Faculty Assembly 2012 Instructional Technology Survey Report

During November and early December of 2012, the Faculty Assembly conducted a survey of UNC faculty regarding the use of information technologies for instructional purposes.

The intended purpose of the survey was to establish a benchmark of findings on the frequency of use, variety of purposes, types of technologies, and assessment of pedagogical effectiveness, of information technologies in both traditional and distributed education settings. A secondary purpose was to canvas faculty on their concerns about the effective integration of information technology in fulfilling their instructional responsibilities.

The usefulness of this particular instrument is that it provides the evidentiary basis for conceptualizing critical and relevant issues and concerns at stake in technology policy and investment. However, the development of effective policy and efficient investment requires a more robust account of current practices than this instrument affords. The Assembly believes that a more complete and systematic survey of faculty instructional technology uses and concerns, the construction of which is informed by the findings of the present survey, should be the basis of any recommendations coming out of the Strategic Planning process.

This report focuses on five issues of especially important interest for ongoing considerations of instructional technology in UNC schools: faculty affiliations, types of technology employed, learning management systems, course specific applications, and assessments of instructional technology applications. We conclude with some general observations about implications of these findings

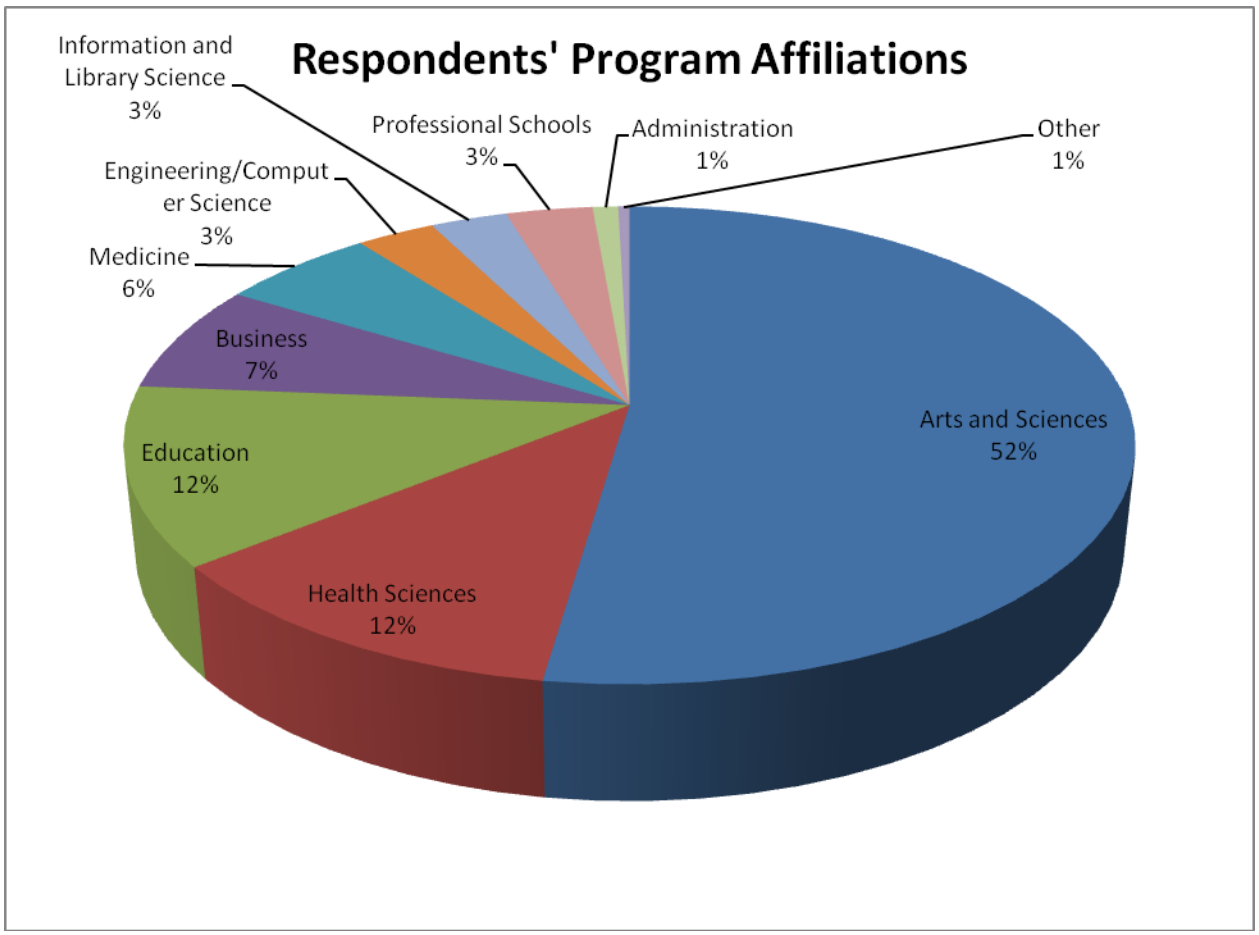
1. Faculty Affiliations

We received nearly 1700 survey responses from faculty on the 17 campuses.

The distribution of responses reflected a representative sample of the diversity and relative size of faculty across the system's constituent institutions. This suggests a high degree of confidence that more systematic and exhaustive inquiries will offer a more fully informed understanding of the trends and concerns articulated here.

That confidence is further bolstered by the distribution of responses by program affiliation. As the figure below (Figure 1) suggests, faculty from the full range of UNC program types are actively interested in issues of instructional technology, and the distribution of responses by those respective program types reflects a representative sample of faculty by both numbers of instructors and students served.

FIGURE 1



2. Types of Instructional Technology Uses

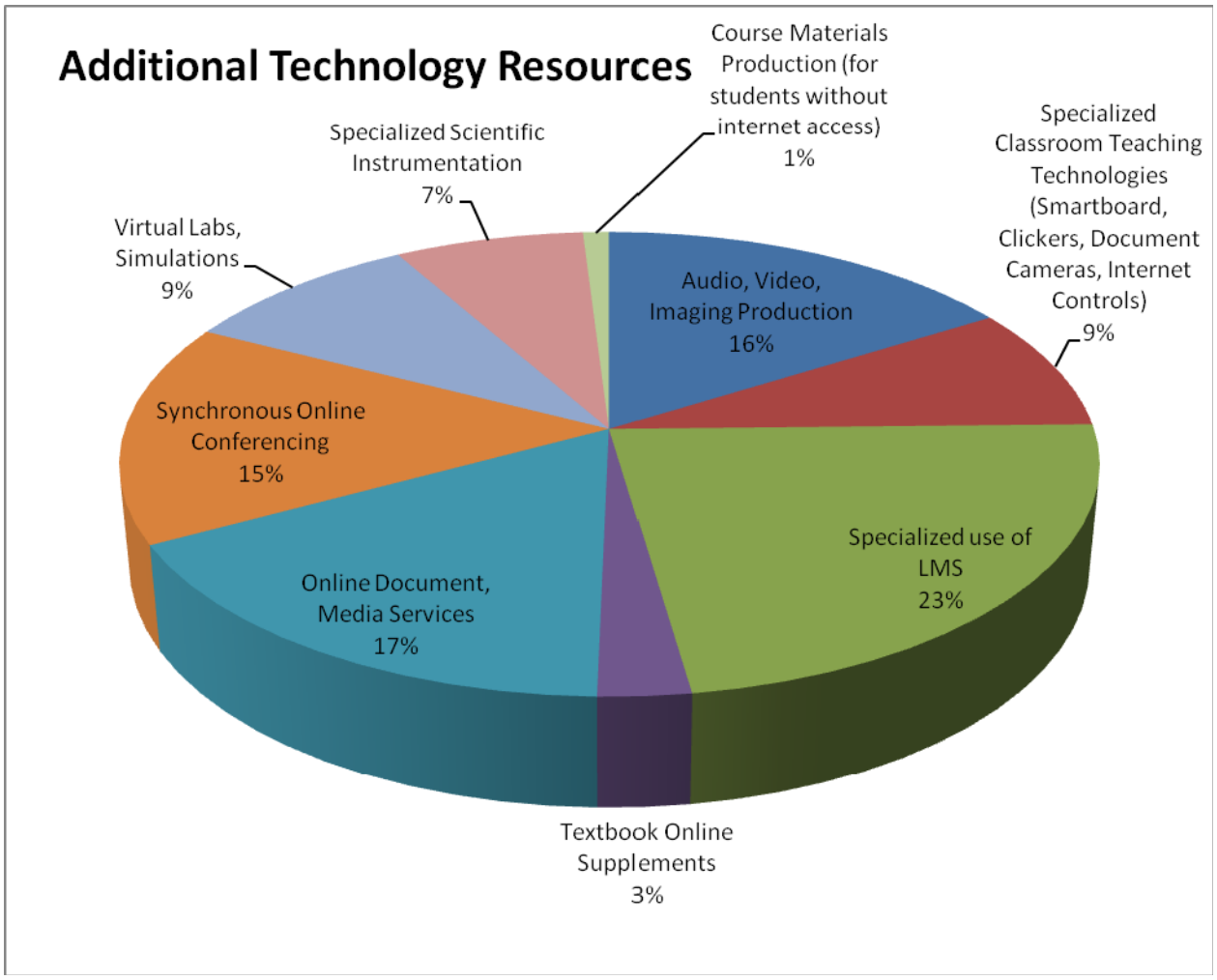
UNC faculty draw on a wide ranging and diverse array of information technologies for instructional purposes. In addition to widespread use of now "familiar" technologies (Powerpoint, recorded lectures, commercial and personally produced video materials, online discussion forums, web-based assignments, student response systems, email, social media), nearly 20% (300/1700) of respondents reported that they also used a number of other technologies for teaching.

The figure below (Figure 2) is organized by type of application rather than software or hardware product names. The reason for this is that faculty employ an enormous number of different proprietary programs, and they frequently do so in ways that exceed software and hardware designers' intentions – or imaginations.

What this suggests is that faculty are very sophisticated and creative in conceptualizing and employing the use of technology for the practical purpose of improving instructional effectiveness. There are probably very few information technologies available today that faculty have not tried to put to use for instructional purposes, and it appears from the

significant number of detailed responses received that a very large number of faculty are very well informed about cutting-edge information technology developments. Anecdotal evidence also suggests that this awareness is likely to be widely shared given the frequency with which faculty talk to their colleagues about instructional concerns.

FIGURE 2



3. Learning management systems

Learning Management Systems (LMS), or course support platforms, have become the most common vehicle for organizing the use of instructional technologies. These software programs typically bundle a variety of features useful for instructional purposes – collaborative suites, assessment instruments, materials provision, and many others.

The use of LMS in UNC institutions is ubiquitous. The "Big 3" LMS systems in UNC schools are Blackboard, Moodle, and Sakai. (See Figure 3). (A large number of respondents [15%] reported using an LMS system, but did not identify which one. These are very likely to be distributed across the three named systems).

It is useful to consider issues of LMS choice precisely because of the critical role that these systems play in the management of instructional technology uses. The cost, serviceability , flexibility, and adaptability of these systems is a source of ongoing concern for information technology departments in system schools, and the design and usability of these systems is a regular topic of informal conversations among faculty. In our survey numerous respondents commented on issues bearing on the choice of LMS programs.

Although Blackboard – a costly, closed-code, proprietary program – still dominates in the system, there has been a pronounced turn toward open-source LMS programs such as Moodle and Sakai.

The advantage of proprietary programs is that they have a development and support staff exclusively dedicated to their product. The disadvantage is that product development and support is limited by the experience and skills of company staff, and the propriety interests of for-profit firms (market pricing, controlled releases of program upgrades, limiting customer-service costs, and so on).

The advantage of open-source programs is that they allow any interested developer or user to participate in program improvement. This model has the potential of bringing to bear a variety of experiences and skills in product design, development, and support, the number of which is limited only by the size and commitment of the program "community." The disadvantage of the open-source model is that institutional use of open-source programs requires a dedicated development and support program that can respond to end-user concerns. This issue has been addressed by various arrangements: creation of program development and support positions in institution IT departments, support and development agreements with consortia of institutions using a shared platform, or contractual arrangements with firms specializing in development and support of the particular open-source program.

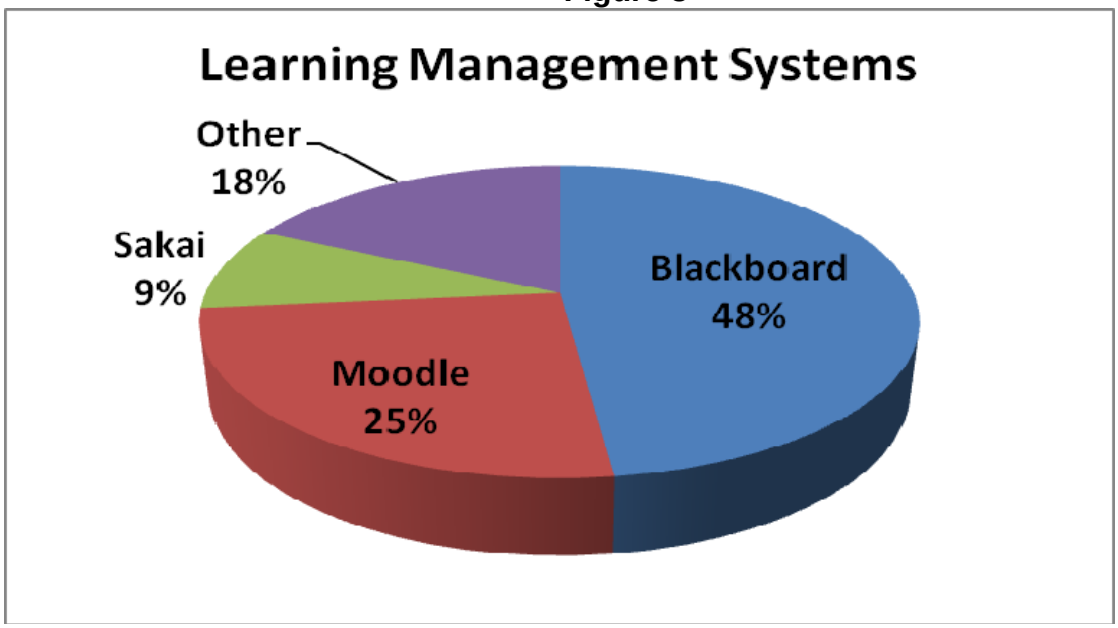
(Similar sorts of concerns also apply to programs for content management and even computer operating systems. Open-source programs such as Linux OS, Open Office and Libre Office productivity suites, WordPress content management, Firefox and Seamonkey internet browser and HTML authoring suites, Thunderbird e-mail, and the

like, are becoming increasingly popular as their development and support infrastructure becomes more robust).

The difficulty is that the current structure of the marketplace for these programs has produced numerous problems for users: differences in interface design, differences in program features, and differences in end-user procedures for managing program features, are three of the most often-cited sources of opposition to adoption and use of available information technologies for instructional purposes. Standardization and accessibility of design, flexibility and adaptability in program features, and simplification of demands on end-users, are central to faculty concerns about the usefulness of information technology: the responses to this survey suggest that one (if not the most) significant obstacle to instructional use of information technology is poor hardware and software design, the effect of which produces limited instructional benefits and prohibitively high learning costs.

The take away point from this discussion is that learning management systems (as well as content management and computer operating systems) are fundamentally critical to efficient and effective instruction technology usage. A well grounded information technology policy intended to encourage best practices in instructional technology applications must be attentive to these critical concerns.

Figure 3

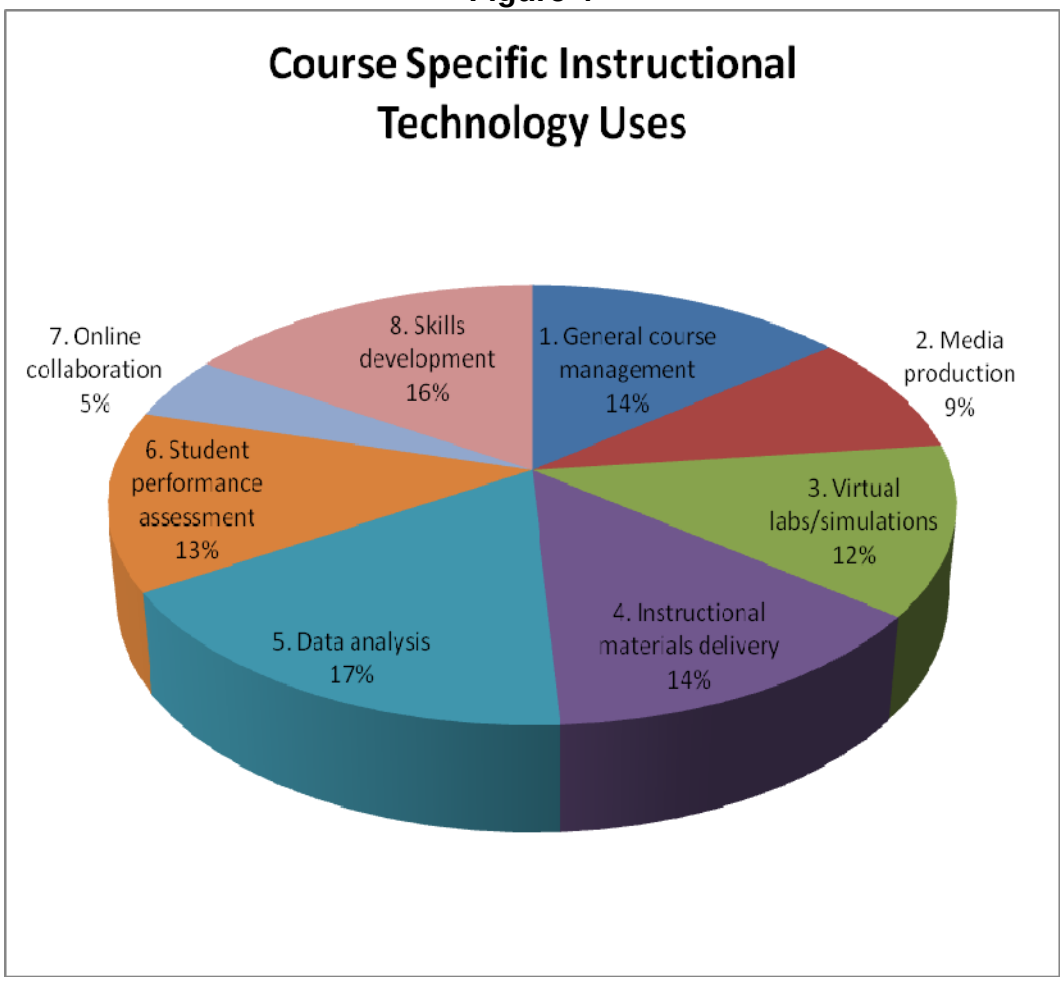


4. Course Specific Instructional Technologies Applications

From the preceding discussion it should be evident that software and hardware serviceability ought to be critical in the development of information technology policy. The importance of this consideration is sharpened by a well grounded understanding of the ways in which faculty use information technology in their courses.

Figure 4 offers a general overview of the various functions or purposes for which faculty use information technology in their instructional activities. The usefulness of this data is that it suggests the sorts of instructional uses that ought to be borne in mind in the formulation of information technology policy. It also suggests the need to better understand the factors that faculty consider in their decisions to employ information technology in instructional support. What is not clear from this survey is how technology serviceability, and pedagogical needs, interact to influence faculty choices in the use of information technologies in their teaching. A well-informed technology policy should be attentive to this question.

Figure 4



5. Assessments of Instructional Technology Applications

As part of our survey, faculty were invited to submit additional comments regarding instructional technology issues. A few respondents were critical of the design and process for the survey (as were those responsible for its last-minute construction and implementation), but – perhaps not surprisingly – the overwhelming majority of comments focused on assessments of information technology uses for instructional purposes.

The vast majority of these assessments were supportive of the use of instructional technologies; a very small minority expressed reservations. (See Figure 5). Consider each in turn:

– Comments supporting instructional technology

The majority (56%) of assessment comments focused on various ways in which instructional technologies have been or could be effectively used. These comments were remarkably thoughtful. It was clear that faculty were very interested in sharing their experiences and successes with colleagues. (Indeed, the opportunity to share these experiences may be one very useful side benefit of a more complete and robust survey.)

A large number of comments (30%) were from faculty interested in using instructional technologies, but who were frustrated by the lack of infrastructure and institutional support for their use. The general tenor of these comments was that faculty would make greater use of information technology if institutions provided better infrastructural support. Hardware deficiencies and institutional policy were most commonly cited.

Some faculty (4%) were concerned about the availability of training for instructional technologies. Others (2%) were concerned about student access issues. The substance of these comments tended to focus on issues of accessibility and learning costs. It was clear that these respondents would readily embrace instructional technology for their teaching if these obstacles could be cleared.

– Comments questioning instructional technology

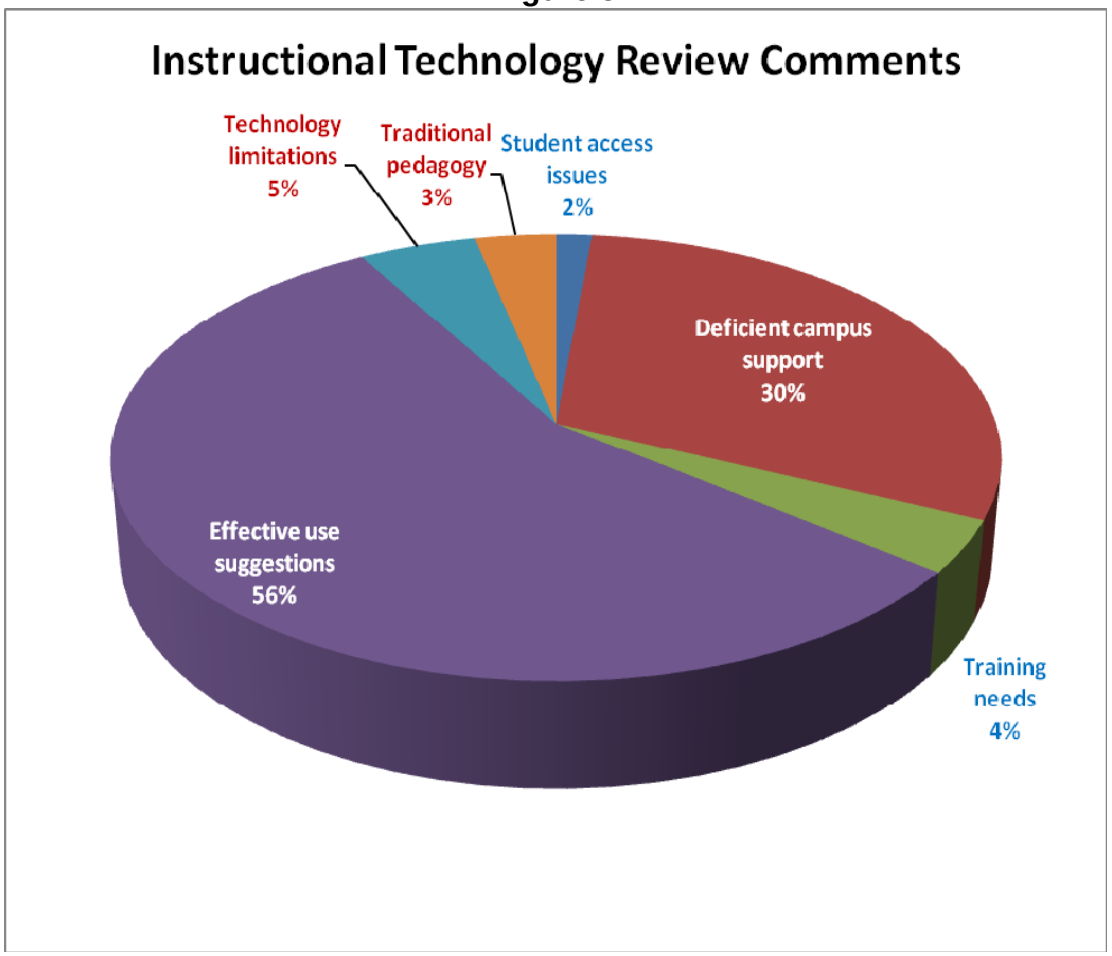
A small minority (5%) of responding faculty expressed doubts about the efficiency and effectiveness of teaching with instructional technologies. These comments for the most part focused on financial costs, learning costs, and questions about effectiveness. The issues here were almost exclusively about “payoff” : comments on financial and learning costs tended to emphasize problems of technology turnover and short-term obsolesence; comments about effectiveness emphasized the relative paucity of systematic evidence demonstrating better learning outcomes.

The importance of these concerns is not that they represent obstacles to faculty adoption of information technology, but that they articulate issues that may be relevant to technology investment considerations.

Finally, a very small number of respondents (3%) expressed outright skepticism about the use of instructional technologies, and defended a "traditional pedagogy" (or what is in the current parlance called a “face-to-face” or “F-2-F” model). This is a particularly interesting finding as both the size of this cohort and their self-understandings seem to be enormously exaggerated in popular discourse, among critics of higher education, and in the rhetoric of technology vendors.

What this particular finding intimates is what the general findings here demonstrate: faculty attitudes, understanding, and uses of information technology for instructional purposes is more positive, sophisticated, and inventive than is assumed by many of those who have little if any experience in contemporary classrooms and instructional programs.

Figure 5



Conclusions

The findings of this survey suggests is that faculty are remarkably well experienced in the use of information technologies for instructional purposes. What it also suggests is that they are remarkably creative and inventive in their use of information technologies, remarkably well-informed about the current state of technology developments, and remarkably thoughtful in their understanding and assessment of potentials and limitations of those technologies. A more robust survey focusing on issues informed by these findings would be very useful in formulating policy intended to support and promote instructional technology use.

In any case, one essential lesson here is that on questions of instructional technology, faculty have a combination of experience, insight, and expertise that cannot be found in any other group of individuals. The reasons are straightforward: faculty are uniquely situated to weigh the trade-offs between efficiency and effectiveness in teaching and learning. They have strong incentives to be effective in teaching, and they have strong incentives to be as efficient as possible in the delivery of effective teaching.

No one else is in a comparable position to assess the relative merits of proposals and policy intended to promote effectiveness and efficiency in the delivery of educational opportunity. The use of information technology for instructional purposes is an important dimension of the kinds of choices that faculty make every day in fulfilling their teaching responsibilities. And a well-crafted instructional technology policy requires the insight that experience affords.