Ocotillo Retreat 1999
Café Discussion Summary Sheet

Technology Staffing **What is needed to better equip colleges with adequate staff to support instructional use of technology? What are appropriate staffing numbers/positions? What are the enticements that would keep valuable staff from leaving for "greener" pastures?**

1. Cross training to teach specialized skills to existing staff
2. Training with commitment to years of service (with contract to keep it binding) => Entice
3. Ratios: number of computers per person; student: teachers
4. Student interns in labs; pay them higher rate than other CWS
5. Enticement: $, competitive salary; salary schedule competitive to industry for technicians
6. Training program delivered in variety of different formats
7. Formula based ratio for amount of technology and support
8. Non-competitive clause in MCCD--don't poach from each other
9. Hiring at entry level appears to be equitable, but after they are trained we lose them because no increase in pay
10. Technology classification in pay scale
11. Have in-house technical training institute to certify our employees
12. Cross-train and develop own partnership among college for resource and personnel sharing
13. Professional growth opportunity for tech staff
14. Number needed varies based on services, staffing, needs, etc., need to assess and strategic plan that support such
15. Hays assessment missed technology concerns
16. Good benefits, especially education; also flexible work schedules
17. Use student internships as both a "grow-your-own" and augmenting of existing staff
18. Identify the ratios used in private industry and at universities expressing proper staffing levels to number of desktops, total technology $, applications supported, etc.
19. Administrative and executive buy-in to idea that, operational $ should be increased and balanced to cap $
20. Keep good people by "lutal-like" sabbaticals (mandatory, every 7 years); ask employees what benefits they want; training; telecommuting
21. Reassess salary levels and industry standards for numbers of workers, etc. to compete with business and industry
22. Recognition of value of existing staff; be more flexible with work hours and duties; allow more independence
23. Support professional growth
24. Find out what incentives are important to individuals
25. Cross-training of all workers and (??) jobs on a formal basis
26. Career path; grow our own technology workers
27. Support for CTCs for experimenting with instructional technology
28. Reward (variety of ways) faculty for using CTLs to learn and same for support staff
29. Research and find colleges / universities with success in staffing levels
30. Informal bench-marking and visiting other colleges in our district and outside our district for staffing levels and positions
31. Identify researchers at League technology conference in October 98 and get a copy of their study on support of technology
32. Provide variety in assignments, flexible work environment

33. Provide on-going training, support, and tools (cell-phone, paper, computer for home)
34. Decide how many staff you need, then double it
35. Rewrite job descriptions and salary schedule
36. Have clear mission plan for technology and instruction
37. Enticement: appreciation, rewards systems, flexible schedules, dollars, access to resources, offer growth opportunities
38. Elevate technical level of faculty / staff to enable more self-sufficiency; mentoring (empowerment); reassigned time for faculty training
39. Cross-training as a way to staff where needed during peak times
40. Develop ratios based on: number of computers, programs, year
41. Staffing requests tied to technology requests and vice versa
42. Track technology staff movement: are they going to other Maricopa colleges or leaving the district? If there is a net loss, then salaries must be increased
43. The amount of technical support will vary with the courses, skills, and knowledge of the faculty
44. There are inequities among colleges, there needs to be equity; driven by FTSE and college size; larger colleges are more financially efficient
45. Recruitment dollars; remove IT from restructure salary schedule (MAT)
46. Depends on student head count and other needs of campus
47. Formula based on number of machines
48. "Grow more grass"
49. New employee group "Technology"; accurate job descriptions and career path
50. Work environment, telecommute, flex work hours
51. Budget
52. Cross-training; job enrichment
53. Internships--number of staff to meet our need based on customer satisfaction surveys
54. Adequate number of positions / lines
55. Adequate quality and nature of preparation of staff
56. New positions, revise existing job descriptions
57. New system of rating job descriptions
58. Adequate pay
59. Adequate number staffing
60. Training--send to training sessions
61. Tools to do the job
62. Work environment / recognize staff
63. Job security
64. Invite staff to be on technology committees
65. Ratio of computers to techs, ratio of students to techs
66. On-going training for new managers / supervisors
67. Recognize / reward current employees to retain them
68. Re / staffing numbers track the current and predict future needs
69. Maintain satisfying and exciting work environment where employees feel involved
70. Separate our technology staff from PSA and MAT manual
71. Tie staffing to number of units--use a formula
72. Link fund 7 to fund 1--staffing per units
73. Provide more incentives to work for us--flex time, cafe benefits, ability to work from home
74. Use English faculty (see Margaret's article) and grow our own students

75. Support should be for whole campus, not just instructional
76. A plan is needed before staffing needs are determined; levels of support need to be determined
77. Competitive pay, cultivating student workers
78. Treat staff as professionals
79. Base pay on workload
80. Training--staff and faculty, $
81. Staffing based on campus size
82. Support both morally and politically, money
83. Do management training, learn people skills, communication, job training skills
84. More flexible schedules
85. Offer more challenging assignments; newer equipment, job training
86. Dual career paths, management or technical--offer opportunity for both
87. Mentor relationships
88. Crew needs more respect from rest of college community
89. Publicize current stable job environment--entice new employees
90. Offer recruitment bonus
91. Funding for internal and external technology communication and customer service training
92. Frontline 50:1 (per UCLA)d
93. Less stress, career path, professional development and training, give bonuses, creative funding and resources, telecommuting, flex scheduling, more contract employees
94. Carl Center Model can be used to develop a ratio model
95. Develop a staffing formula
96. Contract out support
97. Apprenticeship programs
98. A template of an organizational structure, what is an ideal unit of services
99. Centralized technology support for colleges--training, grow your own
100. Training and development programs for technical people
101. Make assessment / self-study skills available
102. Commitment to instructional use of technology and then funds to support
103. Rationale needed for use of technology--cost / benefit analysis needs
104. Mechanism to share technology uses at various colleges
105. Staffing in proportion to technology usage
106. Money, time, recognition, and access to resources throughout district, staff development opportunities, friendly working environment
107. Hire service to facilitate technology (outsource)

Faculty/Staff Development for Technology	**Given the demands and shortage of staff to do so, what are creative ways we can provide support for the use of instructional technology? What can be done collaboratively?**

1. Expand / develop programs based on MCC Student Technical Assistant
2. Organize / encourage information sharing among technology groups
3. Hardware, software, courseware
4. Cooperation / collaborations
5. International council on technology--collaborate across district
6. ITS employee group--increases professionalism, attach dollars for this group, increase pay, etc.
7. Professional growth for ITS, internships with Intel, etc., for computer / technology people--look

at positive work environment

8. District technology pool
9. Internships for students with technology talent, Help Desk programs and curriculum
10. Combine media and computer services with cross-training and flexible scheduling
11. Choose products with built-in help features to enable users to become self-directed learners
12. Outsource
13. Student Technology Assistants
14. Hire staff for adequate support but not at expense of other lines with adequate compensation; create flexibility for increases in salary
15. Release time for faculty to develop
16. Contract to academic services for technology-oriented development of academic materials and use dollars for campus support; i.e., students working with faculty supervision on K-12 materials
17. Instructional technology could be anything from e-mail for a distance learning course to an overhead projector
18. Utilize faculty mentors--reward them, give them release time
19. "Just in time" give support for faculty in learning how to utilize assistants; faculty should work on a problem no longer than 15 minutes before calling for help; Cathege College uses this model
20. Need a trainer for the faculty; a room for faculty training would be nice
21. Training for faculty should be modular and cover specific, limited, well-defined subjects; good documentation should be made available to the faculty
22. Hire students or give students incentives (scholarships, experience, recognition) to act as resources for faculty and staff
23. On-line help or various types of contractual help, CDs, help desks, videos, listservs or discussion groups
24. Develop list of people with expertise to act as resources for colleges or cross-colleges
25. Multiple ways of course development--CDs, manual, video, classroom; staff and faculty take college courses
26. Cross-college collaboration and development versus every college creating their own
27. Use a mentoring system of training--first train mentors then train colleges
28. Expand DO training menu--be creative in enticing use of DO resources
29. Use students as training resources
30. Use web self-training sites--establish district-based site or web that provides self-training in technology for all employees
31. Create district of trainers / expertise throughout district
32. Assess who needs training--establish minimum standard of expertise
33. Job rotation
34. Teach students skills needed and hire back part-time when course is completed
35. Partner with private industry to teach us technology skills needed an we reciprocate with tuition wavers
36. Partner with industry to swap "skills" training (i.e., technology and English courses)
37. Partner with other colleges / universities and swap training needed--includes faculty exchanges
38. Develop RFP; identify technology training needed and use Maricopa employees as FTSE (work with legal on this)
39. Student tech assistant programs, salary and credit to assist organization, internship, college credit, work experience, portfolio (resume)
40. Collaborative training for design and implementation in district learning with CEU credit and / or release time
41. Use mentors to train in technical areas; mentors deserve incentives, e.g., release time or salaries

42. Same as above with alternative delivery, for example, web-based modules with credit, etc. incentives
43. District clearinghouse of technology based training modules with incentives for completion; financially self-sustaining by making available to outside
44. District needs to establish a true development center focusing on instruction and teaching applications and integrate
45. Centralize district training that focuses on application and must be relevant
46. More internships and mentoring; we need to adopt a TA model like universities
47. Training user to go first level troubleshooting--software glitches, check extension / connections; use student technician assistants
48. Release time for faculty to train--software applications used for classrooms and basic troubleshooting; each division / department have first-line person to do troubleshooting; depends on who is open to learning
49. More conversation with instruction "Teach a man to fish"
50. Campus-defined direction; what drives use of technology ex: onset of use of TVs in classroom; direction of college, high technology use
51. TLTRs can create functional groups to collaborate on providing support for the use of instructional technology
52. District-level trainers to work with small groups of faculty / staff--workshops at colleges
53. Faculty on reassignment with expertise do training workshops
54. Adjunct Faculty Institute--preparatory program Friday / Saturday seminars
55. Internships for students from computing classes, could assist faculty and techs
56. CTLs existing at larger colleges; MCLI could provide district-wide; shared CTLs for smaller colleges
57. Buy don't build technology; use interns / students; grow your own
58. Train an expert faculty member who becomes a mentor; just in time training
59. Train division support staff in technology; effective initial training
60. Summer Train-the-Trainer between colleges for faculty mentor
61. Videos, computer-based training, web-based training, CDs, buddy system
62. Conferences, work with groups--faculty and technology; ITP--individual tech plan; create ITP incentives and awards
63. Create priority system; create corporate, business, industry, academic institutions--collaborate, mentor, volunteer programs
64. Have specialist cross train; train-the-trainer model
65. Faculty professional growth association--use funding, etc.
66. District have experts for common technology problems
67. Back-up machines for crisis--will improve faculty / staff relations
68. Preventative maintenance--routinely inspect all equipment--perhaps midnight--6 shift--could be student workers
69. Electronic warning system to notify support when machines fail--automatic--before instructor calls
70. Rotate staff to different computers for 3-4 weeks to share knowledge and practices
71. Share with others computer innovations and tech uses
72. Provide reassign time for faculty to work cross discipline in teams
73. Possible outsource
74. Sharing technical support
75. Internship with graduate students for creativity
76. Internships (early) for potential computer techs / instructors

77. Partnerships between universities and Maricopa
78. STAs training faculty
79. Publicize and showcase technology skills of faculty; 1st week of accountability?; potential short term
80. Department chair presentations--perhaps video sessions
81. Technology exchanges between instructional faculty
82. Department projects in technological development for professional development
83. Share what you learn during professional development when you return

Access to Technology **What are the needs for providing equitable technology access to students, faculty, and our communities? How can they be financially achieved?**

1. Resources for students who can't provide their own
2. Inequity between colleges and within colleges
3. Should some funding be generated by means of fees or other methods?
4. Balance between community use of resources and student use
5. Students of all backgrounds need access at college and at home; all over campus access (library, registration, offices, classrooms, labs ...)
6. Full-time and part-time faculty need access to office, classroom, and home computing; training as well as hardware and software
7. Investigate more financing options such as industry partnerships, block purchases, fees, ...
8. Partnering with other colleges and public libraries for cross-access
9. Dial-up service and access from home or work (students and part-time faculty)
10. Partnerships to share resources: equipment, role models, trade services (courses for personnel), co-enrollment
11. Transport (park n' ride) students to programs within Maricopa equates to district FTSE not college FTSE
12. Need technical support
13. Students need proximity to technology
14. $$$$$$$$$
15. Technology labs and locations other than campuses, i.e., churches, libraries, rec centers (boys and girls clubs), YMCAs, where the people go
16. Computer loan program (use with library card)
17. Scholarships for computers
18. Computers located on campus in other than lab settings; place where students congregate socially
19. Sufficient lab hours with lab support
20. Updated programs, mainstream programs, keeping current software available
21. Making sure students have access to technology...at home or on campus
22. Look at different models, i.e., Sun Microsystems leasing, loaning to students; lease purchase options for students
23. Use of smart cards; allow students access to specific computers directly related to course needs
24. Lab time--space available for students and community
25. Faculty use at home may require laptops; may require more technology support
26. Provide e-mail and web space for students and community for modest fee
27. Define what is needed by each group
28. Creation of open computer labs and specialized labs
29. Partnerships with private Internet service providers
30. Rental, loan, or lease technology hardware to maximize use of equipment

31. Technology fee or bond to fund
32. Faculty / students have modem access to all available on campus and / or 24-hour access
33. Classroom availability for full and partial users of the technology
34. Projection availability / making of presentations transparencies for students
35. Registration, course schedules, bookstore info, grades available to students on-line
36. Orientations for community members wanting to use technology--limited access
37. Obligation to provide access to technology for the students, staff, and community
38. Cyclical process to upgrade and replace technology on campus
39. Across the board technology fee to support student use of technology
40. Assess needs of assorted users; establish priority in relationship to needs; determine fiscal capability to respond to priorities; fit between capabilities needs / capabilities ($)
41. Needs are dynamic therefore ongoing analysis has to be done
42. Financial=creative connections; communities across areas; avoid duplication of resource usage
43. Financial=technologies in bulk
44. Define the needs of each group and establish levels of access and automate as much as possible (equity based on academic need)
45. Selling proprietary netware to outside entities; lab / user fees; added user fees for specialized equipment / needs; recycle old equipment to sell, i.e., fish bowls out of the Mac SEs); lease options
46. Labs / share access, equipment; set equipment up that is discipline-specific; provides user areas (as opposed to commons)
47. Faculty get what they want when they want it
48. Should other forms of technology be made available to these groups? We naturally gravitate to computers, but maybe it should be beepers / cell-phone
49. Universal access
50. Needs impact on campus infrastructure, technology support, wear and tear on equipment, license agreements, general supplies, 24-hour help desk support, etc.
51. Creative manipulation of existing budgets, partnerships, industry support
52. Remote access to classes / library on campus
53. Support human and machine
54. US West remote for ISP
55. Mail for students
56. Internet access with no waiting lines
57. 7 / 24 access
58. Rent to students
59. Tie staffing to capital technology purchases
60. Corporate sponsorships--free support and services
61. Access technology from home for both students / faculty for application purposes; loaners--hardware
62. 24-hour access and support for: instruction, technical assistance
63. Training (ongoing) for faculty take into account teaching schedules and incentives
64. Full access 24 / 7 / 365 with full support
65. Corporate partnerships
66. Creative fund raising (credit cards, grocery cards, banner ads on web sites)
67. Provide e-mail accounts, open lab environments
68. Alliances with libraries, schools
69. Alliances with vendors, business and industries for training labs, donations, internships
70. Lend / lease equipment to students

71. Bond funds for leasing
72. Provide a laptop computer for each full-time student
73. Develop partnerships with local business and institutions to support student learning
74. Provide faculty with appropriate computer resources tool
75. Provide dial-up access to part-time faculty and students
76. Provide authenticated access to on-line resources i.e., ISP, public library, public schools, and other community organizations
77. Access is more than using a computer or lab or dialing in; it is based on socio-economic situation and impacts student's preparation and academic readiness for higher education
78. Transportation is often a key, could we work with HUD non-profits and others partnering to develop distributed access to desktop computers
79. Should we be delivering services (like a van-full of laptops, like a "book-mobile" approach?)
80. Age restrictions and generation impact access
81. Do we need different dollars allocated to, and different strategies developed on each campus?
82. Survey the access to technology of all our students and staff; find out how we can connect them to our services
83. To find a way to match the capability of the hardware / software to realistic need of the users
84. Continued bond support
85. District-wide equitable technology fee
86. Partnering with the public sector review scheduling processes to maximize use of computer lab / classrooms
87. Access to technology; distance learning; universal access to community college computer labs (Internet, Microsoft Office Suite, graphics package)
88. Financial; user fees; cooperative business partnerships
89. Better negotiating power; share technology, resources, and ideas among campuses
90. Commercially (joint funded) sponsored mobile classroom with appropriate technology, i.e., video based, Internet
91. Integrated into all curriculum; spread application of technology to nontraditional curriculum; open labs (non-restricted)
92. Joint sponsored equipment pool for student check-out for home use
93. Partnerships--creative bartering; exchange resources to achieve win / win (i.e., space, faculty, equipment, tech consultants with community city libraries, K-12 sites, ...)
94. Providing access to student based on needs, etc.; refurbished computers / rentals; web TV; scholarship to provide web TV; making deals with computers; trade / recycle program
95. Open labs
96. Priority access: faculty / staff / admin; students; community
97. Fees for access / per crs. or per semester; scholarship money for access; capital funded
98. Subsidize acquisition; provide lease programs; access to lab resources
99. Integrate technology into all curriculum

Technology Cost/ Replacement	**What are the ways colleges can classify technology use and prioritize for equipment upgrade/replacement/recycling? How can costs of software, upgrades, and human support be tied to capital purchases?**

1. Continuously evaluation of need cyclical process of replacement
2. Match level of user to level of equipment for perfect ratio
3. Communication between ITS and Instruction
4. Prioritize people and their need. Also prioritize functional needs e.g. classroom, library, office, labs. People: students, faculty, admin support

5. TLTR be supported to make more of an impact on decisions re: software and memory, upgrades, re-allocations
6. Survey students for feedback on their needs for technology increase communication access / avenue
7. For every dollar of capitol allocate, say .25 cents towards operation / support / staff / software
8. Tie it ratio of computer unites = related to # of support staff
9. Ratio of # of 'technology using' classes to support staff
10. Trickle down upgrades each 3-5 years. Use a cost benefit analysis to categorize based on need
11. Clarification of technology use vs. prioritization of equipment upgrades are not necessarily tied together
12. Centralized the prioritization for technology capital decisions e.g. Dean of IT responsible for all technology computer decisions.
13. Tie Fees to capital requests
14. Upgrade only when needed
15. Classify - computers for student needs first - faculty who teach computers - faculty who use computers to enhance instruction
16. Build an operational budget plan that ties technology allocation to support, training, and software
17. Classify on core values - goals
18. Holistic approach; look at requests as packages equipment, support, software, etc.
19. Allocation by needs based on individuals capacities
20. Faculty who are doing things for students
21. Replacement cycle vs. cost long eye / how cost
22. Student fees reflect cost of technology
23. Restrictions on admin / faculty use by needs who determines
24. Technology users group t" hat decides and assess technology needs throughout the group and allocate resources through this plan
25. Program growth that includes certificate programs, facility growth, new classrooms and remodels
26. Low technology must be assessed and replaced everyday!
27. Holistic approach to planning that would related to capital requests to technology plan, support needs
28. Mostly new computer hardware / software to courses that need state of art systems. Prioritizing labs / classrooms scheduling to software needs
29. Costs such as security, training, support and maintenance may need to be calculated into true costs of obtaining "new" capital
30. Move students to computers- not computers to students
31. Don't always let district "standards" drive all decisions
32. Faculty should be provided with hardware and software prior to expending on facilities and students (course development)
33. Adequate compensation
34. Capital bond for technology should include technology personnel and all hard resources (a separate pay category for technicians for which capital funds can be used)
35. Create a master technology plan; prioritize user levels as high / medium / low
36. Capital expenses tied to campus strategic plan
37. Categorize by functional groups and rate user type by high / medium / low
38. Revise budgeting process - make more flexible - systems approach to budgeting so as to consider personnel needs and software when purchasing capital
39. Classify by use: lab, classroom, instructional; driven by curriculum applications

40. Administratively by responsibility or task instructional priority, guideline driven
41. Formula for support per desktop
42. Capital expenditures should be tied to the strategic plan
43. Automatic commitment of operational dollars per capital expenses
44. Prioritize based on function, need for standards
45. Prioritize based on academic program e.g. Microsoft certification
46. Manage resources, target specific application computer installations e.g. Word and Netscape ... only
47. Conduct "functional audit" of technology to determine priorities and support costs
48. Purchase or lease options include: Training, set-up, configuration
49. Classify by criticality of need
50. The criticality of needs to capital
51. Develop common annotated cost matrix
52. Consider total cost of ownership for technology budgeting. Include life cycle technology budgeting and support
53. Consider "buy low $ end and turn over faster" to ensure average quality of computing environment vs. buy high dollar and keep forever
54. Strategize to developmental planning -- instructional technology plans
55. Plan for growth in base of computers
56. Consider facilities implications of increasing technology available (e.g. networking old buildings without conduit)
57. Classify based on: learning, teaching, administrative, training, skill level of user, user friendliness and relevant for task
58. Prioritize: needs of students, remain current with internal and external entities
59. Bundle purchases "hardware and software". Develop ratios ex: for every 10 computers purchased hire one support person ex2: for every three people hired, hire one person for recruitment and selection
60. Organize / recycle based on type of use. Distinguish between high end and low end users
61. Bundle equipment with software and technical support
62. Bundle individual purchases from different colleges to ?? better prizes or higher quality
63. Assess the support cost associated with equipment and software purchases
64. Trade equip and software with other college
65. Set priorities that match the colleges priorities - tie measures to institutional measures
66. Replacement - needs to be formula driven; 1/5 of total is not realistic since you may not have capital dollars to do this
67. Technological happens so fast, we are planning for something we don't know what to plan for
68. Tie increases and operational support to capital purchases
69. Examine job placement system purchased than afterward ask who will run the system
70. Evaluate user/usage requirement; Establish standard set of software tools and desktop platform; appropriate for learning outcome (job); Low cost PC, define standard cycle of upgrades (phased approach)
71. Desktop shouldn't be capital; concurrent software (mentoring)
72. Tie costs to headcount just like benefits; total cost formula based on capital expenditures to people, equip, software,
73. Capital is wrong place to tie it - rewarding for spending more money
74. Prioritize by rewarding the productive users; Leverage cost of capital expenditure through centralized purchasing
75. Criteria for upgrades: competency-based, classroom instruction

76. Electronic survey of usage
77. Prioritize job skills vs. tools for teaching / learning
78. If technology is used to learn job skills than this should be given highest priority
79. Older versions of technology can be recycled to classes where technology is used for learning purposes i.e. word processors
80. Be sensitive to impact of technology acquisition related to staffing, classrooms, space, supplies, infrastructure, etc.

Assessment of Learning with Technology	**What are meaningful and do-able measures we can use systematically to get an understanding of how technology supports or hinders learning?**

1. Survey students, faculty & staff - include focus groups
2. Comparison - experimental vs. controlled (technology vs. no technology) - pre & post results
3. Interactive assignments (web-based) in class vs. independent
4. Build technology measure into the institution wide assessment plans
5. Develop measure at learning success (i.e. job placed) certifications earned, retention, pre-post competency-based testing) as compared to technology investments (budget, space, level of technology, # of units)
6. Best practices of similar metrics @ other institutions
7. Technology staff retention vs. #7 units, budget)
8. Faculty customer satisfaction survey and follow-up
9. FTSE to technology $ investment ration; exit reviews, student and staff
10. Need a standard test of computer literacy
11. How effective is particular technology to a learning situation - must be well designed and matches the competencies
12. Do a traditional research study of comparing classes - look at retention and completion, achievement of competencies, portfolios, esp. time to learn concepts - w / out technology
13. Use attitude surveys / questionnaire to assess students feelings about impact of technology on their learning
14. Do “Pat Cross” type of classroom research
15. Present student evaluations - integrate questions regarding technology
16. Focus groups using students in technology-enhanced classes
17. Student surveys or student perceptions of the use of technology
18. In order to measure the impact of technology, the variable of technology has to be isolated
19. Student surveys
20. Comparison students
21. Pre-assessment = prescription
22. What students are using; tracking progress with technology to see
23. Post-assessment = achievements
24. ASU students - DO students survey; Also ASU faculty
25. Look at student learning at program level
26. Measure technology literacy on program and employment level
27. In appropriate use of technology hinders learning
28. Create objectives - measure learning against objectives
29. No difference from assessing delivery of learning in any other way
30. This question assumes all learners are able and all uses of technology are the same

31. Maybe we should be assessing technology
32. Maybe we should be assessing learning
33. What ever facilitates learning should be encouraged and supported
34. Feedback from students - pre / post testing, surveys, performance-based "what tool has been most useful to enhance your least useful education?"
35. Survey potential employers of students "What skills do students need for their future work?"
36. Student portfolios - use outcome of process
37. Define learning - it's a poorly phrased question
38. Classroom management - any tool is only as good as 'how' you use it
39. Instructor - appropriate of accessing resources; - measure / compare results of students vs. types of resources used
40. Technology is the independent variable, not dependent variable. Curriculum still the guiding direction - technology is the tool
41. Surveys
42. Focus groups
43. Classroom research (Quantitative and Qualitative measures)
44. Comparison between groups - users vs. nonusers
45. Comparisons across campuses
46. Measure learning - define then discuss assessment
47. Control group study - proficiency assessment
48. Correlate with learning style
49. Student self-assessment
50. Cost-effective measures
51. Define technology to be assessed - isolate variables
52. Focus on short-term interventions might increase ability to control uses in study
53. Longitudinal assessment - apply technology initial class - assess enhanced skills in later classes
54. After initial exposure to tech, how many students above subsequent technology during classes
55. We don't think this can be 'experimental' research; it has to be 'real world'
56. Ask students and instructors - systemically look at the feedback and change what you're doing accordingly
57. Surveys of student experiences / perceptions - Look at the research
58. Comparative studies using different types of technology, or technology / no technology
59. Categorize learning and ways to evaluate
60. Standard, define end-product as evaluation tool
61. Make sure technology is being used properly
62. Assessments of graduates comparatively with those who have used technology with those who have not. Continuous assessment of new students as they progress through the institution
63. Add a question regarding the use of technology to the semester or course evaluation
64. Formally assess learning outcomes via a systemic tool such as Flashlight
65. Identify profile of successful "?" learner using distance learning
66. Make critical analysis of the use of technology vs. traditional methods
67. Learned is really hindered when the technology does not work
68. Technology must be a means not and end
69. Research based outcomes assessment using historical data
70. Competency in the class that used technology vs. the one that didn't - common pre-test & final exam
71. Use technology to enable something that could not have been done otherwise. Aim for the

technology based course to be better than the other one.

72. (FORCE) - sample of test used at SMCC - standardized tests to access learning
73. Survey students - how do they feel about the technology - beneficial?
74. Assess students ability to teach one another
75. Collect usage data from computer services and compare this data with longitudinal classroom assessment data. An example in using links to do research in English (research skill).
76. Using discussion groups and compare with chat room groups
77. Ask the students
78. Short in-class assessment of technology as it is used in the classroom - classroom research
79. Add technology evaluation to adjunct faculty evaluation tool
80. Use technology to INFORM students of their progress - new INFORM system
81. Look at national research
82. Faculty feedback
83. Instructional Design is crucial - instruction must drive technology, not vice-versa
84. Can we finally stop addressing the issue - since the American culture requires technical literacy, we should STOP beating ourselves up with this question
85. If we must assess technology use qualitative
86. All research is flawed in some way
87. Define technology in learning - What do we mean?
88. Should be a look at what improves instructions, not just technology for technologies sake
89. Pre / post in some situations especially where prior knowledge not required
90. Ask students, faculty, support staff - survey and focus groups
91. Ask whether it takes less time to learn
92. Compare student scores, knowledge, retention in technology courses vs. non-computer courses
93. Talk with students and faculty to obtain verbal reactions to use of computers; also talk with employers
94. Look at cost vs. benefits of technology in classrooms
95. Assess students ahead of time to determine learning styles