Open-source vs proprietary VLE: An exploratory study of staff perceptions

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This paper explores staff perceptions of two open-source Virtual learning environments (VLEs), Sakai 2.4.1 and Moodle 1.8, compared to Blackboard Vista 4. In general, staff felt that Sakai was simpler to use, but lacked some of the richer functionality available in Blackboard. A general dissatisfaction with both Sakai and Blackboard led to trialling of Moodle which was perceived more favourably than Blackboard.

Keywords: staff perceptions of open-source and proprietary virtual learning environments

Contextual background

It has been argued that open-source software can help in saving the ever-increasing licensing fee of any commercial provider such as Blackboard (Wheeler, 2004). Additionally, it opens up opportunities to further develop the VLE to meet specific needs of an institution or a group of institutions. However, sometimes they can become compromising with inadequate documentation, less functional features and numerous bugs, with commercial systems seen as a "safer" option (Young, 2004, p. B12). Further, using more than one VLE can have workload implications for staff, students and central support.

Blackboard Vista 4[i] is the centrally supported proprietary Virtual learning environment (VLE) used at Monash University. With worldwide exploration of the suitability of open-source VLEs such as Moodle, Sakai, Atutor, Bodington, Claroline, Course Manager and ILIAS (Özdamlı, 2007; Uzunboylu, Ozdamli, & Ozcinar, 2006), small scale pilots of Sakai 2.4.1 and Moodle 1.8 were trialled in the Faculty of Information Technology (FIT) of Monash University. This paper reports on perceptions of staff who were involved in these trials.

Key themes emerging from the interviews about Sakai and Blackboard

In May 2008, six staff from the Faculty of Information Technology (FIT) were interviewed who had used Sakai 2.4.1 and Blackboard. Two of them had used Sakai for an entire semester while the other four had used Sakai in lieu of Blackboard when the central system was unavailable for five days (Monash University upgraded from WebCT Vista 3 to Blackboard Vista 4 in November 2007). In general, staff felt that Sakai was simpler to use, but lacked some of the richer functionality available in Blackboard. Nonetheless, neither system was seen as fulfilling staff needs at a satisfactory level.

Interface and ease of use: Blackboard was seen as being "overly complicated for seemingly simple tasks". It was described as having a "highly compartmentalised" approach and a "terrible interface". On the other hand, Sakai was seen as being "full and clean"; "simpler"; and "typical of the interface that students would engage with"[ii]

Accessibility and interoperability: Sakai was regarded as being much more accessible as it was "less particular as to which browser it runs in" and "more portable, lightweight and responsive". The restriction to use a supported version of Java when using Blackboard was regarded as a limitation. Interoperability of data between systems and "multi platform accessibility" were considered important in any VLE.

Communication tools: Discussion forum of Blackboard was perceived better with an intuitive layout whereas Sakai was seen as taking a "sequential path" which forced the opening of threads. The chat feature of Sakai was regarded as being better as it allowed seamless integration of synchronous as well as asynchronous chats. Although many staff did not use Web 2.0 tools in their current teaching, they felt that these tools were desirable in a VLE. Whiteboard functionality (available in Blackboard) and Wikis (available in Sakai) were regarded as highly desirable in any VLE. One interviewee who used Wikis with his students felt that this was a serious limitation in Blackboard. The Blogs tool of Sakai was also regarded as being more powerful.

Distributing resources: Blackboard was preferred for allowing a complex network of folders, documents and activities to be layered in presentation within a module system (unavailable in Sakai). Sakai was preferred for allowing RSS feeds.

Assessment and feedback tools: Grade Book, quizzes, assignment and announcement tools were generally regarded as essential for assessment and feedback. The Grade Book in Blackboard was preferred even though it was "overly complicated", with low interoperability, and required "significant effort to use". Sakai did not offer any option for group assignment submission. Neither system allowed the recording of assignment extensions.

Using more than one VLE: Three interviewees noted that using more than one system could be confusing for students, waste staff time, increase training time and "compound the problem of ignorance". However, the other three interviewees felt that it would be good, or unethical not to, provide an alternative method of accessible learning.

Open Source versus Commercial: There was a general preference for a non-commercial VLE provided it was "comparable" in functionality and "not detrimental to productivity". Advantages of an open-source VLE that were noted included: cost factors, ability to add desirable features and a philosophical preference for open-source software.

Summary: The overall impression from the feedback of all 6 interviewees suggested that while they liked the simple interface of Sakai and its Web 2.0 tools, it did not have the functionality to compete at the same level as Blackboard. Some thought that with improved functionality, modality and architecture, Sakai could become highly competitive. Even though there was a general dissatisfaction with many aspects of Blackboard, it was seen as the preferred system. The comparison between the two systems can be summed up in the following quote: There was a "trade off between the simplicity of Sakai against a more powerful Blackboard". Also, a general preference was clearly indicated for an open-source VLE which was sufficiently advanced to be customised for meeting the specific needs of staff without compromising on productivity.

Some themes emerging from the survey about Moodle and Blackboard

A general dissatisfaction with both Sakai and Blackboard and an overall support for an open-source VLE led to trialling of Moodle in 17 FIT units in semester 1, 2008. All the 35 staff involved in these units were invited to respond to a web-based survey. This section reports on some of the key themes emerging from the survey responses of 25 staff who had used Moodle.

The first set of questions asked staff to rate the importance of a list of features within a VLE for their teaching. When staff were asked as to how important was it for a VLE to be open-source, 8% (2) regarded it as being *essential*, 24% (6) regarded as being *highly desirable*, 40% (10) felt it was *desirable*, 24% (6) said that it didn't matter and 4% (1) ticked on the *don't know* option. This is an interesting finding as these staff from FIT are well aware of the pros and cons of open-source versus proprietary software.

As illustrated in Figure 1, the following features were regarded as *essential or highly desirable* for teaching by most of the staff: compatibility with most web browsers (76%); portability across platforms such as Linux, Windows, Mac, etc. (76%); being able to link directly to a specific unit page rather than having to go through multiple screens to get to a specific page (72%); a functional back button (72%); and independence from any Java Applet (56%). Although the other features included in the list were not regarded as *essential or highly desirable* by a majority of respondents, they were still regarded as *essential, highly desirable or desirable* by a majority: sophisticated Gradebook (84%); integration with a single sign-on, i.e., my.monash portal (72%); tracking data (68%); and Wikis (60%).
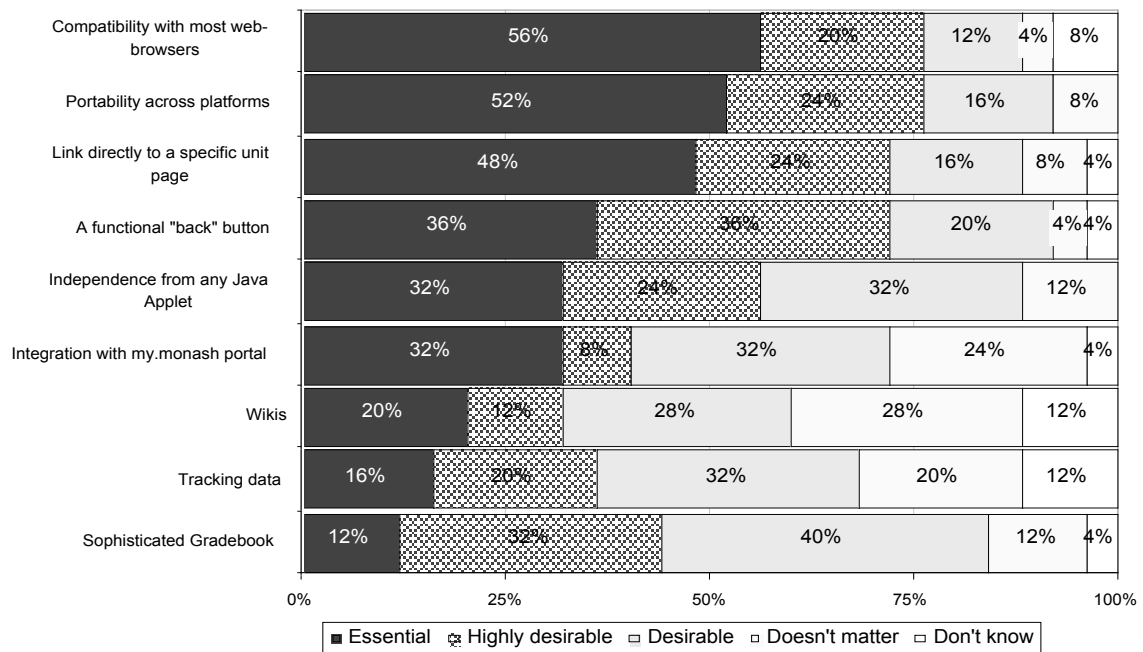
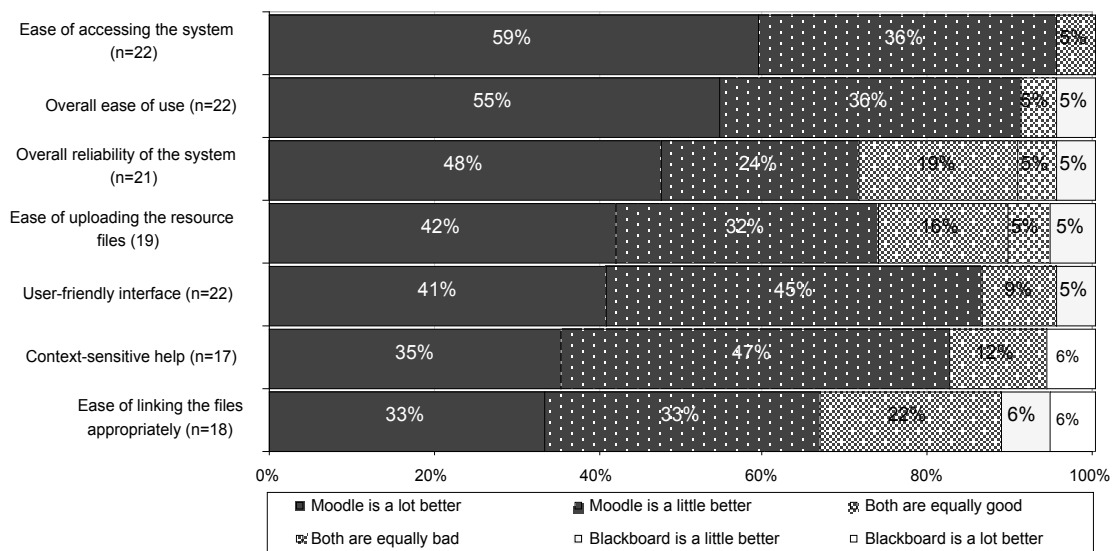**Figure 1: Rating the features of a VLE on the importance for your teaching**

Figure 2: Presenting learning materials and overall ease of use

In questions which compared different features of Moodle and Blackboard, "don't know" responses were excluded when computing the percentages as it was assumed that these respondents may not have had sufficient experience of using those features. As illustrated in Figure 2, most found Moodle easier to use when compared with Blackboard: ease of accessing the system (95%); overall ease of use (91%); user-friendly interface (86%); context-sensitive help (82%); and overall reliability of the system (72%). Similarly, staff also preferred Moodle for presenting learning materials: ease of uploading the resource files (74%); and ease of linking the files appropriately (66%).

As illustrated in Figure 3, only a small number of respondents could compare the tools for assessing and providing feedback to students. For managing students' marks, 40% respondents preferred Moodle while another 40% preferred Blackboard. On all other aspects, Moodle was preferred by a majority: creating a group project (100%); designing a quiz (88%); giving feedback to students (85%); creating an assignment (73%); opportunities for students to give peer feedback (63%); marking a group project (60%) and marking an assignment (59%).
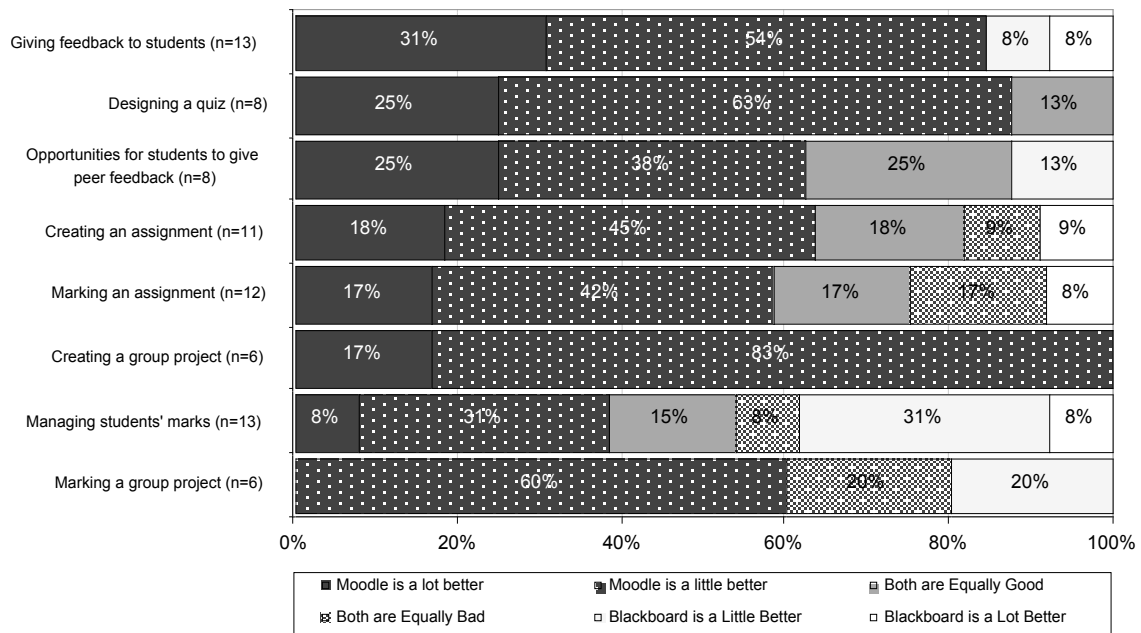
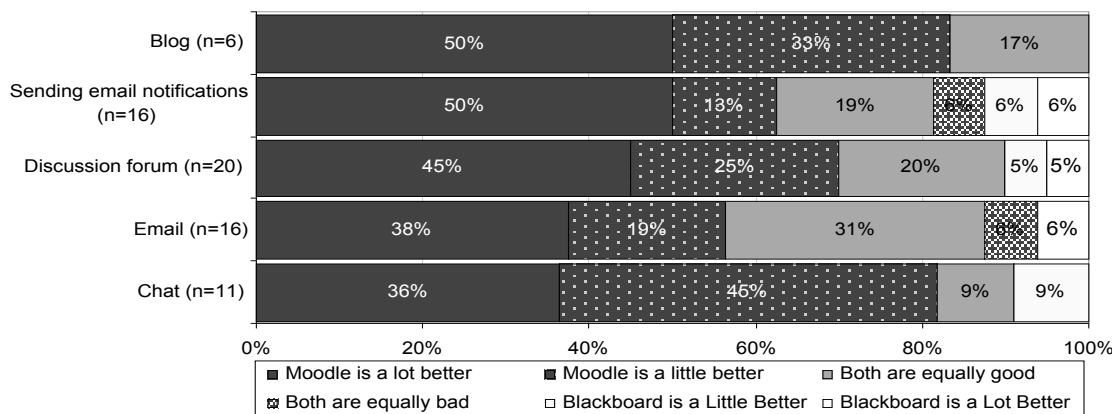**Figure 3: Assessment and feedback**

Figure 4: Communicating with students

Similarly, even though many respondents could not compare specific communication tools within the two systems, most of those who indicated their preference did so in favour of Moodle: Blog (83%); chat (81%); discussion forum (70%); sending email notifications (63%); and email (57%). In addition to the data reported here, several open-ended questions were also included in the survey which provided a clearer understanding of staff preferences.

Moving forward

As the majority of staff preferred an open-source VLE to a proprietary VLE, the University is seriously exploring the option of replacing the current proprietary VLE with an open-source VLE. Further evaluation of Sakai was discontinued as there was little interest among staff to participate in further trials of Sakai. In addition to the data about staff perceptions that is reported here, surveys were also conducted to understand how students compared Moodle and Blackboard. As data from staff and student surveys clearly indicated a preference for Moodle, more trials of Moodle are being conducted in Semester 2 to examine if this preference is evident even when Moodle is implemented on a wider scale within the faculty.

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i The authors recognise that Blackboard Learning System (CE & Vista) and Blackboard Academic Suite are distinct products offered by Blackboard Inc. Perceptions of staff in this study are based on their experiences with WebCT Vista 3 and/or Blackboard Vista 4. In this paper, Blackboard is used as an umbrella term for WebCT Vista 3 or Blackboard Vista 4.

ii Throughout this paper, double quotation marks have been used to highlight direct quotes from the interviewees comments.