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Best and worst dressed web courses: Strutting into the 21st century in comfort and style

Roger Boshier, Mamolete Mohapi, Glen Moulton, Adnan Qayyum, Leslie Sadownik and Mary Wilson

Web courses are constructed as the answer to fiscal crises evoked by neo-liberal restructuring. They are also touted as an anarchist exemplar of "de-schooling" as envisaged by Ivan Illich. The trouble is, some courses are vastly under-dressed and merely attempt to display a face-to-face course on-line. At the other extreme are those laced with links, animation and more than enough glitter and glam to make Liberace wince. In this study the authors employed a 43-item coding schedule to examine the accessibility, opportunities for interaction and attractiveness of 127 courses on the web. Interrelationships between the 43 variables and issues pertaining to accessibility, interaction and attractiveness were identified with the aid of SPSS. Exemplary web courses were then distinguished from mediocre web courses. In our view, Madonna exemplifies qualities that should be incorporated into web courses. After examining 127 sites the Madonna award for the 'best-dressed' site went to a University of Wisconsin History course. The 'worst-dressed' award went to a Social Foundations of Education course at a USA State University which exuded glitter but lacked substance. Reasons for these decisions are elaborated. (The word, course, used here, describes what some systems call a unit of study.)

Dress for success

There has been lately a large increase in the number of 'stand alone' courses available on the web. A stand alone course might include supplemental material but can be completed entirely without face-to-face interaction with an instructor. We positioned ourselves as customers for what were mostly 'stand alone' web courses. Our task was to distinguish the worst from the best dressed web courses, from the perspective of ordinary citizens.

Some web courses are an unmitigated bore and represent little more than lecture notes posted on the web. But there is a Hollywood quality to others because, in the desire to be noticed, some authors resort to zany graphics and high-tech glitz and glamour. Some courses echo the technowizardry of George Lucas (Star Wars). Others express dark foreboding, but not the artistic genius, of Frederico Fellini or Ingemar Bergman. One can easily imagine a grim course writer hacking away in a dank basement of a declining college or university. However, bland is not necessarily bad
and glitter is not always good. Moreover, what experts say about good web courses does not always conform to what learners or customers have to say.

The best courses were imaginative and attractive and resembled Madonna. Hence our award for the ‘best-dressed’ course is named for her. Although Hooks (1994) had profound misgivings about Madonna’s exhibitionism, embrace of gay iconography and assuming the mantle of a blonde Marilyn Monroe, her earlier readings coincide with our use of Madonna as a web course icon. It is Madonna’s ‘presence’, not her music, that is important in this context. For Hooks (1994), Madonna’s early image evoked a sense of possibility ... she was an adventurer, a risk-taker; daring in that she presented a complex, non-static, ever-changing subjectivity. She was intense, into pleasure, but disciplined ... Madonna was a symbol of unrepressed female creativity and power — sexy, seductive, serious and strong. She was the embodiment of radical risk-taking ... that had to be repressed ... for us to make it in the institutionalised world of the mainstream, in the academy. Her transgressive presence was a beacon, a guiding light’ (1994, p. 11).

We are not attracted to every aspect of Madonna, but she nevertheless sends important signals about what’s needed in web courses. For her, dressing for success can involve undressing or dressing down. Hence, later in the paper, we present the Madonna award for ‘best dressed’ web course as well as the Drab and Nameless award for ‘worst-dressed’ web course.

Appeal of the web

For neo-conservatives the web is an efficient and, best of all, relatively inexpensive way to reach vast armies of learners in many countries. For social democrats and others worried by the excesses of the new right, the anarchist nature of the web and its ability to help learners avoid the indignities and high costs of formal education looks like the dawning of a new age. With both the left and the right on side, there is an unbridled enthusiasm for putting courses on the web. In some places the enthusiasm is fuelled by research suggesting that, when learners are randomly assigned to on-line and face-to-face groups, the former do better than the latter (http://www.csun.edu/sociology/virexp.htm). Although such research should be viewed critically, its presence fuels the goldrush mentality in web-world. Hence, in universities, colleges, and other institutions, units are being staffed to expedite the building of web courses. Throughout 1997 the Distance Education Online Symposium (DEOS) listserv at the University of Pennsylvania, along with similar servers elsewhere in the world, contained almost daily announcements about ‘new and better’ courses.
coming on-line. On DEOS there was even an excruciating discussion about how to spell ‘on-line’ (or ‘online’) and in various journals, instructions for fledgling web authors (e.g. Shotsberger, 1996).

Customer viewpoint

The authors of this paper are all adult educators and committed to creating accessible and attractive courses that involve high levels and different kinds of interaction (Burnham & Walden 1997). We are not overly impressed by ‘empty vessel’ or ‘information transmittal’ modes of ‘teaching’ in face-to-face situations, web courses or anywhere else. Like Spencer (1997) we think web courses should be dialogical. Our preferences are broadly informed by Knowles’ (1980) ideas about andragogy, Botkin et al’s (1979) notion of innovative learning and a variety of other conceptions of active or participatory learning typically foregrounded in adult education.

Although all active as scholars, in this study we deliberately eschewed books and articles that claim to lay out the ‘right way’ to make web courses. Rather, in parlance that has become all too frequent in education, we positioned ourselves as customers, ordinary but interested folks, keen to take a course. Hence, like a canny shopper prowling a large supermarket, we looked for special features, natty graphics, evidence of imaginative web architecture and, most importantly, soundness and integrity. Above all, would we recommend this course to our friends?

Having regard to the foregoing, the purposes of this study were to:

1. Raise issues pertaining to the architecture of web courses designed for adults and written in English.
2. Identify and distinguish mediocre courses from exemplary courses on the web.

Method

The purposes were accomplished by examining 127 courses on the web. Our focus was on courses, not reference materials or compilations of other ‘resources’.

Variables and coding:

All the work – data gathering, coding, analysis – was done by the authors. Each researcher was equipped with a 43-variable coding schedule – involving a mix of variables amenable to parametric and non-parametric analysis – as follows:
A. **Site Background:** Id number, Type of Institutional Sponsor (e.g. University, Government Agency), Country of Origin, Level of the Course, Subject Matter (e.g. Mathematics, Social Sciences), Whether a Stand Alone course.

B. **Accessibility:** Cost, Ease of Connection, Crashed Connections Per Session, First Impressions, Transmittal/Constructed Mode of Learning.

C. **Web Architecture:** Twelve dichotomous variables (no/yes) concerning presence of Course Notes, Offline Materials, Still Graphics, Animation, Quicktime Movie, Real Audio, Threaded Discussions, Chatroom (or E-mail), Student Work, Relevant Links, Personal Information Form Required, any part of the site Under Construction.

D. **Face Validity of the Site:** Owners 'Up-Front' About Affiliation, Instructor Identity Revealed, Photograph of the Instructor, Instructor Credibility, Soundness/Integrity of the Course.

E. **Attractiveness:** Links to Outside Sites, Alluringness of Links, Level of Enjoyment, Evidence of Verve/Imagination, User Friendliness, Recommend to Others, Impact of 'Glitter'.

**Data collection:**

Sites were discovered by using Infoseek, Alta Vista and Yahoo search engines or their equivalents (e.g. Wombat or Waltzing Matilda in Australia). All data was collected by the authors who variously worked from their homes in Vancouver, Canada, or in a cramped computer laboratory at the University of BC. All accessed the web with Netscape 2.0 or 3.0 and all worked with the coding schedule described above. Nearly all data was collected at various times of the day or night between February 15 and April 10, 1997. A few sites were visited in May 1997. Because of the large number of false leads – sites that initially appeared to contain a course but failed to do so – and because many courses had to be accessed by working down menus, it was no easy task to secure all the needed data. Sometimes an address that worked on Monday failed to deliver a course on Wednesday.

The authors met continuously throughout the data collection phase. After discussing the merits or demerits of the sites, data on the coding schedules was entered into SPSS-7 for analysis. As well as securing numeric codes, each author made marginal notes to 'flag' any particularly exemplary or awful sites. Later, this information would be checked by the other authors and used as part of a process to identify the best- and worst-dressed web courses.
Test retest reliability:

After 127 had been examined, anomalous data corrected and outliers identified, each site was given an identifying number (from 001 to 127). A table of random numbers was then used to select 20 sites that would be coded a second time. These 'retest' searches were conducted without referring to the original coding schedule. Six to seven weeks separated the first from subsequent searches.

Authors were agitated when a site that had previously been reached without problems could not be contacted. In several cases the URL secured earlier wouldn't work a second time. Efforts were then made to reach the course through the 'back door' - such as the sponsor's home page. Because fourteen URLs would not work, additional sites were selected by returning to the Table of Random Numbers. Eventually 20 sites were contacted a second time.

Cross-tabulations were calculated for some of the key nominal variables (e.g. Country of Origin/Test, Country of Origin/Retest) and found to be satisfactory. Of the 15 remaining ordinal or equal-interval variables, 'Number of Crashes' was eliminated because these were felt to be the responsibility of Netscape or the UBC server and hence not to be 'blamed' on the course owner. This left 14 variables amenable to parametric analysis. Pearson product-moment correlations were calculated and subjected to two-tailed tests of significance. Where data was missing, SPSS was instructed to perform pairwise deletion. In some cases this reduced the n to a point where it was not wise to proceed. Hence, only correlations involving a n of at least 11 were included.

On most variables we had complete data and 20 cases were analysed. Test retest correlations ranged from a low of $r=.21$ (Attractiveness of the Opening Page) to a high of $r=.79$ (Cost). The mean test retest correlation was $r=.50$ ($p<.02$). Although this mean was satisfactory, we were aware that, after looking at 127 sites, our perspective had changed. Hence, what had appeared credible seven weeks earlier was now viewed with some suspicion.

Although an overall test retest mean of $r=.50$ ($p<.02$) was satisfactory it was lower than expected and, after rumination, it dawned on us that, in the life of a web course, seven weeks is a long time. When we returned to some courses we found they had changed. In some cases, what had previously been free, now cost money. In others, what used to be an opening page from hell now exuded sizzle and was bursting with animation. As a result, our ratings were less stable over time than we would have desired. Nevertheless there was sufficient consistency to proceed with the substantive analysis.
Results

The test retest reliability data suggested that web courses are constantly evolving. Hence, all of the following analysis was based just on the ‘test’ data for 127 courses which, as noted above, were collected between February 15 and April 10, 1997 with a few in May.

Because our sampling plan was initially driven by 1997 postings on DEOS and to a certain extent by the proclivities and interests of the authors, we cannot claim these were the absolute best and worst sites in the entire world. If, dear reader, we missed your impressive course on bird watching or crocodile husbandry, it is because we didn’t know about it or our search engine didn’t have the juice to reach your server. Hence, our process resembled the film industry Oscars – which do not necessarily go to the best film but to the one that comes to critical attention.

Table 1 shows the countries in which the 127 courses originated, along with an index of the extent to which course owners were ‘upfront’ about their identity and affiliation. Courses that involved a high level of ‘concealment’ (concerning the course authors and owners) were coded 0; others were coded 1 for a moderate level of concealment and so on up to 4 for a ‘totally revealed’ course.

Despite hyperbole about web courses in the popular press, trade magazines and at academic conferences, it was quite difficult for us to find sites outside North America. In the end 82 (65 per cent) were located in the USA, thirteen in Canada, twelve in Australia/New Zealand, and so on. Authors of the Canadian and US courses were significantly less likely to conceal their location or affiliation than were those in the UK, other European, Asian, or Latin American countries (F=3.10, p<.007). However, there were exceptions. For example, a certain religious college in the US seems to have a generic ‘Professor Blank’ who, although having degrees in accountancy, teaches history and several other subjects. It is not clear if Blank was a ‘real’ person or simulacrum. For the authors, this ‘Professor Blank’ became a kind of leit motif that symbolised a regrettable side of many so-called web courses. Indeed, of the 90 courses that contained information about the instructor, we thought 10 instructors had ‘no credibility’ at all, three were deemed ‘dubious’ (with little match between their qualifications and what was taught) and 11 were coded ‘mildly dubious’. In 17 cases there was ‘quite a bit of match,’ in 49 there was considerable match between the course content and the instructor qualifications. We were particularly irate about history or other courses that eventually turned into vehicles for promulgating (often right-wing and bigoted) religious beliefs.
TABLE 1
Level of disclosure in 127 web courses from different countries

<table>
<thead>
<tr>
<th>Country</th>
<th>n</th>
<th>%</th>
<th>X</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>82</td>
<td>64.5</td>
<td>3.11</td>
<td>1.31</td>
</tr>
<tr>
<td>Canada</td>
<td>13</td>
<td>10.2</td>
<td>3.77</td>
<td>.44</td>
</tr>
<tr>
<td>Australia/NZ</td>
<td>12</td>
<td>9.4</td>
<td>2.92</td>
<td>1.51</td>
</tr>
<tr>
<td>UK</td>
<td>14</td>
<td>11.0</td>
<td>1.86</td>
<td>1.41</td>
</tr>
<tr>
<td>Other European Countries</td>
<td>2</td>
<td>1.6</td>
<td>4.00</td>
<td>.00</td>
</tr>
<tr>
<td>Asia</td>
<td>3</td>
<td>2.4</td>
<td>2.33</td>
<td>1.53</td>
</tr>
<tr>
<td>Latin America</td>
<td>1</td>
<td>0.8</td>
<td>3.00</td>
<td>.00</td>
</tr>
<tr>
<td>TOTAL</td>
<td>127</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* The higher the mean score, the greater the disclosure (F = 3.10, p<.007).

We could not identify the ‘sponsor’ of one site but, of the others, 100 (or 78.7 per cent) were owned by universities, eight came from public colleges, five from private colleges, four from a private business, two from a non-profit group or NGO. Fifteen courses concerned computers and computing, four were on mathematics, 14 on Natural Sciences, 12 on Applied Sciences, 18 on Social Sciences, 20 on Education, 29 in the Humanities. There were 15 Business Courses.

Of the 127 courses, 14 were non-credit, one was a high school course offered to adults, 12 were college or tertiary level courses, 69 were for first to fourth year university students and 28 were university degree graduate courses.

**Attractiveness and Face Validity**

Of the 127 courses 19 of them were deemed to be ‘not enjoyable’ to walk through, 42 were coded as ‘mildly enjoyable’, 43 as ‘moderately enjoyable,’ 19 as ‘very enjoyable’ and four as a ‘complete blast’.

Nine variables were broadly concerned with the extent to which the course made sense and was attractive to potential learners. There was considerable intercorrelation between variables in this part of the study. In other words, sites with alluring links also had an attractive opening page (r=.51, p<.001), were more inclined to adopt a constructed (rather than a transmittal) mode of learning (r=.38, p<.001), manifested considerable verve/imagination (r=.60, p<.001) and had numerous other desirable characteristics.

These intercorrelations were examined in more detail by performing a factor analysis with oblique rotation. This yielded the three factor
solution shown in table 2. The 12 variables entered into this analysis broke into three factors which, after varimax (orthogonal) rotation, accounted for 64.6 percent of the variance. There were no ‘impure’ items that loaded above .40 on more than one factor.

**TABLE 2**
Factor structure and loadings for variables concerned with the attractiveness and face validity of 127 web courses

<table>
<thead>
<tr>
<th>Variables</th>
<th>I Learner Friendliness</th>
<th>II Navigational Clarity</th>
<th>III Instructor Disclosure and Credibility</th>
<th>Communalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verve/Imagination</td>
<td>.89</td>
<td>-</td>
<td>-</td>
<td>.82</td>
</tr>
<tr>
<td>Attractiveness</td>
<td>.87</td>
<td>-</td>
<td>-</td>
<td>.78</td>
</tr>
<tr>
<td>Enjoyment</td>
<td>.83</td>
<td>-</td>
<td>-</td>
<td>.77</td>
</tr>
<tr>
<td>Initial Curiosity</td>
<td>.72</td>
<td>-</td>
<td>-</td>
<td>.68</td>
</tr>
<tr>
<td>Alluring Links</td>
<td>.60</td>
<td>-</td>
<td>-</td>
<td>.47</td>
</tr>
<tr>
<td>Integrity</td>
<td>-</td>
<td>.70</td>
<td>-</td>
<td>.60</td>
</tr>
<tr>
<td>Disclosure</td>
<td>-</td>
<td>.69</td>
<td>-</td>
<td>.67</td>
</tr>
<tr>
<td>Concealment</td>
<td>-</td>
<td>.65</td>
<td>-</td>
<td>.68</td>
</tr>
<tr>
<td>Clarity of Instructions</td>
<td>-</td>
<td>.58</td>
<td>-</td>
<td>.66</td>
</tr>
<tr>
<td>Instructor Identity</td>
<td>-</td>
<td>-</td>
<td>.79</td>
<td>.66</td>
</tr>
<tr>
<td>Credibility</td>
<td>-</td>
<td>-</td>
<td>.70</td>
<td>.65</td>
</tr>
<tr>
<td>Instructor Photo</td>
<td>-</td>
<td>-</td>
<td>.67</td>
<td>.47</td>
</tr>
<tr>
<td>Variance explained</td>
<td>39.7%</td>
<td>15.6%</td>
<td>9.4%</td>
<td></td>
</tr>
<tr>
<td>Cumulative variance</td>
<td>39.7%</td>
<td>55.3%</td>
<td>64.7%</td>
<td></td>
</tr>
</tbody>
</table>

Factor I, labeled ‘Learner Friendliness’ was composed of five variables whose loadings after rotation ranged from a high of .89 to a low of .60. A high score on this factor would identify courses that manifested verve and imagination, had an attractive opening page, was fun or enjoyable to ‘walk through’, emitted an alluring first impression, and had links that invite exploration. This factor explained 39.7 percent of the variance.

Factor II, labeled ‘Navigational Clarity’ was composed of four items whose loadings ranged from a high of .70 to a low of .58. This factor was concerned with the extent to which courses were easy to navigate and manifested integrity. This factor explained an additional 15.6 per cent of the variance. The emphasis in this factor was on the course.
Factor III, ‘Instructor Disclosure and Credibility’ was composed of three items and concerned with the extent to which those responsible for creating or teaching the course had disclosed the extent to which their credentials and background were congruent with the course content. The emphasis in this factor was on the instructor.

It was beyond the purview of this study to calculate factor scores and show the extent to which they varied according to country of origin or other marker variables. Rather, the purpose was to demonstrate that the quality or attractiveness of web course is a composite of differentiated phenomena. This analysis suggests that, as well as the need to make web courses enjoyable and easy to navigate, there is a need to establish face validity or instructor credibility.

Web architecture

These were the key elements of the 127 sites examined and will serve as a benchmark for similar studies in the future. Sixty-eight per cent of courses required the student to use off-line materials (such as a textbook, laboratory equipment or a musical instrument); 60 per cent contained course notes or readings (often in difficult-to-read fonts with inappropriate wallpaper); 56 per cent used ‘still graphics’, 14 per cent contained animation, eight per cent had a quicktime movie, 20 per cent had a soundtrack or ‘real audio’, 33 per cent of those for whom we had data, provided for threaded-discussions and 48 per cent had a student ‘chatroom’ or facility for E-mail. In 35 per cent the author had provided a space to post student work; most importantly, in 74 per cent of courses there were hotlinks to other relevant sites. In several cases, such as in geology or history courses, the links were of a very high quality and exceedingly appropriate. For example, North American geology courses (e.g. utexas.edu/cons/geo/courses/303/new3.html) linked to the US geological survey have apt links. Of the 127 courses surveyed 26 per cent had parts that were under construction. In many cases institutional homepages appeared to promise an on-line course but delivered the researcher into a hole marked by an ‘under construction’ sign.

Face validity

The authors positioned themselves as customers for the 127 web courses. However, now the question is – which courses would we recommend to our friends?

Item 42 on the coding schedule contained a six-point Likert scale where 0 indicated the author would ‘definitely not’ recommend this course to ‘friends interested in this subject’. The other codes were 1 ‘Probably Not’ recommend; 2 ‘Possible, but not likely’; 3 ‘Possible and quite likely to
recommend;’ 4 ‘Yes, quite probably recommend;’ 5 ‘Definitely would recommend this course’.

In order to ascertain which variables, working in combination, were the most potent predictors of a recommendation to friends a stepwise linear regression equation was calculated. ‘Recommend to friends’ was the dependent variable and all other ordinal or interval variables were entered. However, only three independent variables were needed to explain 90 per cent of the variance. Table 2 shows the three variables that entered the equation, some descriptive statistics, their beta weights (which indicated their separate or partial contribution to the equation) and the r-squares which show the variance explained.

TABLE 3
Variables that best predict likelihood of recommending a web course to one’s friends

<table>
<thead>
<tr>
<th>Variable</th>
<th>X</th>
<th>Standardised Beta Coefficients</th>
<th>R</th>
<th>R-Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Integrity</td>
<td>3.20</td>
<td>.54</td>
<td>.928</td>
<td>.865</td>
</tr>
<tr>
<td>Enjoyment (‘walking through’)</td>
<td>1.58</td>
<td>.27</td>
<td>.950</td>
<td>.902</td>
</tr>
<tr>
<td>Verve/Imagination</td>
<td>1.99</td>
<td>.17</td>
<td>.952</td>
<td>.905</td>
</tr>
</tbody>
</table>

The first variable to enter the equation was course integrity which was measured with a 5-point Likert scale ranging from 0, indicating ‘considerable doubt’ about the soundness or integrity of the course, up to 4 meaning ‘no doubts, looks good’. Course integrity was a broad-based composite of ‘alluring links’ (r =.37, p<.001 – two-tailed test), quality of the opening page (r =.27, p<.002), not being under construction (r =-.28, p<.001), having links (r =.27, p<.002), requiring off-line materials (r =.18, p<.03), having a photo of the instructor (r =.24, p<.005), threaded discussions (r =.34, p<.001), a more constructed (rather than transmittal) mode of learning (r =.34, p<.001), verve (r =.32, p<.001), instructor credibility (r =.45, p<.001) and an ‘upfront’ approach to disclosing the identity of the authors and their affiliations (r =.50, p<.001).

Note that 86 per cent of the variance in ‘recommend to friends’ stemmed from the perceived integrity of the course. The second variable to enter the equation was the enjoyment derived from ‘walking through’ the course. This was measured on a five-point Likert scale. This variable explained an additional four per cent of the variance in ‘recommend to friends’. The amount of verve or ‘imagination entered the equation next but, by this stage, little additional variance was being explained so no further variables were added.
Strutting into the future

The authors understand the feeling of being left behind and the anxiety to get something up and running on the web. A characteristic cry in cash-strapped institutions is that ‘everyone’s doing it ... so why aren’t we?’. The problem is that the departmental web enthusiast may be somewhat perplexed about how to make an imaginative web course, particularly one nested in a dynamic ideology of adult education (instead of a static conception of instructional design). With this person in mind, our purpose in the remainder of this paper is to raise issues.

Throughout this study we frequently asked – why is this on the web? There were sites with content that could better have been delivered as photocopies. For instance, a case-study-based turf grass management course offered face-to-face at a US university (http://www.cas.psu.edu/docs/casdept/turf/turf436/turf436.html) provided materials on the web as a supplement. The photographs of various turf-grass management cases were attractive and the one-page descriptions interesting. Students were expected to work in groups to solve problems. However, there was no particular reason for this information to be on the web. No links to other sites were included, and there was no potential for students to provide feedback. In other cases the course was loaded with glitter but lacked substance (e.g. http://coe.ilstu.edu.rpriegle/eaf228/welcome1.html). The situation resembles the early days of E-mail with its ‘gee whiz ... isn’t it great’ messages that celebrated the process but often contained little of substance.

A Model

Web courses should be accessible and involve high levels of interaction (between learners and resources, learners and teachers and each other). As well, they should be attractive. There are guidebooks or articles on how to build web courses (e.g. Baron 1996; Patrick 1996; Peraya 1995). But, as noted earlier, we positioned ourselves not as experts but as customers for web courses.

In figure 1 we have dichotomised each variable whereas, in reality, they are arrayed along a continuum (and in our coding schedule, usually represented by a seven or eight point Likert scale). It is the combination of the elements displayed in figure 1 that helped identify the recipients of the Madonna and the Drab and Nameless awards.

There are many web courses positioned on the lower front surface of figure 1 (e.g. http://www.missouri.edu/~billp/kn/). These involve minimal or no interaction between learners, between the learners and the instructor or between the learners and resources outside the web site. There are also inaccessible – that is, difficult to navigate and are muddled in their
conception. Worst of all, they look like hell (http://www.wildstar.net/~pule/hell/hell.htm) – often with tiny typescript, in difficult-to-read italics on inappropriate wallpaper, page after page of lecture notes which would be better presented in printed form.

FIGURE 1
Possible interactions between three variables that distinguish the 'best' from the 'worst' web courses

In contrast, courses on the back right corner of the model are very attractive, involve high levels of interaction of all kinds and are accessible (i.e. easy to navigate). Good examples of courses in this position are the University of Wisconsin history course (http://hum.lss.wisc.edu/hist102/) or Bill Arnett’s course on nine planets of the solar system (http://
We now explore issues pertaining to the three components of this model—namely Accessibility, Interaction, Attractiveness.

A. Accessibility

It is beyond the scope of this paper to delve into the rapidly accelerating gap between those who have and those who do not have the means to secure a computer, modem and access to the web. In this context, ‘accessibility’ refers to the ease or difficulty of navigating within web courses.

We identified courses through search engines and via references to courses posted on Listerves. We expected it would take about one hour to collect data for each site. However, even with a sophisticated high-speed fibre optic hookup to the mainframe computer at a major Canadian university each researcher experienced a bewildering number of frustrations. Although the mean number of crashes per session was quite low there was a continuing stream of frustrations—such as the address that worked yesterday not working today and sites that appeared to promise a course being ‘under construction’.

Once a course was identified and reached we attempted to enter into and sample the site. This was not possible much of the time. A large number of sites were excluded because our way was blocked. Many sites required passwords—granted after registration and fee payment. Regrettably, our own university—the University of British Columbia—generally requires fees before permitting access.

A user-friendly site needs a sound and legible blueprint. There should be an identifiable floorplan. Since finding your way through the web to a course may be an ordeal in itself, once the learner finds the promised land who wants to get lost again? Web sites need to have navigational tools for the ‘visitor’. Internal links to main pages, previous and or upcoming materials help users stay on track. Exploring links to external information sources may end in frustration if the ‘architect’ has not provided quick links back to the course. Instructors can go further by providing ‘guides’ to evaluate the usefulness of links. It is better to have short pages with few links than long pages with many links.

Every ‘building’ needs familiar infrastructure which helps orient the learner. Recognisable course elements might include course and audience descriptions, an outline of the course content, course and unit objectives, an assessment method, a viable system for tutor/student communication and a way for students to evaluate the course.
Student instructions, assessment methods and student evaluation methods were only superficially incorporated into most of the 127 courses. One assumes that for most of the courses surveyed, the students were receiving these components (assignments, evaluation forms) through face-to-face or mail delivery.

Concerning accessibility, on-line course developers should consider these questions:

- Have you given the learner a usable floorplan or map of the course?
- When a learner uses outside links are there signposts to expedite their return?
- Can you frame the most crucial links so they are in your course?
- To what extent have you provided for learners who don’t like the linearity or order within your course?
- Have you recently checked to see that your links are still working?
- Can learners easily take a look at or sample each bit of the course?
- How do you intend to test the architecture of this course before inviting in the visitors (learners)?
- How do you intend to maintain this course and steadily improve the navigation tools?

B. Interaction

While the web holds considerable potential for learner interaction, few courses use much of its interactive capability. Most courses surveyed offer no possibility of collaborative learning. The chief difficulty was conceptual, not technological. It appears that many, if not most courses, were designed by ‘instructional designers’ obsessed with objectives, assessment of students and arranging things in a hierarchical order. The customer is left with a strong sense that the course writer is ‘in charge’, asymmetrical and unequal power relations are not viewed as a problem and the author has uncritically and, in many cases, unwittingly and naively endorsed a transmission model of learning.

In McLuhan’s global village it is still the leaders (universities, businesses) and not the villagers (the learners, the ordinary folks) that are in control. Web courses have the potential to erode unequal power relations perpetuated by large central institutions. It is the anarchistic-utopian (see Paulston 1977, 1996) potential of the web that has caught the attention of adult educators. The web can function less like a traditional classroom and more like a library where a person can browse, talk with people involved with the program and others not in the course but with similar
interests. In this sense, interaction on web courses can help democratise education by return learning to the commons (cf. Illich 1983/84).

In the courses examined here there were two main types of interaction. One offered the learner the opportunity to interact with materials pertaining to the subject being studied. This type of interaction with materials can take advantage of the Web's hyperlink ability. The Net opens up literally millions of possible links to websites across the cyberplanet. More creative courses had learners leave the home site to do research on relevant sites, then post their findings for all learners to use. Having learners interact with materials and other learners is the kind of collaborative learning missing from more orthodox forms of distance education (see Burnham & Walden 1997).

The other type of interaction was among learners, between learners and instructors, and among learners with people not involved with the course. This type involved various tools of interaction ranging from simply providing an E-mail list to learners, to having chatrooms and threaded discussion spaces. Each of these allows for a different type and level of interaction. E-mail between two learners can be as meaningful or superficial as phone calls between learners from a course phone list. Chatrooms are a little more interactive, allowing third party involvement and group discussions on topics. Threaded discussions organise topics so that they are more accessible and usable. However, the web courses we came across generally did not allow for the sort of interaction one can get from stand alone on-line conferencing programs such as Lotus Notes (popular with businesses) or First Class (used by the Open Learning Agency of BC) which offer a broader range of tools for interaction.

Stand alone conferencing often has some interaction features not evident in most web based courses we examined. For example, some conferencing software allows for developing a 'student lounge' discussion space, where the tutor and other people from the educational institution cannot enter. It is usually in this sort of space, with less possibility for surveillance by the tutor or administrators, that open and productive conversations take place. Courses on the web usually do not provide this feature. Sustained web interaction can be mentally demanding so if the collaborative potential of web based courses is to be realised, the interaction features of a course have to encourage students to want to use it regularly.

**Constructed and transmittal modes of learning**

Continuing the themes just elaborated, one variable involved a seven-point Likert scale used to rate the extent to which each course was nested in a transmittal or constructed mode of learning. A typical transmittal
course was based on the notion that learners are empty vessels to be filled-up. These sites were often competency-based, involved linear notions of instructional design and were often tied to very explicit objectives and learning tasks. They often contained great gobs of lecture notes and no opportunity to use links.

In contrast, some sites involved more constructed modes of learning wherein the course designer provided advanced organisers but, at the same time, stitched together an array of tasks that involved visiting other sites. Here are some examples:

- In a University of Texas Geology 303 course (utexas.edu/cons/geo/courses/303/new3.html) students are to use the web to locate an earthquake that has occurred in the previous 24 hours. Working in groups, students answer questions about the time of, epicentre, magnitude and ‘focal depth’ of the quake. Next they have to locate ‘plate boundaries’ and answer questions about motion at the epicentre. In another assignment, students have to do research related to ‘Charlotte King, who ‘hears’ the Earth … and … yields valuable insights in perception, physics and the geo-sciences’. Her insight is apparently due to ‘tectonically induced piezoelectricity’ and, according to the course writer, any diligent student can find a good explanation for this in various geology links on the web. Some of the links in this course contain gorgeous graphics.

- In a Malaspina University College course on computer-mediated communication (http://www.mala.bc.ca/~soules/CMC290/290index.htm) learners undertake critical reviews of web sites and participate in on-line activities, outside the confines of the course. Reflections on their experiences are combined into an on-line journal entitled ‘Fingerprints’.

- A course on W.E. DuBois’ book The Souls Of Black Folk at the DuBois Virtual University (http://members.tripod.com/~DuBois/syll.html) requires students to go beyond just interacting and learning from each other about the book in weekly seminars conducted via E-mail. As a part of their course assignments, students are required to organise an activity (organising a teach-in, holding a student conference, or just having a group seminar) in their community about DuBois and his historical and contemporary relevance. Students use the Webs link ability to give each other ideas and support in organising community activities and becoming ‘scholar-activists’.

‘Constructed’ modes of learning on the web make maximum use of the enormous resources found there, tend to reward creativity and the unearthing of relevant websites, involve high levels of interaction among learners and generate a momentum and passion that reaches far beyond the calm certitudes, precision and pedantry of ‘instructional objectives’.
and 'course content'.

Hence with regard to interaction, web authors might consider the following:

- To what extent do learners use links and other resources to 'construct' knowledge?
- Can the learners post the results of their work (e.g. the discovery of relevant links) in a shared space?
- Have you provided for high levels of learner/tutor interaction that goes beyond private E-mail?
- Do you have a private student lounge (where there is no faculty surveillance?)
- In your course, does 'interaction' mean more than E-mail?
- Are your learners encouraged to use their initiative to find relevant and timely links?
- To what extent are the links you selected relevant and interesting?
- How do your learners 'use' links? Do you have imaginative and interesting assignments involving links?

C. Attractiveness

An attractive course was well designed, contained interesting and appropriate graphics, an absence of distracting glitter and, as well, had high face validity (i.e. made sense) and credibility. Our evaluation of what was attractive was done subjectively without reference to formal criteria for graphic design. We looked for easy to read text, clear instructions and appropriate graphics. Beyond the initial visual impression we found that an important enhancing factor to a course's attractiveness was its perceived credibility.

Credibility, an aspect of attractiveness, is about what is concealed. Many course developers have done themselves a disservice by assuming the learner is familiar with their program and institution. On-line learners do not necessarily enter a course through the 'front doors' of an institution. If they enter through a 'side door' which leads directly to the course, they may not be familiar with the institution's name and location, the program's requirements, or if the course is suitable to their needs. Some of the 127 opening pages failed to name the institution or provided only abbreviations to identify its location. Similarly, the course often provided only an abbreviation for its title, thereby assuming on-line learners had some familiarity with their program. For example, are you inclined to
enroll in HERT101? Many course developers have not yet learned to ‘think globally, act locally’.

Since face-to-face interaction is not possible, credibility is also established by personalising your course. Learners, like all of humankind, still obtain a sense of comfort from seeing (a photograph) and conversing with (telephone, fax, or E-mail) a course facilitator. Of the 127 courses, 41 per cent had a photo of the instructor. While knowing an instructor’s hobbies may seem trite, it is an attempt to personalise the course, something which does not go unnoticed by potential learners, all of which can be easily accomplished by providing a link to one’s curriculum vitae. However, we also acknowledge that, while these exhortations have resonance on the west coast of North America, they may be dismissed by the guardians of academic decorum in other parts of the world. Moreover, it can also be argued that an absence of cues concerning the instructor might make the learner concentrate more on the course (and not whether the instructor is old or young, black or white, man or woman). Earlier, it was the absence of cues denoting power that was deemed to be part of the appeal of E-mail (Boshier 1990).

Concerning attractiveness, consider these questions:

- When learners reach your site what is their first impression? Does it suggest you are a pedant and a bore?
- To what extent is your site choked with mind-numbing text or enhanced with appropriate graphics?
- Are your graphics worth the time and cost of downloading them?
- Can you put all those words into a still or moving picture? Remember the adage – a picture is worth a thousand words.
- Do you realise you can build video and audio into this course?
- To what extent does all that glitter and smart animation distract from or enhance what this course intends to accomplish?

**Madonna Award for Best-Dressed Course**

From our perspectives, as adult educators posing as potential customers, the best sites were attractive and accessible and involved high levels and different kinds of interaction. Several sites were nominated as being the ‘best-dressed’. With the nomination list in hand, each researcher visited short-listed sites. After extensive discussion and further examination of short-listed sites, the authors decided the Madonna award goes to the American History 102 course at the University of Wisconsin (http://hum.lss.wisc.edu/hist102) which can also be reached through the World Lecture Hall. This course was instructed
Although this course had some notable deficiencies, such as a lack of interactivity between classmates, the course was deemed to be exemplary because:

Concerning Accessibility it:

- Provided a text-only option for those who do not want to wait for graphics to download, or who do not have a web browser with graphic capabilities.
- Rated links on technical requirements (for example plug-ins required), not just on their content.
- Contained clear technical information for the student concerning the optimum hardware and software to be used.
- Provided a clickable site map for the misplaced.
- Used consistent symbols and words as navigation aids.

Concerning Interaction it:

- Provided links to electronic versions of primary documents (letters, for example) that only the keenest undergraduate student of history ever sees in a traditional course.
- Encouraged interaction with the on-line world with clear links. For instance, one could view the list of recommended links by subject, or by their connection to a specific lecture.
- Ignored interactivity between classmates. This was provided by a once-a-week tutorial discussion group. An interpersonal interactive component would improve the web site.
- Provided help for students that went far beyond course work, including technical support information and suggestions for finding help with personal difficulties.
- Provided interactive forms for site viewers to suggest new sites to be linked to, and to report technical problems.

Concerning Attractiveness it:

- Provided a clear, easy-to-look-at background that gave the site a clear graphic identity.
- Displayed cleanly not only in Netscape, but also in Lynx, the text-only browser.
- Provided photographs of the teaching assistants, and made it clear which assistant would be leading which discussion group.
• Made its connection to the University of Wisconsin at Madison clear.
• Recognised that many of those viewing the pages would not be registered students, and provided enough information for them to take advantage of the site as well.
• Emitted a friendly aura and made good use of humour.
• Contained evidence of immense work and considerable creativity.

Drab and Nameless Award for the Worst-Dressed Course:

Discussion concerning nominees for this award unmasked an irony nested in the postmodern. Distance educators have historically wrestled with pejorative constructions of their field as inferior to ‘face-to-face’ education and, in some jurisdictions, open learning agencies have struggled with being so stigmatised (see Boshier & Pratt 1997, concerning Hong Kong and Gillard 1993, for a postmodern critique concerning relations between distance and face-to-face education). Hence, in many web courses there are concerted efforts to simulate the face-to-face campus. Examples include the Simon Fraser University-based ‘Virtual-U’ where the opening page shows a physical campus with the function of each building clearly labeled (e.g. library, café). From a postmodern perspective the face-to-face campus is the valued ‘centre’ and distance education (or off-campus learning) the devalued and contaminated ‘other’.

Many authors of web courses accord considerable emphasis to their attempts to ‘replicate’ face-to-face courses. For example, the Australian proposal to build a ‘virtual campus’ (http://www.optuslearning.net.au/flexlearning/virtual-campus/overview.html) condemns a ‘bricks and mortar mindset’ but claims their system will ‘emulate the functions of a real campus’ ... ‘as close as possible’. Note that the face-to-face is the ‘real’ campus. The notions of positionality embedded in this and thousands of other manifestations of ‘distance’ as second-best discourse beg for a postmodern analysis. But, in this context, the problem is that in trying to emulate the ‘real’ campus far too many web authors have replicated the most rotten, demeaning, archaic and unfortunate manifestations of face-to-face education. For example, as adult educators, we are disturbed by the level of surveillance and discipline in some courses and the tedium of authors who think that mounting acres of lecture notes and a few tests constitutes a course.

As a result of these and related problems there was no shortage of nominees for the worst-dressed award. At first our tendency was to give the ‘worst-dressed’ award to a Florida-based Biochemistry course replete with lecture notes and no links. However, there are many courses like that
and, apart from observing that 'replicating' face-to-face courses is not necessarily a good thing, not much more needs to be said about this or similar courses.

Hence, we decided to award the Drab and Nameless award to a course that, like a would-be superstar, had abundant glitter but lacked substance.

**Glitter in the absence of substance**

British Columbia recently had a Premier who, apart from other foibles, was widely condemned as using charisma as a substitute for substance. The winner of the 'worst-dressed' award, entitled ‘Social Foundations of Education’ from a USA State University (http://coe.ilstu.edu then select 'courses'), is similarly flawed. Its author describes it as

> an asynchronous (i.e. independent of space and time) electronic learning environment ... Its purpose is to help educators understand how information technology is changing education and to prepare them to function in the twenty-first century.

The course employs a menu of options that is useful but, upon going to the available options, the learner finds little or anything of substance. On the 'Course Assignments' page there is an animated mouse who appears to be on cocaine or has eaten too much rat poison. At first glance he/she is amusing but, at the second or third look, is intensely irritating. There is a 'Dweeb Alert,' an electronic assistant I.M. Virtual 'who monitors your every movement and thought'. There are also several pages of congratulatory letters, some from as far away as New Zealand. The course is only marginally literate and replete with errors.

**Summary and Conclusions**

This survey of 127 web courses exposed numerous problems and evoked discussion of important issues. From our perspective as adult educators, architects of web courses should carefully consider the extent to which linear notions of 'instructional design' are appropriate. In our view, the best web courses are attractive and accessible and involve high levels of interaction that go well beyond the conversational superficialities of E-mail or chatrooms.

We know this snapshot of web courses will rapidly be displaced by the fast pace of change in this area. However, some issues will endure. The biggest challenge for web course authors is conceptual, not technological. From an adult education perspective, it is not acceptable to use the web to emulate the worst of face-to-face courses where power relations are unproblematised and learners constructed as passive recipients of
information. Before touching the keyboard or mouse, web authors are urged to dress for success and ask – how do I make this course attractive, accessible and interactive?
References


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