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# TAGGING OER FOR SKILLS PROFILING : USER PERSPECTIVES AND INTERACTIONS AT NO COST

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ABSTRACT :

This Paper reports our research on how open educational resources (OER) should be labelled not only with social tagging but also for skills profiling. We have previously reported the need for wider use of skills profiling : as a practical way forward for very-low-cost massive-scale prior learning assessment and recognition (e-Type-3 PLAR). The result from tagging for skills profiling is that OER become suitable for a personalised curriculum and better fit-for-purpose. And all this at no cost to the institution.

Keywords : Tagging OER, Academic profiling, PLAR, No cost, User perspectives

1. INTRODUCTION :

In this Paper we explain how online self-assessment e-Type-3 PLAR can reduce the institutional costs for accreditation and at the same time serve to intrinsically motivate the student. Then we explain what skills profiling should be created to establish academic profiles for course entry, course graduation, and any stages in between. Finally we suggest that OER are labelled not only using social tagging but also for skills profiling. The overview is shown in FIGURE 1 below in which the core interactions by the user are essentially free of cost, and the later accreditation costs for the institution are at an absolute minimum, which then allows for use in massive open online courses.

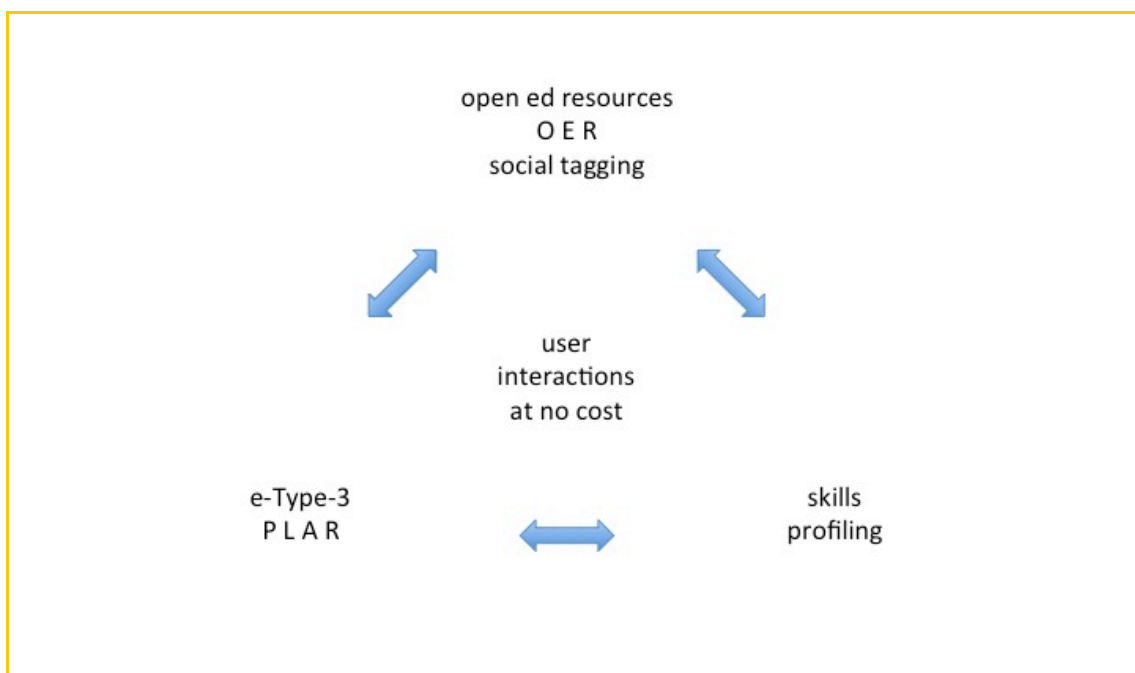


FIGURE 1 : The System Design for Tagging OER for Skills Profiling

There are now huge numbers of open-educational resources (OER) accessible online around the world in various hub repositories. Some open universities claim to host thousands of courses and resources, yet a course teacher finds only six OER of interest and these just plain old powerpoint that are out-of-date and not relevant to the purpose at hand. Even after a student finds an interesting OER, she may need additional intrinsic motivation to learn from it. Students tend to show no immediate learning benefit from an OER unless the teacher then goes through the key points in a flipped-classroom approach. Certainly better social tagging for OER should improve their utilisation by teachers, students and lifelong learners. Social tagging by each user can improve the chances of discovering a best-fit OER, and such user-led personalisation of OER can offer a way forward without needing teaching guidance on which OER is best.

## 2.1 METHODS :

### *Social Tagging for OER*

*'What we find, changes who we become'*

Morville, 2006

Social tagging acts as advance organisers by the original author(s) to serve as navigational aids for intended users, and later as filtering for subsequent users. Social tagging is a capability added onto an OER to allow each user to confirm or adjust the search tags - which indicate the level and the quality on each keyword. The user can add extra keywords. The level is initially signalled by the original writer and can be finely tuned by the users. The quality is a composite ranking of effectiveness, efficiency and user-friendliness. Consequently all the OER discoverable through a search engine can be easily compared on these two dimensions. If one is too difficult (high level) then a lower level OER can be selected. If one is too complex and not of expected quality then it can be downgraded, and another OER selected. For social tagging to work, the OER must require each user to click on each of the two rankings after using the OER.

The institutional role (and cost) is focused on collecting, and adding initial tags to each OER. If the OER is well localised eg translated into a local language suitable for a local curriculum, it may then be tagged as high quality for those students. A user studying a foreign topic may wish to import directly a globalised OER, or one localised to a region abroad, and cross-border access will be needed. It is not true that all users in one location will want only localised OER, so resources at all levels of localisation should be discoverable. Institutions need not spend so much time and money to localise every OER and then to ring-fence these with password-protection and fee-paying access to recover costs.

There are aspects to be tagged in each of the five domains of learning ;- the cognitive, metacognitive, affective/social, environment, and management domain (Zhang & Kawachi, 2011). Tags are needed in each of these five domains - briefly cognitive-difficulty, metacognitive-importance, affective-like, environment-format, and management-time (see for example Kipp, 2007).

Tagging is best done manually. However particularly with long duration resources such as video where tags can be inserted into the content at different places as bookmarks, the user may get tired and not fully tag all the resource. A semi-automatic method has been devised and suggested by Ballan et al. (2010) that uses a memory of tags used previously for similar image frames. This semi-automatic method is recommended for user generated

video resources such as on Flickr, Facebook, YouTube, and Vimeo. Such tagging could mean that in future countries need not block these types of OER learning resources.

An interesting study was reported recently by Popescu & Grefenstette (2010) that found that tags were inherently characterised by the author gender. One generally believes teachers to be gender neutral, although tutors know that gender differences exist among students, ways of thinking and talking, task preference, and strategies chosen. However, it now seems that further studies are warranted to see how users differ by gender in their choices of tags. They found 66% of users preferred to use tag-words that were gender sensitive, and that half of these preferred to use tag words of their own gender. This finding naturally leads to wondering if tag-words are age-related, and whether tag-words are prior-knowledge-related.

## 2.2 METHODS :

### *Prior Learning Assessment and Recognition (PLAR)*

At the Open University of China, we have experimented with prior learning assessment and recognition (PLAR) methods, reported by Wang & Yin (2012). There are three types of PLAR ; - Type-1 for prospective students to be allowed to register for a course ; Type-2 for current students to avoid duplicating work-load to gain certification ; and Type-3 mapping occupational skills as portfolio-needs analysis. In each of these some online assessment can play a role, notably in Type-3 in open and distance education.

Type-1 is traditionally used by open universities offered to persons having valuable experience without certificates and wanting to enroll in higher education. In such case the course tutor can become overloaded in trying to help weaker students. Type-2 is used more recently by all kinds of university offered to enrolled students who want to avoid duplicating coursework which they have already covered during work-related or independent learning outside the university (usually before enrolling). Certifying any person who has not sat through the coursework can be problematic. These are labelled Type-1 and Type-2 following the descriptions given by Sir John Daniel in Mandell & Travers (2012). Type-3 is the expansion of our skills profiling that we used in Type-2 PLAR, which is extended along the lines of occupational profiling suggested by Dickerson, Wilson, Kik & Dhillon (2012), to include the academic knowledge and skills in all five domains of learning reported by us in Zhang & Kawachi (2011). The five domains include the subject knowledge and skills in the cognitive domain, the motivations in the affective domain, self-awareness in the metacognitive domain, interdependence in the environment domain, and study skills in the management domain. Current research is expounding on the learning skills to extend occupational profiling to specific course levels in higher education.

## 2.3 METHODS :

### *Academic and Skills Profiling*

Western governments are producing skills profiles for various occupations. Canada (2012) for example lists the skills together with the depth of complexity / knowledge in each, for 350 different occupations. They specifically indicate these can be used for recognition of foreign credentials [http://www.rhdcc-hrsdc.gc.ca/eng/workplaceskills/credential\\_recognition/index.shtml](http://www.rhdcc-hrsdc.gc.ca/eng/workplaceskills/credential_recognition/index.shtml) to improve the integration of internationally trained workers into the domestic Canadian workforce. They also indicate that such profiling can promote job mobility [http://www.rhdcc-hrsdc.gc.ca/eng/workplaceskills/labour\\_mobility/index.shtml](http://www.rhdcc-hrsdc.gc.ca/eng/workplaceskills/labour_mobility/index.shtml). The Canadian government

goes further to indicate the national occupational analyses NOA “can be used to develop curricula in training institutions” <http://www.red-seal.ca/w.2lc.4me@-eng.jsp?lang=eng> providing a sample examination and the essential skills profile for hundreds of vocational occupations. For example they list the skills and level of complexity in each, for one job as shown in FIGURE 2 below.

In the United States, the government offers a template for skills profiling at <http://www.acinet.org/skills> for self-completion in which the user can select skills and rate each of them to create a take-away profile. The completed profile then compares your self-ratings against those required for jobs you select [http://www.acinet.org/skills/PDF/COS\\_CareerTools\\_SkillsProf\\_Results.pdf](http://www.acinet.org/skills/PDF/COS_CareerTools_SkillsProf_Results.pdf). Although the comparison is very broad, the basic concept is sound. The technique could not only serve as a mechanism for reflective intrinsic motivation to improve, but also can indicate which jobs, courses, or level in a study course could be most suitable. The take-away profile can be re-accessed online and up-graded after further studying and skills acquisition.

In Britain, a wide variety of skilled people engage voluntary work, and an online self-assessment [http://www.workingforacharity.org.uk/skills\\_profile](http://www.workingforacharity.org.uk/skills_profile) helps with matching own skills and levels to the occupational requirements. Of particular concern may be the transfer of skills acquired during military service <https://www.ctp.org.uk> to civilian occupations.

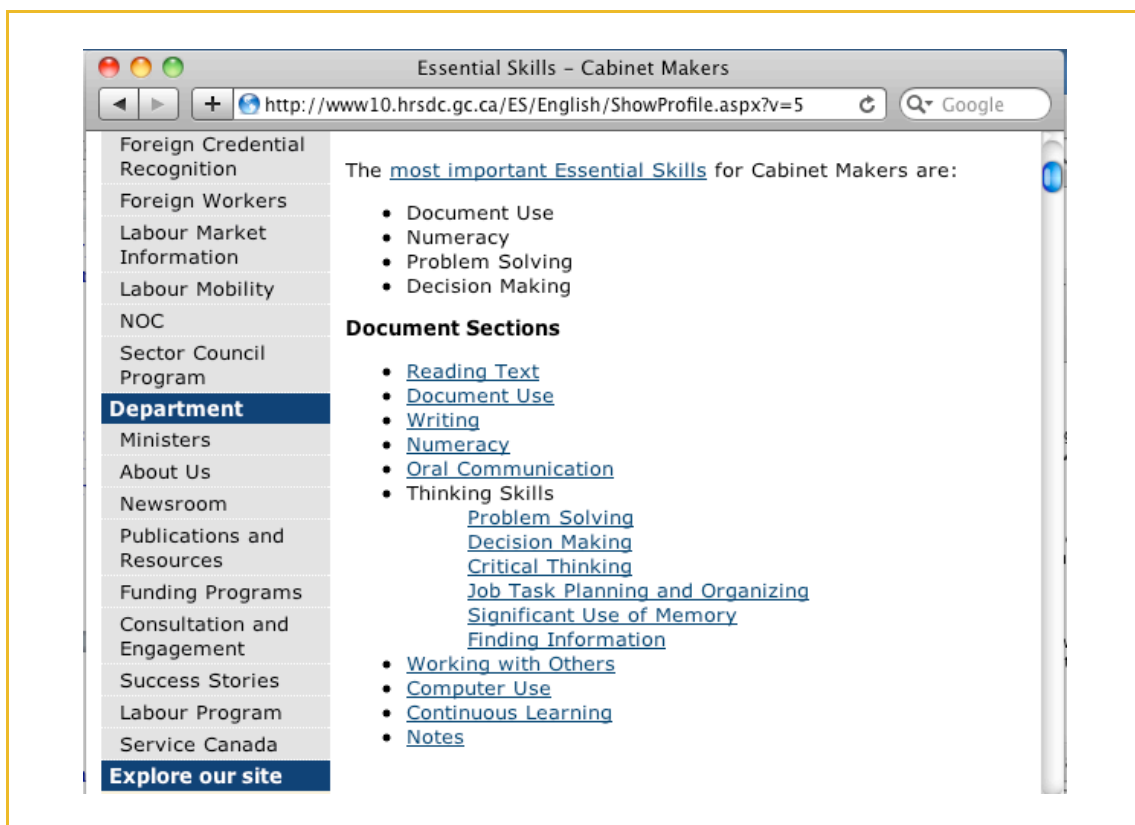


FIGURE 2 : Detailed Skills Profiling can facilitate Job Mobility

There are few Asian countries engaging skills profiling for job mobility. However, the technique lends itself ideally to creating academic profiles for use in e-Type-3 PLAR, which will improve cross-border student (and teacher) mobility and job mobility - all at zero or very low cost.

Occupational skills profiling can easily be extended to academic knowledge and skills profiling covering all the content knowledge and skills across the whole five domains of learning. A visual form of the academic profile can be drawn as a two-dimension plot of complexity level on each item. The academic knowledge and skills profile will then have institutionally pre-set complexity levels (y-axis in FIGURE 3 plots) on each item (x-axis in FIGURE 3 plots) associated with the start of a course (offering easy Type-1 PLAR) and at the end of a course (offering easy Type-2 PLAR). In practice, e-Type-3 PLAR profiling should be text-based to allow for latent semantic analysis (LSA) search for suitable OER. However in these early pilot stages the graphical form may be more user-friendly and intrinsically motivating.

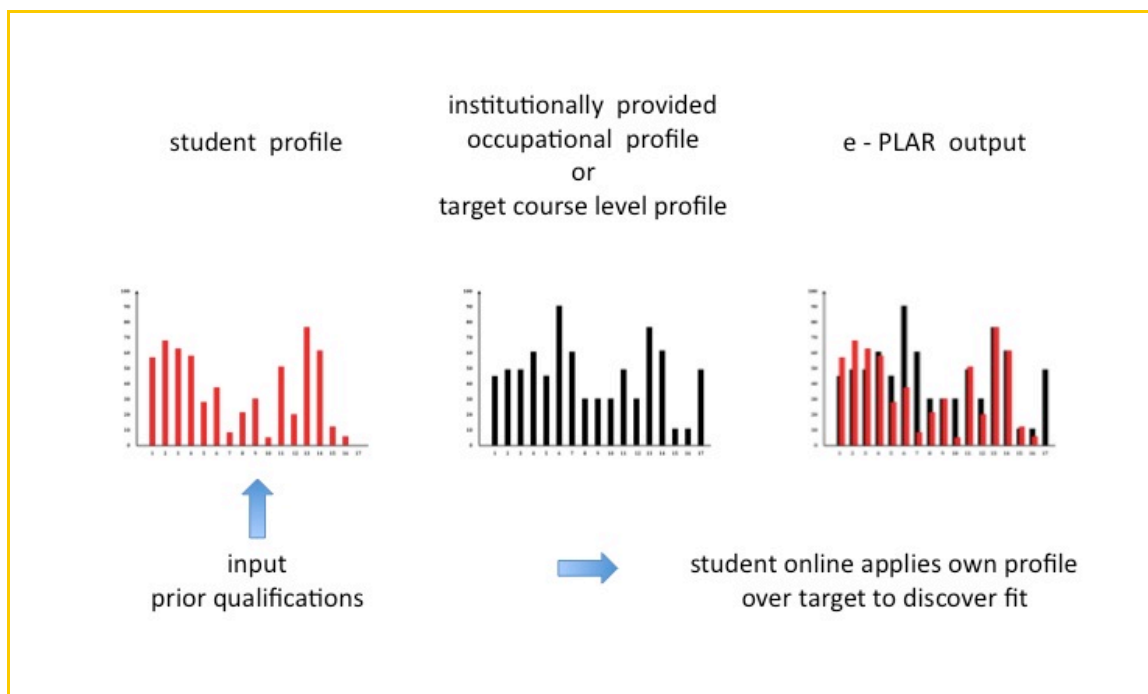


FIGURE 3 : The System Design for e-Type-3 PLAR

Type-3 PLAR can be organised so that students and the wider public can self-evaluate themselves. This can be achieved more easily these days through using online computer-based technologies, and the resulting e-Type-3 PLAR can be offered freely, taking up only the time of the student or person interested in discovering their skills profile status. The interested person can do this to prepare well in advance an own profile that meets the institutionally pre-set levels in relevant education and skills. As shown in FIGURE 3 above, the student can overlay electronically his or her own profile to discover the fit with the target profile. The student not only can discover how and where to improve own skills to construct a better fit (getting self-motivation to learn), but also can gain confidence sufficient to justify paying for the institution to then review his or her profile and award PLAR credits accordingly. The institution only gets involved when the student has achieved a good fit, and submitted this for administrative checking, before involving expensive academic experts in the PLAR process.



### 3. RESULTS :

#### *OER Use and Self-Assessment at No Cost*

Higher education institutions around the world are facing the need to decrease costs - the only alternative is to increase tuition fees or to increase student enrollment. Currently the institution costs for performing PLAR are high (involving senior expert professors for many hours per student assessment) and little if any is recovered from the student (Type-2 PLAR) or prospective student (Type-1 PLAR). Any system for PLAR particularly on a massive scale must be low or zero cost. The e-Type-3 PLAR designed and suggested here not only offers zero cost to the institution but also operates to initiate the intrinsic motivation to learn. The negative-feedback loop reported in detail by Kawachi (2006) (given an opportunity and believing in a reasonable chance for success) in which the student compares her current status with a target status induces the emotion to act, and initiates the intrinsic motivations that are the most highly desirable for academic achievement and lifelong learning.

Another use of academic profiling is for intervention to prevent a student from dropping out. The student's unique profile will naturally evolve over time as the student challenges learning over the years. Monitoring the development of the changes in the individual student's profile - particularly against a profile of an average student - can help to predict dropping out and the specific education and training that is responsible.

Additionally the student profile is easily transmissible for cross-recognition elsewhere. One clear use for the profiles achieved by students will naturally be by future employers or current employers looking to promote the student. In this sense the academic profiles are matched with occupational profiles to see the fittingness. The e-Type-3 PLAR can promote horizontal and vertical mobility in labour at no extra cost.

### 4. CONCLUSION and SUGGESTIONS :

#### *Tagging OER for Skills Profiling*

The overarching issue for OER users is discovering good quality material at the appropriate level. Students particularly can benefit from knowing which OER are best suited to the purpose at hand. The findings here suggest that OER tagging for academic skills profiling will offer reduced costs and improve open access to higher education. Students adopting e-Type-3 PLAR - and regularly comparing their current status with a target status - will become intrinsically motivated to study. The whole e-portfolio profile system promotes the use of OER in higher education and for lifelong learning at very low cost, and moreover facilitates job mobility and cross-recognition abroad.

### NOTES :

The powerpoint slides prepared for this presentation will be freely available from <http://www.open-ed.net/library/oer-profiling.ppt>



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