Advice from the Front Line:
Providing Computer Support for ETD Preparation

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The Office of Academic Computing at West Virginia University provides computer support for the WVU Electronic Theses and Dissertations (ETD) project. We provide this support to WVU students, faculty, and staff using a variety of methods: workshops, clinics, web pages, private tutorials, electronic mail and phone consultation, and quarterly newsletter articles. For additional information that was presented at the ETD Symposium in March 2000, refer to the PowerPoint presentation available at this site.

West Virginia University

West Virginia University (WVU) is a publicly funded state land grant university, classified as a Carnegie Research I institution, with over 22,000 students, over 1,400 faculty, and over 2,600 staff members as part of its Morgantown campus. WVU does not have a separate Graduate School; instead an Office of Graduate Education coordinates central policy for the 13 colleges and schools that grant graduate degrees. For more information about WVU, visit its home page at www.wvu.edu and the informational web page at www.nis.wvu.edu/intro/ataglance.htm.

What is the WVU ETD project?

“West Virginia University has implemented a policy that all master's theses and doctoral dissertations are to be submitted electronically.” [1] Currently at WVU, these electronic documents are created as Adobe Acrobat PDF files and submitted via a web page form. The submitted files reside on a WVU server; student submission information and links to the documents are stored in a Microsoft Access database. Cold Fusion was used to make the documents and database information accessible and searchable from the web server. West Virginia University was the second school in the United States to require electronic document submission from all students making it mandatory as of Aug 15, 1998 for those who defended after that date. Any requests for an exemption must be approved by the Provost. Of the 181 theses and 131 dissertations submitted in our first year 1998-99, 257 of the 312 documents were submitted as ETDs. To find out more about ETDs at WVU, visit the official project web site: www.wvu.edu/~thesis/.

ETD Task Force
Provost Gerald Lang appointed nine members at the beginning of the Fall 1997 semester. These members include faculty from humanities & technical departments, along with representatives from the Library, Information Technology, Research, and the Office of Graduate Education. I was added to the task force as a technical staff member in January 1999; a graduate student representative was added in January 2000. Part of the Task Force's mission was to establish and refine policies to be approved by the Provost, work out the technical implementation details, and to provide publicity and evangelism for the project.

Changes to the "way we do business" due to the ETD Project
The authoritative copy of the student's work is now an electronic document stored on our server instead of a bound book; paper documents created for the college or committee are considered derivative works. Instead of submitting bound books to the library, students fill out web forms and use their web browsers to upload their final ETDs. We revised format requirements slightly: title page and abstract page guidelines were modified; copyright and approval pages were deleted (a copyright line and committee member names now appear on the title page). We created a new approval form for committee signatures so the student can formally designate the distribution option for the ETD. Now at WVU, all masters students must submit their theses to Bell & Howell (UMI); thesis submission was optional in previous years. Due to ETD Task Force meetings and assignments, providing technical and formatting assistance to students, and other professional activities related to the ETD Project, the Library Technical Reviewer has experienced an increase in the amount of time needed for this aspect of his job, especially during the weeks before the ETD submission deadlines. Computer support staff have started dedicating several hours to ETD support during the weeks preceding ETD submission deadlines.

Who needs ETD support on campus?

The following groups of people might benefit from one or more ETD support choices:
- graduate students who have successfully defended their theses or dissertations and need assistance converting their documents to PDF files
- graduate students who are getting ready to write their theses or dissertations and want to learn more about format guidelines, word processing tips, and how to use Adobe Acrobat software
- faculty advisors who want to learn more about the ETD creation process to better advise their students
- computer support staff who want to learn word processing tips and Adobe Acrobat software in order to provide better assistance to students in their computer labs
- anyone who wants to learn more about creating PDF files, which can be used to create a wide variety of documents, presentations, and charts and make them accessible from the web.

Who provides support at WVU?

- Academic Computing lab staff and help desk: routine software support and general information [currently 4 full time employees and several student employees]
- Academic Computing consultants: technical support, workshops, clinics, tutorials by appointment, ETD support web pages [6 full time employees when fully staffed]
- Instructional Technology Resource Center: media file creation support by appointment [currently 2.6 full time employees and 3 to 5 student interns; 1 of these students also provides Acrobat and word processing support for ETD creation]
- Director of Academic Computing: maintains the ETD web server and database, assists his staff with resolving ETD policy and technical issues.

Details about these groups can be found on the Academic Computing web page: www.access.wvu.edu. Graduate students and faculty might be able to obtain some informal software support from their college computer lab support staff if Adobe Acrobat software is installed in their departmental lab. Questions about ETD policies are directed to the ETD Task Force members. Questions about deadlines and paperwork are usually directed to the college graduate contact person: www.libraries.wvu.edu/theses/contacts.htm. Questions about ETD format guidelines are directed to the Library Technical Reviewer, John Hagen, jhagen2@wvu.edu. Questions about ETD distribution options and keyword selection are to be discussed with the student's graduate committee.

Forms of Support

Workshops

Academic Computing presents ETD workshops as part of our regular computer workshop schedule; in these two-hour sessions, we discuss the ETD program and conduct hands-on activities to teach students how to convert existing documents to PDF files and how to enhance PDF files using Adobe Acrobat software. At the beginning of the fall semesters, we present shorter sessions on these topics as part of our QuickStart series. We also present customized workshops to graduate student seminars and other groups by special request. Workshop information is available at www.wvu.edu/~support/training/.

Clinics

When the deadline for ETD submission draws near, Academic Computing uses its training lab in the Evansdale Library Computer Site to host walk-in "clinics". These clinics provide an environment where students can bring their files and work with professional staff members nearby for assistance; a few clinic days are scheduled to last until 8pm to accommodate those graduate students who live out of town or who work during the day. Students do not need an appointment to attend an ETD clinic. The clinic schedule for the current semester can be found on the web[2].

Consulting Assistance

The Academic Computing consultants respond to ETD questions year-round; these questions are handled like any other consulting topic, with the consultants using the telephone, electronic mail, office visits, appointments, faxes, and "snail-mail" as means of communication. Often, students can meet with a consultant for an hour or two by appointment for a tutorial or for advanced technical support on creating an ETD. We also created a mailing list of Academic Computing technical support providers (etd-tech@wvu.edu) so students could have one e-mail point of contact; the support providers also use this mailing list to exchange technical tips as they learn more about ETD creation.

Web Pages

In order to make ETD materials more accessible, we have placed PDF versions of workshop handouts[3] and PowerPoint presentation files on the web. We also link to some useful materials at the Virginia Tech web site. The ETD Committee has placed the ETD Policy and a Frequently Asked Question document on the main ETD project web page, in addition to links to a wide variety of related resources. A submission packet including the official signature form, sample pages, and the UMI agreement form can be viewed on the web as a single PDF file[4].

Newsletter articles

So far, four articles have been published in our quarterly Information Technology newsletter, ***Output***, since May 1998. These articles include: *Electronic Theses and Dissertations at WVU* (98:2), *20 Tips for ETD Success* (99:1), *ETDs at WVU: Word Processing Tips* (99:4), and *Computer Support for ETDs at WVU* (00:1). Reprints of these articles are available by request (kfletche@wvu.edu); *20 Tips* and *Word Processing Tips* can be found on the web at www.wvu.edu/~support/training/classmat/etd/etdwptip.htm.

Possible Problems

Most of the following problems are true for any type of information technology support, not just supporting an ETD project. One problem is **staff turnover**: student employees graduate as soon as you have them fully trained and "house-broken"; full time employees often find better jobs in the area since the state system is not paying competitive salaries for computer professionals. Currently in Academic Computing, 30% of its positions are vacant (6 vacant positions in March 2000); three of those positions provided over 1/3 of the ETD support in the 1998-99 school year.

Since students sometimes leave for jobs before finishing their theses or dissertations, you might have to support **off-campus students**. Off campus students cannot take advantage of workshops, clinics, or face-to-face appointments to learn how to create a PDF. Sometimes they experience problems obtaining Acrobat software at a good price

or they're unwilling to purchase software for a one-time use; using campus computer labs is not an option for those who live ten or more hours away.

Another real problem that we encountered is supporting **hostile or anxious students**. For us, these unpleasant events occurred mainly during the weeks before the first two submission deadlines after we made submission mandatory (December 1998 and April 1999). Students weren't finding out about the ETD requirements until a week before they defended (in some cases, on the day they defended). Sometimes students made plans to leave town (or the country) and had not allocated enough time to create and submit a PDF file. I experienced students shouting at me and students in tears; luckily, those incidents are much more rare now. Graduating students are sharing their information with peers who are behind them in the "pipeline" and more faculty members are aware of the ETD requirements. College graduation coordinators have been trained and are sent reminders about the ETD Project and ETD support on a regular basis.

The last problem I'll mention is **resource management**. If you decide to offer workshops, you'll need a location, preferably with computers for hand-on activities, and one or more staff members capable of presenting the material. You will need time to conduct professional development sessions for your technical staff; even students who will encounter graduate students in a computer lab setting will need to be aware of the ETD program, what support options are available, and perhaps the basics of using Acrobat software.

If you choose to create your own workshop handouts and web-based materials, you will be faced with the problem of allocating enough staff time to create those materials and keeping those materials up-to-date. You will always have competing support demands: new software to learn, new hardware to install, networks to keep going, more people turning to technology in their instruction and research, more interesting projects delegated to you but no additional staff...

Tips

- **Train technical staff as early as possible** in your implementation; include student employees in this training. Make sure you emphasize the "customer service" skills needed to support possibly hostile, fearful, or anxious students.
- Make sure you have allocated adequate resources: staff hours, copies of Acrobat and other software, scanners, multimedia creation support. In our first semester, we had installed only six copies of the Adobe Acrobat software in a small lab, our Instructional Technology Resource Center. The two ITRC staff members who worked in that lab were unable to make any progress on other assigned projects during the two weeks before the deadline; they had nowhere else to send the

unexpected number of students demanding assistance. Also at that time, we did not have ITRC student interns trained to provide ETD support.

- Publicize deadlines and ETD policies via a variety of mechanisms: project web page, IT newsletters, campus newspaper, campus meetings, email to college coordinators, workshop schedules...
- Allocate one or more technical staff members to provide web server and database support. Our director is performing those tasks here at WVU because he enjoys that type of work; a network manager, web server administrator, or other high-level computing professional would be a logical choice to provide this support at other institutions.
- Schedule workshops and other support around the submission deadlines. Often the thesis or dissertation defense is scheduled late in the semester regardless of guidelines distributed by the Records Office; students seem to wait until the last available week to undertake ETD preparation. Students aren't interested in attending workshops when they are working near the submission deadline.
- **Be flexible and creative** in providing support. For instance, I will make arrangements to stay late or come in on a Saturday to accommodate a working student or a student traveling to my campus from far away. In another instance, a student had created his PDF file using some other Adobe product and did not have access to Acrobat to optimize it (a requirement at WVU). He placed the file on a web space and gave me a password to download the file. I optimized the file for him and uploaded it back to his web space, solving his problem in just a few minutes. The Library Technical Reviewer, my director, and I have all made very minor formatting fixes to PDF files as a service on occasion, especially for students off campus.

Questions and Answers

This section is based on a few of the questions from the live presentation I gave on March 17, 2000 at the ETD Symposium in St. Petersburg Florida. I am paraphrasing the questions from memory; likewise the answers are not exactly what I said at the time. If you have additional questions, feel free to contact me at kfletche@wvu.edu.

Have you surveyed the graduating students to evaluate your ETD support?
No, but it sounds like a good idea. I will discuss that with our ETD Task Force at our next meeting.

Are your workshop handouts available on the web where we could see them?
Yes, go to:
www.wvu.edu/~support/training/classmat/etd/

You told us about spending twelve hours helping one of your graduate students. How much of that time was related to actually using Adobe Acrobat and how much was due to remedial word processing?
Over eleven of those hours were spent on word processing issues related to changing the printer driver. Unfortunately, several students use their word processing software as if it were a typewriter: using blanks, tabs, and underscores to create tables instead of using the table feature in their software, manually creating dot leaders with periods, not taking advantage of automatic widow/orphan protection, etc. They manage to create a file that looks good on their own printer, yet it needs minor adjustments on nearly every page once the printer driver is changed to the Adobe PostScript printer which is part of the conversion to a PDF file.

What costs did WVU incur for their ETD Project and its support?
I don't know the numbers because I'm not in a management position; I'm not sure if all of the costs were tracked. I know that Academic Computing bought a new web server and additional disk space, an additional Cold Fusion license, approximately 150 copies of Adobe Acrobat 3.0 software (Acrobat 4.0 did not come out until April 1999 and we have not upgraded the labs yet), and funding for a half-time student intern ($8.50/hour, 20 hours per week during school terms). WVU did not hire any additional staff other than the additional student intern; the student intern works on other ITRC projects when she is not needed for ETD support. Opportunity costs included Academic Computing staff and lab time and time spent by the ETD Task Force members and the Library Technical Reviewer.

The **current server hardware/software** (machine is not dedicated to the ETD project):
- Dell Optiplex 300 Mhz Pentium II with 256M memory
- 20Gb disk drive (portion of disk drive dedicated to ETDs)
- 100 Mbs dedicated network segment
- Windows NT Server 4.0 (will migrate to Windows 2000 Server)
- Microsoft IIS web server software
- Cold Fusion 4.01 (will migrate to 4.5 soon)
- Microsoft Access 97 database

When we started the project (August 1998-December 1999):
- 166 Mhz Pentium with 32M memory
- 10Gb disk
- 10 Mbs Ethernet
- Windows 95
- O'Reilly's Website server software
- Cold Fusion 3.1
- Microsoft Access 97 database

What did I give up to be able to provide this level of ETD support?
I didn't suddenly cease to support other topics when this project came our way. The mix of supported topics is constantly evolving. When I began my current job in Academic Computing, I provided support for statistical software, editors, and programming languages on mainframe systems; I can still write IBM JCL without referring to a manual. Over the years, mainframe users have switched to using microcomputers, or have become self-sufficient, or have left the University via graduation, retirement, or death. In the meantime, I have acquired additional competencies in Microsoft Office software, web page creation, and other topics and software; I continue to support statistical software on microcomputer platforms.

The ETD project appeared during a time when we had all six consulting positions filled with extremely capable and hard-working staff members, so that may have freed some of my time for this project. Also, ETD support is very seasonal, once the staff is trained and the materials are developed. For about four weeks in April/May, two weeks in August, and three weeks in December, I try not to schedule many other commitments so I can be free for ETD clinics, appointments, and last minute questions.

If your provost asked you to provide less service due to budget cutbacks, which method(s) of support would you do away with?
My least favorite type of support is where students walk in, disk in hand, and expect me to drop everything to help them create an ETD on the spot; however, I manage those incidents by referring them to an ETD clinic if one is scheduled soon or I send them to a student intern if one is available. The most time consuming support is one-to-one appointments and that would be the first to go if I were short on time or if I were ordered to provide less "lavish" support.

Why doesn't Adobe provide written materials about creating PDF files?
Adobe had three representatives at this session and they provided the answer to this question. Adobe publishes two booklets: *Adobe Acrobat 4.0 Tips for Business Professionals* and *How to Create Adobe PDF Files for Print and Press*. These booklets are distributed by Adobe representatives at events they attend and were available at the ETD Symposium. The representatives who attended my session said that Adobe would provide multiple copies of these booklets to academic institutions upon request.

Endnotes and References:

1. Overview of ETDs at WVU: www.wvu.edu/~thesis/ETDtechbrief.html

2. ETD workshops and clinics: www.wvu.edu/~support/training/classmat/etd/etdlist.htm

3. ETD Workshop Materials: www.wvu.edu/~support/training/classmat/etd/

4. www.libraries.wvu.edu/theses/forms/Masters_Submission_Info_Packet.pdf
   www.libraries.wvu.edu/theses/forms/Doctoral_Submission_Info_Packet.pdf

5. Academic Computing Consultants: www.wvu.edu/~support/cc/

6. Academic Computing ITRC: www.access.wvu.edu/itrc/

7. Computer Labs on WVU Campus: www.access.wvu.edu/labs/Maps/

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ETD Project at WVU

- Mandatory as of Aug 15, 1998
  - for those who defended after that date
  - Exemption requests go to Provost
- ETD Task Force started meeting Fall 1997
  - Determine policy, provide publicity, etc.
  - Members appointed by Provost:
    - Included humanities & technical faculty members
    - Representatives for Library, Information Technology, Research Corporation, Graduate Office

Changes due to ETD Project

- Authoritative copy is now a PDF file instead of bound book; paper documents considered derivative works
- Revised format guidelines
- New approval form for committee signatures
- All masters students must submit thesis to UMI (optional in previous years)
- Submission via web form upload
- Increase in work load for Technical Reviewer

Revised format guidelines

- Standard title page includes committee members, keywords, and copyright info
- Abstract page must follow title page & include document title and author name.
- Do not include approval page; don't include signatures on scanned letters.

ETD Process at WVU

- Student defends work and makes corrections as requested
- Converts word processing file(s) to PDF using Adobe Acrobat software
  - we suggest printing to PostScript and using Distiller to convert to PDF
- Combine smaller PDF files into single PDF file unless final file size > 10M

ETD Process, continued

- Ideally, student adds bookmarks &/or hyperlinks to enhance document navigation
- PDF file(s) must be "optimized" before submission using File | Save As… command in Acrobat software
- File naming conventions: name after author, no blanks or special symbols in filename
- PDF file(s) submitted via web page

ETD Computer Support Staff

Formal support provided by Academic Computing

- 6 full time Senior Info. Tech. Consultants
- 3 full time Instructional Technology Resource Center staff members
- 3 ITRC student interns
- Computer Lab staff & student employees
- Director: maintains web server & ETD database

Informal support

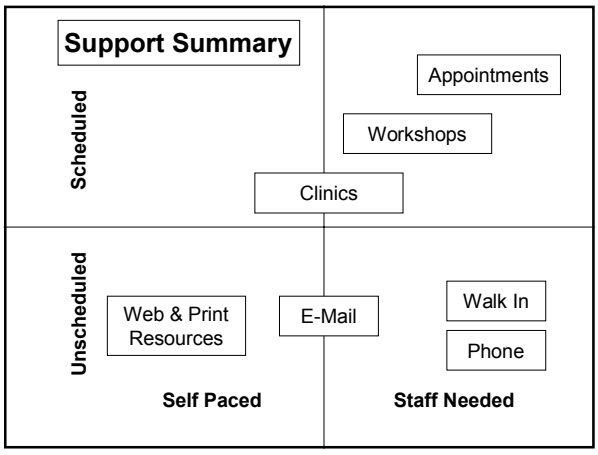
- Library Technical Reviewer
- ETD Task Force members
- Faculty member on student's committee
- Other computer labs' staff members: we will train them if they install Acrobat

ETD Computer Support Topics

- General information: deadlines, guidelines, process, location of resources, workshop info
- File conversion
- Word processing
- Acrobat software use
- Scanning
- Submission of ETD via web page

Types of Support

- **Scheduled & Unscheduled**
  - scheduled: staff sets aside time for support
  - unscheduled: student comes in any time
- **Staff on Duty & Self-Paced**
  - staff time needed to create materials
  - publicity needed for both live sessions and for availability of self-paced materials



Electronic Mail

- Advantages
  - asynchronous
  - copy & paste routine responses
  - can include URLs to web resources
  - can create transcript of Q&A (FAQ file)
- Disadvantage
  - delay in receiving response

Web Based

- Guidelines and sample pages on web
- Forms on web: approval, submission, UMI, survey of earned doctorates
- PDF files of workshop materials
- Web-based tutorials
  - currently we link to VT web site
- **www.wvu.edu/~thesis/**

Web Based [slide 2]

- Staff time needed to create & update PDF files and web pages
- Students:
  - need access to Internet
  - need to know how to get to site
  - need to be motivated to learn on their own

Workshops

- Free, for WVU faculty, students, staff
- Must pre-register
- ETD sessions: 2 hours, once per month
- 12 workstations
- Special request sessions
- www.wvu.edu/~support/training/

Workshops [slide 2]

Advantages

- Part of regular schedule
- More efficient than tutorial
- Hands on learning
- Q & A: students learn from others' questions
- Staff development: nothing forces you to learn something like teaching it.

Disadvantages

- Schedule conflicts for non-traditional students and with WVU classes
- Timing around deadlines
- Ties up lab/staff resources
- "Rabble rousers" stir up anxiety and paranoia in others

Appointments

- **Advantages**
  - personal attention to students' needs
  - staff reserves time to provide service
- **Disadvantages**
  - time consuming, inefficient
  - staff may do too much of the actual work

Clinics

- Students drop in without pre-scheduling
- Use training lab and ETD support staff
- Clinics normally start at 9 or 10 am and run until 6 or 8pm
- Start scheduling sessions 2 weeks before deadline
- www.wvu.edu/~support/training/classmat/etd/etdlist.htm

Clinics [slide 2]

Advantages

- Self paced yet help readily available
- Access to resources: Acrobat software, scanner
- Quiet time for staff to catch up on projects if no students show up

Disadvantages

- Lab & staff hours
- Possible need for weekend / evening hours
- Hard to predict usage

Possible Problems

- supporting off-campus students ⇨
- staff turnover
- competing support demands
- keeping materials up-to-date
- hostile or anxious students

Tips for Success

- train staff first
- adequate resources
  - staff
  - copies of Acrobat and other software
  - scanners etc.

Tips for Success, continued

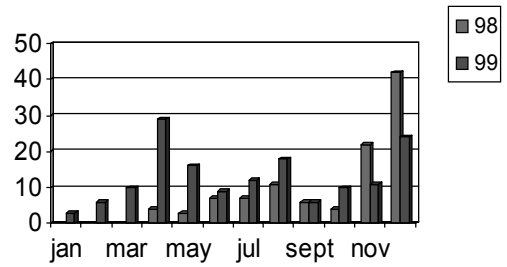
- publicize deadlines & policies
- server and database support
- scheduling based on deadlines
- be flexible and creative

Statistics

1998-99 Statistics

- 15 Workshops, 110 Attendees
- 10 Quick Starts, 40 Attendees
- **April-May 99 (Spring 99 graduates)**:
  146 Clinic Hours, 188 Staff Hours
  50 Attendees
- Task Force members made informational presentations to faculty April 98 - May 99

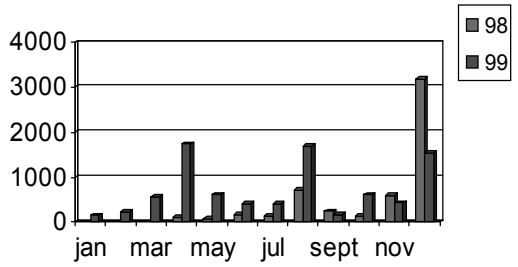
Consulting Contacts



Data from one consultant: Kathy Fletcher

Consulting Time:

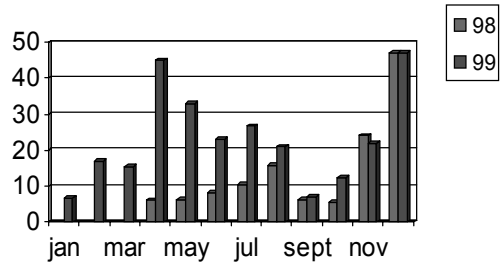
number of minutes spent on ETD support



Data from one consultant: Kathy Fletcher

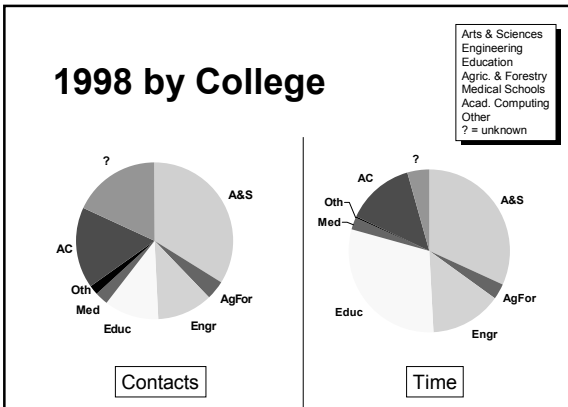
Percent of Consulting Time

of time spent consulting, percentage of that time spent on ETD support



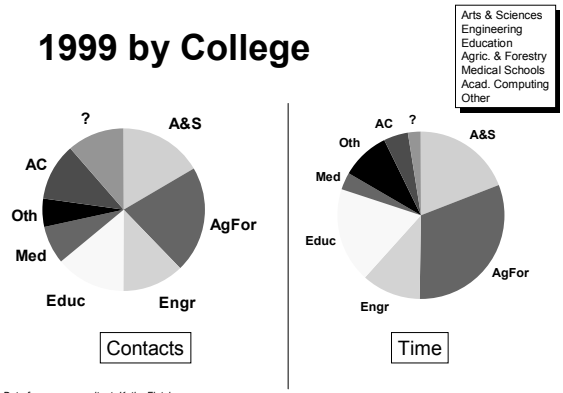
Data from one consultant: Kathy Fletcher

1998 by College



Data from one consultant: Kathy Fletcher

1999 by College



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