

Part I: an E-Portfolio empowering people with special educational and social needs



Introduction

The introduction of this report builds on pages at Wikipedia, the free encyclopedia, on a document published on the website of the IMS Global Learning Consortium, the international standardization authority for the E-Portfolio (see references).

The report will also reflect the results of new research and the outcomes of previous projects, especially the Handbook on Social Inclusion of the Social Return Project (LdV-2004-2007) and the Survey Report of the PELLEA-project (Grundtvig, 2003-2005). The report marks a major threshold of progress for the SUB-SCRIPT project, for which we need to define and identify user focused and empowering tools for the benefit of people with special educational and social needs.

In this document the SUB-SCRIPT partnership will establish the a priori assumptions for structuring a user oriented, easy to use, comprehensive and highly accessible e-portfolio system.



Input from the project partners and from members of the Social Return Approach Network group on LinkedIn will be integrated in this document. For that purpose a basic version of this document will be made available online for a wider audience on the project website at www.sub-script.eu and in an open Dropbox folder from early Autumn 2011 on. The reader is cordially invited to send comments and remarks to the author's mail address directly: office@re-flexion.eu.

Definition

An electronic portfolio, also known as an E-Portfolio or digital portfolio, is a collection of electronic evidence assembled and managed by a user, usually on the Web (but working on a stand alone system is possible just as well). Such electronic evidence may include text written by the user, electronic files, images, multimedia, blog entries, and hyperlinks. E-portfolios are both demonstrations of the user's achievements and present abilities as well as platforms for self-expression. If they are online, they can be maintained dynamically over time.

Some e-portfolio applications permit varying degrees of audience access, so the same portfolio might be used for multiple purposes. According to general standards, the portfolio should be user owned, which (among other things) means that the user (student, employee) defines the levels of access for different categories of external viewers (friends, classmates, teachers, employers, etcetera).

An e-portfolio can be seen as a type of learning record that provides actual evidence of achievement. Learning records are closely related to the Learning Plan or Learning Path, a tool that is being used to manage learning by individuals, teams, communities of interest, and organizations.

To the extent that a Personal Learning Environment captures and displays a learning record, it also might be understood to be an electronic portfolio. E-portfolios, like traditional portfolios, can facilitate students' reflections on their own learning, leading to more awareness of learning strategies and needs. [\[1\]](#)

Results of a comparative research, by M. van Wesel and A. Prop, between paper based portfolios and electronic portfolios in the same setting, suggest that using an electronic portfolio leads to better learning outcomes. [\[2\]](#) In fact, this outcome is hardly surprising: electronic data allow continuous editing and sharing data in a wide area (online), whereas paper based data can only be replaced by new papers that are not immediately visible to others. This the basic advantage of the information society over the traditional way of organising public life.

Nowadays, students are constantly busy to create digital identities using presentation software or tools to create web pages on social media (Facebook), on professional networking sites (LinkedIn) and on institutional communication platforms of schools and clubs. Recently, the use of virtual learning environments (VLE's) in schools and universities has led to an increased creation of e-portfolios for a variety of purposes. However, most of these e-portfolios, are retained within the VLE and are not easily accessed from outside, let alone that the e-portfolio could be taken along by the user to a next stage in life.

The problems of exporting portfolio content (data in various formats) and importing this material into another e-portfolio system (and other interoperability issues) have resulted in an international standard requirement, urging that any e-portfolio should be student (user) owned.

CMS, LMS and VLE: institution focused systems

At this point we should draw attention to an issue that is addressed implicitly at the best, but most of the time simply overlooked.

*The design and structure of any e-portfolio system has up to now always been **determined by** the information and storage demands of **the (educational) institutions** providing such systems to their users.*

The fundamental perspective of the system developers has always been to gather and store the kind of data that is desirable to the institutions ordering and paying for these systems. Course Management Systems (CMS) like Blackboard and many others were designed to primarily support the operational aspects of running a programme or course (administrators, teachers, trainers) and only in second place to satisfy the learning needs of the individual user or learner. As a general standard the use of a CMS is offered to the learner in exactly the same way as books and other documentation: compulsory, not subject to discussion.

The better part of these systems would also facilitate planning, documenting and self-evaluation of the learning process by the learner and could rightfully be called an LMS (Learning Management System). But still the main purpose has always been to primarily serve the institutional staff and the student in second place. One could of course argue that the whole educational structure is set up to serve the needs of learners principally, which is true. But only just as true as the statement that education serves the need of society, i.e. to train youngsters to become well adapted citizens. By the way, originally also the term LMS was used to describe a pure CMS, allowing their users no or little influence on the structure.

*In simple words: the classic and typical digital learning systems are focused on the teaching and managing part of the educational process, not on the learning process of the individual. Newly set standards have pointed out the necessity of **building e-portfolio structures from a user's point of view**.*

It is this kind of Lifelong E-Portfolio that the SUB-SCRIPT project aims to discover or develop.

A preferable approach is to have *an e-Portfolio system hosted externally from any educational or employment institution, ensuring user ownership and excluding influence on the structure and content of a student portfolio by a single organisation.*

This permits smooth transitions and continuous maintenance by the owner of the e-portfolio through all stages of education and employment and even into retirement. The same demand of user ownership has an effect on the very design and structure of the e-portfolio: these should be based on user related functionality (as opposed to providing functionality mainly useful to institutions (schools, employers)).

Empowerment of individuals on the educational and labour market

One could take this line of reasoning one step further by pointing out that having an e-portfolio for lifelong personal use is a civil right, like medical care and primary education, for which reason the public authorities should provide resources to the individual citizen. Such a move forward would turn the user into a customer and this change of positions in the market would immediately cause system and software developers to shift their focus from the educational and employment institutions to the user/learner/job seeker.

A deliberate focus on users will lead to a dramatic change in "portfolio-thinking", replacing the authority of institutions by the democratic right of the individual to decide what one needs and how to fulfil that need.

This is the kind of portfolio approach that will contribute to the effective empowerment of individual citizens, especially of people with special educational and social needs.

Such an approach will lead quite naturally and quickly to the incorporation of a Coursefinder in E-portfolio systems (among other things). This is a tool that helps the user to find suitable and accessible learning programmes, based on personal features like ambition, talents, previous achievements and learning level. Given the present state of search engine technology this is really not so difficult. But since this kind of development is not relevant or even quite contrary to the interests of the educational and employment institutions ruling the market, functionality like this is not yet included in any existing VLE, CMS or LMS!

The SUB-SCRIPT partnership has implemented a first version of such a Coursefinder (also referred to by the project team as the "Roundabout"), enabling easy selection of courses for those in need this kind of assistance . The operational power of this tool will have to expand over time: system development resources for the present European project are quite limited, despite generous funding by the Leonardo da Vinci Programme¹.

1 Contract Number 201-LDV-TOI-509, the project runs from November 2010 until October 2012

E-portfolio typology

Mainstream theory distinguishes three types of e-portfolios; they may be referred to using different terms:

- developmental (e.g., working),
- reflective (e.g., learning),
- representational (e.g., showcase).

A developmental e-portfolio is a record of things that the owner has done over a period of time, and may be directly tied to learner outcomes (or "rubrics" in system developer's terms). A reflective e-portfolio includes personal reflection on the content and what it means for the owner's development.

A representational e-portfolio shows the owner's achievements in relation to particular work or developmental goals and is, therefore, selective.

The first and third type are also referred to as a portfolio of evidence, especially when used for testing and examinations. When used for job applications, it may also be called a Career portfolio.

Career portfolios are used to plan, organize and document education, work samples and skills. People use career portfolios to apply for jobs, apply to college or training programs, get a higher salary, show transferable skills, and to track personal development.

They are in fact an extension of the well known resume (or Curriculum Vitae), which is used to summarize the above in one or two pages, but a career portfolio offers more in-depth information than the CV. Career portfolios serve as proof of one's skills, abilities and potential in the future. Career portfolios are becoming common in high schools, college, and workforce development. Many school programs will have students create, update, and use a career portfolio before moving on to the next level in life ... and to a different e-portfolio system.

The introduction of the career portfolio in the field of reintegration and rehabilitation is bound to follow the introduction in recent years of extended job seekers' profiles on internet sites for vacancy selection and job matching. While introducing the e-portfolio for usage in the social inclusion sector, confusion with a digital medical patient file should be avoided, especially in the rehabilitation sector.

Career portfolios can be helpful in job acquisition and for acceptance into higher education institutes. A career portfolio should be personal and contain critical information. Items or subjects to deal with include (but are not limited to) personal information, evaluations, sample work, awards and acknowledgements. Career portfolios are often kept in a simple three-ring

binder or online as an Electronic portfolio and are preferably updated very often.

A career portfolio is used as a marketing tool in selling oneself for personal advancement. In some industries, employers or admission offices commonly request a career portfolio.

The archetype of the portfolio is the one used by artists. An artist's portfolio is for its purpose and almost by definition a portfolio of evidence: it consists of artwork that the artist can take to job interviews, conferences, galleries, and other networking opportunities to showcase his or her work, and give others an idea of what type of genre the artist works in.

Artists, especially writers and painters, have been doing this over the centuries, followed by graphic designers in recent history. Their successful example inspired experts in education to adopt and adapt the portfolio for educational use.

The three main types (developmental, reflective and representational) may be mixed to show different learning, personal, or work-related outcomes. The e-portfolio owner should preferably also be the person who determines access levels.

Another typology is offered by IMS, but it hardly adds fundamental insights to the division in categories as described above. It is discussed below to make sure that important theoretical contributions to "portfolio thinking" are covered (as far as that is possible in a single document).

1. Assessment E-Portfolios

Assessment E-Portfolios are used to demonstrate achievement to some authority by relating evidence within the E-Portfolio to performance standards defined by that authority. For example, departments or schools may use assessment E-Portfolios for accreditation purposes.

2. Presentation E-Portfolios

Presentation portfolios are used to evidence learning or achievement to an audience and they are often used to demonstrate professional qualifications and skills. For example, an engineer might show the professional certifications he has received and employment history in order to convince a potential employer to hire him.

3. Learning E-Portfolios

Learning E-Portfolios are used to document, guide, and advance learning over time. They often have a reflective component and may be used for meta-cognition, to plan learning, or for the integration of diverse learning experiences.

4. Personal Development E-Portfolios

Personal development planning is defined in the UK as "a structured and supported process undertaken by individuals to reflect upon their learning,

performance and/or achievement and to plan for their personal, educational and career development." This could include a learning E-Portfolio, but it is often related to professional development and employment.

5. Multiple Owner E-Portfolios

Multiple Owner E-Portfolios are used to allow more than one individual to participate in the development of content and presentation. It might combine elements of the above portfolio types, but most likely takes the form of a Presentation E-Portfolio when used for such purposes as a website or group blog and a Learning E-Portfolio when used by a group of learners to present evidence of their academic growth through the group collaboration. Multiple Owner E-Portfolios are often used to represent the work and growth of an organization or organizational unit and may be referred to as program or institutional portfolios.

6. Working E-Portfolios

Working E-Portfolios combine elements of all of the preceding types. They often include multiple views, each of which may be analogous to an assessment, presentation, learning, or development E-Portfolio. In the terms of the NLII definition, a working portfolio is the larger archive from which the contents of one or more E-Portfolios may be selected. The whole of a working ePortfolio is generally accessible only to its subject, while views are made accessible to other individuals and groups.

Some E-portfolios can be used for presentations, a number of different assignments and most popularly, class studies. Others may be used within an educational setting for assessment and accreditation, such as an institutional electronic portfolio.

An Institutional E-Portfolio is a multimedia Web site designed to help document and organize a college or university's story, goals, and standards. It can provide an efficient means to share visions and commitments to its mission.

A major use of e-portfolios is for the **assessment of National Vocational Qualifications [NVQ]**. A number of providers such as www.nvqonline.co.uk and www.nvqs-direct.co.uk enable candidates to build their portfolios of evidence which can be accessed by nominated assessors and verifiers from any internet access point. The e-portfolio does not make the gaining of the internationally recognised qualification easier, but it does make the whole process much more cost-effective. In the UK students in vocational education and training are obliged to build a portfolio of evidence; it's assessment is part of the qualification procedure.

E-Portfolios are supporting all components of good RPL practice (Recognition of Prior Learning) through effective evidence capture and validation; by establishing linkages to existing forms of evidence, and by complimenting the conversational style of good RPL process through regular asynchronous dialogue.

In the context of the RPL assessment process, the E-Portfolio is able to streamline evidence identification and validation, and enable assessors to effectively make judgements about the authenticity of evidence when it is verified through existing legitimised sources, such as Learning Management Systems (LMS).

Conclusions: users and functionality

Overlooking the previous section, the reader may get the impression that some distinctions are made for the sake of distinguishing.

Instead of being “theoretically correct and complete” it seems more practical (and therefore more functional) to summarize the basic and main desirable functions of the E-Portfolio, both from a user/learner/job seeker point of view, as from an expert/assessor point of view. This is the fundamental and first distinction to be made, when we discuss the (desired) functionality of any E-Portfolio.

Experts

This category includes teachers, trainers, therapists, coaches, employers and anyone else involved in HRM. All experts are assumed to represent organisations in which they operate professionally. They will look at an E-Portfolio with a similar, professional perspective, covering a range of interests regarding the development process of the user/learner/job seeker: from guidance and training to assessment and selection.

- Guidance and training covers all kinds of support for the development process of the user: the aim is to stimulate and help the individual user to improve knowledge, skills and performance.
- Assessment and selection includes evaluation and acknowledgement (qualification, admission to a course or job): the aim is to get capable learners for a course, the best person for a position, or to select the best available educational programme or job vacancy for an individual user.

Users

This group consists of learners, job seekers, workers and people in retirement. People with special needs will belong to one of these categories. If they are incapable to work at all, they will be learners all the same, or perhaps in a similar position as someone in retirement.

An E-Portfolio should provide the following functionalities:

- Learning facilities: enabling apprehension and exercise by providing the user with easy storage of and access to learning materials and outcomes.
- Communication support: using standardized file formats (automatic export to pdf) to enable discussion of learning outcomes.
- Control of exposure by the user/owner: enabling easy differentiation in access levels to the e-portfolio content for a variety of visitors/viewers.
- Easy search and application functionality:
 - ◆ automatic extraction of user features into a Coursefinder and/or a Jobfinder, which means that the matching of characteristics for a selection of vacancies or courses starts from the e-portfolio and not from submitting one's profile to an external website: the user stays completely in charge of his/her data
 - ◆ half or fully automatic export of relevant data into standardized formats: CV, job application letter, admission requests to courses and educational institutions.
- Leisure functionality ("more about me") to increase the attractiveness and promote frequent use of the E-Portfolio by the owner.
- Contribution functionality: easy admission of people from outside to contribute to certain sections or parts of the E-Portfolio (allocation of editing rights to externals), for instance to write recommendations in the work section or feedback on assignments and learning outcomes.
- Sharing functionality: links or exporting functions to social and professional media like Facebook and LinkedIn, without giving those media access to the E-Portfolio.

Unless there are specific reasons for including it, to the benefit of the subject and agreed by the subject, E-Portfolio information would normally not include:

- *medical records;*
- *financial records;*
- *government records including criminal and statutory records;*
- *records made by any other party of the subject's dealings with them.*

Outline of structure (content categories) of the SUB-SCRIPT E-Portfolio

In this section we present the main components of the E-Portfolio, seen from the client's perspective; most elements dealing with learning and work will be extractable easily and automatically into a CV in the Europass format.

- **Personal section**
 - *Introduction (This is me!)*
 - *Personal data (name, address, phone, date of birth, etc.)*
 - *Family, friends, pets; hobbies and favourites*
 - *Who are you? (access levels of visitors)*

- *Learning section*
 - *My education right now:*
 - *Subjects/things I like to learn (goals)*
 - *My programme (planning)*
 - *Things I do (assignments)*
 - *Recent achievements (results & ratings)*
 - *How am I doing? (reflection & assessments/comments)*
 - *My school: what is it?*
 - *Teachers, classmates*
 - *Interesting stuff (subject documentation)*
 - *Previous education*
 - *Schools I have been to*
 - *All time favourite teachers and classmates*
 - *Next education*
 - *What I want to be*
 - *What I need to learn next!*

- *Work section*
 - *My job right now:*
 - *This is what I do (daily work)*
 - *My career (planning)*
 - *Things I'd like to do (wishes & dreams)*
 - *Recent achievements (results & ratings)*
 - *How am I doing? (reflection & assessments/comments)*
 - *My company/institution: what is it?*
 - *Managers, colleagues, mates*
 - *Interesting stuff (subject documentation, photographs)*
 - *Previous work*
 - *Jobs up to this day*
 - *All time favourite colleagues*
 - *Next job*
 - *What I want to be*
 - *What I need to do next!*

- *Photograph for my CV; my elevator pitch*
- *my video CV*

- *Leisure section*
 - *More about me!*
 - *My diary*
 - *Personal photo/music/text galleries*
 - *Platforms and communities I use*
 - *Anything else*

Further options (future extensions)

- Log in features (remember me for next log in, automatic non active log out)
- Communication area: mail, chat, skype functions (who's online pop up)
- discussion groups, thematic groups
- share option, like/dislike option, smileys, animations
useful links (Wikipedia, social security services, ...?)

Comments to support this structure

Accessibility

The Accessibility criterion deals with implementing the functional accessibility preferences of the portfolio owner. The SUB-SCRIPT partnership adopts the specification of the IMS, called Accessibility for LIP [ACCLIP, 03]. That specification describes a data model for recording a user's preferences for how material is displayed, how a user interacts with and controls a system and specific accessibility properties the user requires of content. There is an associated specification IMS AccessForAll Meta-data [ACCMD, 04] that describes meta-data for the labelling of content for accessibility. These specifications can be used together, with fields being matched between the two specifications to select content a user can use, and ACCLIP alone being used to customize content and provide information necessary for interface customization (such as browser switches) and on-the-fly content adjustment. This is similar to views (see Appendix 1 and <http://www.msglobal.org/accessibility/accessiblevers/sec2.html>).

User Requirements

For People Who Are Blind

Many people who are legally blind retain some residual vision. Some may be able to see objects with the help of magnification. Others may be able to sense light and dark but little else. Because of the wide range of visual sensitivity found among those who are legally blind, a well-designed interface should assume that the end user has no vision, while allowing that person to make use of whatever residual vision they possess.

To access online material, blind users depend on screen-reading software that digests the contents of the computer screen and sends information to a text-to-speech synthesizer or refreshable Braille display. Application software developers can do much to support screen reading software and to help blind users perceive and understand screen content.

To support screen reading software developers can:

- Use standard system tools to draw and erase all on-screen text and to display all cursors and pointers.
- Use system standard on-screen controls whenever possible.
- Define tools in toolbars, palettes, and menus as separate items. Do not create single graphics containing multiple objects. By keeping tools and other objects separate, the screen reader is better able to identify and name each tool for the user.
- Embed descriptive text in graphic images in such a way as to make the text known to screen-reading software. This addresses the

problems that can arise when text is rendered as a graphic image and cannot be read by software.

- Assign logical names to controls, even if the name is not visible on the screen. Screen readers can access this information and use it to describe the type and function of the control on the screen.
- Track the system cursor with the mouse, even if the cursor is invisible. This allows the screen reading software to detect the mouse position when customized highlighting or focusing techniques are in use.
- Use consistent and predictable screen and dialog layouts.
- Avoid the use of "help" balloons that disappear whenever the hot spot, or focus of the mouse changes. Try instead to lock the "help" balloon in place so that the user can move the cursor and continue to read the balloon.
- Use single column text whenever possible.
- Provide keyboard equivalents for all tools, menus, and dialog boxes.

Since screen readers can only read text (or give names to separately identifiable icons or tools), it is a good idea to:

- Avoid assigning unlabeled "hot spots" to pictures for use as controls, unless they are redundant with menu selections.
- Avoid non-text menu items when possible or at least incorporate visible or invisible text cues to accompany these items. Screen readers can see text even if that text is written to the screen invisibly.
- Avoid non-redundant graphic tool bars. Make any tool bar command available in a menu.

Finally, documentation and training materials are always more accessible when:

- Documentation and online help can be understood independent of graphics. Text descriptions should stand on their own.
- Synchronized audio descriptions are available to play alongside animated graphics or movies.

For People with Low-Vision

"Low-vision" refers to a range of vision problems including:

- poor acuity, meaning blurred or fogged vision.
- loss of all central vision; the ability to see only the outer ring of the visual field.
- tunnel vision; the ability to see only the center of the normal visual field.
- loss of vision in other parts of the visual field.
- other problems, including sensitivity to glare, night blindness, reduced contrast.

Computer users with low-vision often depend on the ability to enlarge or otherwise enhance areas of onscreen information. Screen enlargement

software can be tremendously helpful.

To make onscreen information easier to see developers can:

- Increase the contrast between text and the background.
- Place text over a solid-color background. A patterned background can make text harder to discern.
- Create consistent layouts for all screens and dialogs within the program.
- Provide access to tools via a menu bar.
- Follow line width guidelines when drawing lines on screen. Use the line width information provided by operating system settings. This will ensure that the learning application will increase all lines proportionally should a user choose to enlarge the view.
- Allow the user to zoom in to or magnify portions of the screen.

To make their software more compatible with other applications that offer low-vision access features developers can:

- Use the system pointers whenever possible, as well as the system caret or insertion bar, if available.
- Include a highlight or focus indicator when dragging the system cursor, even at those times when the cursor is invisible. This adjustment will help screen enlargement software using "pan and zoom" features to track the user's movements more accurately.
- Add support for a "high contrast" setting.
- Protect users from the need to simultaneously monitor two or more events occurring far apart from each other on the screen.

For People with Colour Blindness

To make it easier for colour blind users to access their software, developers can:

- make colour-coding a redundant or secondary means of conveying information.
- ensure that the program will run in monochrome mode.
- use variations in contrast and brightness in addition to color variations.

For People Who Are Hard-of-Hearing or Deaf

Many users with hearing impairments need to have some method for adjusting the volume or for coupling audio output more directly to their hearing aids. These are hardware requirements that can be met by systems with built-in volume controls and headphone or audio output jacks. Users who have more severe hearing impairments may choose to combine these solutions with visual display technologies designed for people who are deaf.

To increase the accessibility of software to users with hearing impairments developers can:

- Provide all auditory information visually.

- Ensure that all visual cues are noticeable even if the user is not looking straight at the screen. Important information should catch the user's attention, even through peripheral vision.
- Support the ShowSounds feature that allows a user to assign a visual and caption for each audio event.

Finally, telephone support staff should also have text telephone (TTY) available in order to be able to assist deaf or hard-of-hearing customers.

For People with Physical Disabilities

The nature of physical disabilities varies widely. Some physically disabled users experience complete paralysis in some portion of their bodies. Others are restricted by muscular weakness. Some may have a very limited range of motion, but may possess very fine movement control within that range. Others may have feeling in their limbs, but little control over them. Others have to work with uncontrolled, sporadic movements that interfere with their purposeful movements. Users with arthritis report that the joints in the hand and elsewhere are restricted in their range of motion both mechanically and by pain. Some users have posture difficulties that can only be solved by mounting the computer screen in a non-standard orientation. Physical disabilities, by themselves, do not usually affect a person's ability to perceive information displayed on the computer screen. They can interfere with the interactive experience by preventing users from easily manipulating the interface.

To increase the accessibility of software to people with physical disabilities and ensure compatibility with assistive technologies developers can:

- Avoid timed responses or when they cannot be avoided, lengthen the time allowed for a user to respond.
- Provide keyboard access to all toolbars, menus, and dialog boxes.
- Allow the user to access helpful features already built into the operating system, such as StickyKeys, SlowKeys, Key Repeating.

For People with Language or Cognitive Disabilities

Language and cognitive disabilities are very difficult for developers to address, partly because of the diversity of the category. The group includes individuals with:

- general processing difficulties such as mental retardation, brain injury and others.
- specific deficits such as lack of short-term memory, the inability to remember proper names and others.
- learning disabilities such as dyslexia, dyscalculia, dysgraphia, auditory perceptual disabilities, cognitive disorganization, and visual perceptual disabilities.
- language delays.

In addition, the range of impairment within each of these categories can vary from minimal to severe. In general, software designed to be as user-friendly as possible will improve accessibility for those with language or cognitive impairments.

To improve accessibility for people with language or cognitive disabilities developers can:

- allow all message alerts to remain on screen until dismissed by the user.
- make language and instructions as simple and straightforward as possible, both on screen and in documentation.
- use simple and consistent screen layouts.

It is important to bear in mind that those with language and cognitive disabilities often have difficulty processing print. To increase accessibility for this population, developers should take steps to make their software compatible with screen-reading software (for more information, see [subsection 2.1.1](#) For People Who Are Blind.)

Dyslexia is one of the most common learning disabilities. Affecting between 4 and 15 percent of the population, this neurological disorder interferes with the acquisition and processing of written language. Dyslexia is associated with difficulties in both receiving and expressing language, including phonological processing, in reading, writing, spelling, handwriting, and sometimes in interferes with mathematical reasoning. Dyslexic students can benefit from many of the solutions developed to help users with other disabilities.

To improve accessibility for people with dyslexia developers can:

- Give users the ability to select their preferred font.
- Make products compatible with screen reading software and voice recognition software.
- Use consistent layouts and formats.
- Use plain, uncomplicated backgrounds behind text.
- Avoid flashing text and avoid moving or animated text.
- List hyperlinks at the end of the relevant paragraph or section instead of within the general text.
- Describe the type of information or website pointed to by a link, before inserting the link into the text.

See also (Wikipedia links)

- [Career portfolio](#)
- [Desire2Learn](#) ePortfolio (software)
- [Digication](#)
- [E-scape](#)
- [Elgg](#), an [open source social networking](#) platform primarily designed to be a [Personal Learning Environment](#) (PLE) and an Eportfolio tool.
- [Mahara](#), an [open source](#) ePortfolio system
- [PebblePAD \(software\)](#)
- [Pass-port](#) a commercial assessment management system
- [RCampus](#) ePortfolio System

Notes

1. Moon, Jenny. "[Guide for Busy Academics No. 4: Learning through reflection](#)" (MSWord). The Higher Education Academy.
2. M. van Wesel & A. Prop (2008). "[The influence of Portfolio media on student perceptions and learning outcomes.](#)". Paper to be presented at the Student Mobility and ICT: Can E-LEARNING overcome barriers of Life-Long learning Conference, Maastricht

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- Hebert, Elizabeth A., (2001) The Power of Portfolios - What children can teach us about Learning and Assessment. San Francisco: Jossey-Bass. [ISBN 0-7879-5871-9](#).
- Mendoza-Calderón, Marco A.; Ramirez-Buentello, Joaquin. (2006). Handbook of Research on E-Portfolios. *Facilitating Reflection Through ePortfolio at Tecnológico de Monterrey*. Hershey, USA. Ali Jafari (Ed). pp: 484-493 [ISBN 1-59140-890-3](#).
- Portfolio documentation, standardization of design and coding/programming, user accessibility criteria: http://www.msglobal.org/ep/epv1p0/imsep_bestv1p0.html

External links

- [Online Portfolio Websites*](#)
- [Portfolio Websites*](#)

Part II: constructing valid e-Portfolio assignments

An elaboration of previous work in the Pellea-project (Grundtvig 2004) by Joost Thissen, shared with the ongoing Create-In project (Leonardo da Vinci TOI 2011).

1 Main purposes of the portfolio:

For the student:

- showcase of competences
- job or business order acquisition tool (near future)
- documenting personal progress and achievement

For the teacher:

- evidence of student's competences
- storage of learning outcomes and achievements
- track record of learning progress

For student and teacher:

- internal, secure communication platform
- interactive assessment tool

Professionals like for instance MyHairdressers.com have adopted a natural focus in relation to the portfolio on the function of exhibiting individual qualities and self promoting. They encourage portfolio users to exploit the marketing opportunities that are obviously the result of a well maintained personal portfolio.

However, if that would be all the e-portfolio has to offer, it would hardly deserve a place in education. At best we would teach students in their last year to use it, in order to increase their chances of getting assignments or jobs after leaving school.

Over the last decades the e-portfolio has developed into an educational

tool, besides the showcase function. In the early days (midway previous century) it was referred to as a "leaner report". Proper use of the instrument and the methods that capitalize on it's strengths, have resulted in a more effective use of assignments, yielding stronger and longer lasting learning effects.

To make this happen both teachers and students need to move their focus from recalling and reproducing earlier acquired knowledge towards applying that knowledge and expanding skills to new contexts, unleashing creative talents that would otherwise remain "under the skin".

Some brief examples may underline the high validity of this approach.

2 Examples of specific portfolio assignments

2.1 Subject: Multi-media design

Task description of an assignment for a medium advanced learner, the assignment is individual, but will be given to at least 2 students to enable comparison and discussion:

- Design and build a homepage for a sport equipment shop
- Define the underlying web functionalities (without yet designing and constructing) that this home page would be based on, e.g. a searchable database of products, links to locations and maps
- Compare your concept of the homepage with existing examples of home pages for such shops; what do you consider to be the essential features of these websites, including your own concept
- Share your comments (preferably online) with fellow students working on the same assignment, compare the concepts each of you produced. Try to agree on a ranking of your concepts
- Report briefly on the discussions and the ranking, but also on remarks and recommendations.
- Give an overall judgement of your work: what have you done really well and on what aspects or parts could you improve? Ask your teacher for a review of your work (store it with your report in the e-Pfl).

This assignment would result in the following portfolio output:

- Description and image of a concept home page, resulting from a) and b) and some examples found on the internet
- Comparative (and motivated) judgement on design features and tools
- Self assessment of progress stage in learning, strong and weak points
- Peer evaluation, learning from and evaluating each other (which may become an ongoing or recurring process)

In a more advanced phase of the learning process the following individual assignment could be used:

- Compare two or three design and construction tools, including products of some market leaders, e.g. Creative Suite, Xara Web Designer. Focus on a specific element you consider relevant, e.g. database handling by these tools, or style sheets.
- Do you consider yourself capable of using the essential or main elements of these packages? Which ones? Substantiate your claim by designing a more elaborate website including the construction of underlying functionalities (multi-layered design).
- Reflection: What kind of a web designer do you consider yourself to be? Technical, creative, commercial? Could one of your fellow students be your team mate in a large design task? On what grounds?
- Reflection: What's next to learn? Try to plan the following stage of your learning programme. This portfolio content is subject to assessment and planning with the teacher in the next evaluation session.
- After storing these reflections, you may make them subject of discussion with your classmates and other people with valuable insights.

Portfolio output indication:

- Comparative description of web editors, concerning one of their main functionalities
- Website showing a more complex elaboration of one feature
- Self and peer assessment concerning "professional position, aptitude and attitude"

- Self assessment and joint evaluation with the teacher of progress in learning programme
- Report of joint evaluation

2.2 Subject: Hairdressing

Task description of an assignment for a learner at starting level, the assignment is collective, i.e. at least for a group of 4 students but preferably for a whole class (divided in little groups) to enable comparison and discussion:

- Find information on latest trends in hairdressing: what's new out there. Look on the web, in magazines and go out to (fancy) hairdressers and collect their opinions about what's "hot" in hair fashion. Support your research with pictures.
- Choose a favourite among the trendy hairdo's, choose two other looks to compare with: describe your favourite hairdo in your own words and why you like it better than the other two. If you have pictures, put the description and the picture in your portfolio: "my favourite hairdo"
- Compare and discuss with your groupmates
- Try to figure out (with your group) the techniques that are needed to realise this look: washing, drying, colouring, brushing, cutting, whatever else.
- Which of these techniques do you know already, which ones would you like to learn a.s.a.p.?
- Would you like to be a "trendy hairdresser" or do you prefer a salon where routine prevails?

Portfolio output indication:

- Comparative description of some fashionable hairdo's, not only pictures, but also description of highlights and personal comparison and judgement of three examples.
- Listing of some techniques in modern hairdressing
- Self and peer assessment concerning "training priorities"
- Self assessment and joint evaluation with peers and/or teacher of professional attitude and preferences as a hairdresser
- Report of research and joint evaluation

2.3 Subject: Fashion

Task description of an assignment for a learner at medium or semi-advanced level. The assignment is individual, or at most for a pair of students capable of smooth cooperation.

- Pick someone in your direct environment (without telling this person) and start designing a new garment for him/her: a pair of trousers, a robe, a jacket. Of course it should be something you expect your target person to like.
- Show your design (drawing) to your target person and explain in your own words what it will look like, what it will be made of (fabric) and why you think it fits him/her.
- Take good notice of the reaction of your client: does he or she like what you propose? If not, figure out why. If she/he likes the design, try to get feedback on details (colour, length, collar, cuffs et cetera).
- Adapt the design to the result of your feedback session with the target person.
- If time allows you can produce the garment.
- Don't forget to put the design, a brief report on the feedback you received and some photographs of the final garment (if you reach that point) in your portfolio. Notify the teacher when you are done.
- Retrospective: was your impression of what your target person would like, correct? Do you see a way to improve this design and production process?

Portfolio output indication:

- Drawings and description of self designed garment for target person.
- Process description: from first design to final proposal and produced garment
- Reflection on the process of communicating with the client, Report on joint evaluation with client and/or teacher.

2.4 Subject: Cosmetics, visagie (make up art)

Task description of a project for learners at the final stages of their programme. The assignment is for groups of students and it fosters cooperation based on advanced professional quality in combination with a sense of competition.

- General assignment: three or four companies are short listed to do the make up for a new theatre-production of Beauty and The Beast next year. To win the final selection your products will have to convince the jury (made up of teachers and perhaps external professionals). Three or four groups (depending on the size of the class) will compete on behalf of their companies to win the selection.
- You will focus on the main characters. Of course you need a "plan for battle": what will be your approach to increase your chances of winning to the max? Store the written plan for later adjustment and final evaluation.
- Whatever your plan looks like: start by looking for pictures, movies, descriptions to find out what these characters have looked like in the past. Assemble them in a short report.
- Carry out your "plan for victory": draw concepts, discuss and try out, while taking pictures and making notes of essential comments and decisions. Pay attention to the workplan, time schedule and division of tasks.
- Choose the best concept and try to improve it further
- Final presentation to the jury; perhaps you could make a show out of this in some way (present it as a video, add live music ...).
- The jury decides, giving an explicit report and detailed comments with their judgements.
- Final group evaluation: why did we (not) win?

Portfolio output indication:

- Workplan, time schedule, task division.
- Process description: choice of best concept, final contest
- Reflection on the internal group communication process. Jury report and group evaluation report.

4 Final remarks

Not all tasks and assignments need to explicitly invoke reflective activity by the students: to read a chapter in a book (just to learn something) or to build a web page (just to gain practical experience) will do fine in a lot of cases.

Certainly students do not have to sit and contemplate on their progress or personal qualities all the time. Building routine in daily recurring activities is equally important for most professionals as the increasing awareness of one's capacities that will result from reflection.

The most important thing is to include moments for reflection and forms of authentic assessment at various instances in order to enhance a richer learning experience for the student (and for the teaching staff as well).

Studies of the use of the learner report (the predecessor of the portfolio as we are using it nowadays), showed that the outcomes and effects of the learning process per individual learner became steadier: they will last longer in time and knowledge is easier to recall:

3. reporting and documenting learning achievements makes results explicit and visible, which has a motivating effect on students. A growing personal portfolio simply invites to add more, especially when others (fellow students, friends, parents, teachers) can see and praise the content, or suggest improvements;
4. communication concerning a desired approach and intermediate results enhances the ability to cooperate, to listen to others and value their views;
5. discussion of "how to proceed" and "what to do next" leads to a better understanding of the work process, but also of personal strengths and weaknesses (or level of achievement): "You are better at colouring hair, so you do that and I'll do the cutting afterwards". This kind of awareness and cooperation leads in the end to a result of higher quality as well.
6. Self assessment of progress, capabilities and shortcomings will help the student to establish the need for further learning ("I need to get better at hair colouring, so what can I do about that?").
7. Joint evaluation and consensus between student and teacher about the present status of the learner, equals the perfect use of the portfolio: "You need to get better at colouring hair?" "Yes, I do!" "Well, here's an instruction video you can watch and tomorrow we'll continue with practising some techniques".

In order to reach this educational ideal, instructions/assignments and learning materials presented by teachers should focus on two main forms of reflection by students, characterized by two essential short sentences:

- I have learned that/I have learned how to ... (referring to factual knowledge and skills)
- I have learned that I ... (referring to personal talent, attitude, progress)

These questions themselves will do an excellent job, when used as recurring assignments at fixed intervals, for instance once per (half) year:

- in the past six (12) months I have acquired the following knowledge and skills [...]
- in the past six (12) months I found out about myself that I [...].

Such assignments provide a rich information basis for interactive progress assessments between teacher and student. The whole procedure can be carried out within the framework of the student's e-Portfolio, where these evaluations remain stored for review in the future. The student may use these assessments as part of his/her showcase to impress external viewers (like employers).

Halfway the previous century, the great educational scientist Benjamin S. Bloom stressed the importance of the student's attitude in addition to the well acknowledged traditional goals of education: knowledge and skills.

In creative occupations the importance of a professional, mature attitude of those carrying out their jobs or running their companies, is beyond dispute. The e-Portfolio is the (exclusive) educational tool for making progress in developing a professional working attitude by students explicit. By doing that the professional competences of a student in creative VET programmes become

- an object of observation,
- the subject of discussion with teachers and fellow students and,
- an integral part of the certification procedure.

PS

The examples presented were constructed to highlight essential portfolio-related learning activities. They may be perceived as being not original nor creative at all, but that was not the purpose here. The examples could have been taken from an existing portfolio-based training programme for creative professionals and that is all they should look like.