areas as personal psychology, economics, sociology, ethics, and so on. It is also often "linked to wider processes and systems for supporting and promoting personal development" (Barnes, 2009, p.6). CMS learning is therefore difficult to assess by any means, let alone by summative assessment strategies which, by definition, are best suited to test mastery of a pre-specified and tightly bounded knowledge base.

[b] Many career learning programmes, whether in education or PES settings, are built on interactive and constructivist pedagogies. Constructivism emphasises that learning takes place gradually and incrementally, with students building upon knowledge they already have. Constructivism also considers learning as an interactive process involving a variety of players, rather than an activity carried out by a single person (the teacher or instructor). This has implications for assessment, emphasising the value of continuous and formative assessment strategies which connect with the dynamic process of meaning-making over time and in context.

[c] In education settings in particular, career learning typically gives more importance to process (including 'meta' skills and knowledge, such as learning how to make decisions, how to learn) than to product (reaching the 'decision' or the 'learning goal'). In a CMS programme, the focus is on supporting a personalised learning journey through a diagnostic and formative process, with formative assessment providing the most suitable strategies in providing such support. In education settings, therefore, the focus is not on establishing whether a student has 'passed' or 'failed', but how what progress has been achieved along the journey of career learning. Within PES settings, CMS provision, by definition, tends to be tightly linked to the pragmatic consideration of

getting unemployed persons into jobs, and in some cases career learning is recorded and assessed in ways that facilitate recruitment. In such cases, assessment can become more goal oriented, and more summative in nature.

1.7. In the second section of this Briefing Note, we will look in more detail at one of the more popular formative assessment tools used in career learning programmes, i.e. portfolios. Before we do that, however, we will provide details of a more summative, behaviouristically-oriented approach to assessing CMS, one that is possibly more in tune with career learning orientations in PES settings, for the reasons that have just been pointed out. Such an approach tends to be associated with CMS competence-based programmes, where learning outcomes are set out in some detail, and different levels of competence mastery are also specified. It should be noted that both the Canadian and Australian CMS Blueprint models establish a series of specific and observable learning outcomes, rendering each component of the CMS programme testable in summative ways.

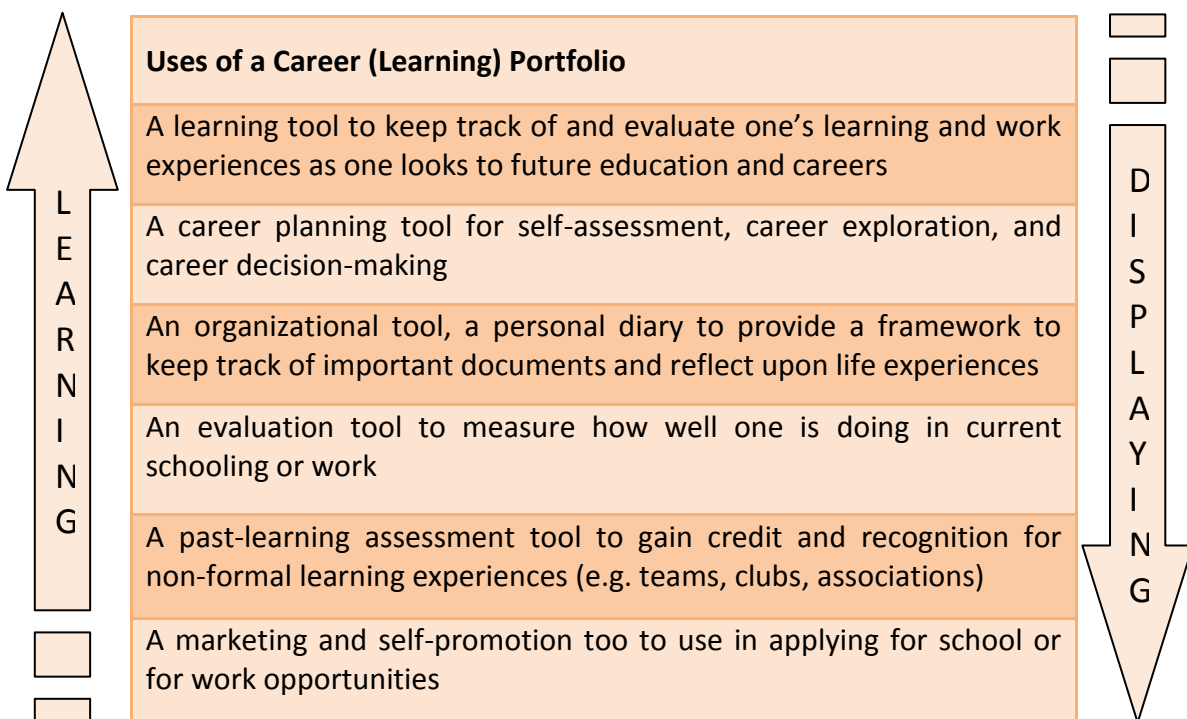
1.8. A key advantage with competence-based CMS programmes is that they clearly specify what needs to be learnt, thus helping to demystify and pin down this ‘slippery’ area of multi-disciplinary knowledge. A potential disadvantage with such ‘mastery learning’ approaches is that the breaking down of complex tasks into component parts makes assessment of learning fragmented, over-bureaucratic, and ultimately meaningless. ‘Competence-Based Transcripts’ represent one assessment tool that attempts to exploit the advantage and avoid the pitfalls just mentioned by drawing on both summative and formative assessment strategies. They strive for a greater degree of validity, reliability and consistency across a range of settings than do formative assessment strategies, with competence in specific CMS being determined “by assessment against a performance standard that is supported not only by skill attainment, but knowledge and understanding in a variety of contexts or applications” ensuring that underlying knowledge is not sacrificed to performance outcomes (Gfroerer, 2000, p.123). Annex I provides an example of a competence-based approach to one of the central areas in a CMS programme, articulated in such a way as to facilitate the development of a Competence-Based Transcript.

2. Career Learning Portfolios

2.1. Portfolios are possibly the preferred assessment tool that is used in those countries that have integrated CMS in or through their school curricula, whether at compulsory or higher education levels. They are reportedly used in education settings in Austria, Croatia, Denmark, Finland, France, Germany, Ireland, Luxembourg, and the UK, and are being introduced in Malta and in a number of other countries. There are few countries that report using portfolios in PES settings—other than, as in Belgium for instance, as a electronic platform for displaying a job-seeker’s competence profile. The potential and opportunity for enhancing PES use of portfolios for career learning is certainly there, given the widespread use of Personal Action Planning, which can be sustained through the keeping of a reflective record. In this section we will consider different types of portfolios, and their value in assessing career learning. Our focus is not as much on the valid practitioner’s concern of

how to construct a portfolio, as on whether portfolios are a suitable tool to implement an assessment policy in career learning.

2.2. The term Portfolio comes from the Latin *portare* (to carry/movable) and *folium* (document/artefact), and as we shall note, such ‘movable artefacts’ can be paper-based or digital (‘e-portfolios’). There are different types of portfolios, including developmental (e.g. working), reflective (e.g. learning), and representational (e.g. showcase). The three types are not mutually exclusive, and can be merged to achieve different learning, personal or work-related outcomes. In this Briefing Note we are mainly interested in those portfolios whose focus is reflection and learning, and which track personal development—what we will refer to as ‘Career Learning Portfolios’ (CLPs). We will therefore not refer much at all to ‘Career Portfolios’, which are a visual representation of a person’s abilities, skills, knowledge, and qualities, in a bid to represent—and provide evidence of—one’s potential by demonstrating what has been accomplished in the past, often to prospective employers. This does not of course mean that such portfolios are not of interest to career guidance specialists—not least because they have a role to play in an area that is of increasing interest across the EU, namely the accreditation of prior experiential learning (APEL).



2.3. Typically, Career Learning Portfolios encourage learners to focus on key career management skills, which are organised around overarching categories such as personal attributes that are related to career goals, career beliefs, decision-making, transition issues, gathering and making sense of information related to further education and training as well as career pathways, developing a network of people who can assist in achieving career goals, and so on. Annex II reproduces the categories for career learning programme development that are suggested by the US-based National Career Development Association (NCDA), but of course there are other frameworks, such as the Canadian and Australian

Blueprints. The Resources section of this Briefing Note provide links to examples of Career Learning Portfolios, which are organised around such career learning categories, and which range from very basic to highly sophisticated tools, whether in conception or presentation. Portfolio keeping involves collecting, selecting, reflecting, projecting, and celebrating. The Portfolio thus becomes the site for documenting school-to-work (in education settings) and unemployment-to-training/work or work-to-work (in PES settings) learning, and one's reflections on that learning. The main aim of this documentation is to support purposeful learning, which is the basis for planning of further learning and action. All sorts of learning can be documented and celebrated, including formal learning that takes place in and across the education and training curriculum (at whatever level), and in any setting (such as learning from work experience, experience in part-time and holiday jobs, in full-time employment, and so on). The power of the CLP comes from the process requiring learners to identify and reflect upon what motivates and satisfies them, a process that involves the documenting of one's interests, skills, values, needs, goals and strategies, and a reflection upon them (Wright, 2001).

- 2.4. The kinds of practices we encourage with portfolios reflect our learning theories, for as we have already seen, the way we approach learning conditions our choice from among assessment strategies. If our CMS programmes are driven by behaviourist and positivist notions of teaching and learning (i.e. they assume that meaning is constant across users, contexts, and purposes), then the portfolio is likely to be a receptacle for examples of student work, which are then used to infer what and how much learning has occurred. Such a selection of items will tend to reflect external standards and interests. If, on the other hand, a CMS programme is inspired by constructivist approaches, then the portfolio is more likely to stress the selection of items that reflect learning from the student's perspective. In this case, the whole point of a portfolio is to provide a learning environment in which the learner constructs meaning, and the portfolio becomes a record of the processes associated with learning itself (Barrett & Wilkinson, 2004).
- 2.5. Career Learning Portfolios based on such constructivist approaches are often commended for use in career learning because they provide "a powerful environment for planning, reflection and review, recording evidence and celebrating achievement." They are considered to be "useful for focusing on elements of career learning that are difficult to accredit such as curiosity, persistence, flexibility, optimism and risk-taking" (Barnes, 2009, p. 6). In education settings where career learning is diffused throughout the curriculum, portfolios help make CMS learning more visible to students, who can consequently make the link between different inputs by different teachers in purposeful and self-reflective ways. The portfolio becomes a useful tool to construct meaning on the basis of disparate curricular material presented in different subject areas. From a lifelong perspective, portfolios can serve to link various career services and resources throughout the career path of an individual.
- 2.6. CLPs are best seen as another manifestation of the 'constructivist turn' in teaching and learning, as well as in career development theory. As such, CLPs are often used in conjunction with Individual Learning Planning (in education settings) and Personal Action

Planning (in PES settings), since all are underpinned by compatible and similar cognitive and pedagogical/andragogical approaches. The overall focus is ‘deep learning’, which is characterised by involving reflection, and by being developmental, integrative, self-directive, and lifelong (Barrett & Wilkinson, 2004). Such deep learning is facilitated and enhanced when learners have the opportunity to plan and assess their own learning—a process that is referred to as ‘metacognition’.

- 2.7. Career Learning Portfolios capture both process and product, the reflection on one’s efforts to learn as well as the learning outcomes achieved. In relation to career learning, and particularly in education settings, CLPs are a means to an end, and not an end in themselves (which is the case with career portfolios, where display of evidence of achievement matters more). CLPs are therefore a good example of a formative assessment mode, and since they provide a multidimensional picture of a student’s learning over time, are an excellent basis for meaningful ‘career conversations’ (Mittendorff et al., 2008). Such planned conferencing sessions, facilitated by trained career workers, are vital in helping learners talk about the contents of the portfolio, to attribute meaning to them, to increase self-efficacy, and to negotiate an action plan, including new learning goals (Baker, 1997).
- 2.8. Digital or e-portfolios, which are increasingly popular (see Reardon & Hartley, 2007; Barrett, 2008), add further dimensions to the potential of CLPs. The use of a WWW platform, managed by the user, expands the display options of a portfolio to include electronic files, images, multimedia, blog entries, and hyperlinks besides text. The infusion of technology in the process also adds such dimensions as archiving, linking/thinking, storytelling, planning, and publishing (Barrett & Wilkinson, 2004), some of which have a direct impact on learning. Hyperlinking, for instance, leads to metacognition, which in turn facilitates deeper learning. E-portfolios widen the scope of the career conversations that are at the heart of CMS learning, given that their owners can determine levels of access to the material they include. CLPs operating on a web platform can thus become a powerful tool for constructivist coaching not only with peers, teachers, and career guidance specialists, but also parents and employers, all of whom may be given access rights to the site in order to contribute to the learning and feedback process. For reasons such as these, there is some evidence that the use of digital portfolios leads to better learning outcomes than paper-based portfolios in the same setting (van Wesel & Prop, 2008).
- 2.9. Over and above the potential of portfolios as tools for assessing the learning of CMS, it bears pointing out that Career Learning Portfolios can serve to bridge the policy concerns of WP1 with those of the three other work packages in the ELGPN, as follows:
 - [a] CLPs can enhance access to career guidance services—the focus of WP2—in that they are closely linked to broader learning goals, and hence potentially seen by students in education settings to be more relevant to their immediate life concerns. In other words, students who might not be willing to use, or might not even be aware of, one-to-one or group career guidance services, might engage more willingly with career learning through a CLP.

[b] Learners using CLPs can benefit from feedback from teachers, from employment officers, and from employers networked by the PES, thus facilitating cross-sectoral collaboration—the focus of WP3, whose 2009-2010 report strongly trailed the link with e-portfolios, for instance (ELGPN, 2010, pp.47-48). Indeed, the CLP can be seen as a tool for lifelong career development as individuals make transitions from education to employment, back to training, and into new jobs, with the support of staff from public or private employment services, when needed. The French e-portfolio PEC (*Portefeuille d'Expériences et de Compétences*) is an example of this.

[c] Finally, the strongly constructivist and learning-oriented, reflexive approach to career thinking and career development has great potential in improving the quality of career guidance services—the concern of WP4.

3. Issues and Problems with portfolios

3.1. In line with the critical and reflexive stance adopted by WP1 members in their consideration of different aspects of Career Management Skills, it is important to highlight some of the issues with Career Learning Portfolios, despite their many benefits. We here outline three factors, the consideration of which has implications for policy.

3.2. Several accounts and case studies focusing on Career Learning Portfolios point out that the career conversations that are of central importance to the whole process are time- and resource-consuming, and difficult to keep up given that they often (though not always necessarily) require one-to-one sessions. Many career workers and CMS teachers have not been trained to make good use of portfolio material, and to work with learners in a way that helps individuals develop a career identity through the construction of a narrative within a career conversation. Furthermore, most schools do not have the 'space' yet—whether institutionally or culturally—to organize career conversations (cf. Winters et al., n.d.). When individuals are not mentored and given adequate feedback, they tend to lose interest in, and enthusiasm for, the updating and maintaining of their CLP, and the formative assessment and learning enhancing role of the whole exercise is jeopardized. Mittendorff et al. (2008, p.77) note that when this happens, “students will react in the same manner as they react to the curriculum they do not see as relevant: they will try to achieve maximum results with a minimal effort.” Mittendorff et al.'s (2008) analysis of three cases studies where career learning portfolios were used in Dutch vocational schools is instructive in showing up the gap between intention and reality. The authors found that:

[a] The majority of the teachers and counselors *perceived* portfolios and personal development plans as instruments to collect evidence on student development, to stimulate self-responsibility or self-direction of students, and to support students in reflecting on identity and future ambitions; and to set up learning goals to achieve this;

[b] However, portfolios and personal development plans were often *used instrumentally* but not to support career dialogues; the instruments were used by students mainly to collect information about themselves, but information was not used in conversations between teachers and students to stimulate reflection;

[c] If instruments were not used in a context of dialogue, students perceived them as irrelevant and refrained from using them to reflect on identity or future plans. If teachers used portfolios and personal development plans as a basis for a career dialogue, students were more likely to appreciate the instruments and to reflect on their identity and future ambitions.

3.3. Some authors have highlighted the value of CLPs for vulnerable groups of students and youths, such as those from depressed economic backgrounds, low achievers, and persons with disability (Koch & Rumrill, 1999). Mittendorff et al. (2008) also claim, for instance, that many VET youngsters in several Western European countries—who are often low achieving and have learning difficulties—face problems around personal identity development and making choices for the future. Such at risk youths often find it difficult to learn in a self-directed manner and experience less support in constructing their lives and careers, so that career guidance programmes, including the use of portfolios, can provide support in developing these skills. Others, however, have pointed out that the ‘habitus’, frame of mind, and dispositions (Collin, 2011a) required by CLPs and Individual Education Planning are alien to learners from working class backgrounds, who are less likely to think of work as a ‘career’, who tend not to be as individualistic, forward-planning and long-term in orientation (as assumed by middle-class-oriented career development theories), and who have their own strategic and more collectivist ways of managing the transition to work, in relation to which CLPs are neither applicable nor suitable. As a genre, the portfolio “requires students to individualize themselves”, as well as “to endorse [...] a middle-class ideology of self-cultivation and self-promotion” (Collin, 2011b, p.329). The very form of the portfolio, i.e., the way it is constructed, worded, and invested with meaning, requires students to “take on particular identities, contract specific kinds of relationships, connect certain things in certain ways, and construe particular things as having particular kinds of significance” (Collin, 2011b, p.339). Similar views and critiques have been made of Individual Learning Plans (Hamilton, 2009). To the class dimension one can add a gender consideration, in that the dis/playful nature of portfolios, together with their focus on literacy and organization of identity-related material, might make them more consonant with feminine learning styles, at least in some cultures.

3.4. A further concern has been expressed in relation to the potential of CLPs of becoming yet another instance reinforcing the culture of surveillance and record-keeping that can subvert educational principles and goals – particularly when such documents are used to mediate the transition from school to work and end up in employers’ hands. Portfolios thus raise a host of ethical issues, and can be subject to legal challenge when used for a purpose other than that for which they were intended, or when there are suspicions that they will intrude on citizens’ right to privacy and render them vulnerable. In France, for instance, the plans by the State to introduce web-based portfolios detailing the competences of each individual person, as well as his or her experience in a range of associations outside schools, has led to a spirited campaign of resistance, comparing this initiative to the ‘*livret ouvrier*’ that was used in the 19th century to track, surveil and control workers.¹

¹ See <http://www.slideshare.net/franckdda/diaporama-livretpersonneldecompetences>

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Resources

- A self-managed career learning portfolio: http://www.edu.gov.mb.ca/k12/docs/support/c_portfolio/
- Another example of a career portfolio: <http://eahec.ecu.edu/telehealth/AHECareer.PDF>
- A guidebook for building a career portfolio, aimed to support career staff in their work with students: <http://curriculum.org/storage/108/1278484153portfolios.pdf>
- A guide to designing a career learning module in a higher education setting, with examples of assessment: http://www2.warwick.ac.uk/study/cll/about/cllteam/pmccash/ccms_career_studies_example_08_11.pdf
- A website dedicated to the development and use of digital portfolios: <http://electronicportfolios.org/>
- An example of a school-based career development program, and the use of a portfolio to integrate learning: <http://www.trinity.wa.edu.au/intranet/subjects/careers/TrinityCareersBook.pdf>
- The French *Livret Personnel de Compétences*, and the Ministry of Education website with details of this initiative: http://media.education.gouv.fr/file/27/02/7/livret_personnel_compétences_149027.pdf
<http://eduscol.education.fr/pid23228-cid49889/livret-personnel-competences.html#utilisateur>
- The PEC-Portefeuille d'Expériences et de Compétences http://scuio.ups-tlse.fr/10340482/0/fiche_pagelibre/
- The Italian *Libretto Formattivo del Cittadino*: http://www.lavoro.gov.it/NR/rdonlyres/2C0DD548-286B-4119-89EF-11D6E6E6ABA/0/Libretto_formativo.pdf
- The German *ProfilPASS*: <http://www.profilpass.de/> and *Berufswahlpass*: <http://www.berufswahlpass.de/> [see also the following in English: http://www.citiesforchildren.eu/fileadmin/media/PDF/WG1/Berufswahlpass_essay_-_edited.pdf]
- Use of career portfolio in Austria—'The Portfolio of Strengths' or 'Talent Portfolio'
<http://bo-hs-gemeinsamlernen.bmukk.gv.at/projekt/dokumente/Dokumente%20klibo/Das%20Portfolio.pdf> and
<http://www.school-wow.net/wow.nsf/41600465fc5f1426c125754e004b704b/0467f4c927b21a34c12577e7003d61dd?OpenDocument>

DECISION-MAKING AND PROBLEM SOLVING

According to the NH Curriculum Frameworks, proficiency in Decision-Making and Problem Solving means that the student will make developmentally appropriate decisions and will use problem solving strategies to investigate information and gain understanding in a variety of settings.

The student shall submit evidence to demonstrate to the assessor(s) that the following standard has been met in its entirety. This evidence should be gathered from more than two courses or verifiable experiences to show consistent skill. The student's proficiency level in each competency area will be evaluated by: 1) assessing how closely the evidence submitted meets this written standard, 2) the Assessor(s) Professional Judgement, and 3) comparison of the student's evidence with Exemplar work that illustrates "Proficient" in each competency area.

Performance Standard: The student will demonstrate the ability to:

Grade 9:

Outline issues involved in a situation, problem, or challenge
Determine, collect, and organize information needed to formulate a solution
Identify solution options available
Develop and test strategies or options that might work

Grade 10 (in addition to above)

Provide examples of the strategies or options tested or tried
Compare and analyze the pros and cons of identified strategies or options
Through Teamwork, arrive at a decision or determine a solution that is well suited to the task

Grade 11 & 12 (in addition to above)

Independently arrive at a decision or determine a solution, that is well suited to the task
Communicate, in a clear format, how the solution was formed
Justify or describe how and why a particular solution option was chosen

Guidance Notes for Assessors:

The evidence submitted for this competency must include an example of problem solving in mathematics and an example encountered in a real-life situation, such as work-based learning, school-based learning, job skills practice, or other career development decisions. The mathematics work submitted as evidence must demonstrate proficiency in computation as well as problem solving skills to meet this standard. The mathematics work may occur in any setting, not necessarily a mathematics class, and the mathematics example may occur in the context of the real-life setting.

Time frames for decision-making appropriate for the task within an assignment or activity will be established in the learning environment (the class, task group, work experience, etc).

A portfolio of evidence may be used to demonstrate this process.

Source: Gfroerer, M. (2000) 'Assessment: career guidance on the cutting edge of competency-based assessment.' *Journal of Career Development*, 27(2), 119 – 131.

Annex II

National Career Development Guidelines:

NCDG standards developed by the *National Career Development Association* (NCDA, USA) provide learner outcome criteria for designing career learning programmes. Domains, goals and indicators organize the NCDG framework. The three domains of Personal Social Development (PS), Educational Achievement and Lifelong Learning (ED), and Career Management (CM) describe content. Under each domain are goals (eleven in all) that define broad areas of career development competency.

Personal Social Development Domain

- GOAL PS1 Develop understanding of self to build and maintain a positive self-concept.
- GOAL PS2 Develop positive interpersonal skills including respect for diversity.
- GOAL PS3 Integrate growth and change into your career development.
- GOAL PS4 Balance personal, leisure, community, learner, family and work roles.

Educational Achievement and Lifelong Learning Domain

- GOAL ED1 Attain educational achievement and performance levels needed to reach your personal and career goals.
- GOAL ED2 Participate in ongoing, lifelong learning experiences to enhance your ability to function effectively in a diverse and changing economy.

Career Management Domain

- GOAL CM1 Create and manage a career plan that meets your career goals.
- GOAL CM2 Use a process of decision-making as one component of career development.
- GOAL CM3 Use accurate, current and unbiased career information during career planning and management.
- GOAL CM4 Master academic, occupational and general employability skills in order to obtain, create, maintain and/or advance your employment.
- GOAL CM5 Integrate changing employment trends, societal needs and economic conditions into your career plans.

Under each goal in the framework are indicators of mastery that highlight the knowledge and skills needed to achieve that goal. Each indicator is presented in three learning stages derived from Bloom's Taxonomy: knowledge acquisition, application, and reflection. The stages describe learning competency. They are not tied to an individual's age or level of education. For details see: http://associationdatabase.com/aws/NCDA/asset_manager/get_file/3384