ResearchGate

See discussions, stats, and author profiles for this publication at: https://www.researchgate.net/publication/331634268

Sakai: A Virtual Research Environment for Education

Article · August 2006

CITATIONS
3

READS
78

4 authors:

Patrick Carmichael
University of Bedfordshire
77 PUBLICATIONS **802** CITATIONS
SEE PROFILE

Richard Procter
De Montfort University
23 PUBLICATIONS **473** CITATIONS
SEE PROFILE

Vito Laterza
Universitetet i Agder
22 PUBLICATIONS **118** CITATIONS
SEE PROFILE

Sanna Rimpiläinen
University of Strathclyde
18 PUBLICATIONS **107** CITATIONS
SEE PROFILE

Some of the authors of this publication are also working on these related projects:

Interdisciplinary Special Issue "Digitalization and Sustainability" 2021 View project

Learning how to Learn View project

All content following this page was uploaded by Vito Laterza on 09 March 2019.

The user has requested enhancement of the downloaded file.

researchintelligence

News from the British Educational Research Association

August 2006 ISSUE 96

bera

British Educational Research Association

Sakai: A Virtual Research Environment for Education Research

Patrick Carmichael, **Richard Procter**,
Vito Laterza,
(Centre for Applied Research in Educational Technologies, University of Cambridge)

Sanna Rimpilainen (Applied Education Research Centre, University of Strathclyde)

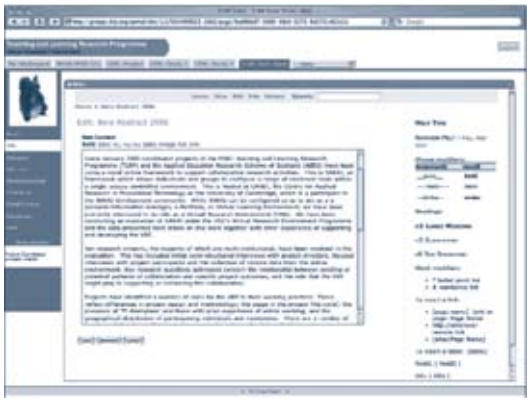
What is Sakai?

Electronic, and especially online, research tools are starting to have a significant impact upon research processes and the topics that can be addressed. The Teaching and Learning Research Programme has developed a Virtual Research Environment (VRE) using the Sakai Virtual Collaboration Environment (http://www.sakaiproject.org). As Wenger states in his review of 'community-building' technologies, "ideal systems emerge from combinations and convergence" (Wenger, 2001; 5). Sakai responds to the demand by offering a modular architecture in which various 'tools', services and resources (such as file stores, messaging and a 'wiki' for collaborative document writing) can be combined within a single, access-controlled framework. The system is web-based and users require no special software other than an up-to-date web browser.

The VRE is currently being tested by the BERA Physical Education and Sports Pedagogy SIG, and based on their experiences it may be made available to support other SIGs in their work. In this article we describe Sakai and reflect on some of the issues which have arisen from the first year of using this platform in our own work and to support other collaborative and distributed research projects in the UK. Sakai can be configured in many different ways. It can be used as a Virtual Learning Environment with schedule, syllabus, assignment and gradebook tools. Alternatively, it can be set up to work primarily as a personal information management (PIM) system for secure online access to a personal file store and other productivity tools. We have mainly been interested in its use as a Virtual Research Environment (VRE) for Education Research Projects within the Teaching and Learning Research Programme (TLRP) and the Applied Educational Research Scheme of Scotland (AERS). In this case, tools for collaboration within and between groups of researchers take precedence over other functions.

The key unit within Sakai is the 'worksite.' This is a group of tools and resources with a specific membership, similar in some ways to an email list or password protected website. When configured as a VRE, groups of researchers can select from a range of tools allowing project planning and management (Schedule) synchronous and asynchronous communication (Chat, Discussion, Email Archive, Announcements) document sharing and storage (File Store, Email archive) and collaborative writing (Wiki). Figure 1 shows a typical Sakai worksite. Individual users can be 'subscribed' to any number of worksites, each of which may have different sets of tools.

Figure 1: A Sakai Worksite with multiple tools; the wiki tool is currently in use



By providing a distinctive, common workspace for the team, the VRE can reinforce the group's identity and help create opportunities for collaborative work and communication between face-to-face meetings. The VRE also helps projects address the funders' requirements for projects to have a presence on the World Wide Web, a 'communication strategy' and a means of archiving project data and documentation.

Sakai in Action: Some Examples

We will describe how two research groups have configured and used the SAKAI platform to support their research activities. These are drawn from amongst the projects of the UK's ESRC Teaching and Learning Research Programme and the Applied Educational Research Scheme.

The first example is a research project which involves researchers from four geographically-distributed universities who are collecting survey data from a large population and additionally developing detailed case studies of a smaller number of respondents. For this project, it was important that researchers had opportunities to 'iterate' between quantitative and qualitative data in the analysis process, so a priority was the development of a structured archive of research data accessible from all the research sites. At the same time, it was essential that data remained confidential and that access to data was carefully monitored. What emerged was a configuration of the VRE in which only a limited set of the tools – those concerned with data storage and project news – were used to any great extent and membership was restricted to project researchers.

Our second example is a research project based at a single UK university and involved in a set of interrelated research activities. This project began using the VRE from the outset, and as a result much of the early activity involved project management, the development of research instruments, and the negotiation of access to research sites. As such, a wider range of VRE tools were used: document storage was important as research instruments were developed and literature reviewed; but at the same time synchronous and asynchronous communication was important, with 'chat' playing an important role both as a means of maintaining contact between project members and producing a record of decisions taken. This project was quick to see the potential of the VRE for engaging users with the work of the project, and set up multiple worksites for public access, the project 'advisory group' and each of the subgroups within the project.

These cases illustrate the ability of the VRE to be customised to reflect the needs and desires of specific research groups. As confidence, familiarity, and need for sophistication increase, tools can be added to the VRE to accommodate more complex patterns of use. It is important that the development of the VRE is led by the research group and not merely by technical considerations – this is what ensures that they get used and are useful.

Emerging Patterns

These communities use the VRE in ways designed to strengthen community identity, encourage discussion, and co-construct and share knowledge. When members come from many different backgrounds and have varying degrees of expertise in the area of enquiry, they bring new perspectives and have changing roles within the work of the group depending on the phase the project has reached. In our experience to date the work of the group has been governed both by the individual's expertise and by the capacity and ability (most importantly time constraints) to participate, which the VRE has often significantly increased.

Any successful deployment of an application as the VRE, then, needs to consider the organisational form of the group to be supported. While we have talked about 'communities' in the broad sense, most of the projects we currently support are in fact similar to what Swaak, Verwijs, & Mulder (2000) describe as 'task groups', with external funding and reporting responsibilities and (to a greater or lesser extent) an externally defined research agenda to address. As the VRE platform has become more established and users more confident, we have noted that there has been a tendency for groups to establish worksites for specified purposes rather than to provide an online 'home' for an entire project. Small groups set up worksites to analyse data, engage with specific users and to write documents, apparently without any expectation that these will continue to exist beyond the life of the activities concerned. These self-directed, temporary groupings seem to correspond more to the 'knotworks' described by Engeström, Engeström & Vähäaho (1999). Individuals and groups may need to work together to identify what organisational and network forms are best 'fit for purpose' for their intended research activities; deployment of the VRE may represent an opportunity to 'leverage' discussions to this end. A challenge at programme and institutional level then, as Swaak, Verwijs, & Mulder (2000) suggest, is how to embed knowledge and useful practices, introduced and developed within these task-oriented groups within a broader, long-lived and self-regulating community.

> "By providing a distinctive, common workspace for the team, the VRE can reinforce the group's identity and help create opportunities for collaborative work and communication between face-to-face meetings."

Concluding Remarks

As they gain experience and confidence, VRE users do not simply identify those tools and services which address specific and predefined project 'needs'. Increasingly, we also find them discussing the potential of new tools to qualitatively change their ways of working; their relationships with research participants; and role of the VRE in ensuring the sustainability of their research activities. Our longer-term concern is to explore how use of appropriate technologies can not only support established 'ways of thinking and practising', but how they can support different kinds of research activity and new relationships between researchers, research participants and 'users' of research.

References

Engeström, Y., Engeström, R. & Vähäaho, T. (1999) When the Center Does not Hold: the Importance of Knotworking. In Chaiklin, S. Hedegaard, M. & Jensen, U.J. (Eds.) Activity Theory and Social Practice: Cultural-Historical Approaches. Aarhus University Press, 345-374.

Swaak, J., Verwijs, C. & Mulder, I. (2000) *Task Groups and Communities Compared: Can results from task groups be transferred to communities?* Enschede: Telematica

Insitute. Online at: https://doc.telin.nl/dscgi/ds.py/Get/File-10580/Task_groups_and_communities_compared_Can_research_results_of_task_groups_be_transferred_to_communities_.doc (accessed 01-06-06)

Wenger, E. (1998) *Communities of Practice: Learning, Meaning and Identity* Cambridge: Cambridge University Press.

Wenger, E. (2001) 'Supporting Communities of Practice: a survey of community-oriented technologies' Etienne Wenger Research and Consulting. Online at: http://ewenger.com/tech/index.htm (accessed 01-03-06).

View publication stats