

The SkillClouds project: an overview

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Background

The ability of graduates to identify skills they have gained while at university is something that employers rate highly in selecting candidates (Yorke, 2006). However, these skills are not always transparent to students, but are hidden within the curriculum (Fraser et al, 2007). In addition, students' primary motivation for studying in HE is often to learn more about a particular subject or discipline, so the skills they are developing as part of their degree are often seen as secondary. The SkillClouds project attempts to address these issues through an exploration of the use of the tag cloud data visualisation technique that has become a distinctive feature of web 2.0 sites (Anderson, 2007). Our hypothesis is that representing transferable skills as a "skill cloud" will be an engaging way of visualising this information for students.

Tag clouds to SkillClouds

A 'tag' is a keyword or descriptive term that is associated with a particular resource, such as a photograph, web page or blog posting, and is used in order to facilitate the retrieval and dissemination of that resource. In the SkillClouds project¹, tag clouds will be used to represent the transferable skills that students have acquired. The skill cloud will be automatically generated for each student, based on the merging or mashing-up of institutionally generated data (from a skills database associated with courses students have taken) and student generated data.

Methods

We have adopted a user-centred design approach to inform development. This work is on-going but activities to date have included:

- User centred design sessions with several small groups of students
- Card sorting activity in which we presented students with a number of goal statements and asked them to group them in any way that made sense to them.
- Interviews with careers advisors to explore the issues about students engagement with skills
- One-to-one interviews with students in which they gave feedback on a prototype skills tag cloud

Sessions were either recorded and later transcribed or detailed notes made during the interviews. Some sessions were also recorded on video.

Results

Mapping the divide: why is it difficult think about skills?

Some of the students we interviewed said that the notion of skills was a 'turn-off' and that rather than talking about skills, it would be better to talk about the 'things you enjoy doing' or 'things you learn as part of your degree'. Those that could define their skills still found it difficult to bridge the gap between making sense of what they had done in the university context with what employers want. There was a general feeling from students we interviewed that skills were not foregrounded within the curriculum and that transferable skills were not mentioned on the courses they took.

"It's quite difficult. We don't say – 'right, we're learning this skill and this skill' we just say we're writing an essay or doing whatever course - it's not thought of in terms of skills."

Some students felt that the skills tended to be the same across all courses. There was some notion that course designers cut and pasted the skills from one course to another.

¹ See <http://www.sussex.ac.uk/skillclouds>

“They put it in our course documents, our skills or learning objectives or something, but I don’t think anyone ever reads that, because they all say the same thing.”

This perception was actually backed up by the views of one lecturer at the University:

“When filling out course forms, I tend to cut and paste the same generic skills from one form to another [...] lecturers are asked to provide a set of generic skills which don't "go anywhere" as it were: there is no requirement for the skills to be mapped onto the course assessments, nor do they appear on the course web page..”

In general, students we spoke to were not particularly keen to add their own activities and related skills (stakeholders in the institution had identified this as a high priority for the project) to their cloud. If we unpack this set of responses we can conclude that:

- students may ignore information about transferable skills because they feel it lacks authenticity and freshness and is not directly relevant for them
- staff may copy and paste information about transferable skills from one course to another because they see no evidence that it is utilised by the institution or students

From this work, we realised that the key issue to engaging students around skills was to find ways of presenting credible, authentic and personalised information about their skills.

Skills information requirements

To gain an insight into students’ information requirements on skills, we undertook an open card sorting exercise (see for example Morville et al 2006). Nine students were asked to group a number of statements (information goals) that related to skills and to rank the importance of the groups they created and the statements within each group. The information goal statements were derived from the interviews held with students as part of the initial user centred design sessions. An example of a statement is ‘*I’d like to see how I have used this skill in a course*’. The resulting data were analysed with cluster analysis using XSort². We were able to identify four distinct clusters that we felt could be framed around a user journey, where students move through stages of increasing complexity associated with skills (Table 1).

Table 1 Information that students at Sussex stated that they would like to help them understand, access and apply their skills

Stage 1 Understanding my skills	I’d like to know what a skill is	I’d like to know how skills are transferable			
Stage 2 Accessing my skills	I’d like to review my degree skills	I’d like information on where that skills was used	I would like further information about a skill I have	I’d like to see subject specific skills and well as transferable skills	
Stage 3 Getting to know my skills	I’d like to see a what the skill encompasses	I would like to see a description of the meaning of the skill	I’d like alternative suggestions of words for the skill	I’d like feedback from tutors for the assessment on which I attained that skill	I’d like my skills to be course specific
Stage 4 Applying my skills	I’d like an example showing how can I demonstrate this skill on a CV	Jobs which these skills apply to should be available	I’d like one line I can copy and paste on to a CV	I’d like to add skills I have gained externally	

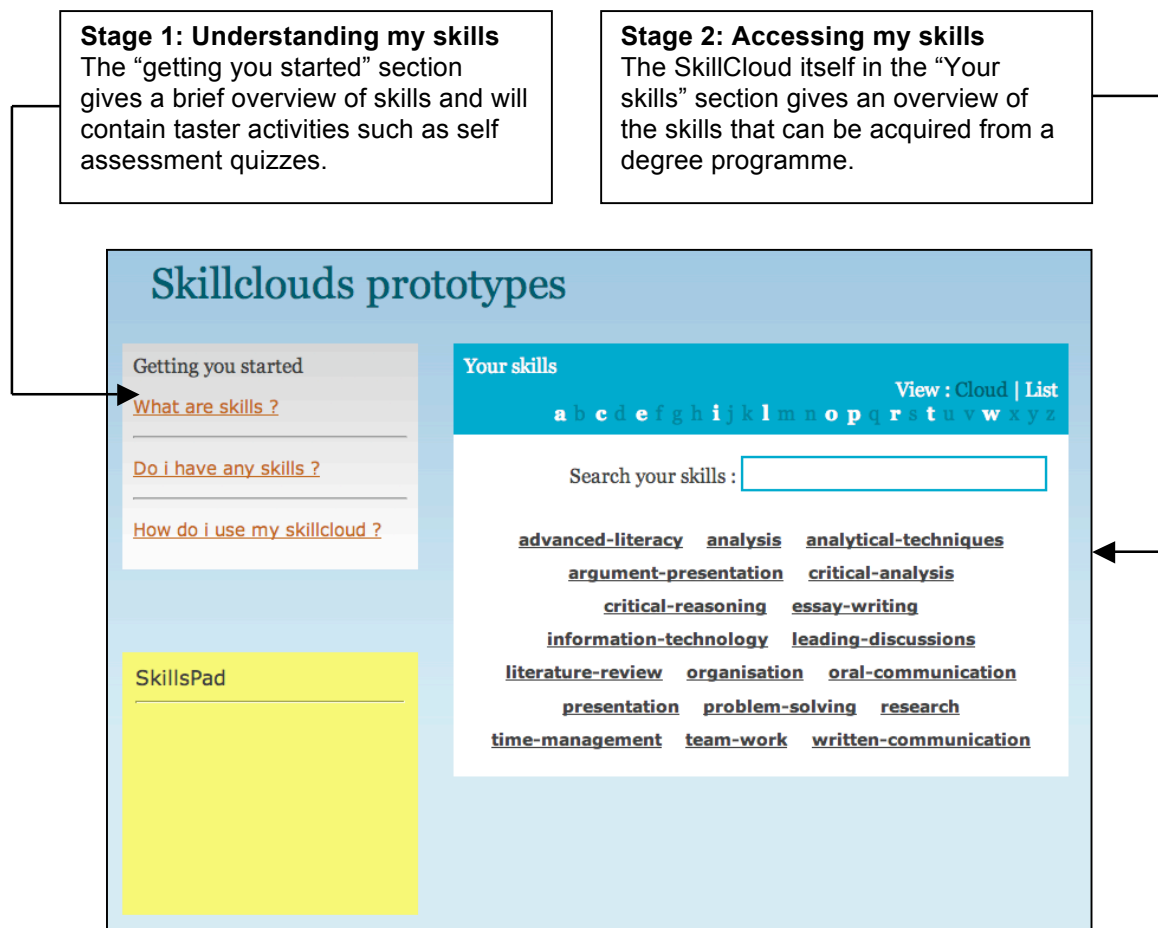
² <http://www.ipragma.com/xsort>

The most highly ranked information goals were the extremely basic ones in Stage 1, suggesting that students identified themselves as requiring fundamental grounding in understanding their skills. The information presented in the user journey introduced the notion of the need for scaffolding around the skills they have. The insight into students' user journey helped us to understand why students weren't keen to add skills of their own, as we realised that perhaps they were still looking to the institution to explain key basic concepts rather than feeling ready to create information for themselves. This user journey reminded us of the SCONUL (Society for College, National and University Libraries) model for Information Literacy (SCONUL, 2007).

We wanted to explore the extent to which these stages matched expectations of careers advisors at Sussex. It was almost a revelation to the advisors we interviewed that students were at this stage of their development – that they were asking for very basic information about skills. This revealed a potential gap between where a students are in their understanding of skills and where careers advisors consider they are.

The SkillClouds user interface

We are currently using the information we have presented above to guide and shape the design of a skills interface tool for students.



Stage 3: Getting to know my skills

Clicking on a particular skill tag brings up a window giving further information on that skill including a brief definition, a more in depth discussion of the skill and where the student would have encountered it, and courses and assessments that involved the skill including feedback from tutors where available

The screenshot shows a web interface for 'Your skills'. On the left, a sidebar contains links: 'Getting you started', 'What are skills?', 'Do i have any skills?', and 'How do i use my skillcloud?'. Below this is a yellow 'SkillsPad' area. The main content area is titled 'Your skills' and includes a search bar and a list of skill tags: 'advanced-literacy', 'analysis', 'analytical-techniques', 'argument-presentation', and 'critical-analysis'. The 'Research' skill is selected, opening a modal window. The modal window has a title bar with 'Research', 'Close', and 'Enlarge'. The content includes a definition: 'The ability to gather, sift and organise material independently and critically, and evaluate its significance'. It asks 'What does this skill encompass?' and provides a '<< Hide' button. The text explains that a degree programme should help develop a deep understanding and critical analysis. It also mentions that initially, this skill is developed through recommended texts and internet resources. An image of a hand writing in a notebook is shown at the bottom.

Stage 4: Applying my skills

Clicking on "how can I demonstrate this skill in a CV, interview or application" provides ideas for students about where on their degree course or in their extra-curricula activities they might have developed a skill, and a list of verbs that can be used to describe activities around the skill to promote creativity.

This screenshot shows the 'Research' skill page in a modal window. The title bar includes 'Research', 'Close', and 'Enlarge'. The definition is repeated: 'The ability to gather, sift and organise material independently and critically, and evaluate its significance'. It asks 'What does this skill encompass?' and provides a 'Show >>' button. Below, it asks 'Where did i practice this skill?' and 'How can i demonstrate this skill on my CV or in an interview?', both with 'Show >>' buttons. A '<< Hide' button is also present. The page then asks to 'Prove research skills by real examples of:' and lists several bullet points: 'literature projects and dissertations', 'use of libraries and the Internet', 'practicals, research projects and fieldwork', 'critical analysis and thesis construction', 'experimental design', and 'data analysis and statistical methods'. It then asks for 'Keywords for describing research on your CV or in interviews' and provides a '<< Hide' button. A list of key words is provided: 'Analysed, Clarified, Collected, Compared, Conducted Critiqued, Detected, Determined, Diagnosed, Evaluated, Examined, Experimented, Explored, Extracted, Formulated, Gathered, Inspected, Interviewed, Invented, Investigated, Located, Measured, Organised, Researched, Reviewed, Searched, Solved, Summarised, Surveyed, Systematised, Tested'. A 'Close' button is at the bottom.

Conclusions and next steps

The tool is being developed with iterative cycles of development and user testing. Initial comments from students have been positive. We will undertake formal testing during the Autumn term 2008 with groups of Science and Arts students, and we will use the results of this to make recommendations to the University about the resource implications and potential benefits of rolling out the SkillClouds system for all students.

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