APPENDIX I:
ANALYSIS AND DATA

The evidence gathered during the three-year course of this initiative is described in greater detail here.

To reiterate, this evidence has served as the basis of the "emergent themes" and "lessons learned" described in the overview of this proposal. In addition, based on this evidence, we have revised the goal and aims of the original proposal, which are also stated in the overview.

Teaching and student learning

University assessment data

Sophomore Competency Exams

Xavier University administers the Collegiate Assessment of Academic Proficiency (CAAP) to all undergraduate students, who are required to successfully complete competency requirements in reading, mathematics, critical thinking, and oral and written communication.

The Center (with the assistance of staff in the Office of Institutional Research) examined the relationship between the participation in Center activities of faculty from disciplines that correlate with the content of CAAP and the mean student CAAP scores.

Since fall 1997, the CAAP mean scores have continued upward trends in four areas: critical thinking, reading skills, writing skills, and mathematics. During this same period, a majority of faculty members from Xavier's humanities and social sciences departments—departments that contribute most to students' preparation for the Sophomore Competency Exams—have participated in Center activities (Tables 1-3).

A general observation, therefore, is that the Center's focus on communities of practice, and faculty efforts at curriculum development, and improved teaching and student learning have had a positive impact on students' abilities at critical thinking, reading and writing skills, and mathematics.

Technology Survey

A survey administered to all faculty members in 1998, and again in 2001, measured, among other variables, faculty use of information technology (Tables 4-40). A comparison of the results obtained in 1998 and 2001 shows significantly large increases in the number of faculty who:

1. Regularly use technology for collaboration, communication, and research and integrate these processes into classroom instruction
2. Incorporate Web-based instruction into their course work.

The results also indicate that there is a modest increase in the number of faculty members who regularly use CD-ROM or on-line research resources, e-mail, and electronic bulletin boards such as WebBoard in the classroom.

Assessment data from faculty projects

Of all the activities funded by the Center, faculty projects best illustrate the Bush initiatives' effects on teaching and student learning. In reviewing assessment data [required in the request for proposals (RFP)] submitted by individual faculty members, the following examples best demonstrate how these projects can have a positive impact on teaching and student learning.

Psychology

A faculty member in the Psychology Department designed assessment tools to measure the effectiveness of homework assignments and research proposals in fostering an understanding of the scientific method (Table 41). The faculty member noted that, "Overall, these results suggest that the Psychology Laboratory assignments (*e.g.*, homework and research proposals) are effective in fostering an understanding of the scientific method and of how to conduct research."

A second survey assessed "research efficacy" or how confident students were at conducting research. The faculty member hypothesized that efficacy would be relatively high at the first administration of the survey and decrease at the second administration. The faculty member

speculated that, although students tend to think they are knowledgeable of research methodology, they would begin to truly understand the complexity of conducting research as the course progressed. Hence, at the second administration of the survey, students' confidence or research efficacy would decrease relative to their estimations at the start of the semester. During the third and final administration of the survey, efficacy levels were expected to increase—an increase associated with student mastery of conducting research as a result of their experiences and knowledge gained from the course.

Correlated groups *t*-tests were conducted on all items, examining changes in efficacy from the first to second, and from the second to third administrations of the survey (Table 42).

The data indicate:

- From the first to the second administration of the surveys, there was an increase in three areas: presenting results at a conference; developing an appropriate research design; and ability to analyze data using *t*-tests. Hence, hypothesis one was not supported, that is, students' research efficacy did not significantly decrease in most areas.
- From the second to the third administration of the surveys, there was an increase in students' ability to: conduct a literature review, analyze data obtained from research, code data, collect data from subjects, and present results at a conference. Hence, hypothesis two was partially supported in that student research efficacy increased over time.
- Overall, the Psychology Laboratory course is effective in producing confident researchers.

Speech Pathology and Education

Two faculty members—one in Speech Pathology and the other in the Division of Education—assessed student learning relative to a stated learning goal: "Students will demonstrate knowledge of development of phonology, articulation, and speech perception; characteristics of disordered speech sound development; assessment of disordered speech sound development; and treatment of disordered articulation and phonology." The faculty members noted that students utilized case studies as the primary means of understanding course content.

Using pre- and post-test data (Table 43), the faculty members concluded, "… (The students) learned the information and they were able to apply the knowledge at a deeper level…."

Philosophy

A faculty member in the Philosophy Department administered a survey to students enrolled in two sections of his Philosophy course (Table 44). The survey addressed a variety of course and student learning issues including: difficulty and number of course readings, instructor's grading, quality of classroom discussion and lectures, instruction outside of class, and pace of the course.

Of the faculty member's reflections on the survey results, the following are particularly noteworthy:

Regarding what the professor calls 'tools:'

> I would like to continue refining the Reading Workshop … (by) explor(ing) the more specific area of philosophical reading…. I would like to add to this Reading Workshop a sister, namely, a Writing Workshop. Its intent would be to teach students the basic writing skills they need to write an effective philosophy paper. I would emphasize, in particular, the idea of "building" or "constructing" an essay. Often, it is the craftsman-like skills that students lack, and this might be an opportunity to view essay writing as an exercise in craftsmanship.

Regarding 'ideas:'

> Here there is still much to do. I intend to develop thematic introductions for each of the units of the course. These would be designed to enhance the narrative flow of ideas, that is, to give students a better sense of how the concepts fit together…. Part of these thematic introductions would need to reach out to the student. Thus, in-class

exercises and writing assignments might be developed to enhance the bridge between idea world and student.

Regarding 'philosophizing:'

> Here too there is still much to work on…. One area, in particular, that I would like to develop is classroom communication between students. I have in the past been reluctant to utilize group activities in the classroom, but I believe this might be an effective way to draw more students into the spirit of the course, and even to broaden the instruction by having students explain ideas to their classmates.

Philosophy and Theology

Two faculty members from the Philosophy and Theology departments assessed student learning as it was affected by their participation in an on-line discussion with other students at the University of Wisconsin-Stout. Students' responses to two questions were analyzed in this study:

- As concerns content, name both the strengths and the weaknesses of what was communicated through the on-line discussion board.
- As concerns the technical process of communicating on-line, name both the strengths and the weaknesses of how communication took place on the discussion board.

The faculty members wrote:

> The experience of engaging in an Internet discussion increased student learning in a number of significant ways. First, students learned that one's social context has an important influence on the way in which one both reads and understands a text. The text, in this case, was Dr. King's "Letter from Birmingham Jail." While all the students at both campuses read the same identical material, the students at Xavier University learned that their understanding of King's ideas was clearly influenced by their own life experiences and their interpretation of that experience. In fact, a number of Xavier University students were quite perplexed at discovering that some

students at UW-Stout did not automatically arrive at the same conclusions as they did. The experience made the Xavier students more aware of how there is not simply one way of seeing things, but that the more perspectives that one can gain, the more understanding occurs.

Second, students learned that just the fact of engaging in an Internet discussion with other students, whether from the Xavier University or the UW-Stout campus, was a catalyst for learning. They sought to clarify and formulate important critical questions that arose from their reading. This discussion generated new questions and perspectives and invited students to begin to formulate ethical judgments. This Internet discussion motivated Xavier University students to continue and to expand on the topics and questions generated in that discussion with their fellow students in the classroom. Hence, the Internet discussion helped the students to better learn in both direct and indirect ways….

With regard to technical aspects of the project, students learned many skills relating to electronic communication and use of the World Wide Web. For most students this was their first experience in using an electronic discussion board to communicate with a group of people in an educational context. Students learned very quickly and became quite adept with this technical dimension. Students also learned how to access relevant on-line material and how to use a course-management system.

Creative Writing

Four faculty members involved in Xavier's Creative Writing Program developed pre- and post-test assessment tools to measure students' critical sophistication (*i.e.*, written critique of a poem) and ability to recognize concepts essential in creative writing (Table 45).

Although the faculty members were reasonably satisfied with the structure and content of the courses, they used the results to reset the grading criteria in the introductory and intermediate creative writing courses. In addition, they integrated into these same courses more activities that involve revision and criticism.

Communications

Faculty members in the Communications Department, who routinely use case studies in their courses, assessed whether questions associated with the case studies were written in such as way as to support the learning goals. They evaluated the questions relative to Benjamin Bloom's[1] (1956) Cognitive Taxonomy. The faculty members wrote, "What we found was that most of the questions on the cases were above the level of 'knowledge' and 'comprehension.' That is, the students were compelled to think about the information at a deeper level than just the regurgitation of facts. The cases had a total of 18 questions; of those 18 questions, 15 were at the 'analysis' and above levels."

One Communications Department faculty member also wrote,

> …(I)t should be worth noting that I received 5.00 (on a scale of 1-5; a rating of "Excellent" from all students completing the form) on the following statements:
>
> 1. The instructor's ability to promote effective teaching/learning atmosphere
> 2. The instructor's management of class time
> 3. The instructor's ability to communicate
> 4. The instructor's enthusiasm in teaching the course
> 5. The clarity of the course objectives
> 6. Agreement between course objectives and the material actually taught
> 7. Opportunities for learning in this class
> 8. Compared to other instructors who have taught me, this instructor's overall teaching effectiveness
>
> These positive results indicate to me that I taught the students at the appropriate level and they felt like they really got something out of the course.

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[1] Bloom, B.S. (Ed.). 1956. Taxonomy of educational objectives: The classification of educational goals. Handbook I, Cognitive Domain. New York, Longmans Green.

History

A faculty member in the History Department collected survey data from students enrolled in a two-course World Civilizations sequence. Qualitative data were collected from weekly student postings to an electronic journal and from mid- and end-of-semester student evaluations.

The History professor noted three particularly important outcomes of this study:

1. Students commented the most on the small group work and presentations. The groups prepared three short presentations on historical documents during the semester, as well as two "integrated presentations" in which they had to synthesize a larger body of material to present to the class. For all of these presentations they had to use some sort of information technology, either by conducting research on the Internet or by using PowerPoint and Web resources in their presentations. The response to this aspect of the course was overwhelmingly positive. Students said that they had a better understanding of history as a result of working on focused topics and listening to other students' presentations. Other advantages to working in small groups included:
    - Students learned from one another
    - Students understood a topic in more depth
    - Students became actively involved in their own learning
    - Students communicated with one another (and in some cases developed close working and personal relationships)
    - Students became more independent and relied less on the instructor as the source of all information.

    Since these presentations were graded mostly collectively, group members relied on one another to prepare and perform well. Not everyone was happy with this situation, and during the second half of the semester I included an individual writing component to the presentations, so that there would be a balance between the individual and group portions."

2. Unfortunately, the open-ended nature of the evaluation (survey questions) did not elicit comments on the third goal of the course, (that is,) to include more material on gender and women. However, anecdotal evidence and my own observations show that this shift in the course content did have an impact on the ways in which students thought about the course. In many cases they thought more carefully about the exercise of power, not only in relation to gender, but also with class and race. They also gained an appreciation for women as important actors in the past, not just as afterthoughts. Most important, I think having an emphasis on women and gender gave permission to the women students to take charge of their own work.

3. I think that using more information technology resources in this course enhanced it. Although I did not rely exclusively upon these resources, they helped me present material in a more organized fashion in class and enabled students to follow along and catch up if they fell behind. In all my classes this spring I placed all assignments on-line and had almost no paper handouts, a situation that forced students to use the on-line systems. For the most part, this worked out well, and I will do it again, although the success of this method depends entirely on the reliability of the technology resources (*i.e.*, computers, servers, websites, *etc*.).

Business

A faculty member in the Business Department developed Web-based classroom exercises that were aimed at integrating contemporary concepts of money and banking into a comprehensive learning experience.

The faculty member used a regression model to assess the impact of these classroom activities on student learning (Table 46). Based on the analysis, the faculty member noted:

> The coefficient in the Internet group is significant at the 95 percent level of confidence. This may be for two reasons: First, contact time with students has substantially increased. Being able to correspond among themselves regarding the relevant theory and problems gives students an additional opportunity to focus on

> problem areas and seek help from each other. We believe the added communications element has gone a long way in fostering both thought and interest in the subject matter. Second, the Internet assignments and use of the Web may have allowed students to observe the real-life implications of the monetary theories they learn in the money and banking class. The hands-on experience may have provided a better understanding of the subject matter and makes the learning process more active. Thus, the hypothesis that the Internet use in money and banking course has no effect on student performance can be rejected in favor of a positive influence.

In addition to measuring the impact of his use of technology in teaching, the Business Department faculty member collected survey data on students' perceptions of his effectiveness as an instructor (Table 47). The faculty member wrote:

> …(S)tudent satisfaction, as measured by rating of the instructor and overall learning experience, is significantly greater when the Internet was incorporated in the course work. Although there is an overall improvement in the student ratings, it is particularly apparent in the areas of instructor preparedness (item number 8) and course usefulness (item number 21).
>
> Student responses to item number 12 also indicate that their enthusiasm and interest in the course is much higher when the Internet is incorporated.
>
> It is interesting to note that item number 20, which indicates a significant drop in the mean rating, relates to examinations. It is possible that, as more time was spent on the Internet exercises, less (time) was available for covering materials directly related to exams.
>
> In summary, linking formal economic concepts to students' hands-on trading experiences increased their interest in the subject and … increased learning. Making the Iowa Electronics Market (IEM), a set of Web-based financial markets where students use real money accounts to buy and sell future contracts, an integral part of

> Money and Banking instruction provided me with another tool to engage students with varied learning styles in the learning process and provided students with fun learning experiences that reinforced classroom teaching.

In a similar study, the Business Department faculty member developed a set of teaching and learning tools designed to:

1. Introduce students to the statistical capabilities of Microsoft Excel
2. Develop students' proficiency in handling data
3. Provide supplementary exercises and activities to enhance learning
4. Provide a feel for statistics by letting students work on a real-world data on an as-it-is-happening basis.

He tested the hypothesis that the Excel exercises had no effect on student grades using a regression analysis with the student's grade as the dependent variable (Table 48). He noted, "The effect of Excel (on students' grades) has been found to be positive and significant…."

He continued:

> Transforming schools to improve the education of students is engaging the productive energies of educators, researchers and policy makers throughout the country. Our experiment with the project makes us take the position that technology can support students' acquisition of higher-order thinking and problem-solving skills in a number of ways. At one level, students' use of technology as a tool in class projects contributes to the authenticity of the projects, because technology pervades much of the society. At another level, technology can be used to introduce a problem for student investigation. In some instances, technology can simulate a real-world situation that is not feasible for youngsters to explore otherwise. Thus, technology … affords (an) opportunity for making teaching and learning more efficient.

Education

The goals of a project initiated by a faculty member in the Division of Education focused on the usage of the Journal Storage (JSTOR) electronic database by advanced counseling

graduate students. The results of this project provided a baseline of data regarding the usefulness of the JSTOR database in counselor education instruction. A pre- and post-survey of their technological competencies was administered and an analysis of their discussion threads to WebBoard, an electronic conferencing tool, was used:

> While only six of the nine students in the class had ever used JSTOR prior to beginning the course, all students reported using JSTOR by the completion of the course. Pre- and post-survey data indicated that students' perceptions of JSTOR's usefulness changed from two-thirds of the class perceiving JSTOR as either "not very useful" or "totally useless" at the beginning of the course to nearly 90% of the students perceiving JSTOR as "extremely useful" or "somewhat useful" at the end of the course. Qualitative analysis of WebBoard discussion threads also supports the findings of the pre- and post-survey results.
>
> Analysis of pre- and post-course quantitative data indicated that students' comfort level in research activities related to disseminating clinical research findings increased during the course period. In the area of interpreting journal articles, their change in self-reported discomfort ("not very comfortable") decreased from 55.6% to 22.2%. In reporting their comfort level with deciphering statistical tables in journal articles, student responses indicated an increase from 55.5% ("somewhat comfortable") to 100.00% (either "extremely comfortable" or "somewhat comfortable"). By the end of the course, students reported an increase in comfort level in delivering their research reports. While all of the students indicated that they were either "extremely uncomfortable" or "not very comfortable," in delivering results of research, by the end of the course 88.9% of the students indicated that they were either "extremely comfortable" or "somewhat comfortable."

The results suggest that:

1. Students expanded their technology competencies by using the JSTOR electronic database system

2. There was an increase in positive attitudes toward the usefulness of the database after required usage in accessing counseling-related journal articles
3. Students developed their own protocols in order to disseminate clinical research findings.

Political Science

A Political Science professor also integrated JSTOR into the teaching and learning process. The faculty member's analysis of the students' research papers formed the basis of the assessment of students' mastery of the JSTOR database. The professor noted two particularly important outcomes of the study:

1. The extent to which students were able to identify hypotheses tested in previous (published JSTOR) studies and choose to accept or reject them for their study was considered. In all 22 cases where students used the database, the hypotheses accepted or rejected were grounded in the literature…. This satisfied … (one) criterion of my assessment method: a measure of the correlation between the scholarship and students' identification of hypotheses.
2. … I assessed how well students were able to identify the influences created by an author's research design on the outcome of a study. Most students (approximately 64%) seemed able to recognize that the design used may have contributed to the author's results and developed alternative designs to suit the particular data available to them.

Biology

Four faculty members in the Biology Department implemented a series of workshops for students enrolled in the first semester Biology course. The workshops addressed a broad range of topics from principles of learning and logistics of studying to course content. The faculty members noted that it is difficult to determine if the workshops alone effected student performance. However, an evaluation of grade distributions over two semesters, when compared to the previous academic year, indicated that there was a 7% increase in the number of 'C' or better student final grades. As one faculty member wrote, "It is impossible to determine if this increase in student performance was actually a result of these workshops, although it does seem to be likely."

Pharmacy

A faculty member in Xavier's College of Pharmacy, who serves as a preceptor in a Clinical Rotations course for professional students, used pre- and post-course surveys to analyze the effectiveness of the professional relationship between the preceptor and students.

The faculty member wrote:

> When asked about career goals on the pre-course survey, 4 of the 9 chose a career in retail and 5 seemed unsure as each gave multiple answers. Other career goals that were mentioned included management, research, personal satisfaction, passing the board, hospital, home health, industry, medical school, and a pharmacy residency. Only 1 student of the 9 indicated the possibility of a pharmacy residency that would possibly lead to a clinical pharmacy position such as what they would be learning on my rotation. However, on post-course survey, 3 were considering a pharmacy residency (one of which was the student considering it on pre-course survey) and 2 definitely wanted to pursue a residency and a clinical pharmacy career.
>
> In regards to their personal goals they wished to attain during their rotations, gaining clinical pharmacy knowledge was the highest on their list with 8 or the 9 mentioning this as a goal. Only 5 of the 9 specified attaining skills to apply their knowledge in the patient setting. Other goals included gaining confidence (4), learning patient assessment skills (2), becoming a self-learner (1), becoming more assertive/aggressive (2), increasing drug information skills (1), increasing communication skills (oral and/or written) (2). Upon post-course survey, 7 of the 9 felt that they had achieved their original goals and the other 2 felt that they were headed in the right direction. One student felt that additional goals for future rotations were to increase his presentation skills and drug knowledge. No other student indicated goals for future rotations.
>
> *All 9 students indicated that the preceptor's role should be a role model, guide, and resource. One student indicated that she felt the preceptor should "push" her to do*

her best. When asked how the preceptor could have further facilitated the attainment of goals, 6 indicated the preceptor had done an excellent job and no recommendation for improvement was made. Criticisms included needing more patient case discussions, there was too much work although the educational techniques were helpful, the preceptor needed to be more specific in particular areas, not enough discussion of oncologic disease states, and preceptor made student 'apprehensive'.

Based on these results, it seems as if many of the students are unsure of what they would like to do in their career and almost none of them are considering a clinical career. This is possibly due to lack of experience in the various areas of pharmacy as a few do indicate a developing interest once the rotation is complete. It also seems as if students do not really understand what they are supposed to be gaining from their clinical experiences. Although clinical rotation is supposed to be focused on applying knowledge already gained, the students seem to be focusing on gaining knowledge they should already have. It also seems that I am doing a fairly good job in guiding the students through this course although there are some areas that a few felt that I needed to work on.

Education

A faculty member in the Division of Education set out to "…enhance student learning through appropriate and innovative assessments, relevant and interesting course materials, and a higher level of student engagement." One means of determining the extent to which this goal was achieved was by analyzing over 180 student e-mail messages. In this course, students were required to use e-mail or an on-line chat to complete assignments, share information, or discuss the material given in class.

The faculty member noted that in the first half of the semester, extraordinarily little electronic correspondence concerned course content.

In the second half of the semester, however, especially after students realized that this means of communication was intended to help in reaching the goals of the course, students worked

much harder at corresponding with everyone in the class about substantive, course-related information. The faculty member reported that, "This time, higher level thinking went on, such as sharing important information a student had discovered through his or her research. They began to ask deeper questions, plan their work, and form study groups."

Language Department

A faculty member from the Language Department conducted a classroom research project to examine various aspects of teaching a technology-enhanced language-learning course in comparison to a more traditional, non-technology language-learning course. For example, she assessed whether technology-enhanced language learning results in higher performance in:

1. Listening comprehension
2. Understanding of culture.

To test these hypotheses, the faculty member analyzed data from pre- and post-tests from two groups of students: a group of students enrolled in a course in which technology (*e.g.*, the Web, videotapes, audiotapes, *etc.*) was fully integrated into the teaching and learning process, and a group of students enrolled in another section of the same course in which no information technology was used.

The results indicated the following:

1. Students learn more about culture when computer-based materials are used
2. The use of computer-based materials did not significantly improve students' listening skills
3. Based on a comparison of students' final grades, students who experienced technology in the teaching and learning process performed better, overall, than did students in the non-technology teaching and learning environment.

The faculty member concludes, “As there is more and more emphasis on the adoption of computer-based materials in the foreign language classroom, educators and administrators need to make knowledgeable choices based on empirical research. Continuous evaluation of modern technology will also help us to understand how students learn foreign languages more effectively.”

History and English departments

Faculty members in the English and History departments developed pre- and post-course tests to assess students’ increase in knowledge due to their experiences in the World History and World Literature courses. The knowledge assessed in the tests included knowledge of historical facts and contexts, literary genres, and reading comprehension of difficult texts.

The faculty members discovered from a comparison of the data that students had difficulty:

1. Defining and understanding major literary terms, such as *novel*, *epic*, and *tragedy*
2. Noting the correct time sequence of events
3. Determining the historical, geographical, and cultural context of texts.

They also discovered that students had made significant progress in:

1. Interpreting cultural values based on short readings
2. Understanding concepts of Renaissance and myth.

Based on these results:

1. A list of terms dealing with literary concepts has been added to the syllabi
2. The faculty developed new approaches to teaching generic terms so that, rather than presenting them as mere labels with pat answers, the terms become starting points for deeper explorations into the ambiguities of literary form as it relates to particular cultures and periods.
3. The faculty developed new pedagogies to help students understand the historical contexts of literature.

Faculty and student participation and scholarship

During each of the three years of the grant, approximately 60% of Xavier's faculty members participated in Center activities (Table 1).

Additional data also indicate that the Center provided nearly consistent support during the funding period to faculty members' interested in teaching and research communities, including the Course Portfolio and Scholarship of Teaching working groups. The data also indicate a decreasing level of support during the grant period for technology communities (Table 49). That no faculty members or students participated in technology communities during year III of the grant does not reflect a lack of institutional or faculty interest in information technology, but instead a change in the Center's strategy for supporting faculty and student use of information technology.

As the data indicate, a majority of Xavier's faculty members have had direct interaction with the Center for the Advancement of Teaching. Clearly, participation data such as these do not in and of themselves indicate what impact, if any, these activities have actually had on faculty development or student learning. They do, however, indicate faculty members' interest in professional development, and the improvement of teaching, research, and student learning. Hirschhorn and May[2] describe four elements of a successful campus campaign, including the need to "listen in to the institution to discover the emergent future" and "sweep people in to mobilize energies." The Center for the Advancement of Teaching, with the support of this grant, has succeeded in drawing faculty members to its professional development activities.

When considering these data, it is important to note that the portion of the grant that was allocated to faculty salaries and stipends and student stipends is the single limitation to the numbers of faculty members and students who participated the grant activities. That is to

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[2] Hirschhorn, L. and L. May. "The Campaign Approach to Change."
Change, May/June
2000.

say, more faculty members and students expressed an interest in the grant initiatives and submitted proposals than we were able to support because of a finite budget.

Finally, during the three years of this grant initiative, several faculty and students have produced works of scholarship, including conference presentations, publications, and successful grant proposals (Table 50).

Impact of workshops

The Center hosted several workshops throughout the grant period, some of which focused on developing faculty members' technology skills and knowledge and others of which focused on pedagogical strategies and faculty development issues.

Following each workshop, a survey was conducted of workshop participants. The data (Table 51) reported here represent pooled survey results from seven workshops that focused exclusively on pedagogical strategies and faculty development issues. The data, along with the written responses from faculty, point to two particularly important "lessons" or "avenues for improvement," including:

- The need to contextualize workshop content in ways that are appropriate, relevant, and applicable to Xavier University and its faculty and students. Although nearly 70% of the workshop participants indicated that the workshop topics were of "high importance," more than a third of the participants found the workshop information to be of little or no usefulness.
- The need to link individual workshops with other Center initiatives and projects in order to sustain the goals of the workshops.

Impact on faculty development

Near the end of the current grant period, the Center administered a survey to all faculty members who participated in Center activities during the past three years. The survey was designed to help the Center staff further understand the impact of the Center's activities on teaching and student learning (Appendix II). It is important to note that the population

surveyed was a subset of the entire university faculty, since the purpose of the survey was to measure the impact of faculty members' participation in Center activities.

The results indicate that faculty members who responded to the survey, to a greater extent now than before their participation in Center activities:

1. Have integrated new information technology and assessment practices (*e.g.*, performance-based assessment) into their teaching
2. Developed knowledge, understanding, and collegial practices
3. Perceive improvements in student behaviors with regard to learning and classroom experiences.

A correlation analysis is particularly helpful in demonstrating the interconnectedness of faculty teaching and assessment practices, successful faculty development, and perceptions of impact on student learning. Two particularly noteworthy cases deserve attention:

1. Faculty members reported that, as a result of their participation in Center activities, they reflect more now than before on their effectiveness as teachers. This finding is significantly correlated with faculty members' deeper understanding of course content and their requirement of students to use information technology.
2. Faculty members also reported that they discuss learning and teaching issues with departmental colleagues more as a result of their participation in Center activities. This finding is significantly correlated with faculty members' increased understanding of barriers to students' learning, knowledge of institutional issues, and confidence as teachers.

A second survey was issued to faculty members who submitted proposals to the Center and were approved for funding by the Bush-Hewlett grant (Appendix III). This survey was designed to measure various aspects of the value that faculty members place on the community approach to faculty development. Three "messages" from these data deserve mention:

1. The community approach to faculty development was an approach that nearly 50% of the faculty had not experienced prior to the Bush grant initiatives.

2. Faculty members expressed overwhelming support of the community approach to faculty development efforts at Xavier. Not only did they find it an effective approach to professional development, nearly 75% of the faculty members indicated that the goals of their projects could not have been achieved without the involvement of other faculty (and students, where applicable). Moreover, 70% of the faculty members indicated that their communities would continue working together after the funding period. Last, 90% of the faculty members supported the Center's continued role in establishing and supporting communities of faculty and students.
3. Barriers to having successful communities of faculty and students include:
    a. Lack of time (noted by 30% of respondents)
    b. Lack of student commitment (noted by 28% of respondents)
    c. The too frequent occurrence of discussion of irrelevant issues (noted by 24% of the respondents)
    d. Ineffective use of time (noted by 20% of respondents)
    e. Lack of leadership (noted by 18% of respondents).

Percentage of faculty involved in Center activities			
Department	**1998-1999**	**1999-2000**	**2000-2001**
African American Studies	100%	66%	100%
Art	20%	60%	40%
Biology	71%	65%	48%
Business	78%	56%	100%
Chemistry	50%	50%	38%
Communications	91%	100%	73%
Computer Science	38%	88%	43%
Deciding Majors	0%	0%	0%
Education	69%	85%	60%
English	71%	88%	61%
History	100%	88%	86%
Languages	100%	100%	100%
Mathematics	64%	47%	36%
Music	83%	60%	17%
Pharmacy	54%	47%	59%
Philosophy	50%	67%	100%
Physics/Engineering	43%	50%	43%
Political Science	67%	100%	67%
Psychology	50%	43%	57%
Sociology	0%	100%	100%
Theology	50%	80%	100%
Overall participation (number of participants/total number of faculty)	63% 133 / 212	63% 134 / 214	59% 127 / 215

Table 1. Percent of faculty members per department involved in Center activities during the three year grant period.

Grant Activities	Academic Year 1998-1999	Academic Year 1999-2000	Academic Year 2000-2001
Communities of Faculty and Students			
Teaching Communities	17 faculty 4 students*	28 faculty 18 students*	8 faculty 2 students*
Research Communities	7 faculty 6 students	9 faculty 0 students	12 faculty 4 students
Technology Communities	31 faculty 25 students	18 faculty 12 students	0 faculty 0 students
Other Activities			
Course Portfolio Working Group	11 faculty 0 students*	0 faculty 0 students	15 faculty 0 students*
Scholarship of Teaching Working Group^	7 faculty**	0 faculty	3 faculty
Workshops and Symposia^^	111 faculty	125 faculty	131 faculty
Total	**184 faculty^^^ 35 students**	**180 faculty^^^ 30 students**	**169 faculty^^^ 6 students**

Table 2. Faculty and student participation in Bush-Hewlett grant funded activities. *The number of students does not include those in courses taught by faculty members in communities. (Students in these courses did not receive stipends for their participation in the projects.) **These faculty members participated in Year I of the Carnegie Teaching Academy Campus Program. The participating faculty members did not receive financial support from the Bush-Hewlett faculty development grant. ^The students involved in this initiative were enrolled in the faculty member's courses and did not receive stipends. ^^These workshops and symposia did not involve students. ^^^This number includes duplicate entries.

Grant Activities	Number of projects recommended for funding	Success rate* of projects recommended for funding (number)
Communities of Faculty and Students		
Teaching Communities	11	91% (10)
Research Communities	7	100% (7)
Technology Communities	21	57% (12)
Course Portfolio Working Group	26	81% (21)
Scholarship of Teaching Working Group	10	100% (10)

Table 3. Total number of faculty and student projects funded during the three-year grant period, and their success rate. *Success was determined by the degree of correlation between stated outcomes and results, based on faculty self-reporting.

I am just beginning to learn how to use basic applications such as word processors and drill and practice software.		
Response	**1998**	**2001**
Agree	12.1% (11)	8.2% (6)
Disagree	87.9% (80)	91.7% (67)

Table 4. 1998 and 2001 technology survey data, question 1. (*t* test, p=0.4193)

I am familiar with a variety of applications and often require students to use technology to complete assignments.		
Response	**1998**	**2001**
Agree	62.2% (56)	69.9% (51)
Disagree	37.8% (34)	30.1% (22)
Missing	1 (-)	-

Table 5. 1998 and 2001 technology survey data, question 2. (*t* test, p=0.307)

I regularly use technology for collaboration, communication, and research and integrate these processes into classroom instruction.		
Response	**1998**	**2001**
Agree	60.7% (54)	75.3% (55)
Disagree	39.3% (35)	24.7% (18)
Missing	2 (-)	-

Table 6. 1998 and 2001 technology survey data, question 3. (*t* test, p=0.0477)*

I use technology as a tool to craft curriculum and new teaching and learning techniques.		
Response	**1998**	**2001**
Agree	65.5% (59)	69.8% (51)
Disagree	34.4% (31)	30.1% (22)
Missing	1 (-)	-

Table 7. 1998 and 2001 technology survey data, question 4. (*t* test, p=0.5594)

To what extent do you currently incorporate computer technology into classroom instruction?		
Response	**1998**	**2001**
Frequently	24.4% (22)	34.7% (25)
Occasionally	38.9% (35)	38.8% (28)
Seldom	25.6% (23)	13.8% (10)
Never	11.1% (10)	12.5% (9)
Missing	1 (-)	-

Table 8. 1998 and 2001 technology survey data, question 5. (Chi-square, p=0.2412)

Insufficient technical equipment infrastructure (i.e., cables, routers, wiring) is a barrier to my incorporating computer technology into my classroom instruction (excluding Web-Based Instruction).		
Response	**1998**	**2001**
Strongly Agree	35.6% (32)	28.7% (21)
Agree	31. 1(28)	26.0% (19)
Disagree	21.1% (19)	21.9% (16)
Strongly Disagree	4.4% (4)	10.9% (8)
No Opinion	7.8% (7)	12.3% (9)
Missing	1 (-)	-

Table 9. 1998 and 2001 technology survey data, question 6. (Chi-square, p=0.3902)

Insufficient equipment (i.e., computers, servers) is a barrier to my incorporating computer technology into my classroom instruction (excluding Web-Based Instruction).		
Response	**1998**	**2001**
Strongly Agree	43.3% (39)	21.9% (16)
Agree	27.8% (25)	28.7% (21)
Disagree	21.1% (19)	26.0% (19)
Strongly Disagree	3.3% (3)	12.3% (9)
No Opinion	4.4% (4)	10.9% (8)
Missing	1 (-)	-

Table 10. 1998 and 2001 technology survey data, question 7. (Chi-square, p=0.013)*

Insufficient technical support (i.e., technology administrators, etc.) is a barrier to my incorporating computer technology into my classroom instruction (excluding Web-Based Instruction).		
Response	**1998**	**2001**
Strongly Agree	35.6% (32)	7.0% (5)
Agree	34.4% (31)	27.3% (20)
Disagree	24.4% (22)	43.8% (32)
Strongly Disagree	1.1% (1)	8.2% (6)
No Opinion	4.4% (4)	10.9% (8)
Missing	1 (-)	-

Table 11. 1998 and 2001 technology survey data, question 8. (Chi-square, p=0.00)**

Insufficient personal training on computer technology (excluding Web-Based Instruction) is a barrier to my incorporating computer technology into my classroom.		
Response	**1998**	**2001**
Strongly Agree	12.2% (11)	9.5% (7)
Agree	34.4% (31)	17.8% (13)
Disagree	34.4% (31)	46.5% (34)
Strongly Disagree	14.4% (13)	16.4% (12)
No Opinion	4.4% (4)	8.2% (6)
Missing	1 (-)	-

Table 12. 1998 and 2001 technology survey data, question 9. (Chi-square, p=0.1404)

Do you currently incorporate Web-Based Instruction into your course work?		
Response	**1998**	**2001**
Frequently	6.7% (6)	20.5% (15)
Occasionally	21.1% (19)	28.7% (21)
Seldom	26.7% (24)	21.9% (16)
Never	45.6% (41)	28.7% (21)
Missing	1 (-)	-

Table 13. 1998 and 2001 technology survey data, question 10. (Chi-square, p=0.035)*

Insufficient technical equipment infrastructure (i.e., cables, routers, wiring) is a barrier to my incorporating Web-Based Instruction into my classroom.		
Response	**1998**	**2001**
Strongly Agree	36.0% (32)	21.7% (15)
Agree	25.8% (23)	24.6% (17)
Disagree	20.2% (18)	31.8% (22)
Strongly Disagree	3.4% (3)	7.2% (5)
No Opinion	13.5% (12)	14.4% (10)
Missing	2 (-)	-

Table 14. 1998 and 2001 technology survey data, question 11. (Chi-square, p=0.2053)

Insufficient equipment (i.e., computers, modems, servers) is a barrier to my incorporating Web-Based Instruction into my classroom.		
Response	**1998**	**2001**
Strongly Agree	37.5% (33)	20.5% (16)
Agree	30.7% (27)	19.2% (15)
Disagree	18.2% (16)	28.2% (22)
Strongly Disagree	2.3% (2)	19.2% (15)
No Opinion	11.4% (10)	12.8% (10)
Missing	3 (-)	-

Table 15. 1998 and 2001 technology survey data, question 12. (Chi-square, p=0.0006)**

Insufficient technical support (i.e., technology administrators, webmasters, etc.) is a barrier to my incorporating Web-Based Instruction into my classroom.		
Response	**1998**	**2001**
Strongly Agree	34.1% (30)	10.0% (7)
Agree	30.7% (27)	28.5% (20)
Disagree	21.6% (19)	40.0% (28)
Strongly Disagree	1.1% (1)	7.1% (5)
No Opinion	12.5% (11)	14.2% (10)
Missing	3 (-)	-

Table 16. 1998 and 2001 technology survey data, question 13. (Chi-square, p=0.0013)**

Insufficient personal training on Web-Based Instruction is a barrier to my incorporating Web-Based Instruction into my classroom.		
Response	**1998**	**2001**
Strongly Agree	20.5% (18)	15.7% (11)
Agree	38.6% (34)	22.8% (16)
Disagree	21.6% (19)	40.0% (28)
Strongly Disagree	9.1% (8)	8.5% (6)
No Opinion	10.2% (9)	12.8% (9)
Missing	3 (-)	-

Table 17. 1998 and 2001 technology survey data, question 14. (Chi-square, p=0.0833)

To what extent do you use word processors?		
Response	**1998**	**2001**
At least once a month	96.7% (88)	95.7% (68)
Less than once a month but at least in three months	1.1% (1)	1.4% (1)
Less than once a year	1.1% (1)	-
Never	1.1% (1)	2.8% (2)

Table 18. 1998 and 2001 technology survey data, question 15. (p=0.6938)

To what extent do you use spreadsheets?		
Response	**1998**	**2001**
At least once a month	49.5% (45)	57.5% (42)
Less than once a month but at least in three months	8.8% (8)	4.1% (3)
Less than once in three months but at least once a year	8.8% (8)	8.2% (6)
Less than once a year	7.7% (7)	9.5% (7)
Never	25.3% (23)	20.5% (15)

Table 19. 1998 and 2001 technology survey data, question 16. (Chi-square, p=0.6627)

To what extent do you use presentation software?		
Response	**1998**	**2001**
At least once a month	31.9% (29)	40.9% (27)
Less than once a month but at least in three months	17.6% (16)	13.6% (9)
Less than once in three months but at least once a year	13.2% (12)	9.0% (6)
Less than once a year	8.8% (8)	9.0% (6)
Never	28.6% (26)	27.2% (18)

Table 20. 1998 and 2001 technology survey data, question 17. (Chi-square, p=0.7656)

To what extent do you use Web publishing software?		
Response	**1998**	**2001**
At least once a month	25.3% (23)	31.9% (23)
Less than once a month but at least in three months	4.4% (4)	11.1% (8)
Less than once in three months but at least once a year	16.5% (15)	12.5% (9)
Less than once a year	12.1% (11)	5.5% (4)
Never	41.8% (38)	38.8% (28)

Table 21. 1998 and 2001 technology survey data, question 18. (Chi-square, p=0.242)

To what extent do you use software for collaborative work (NetMeeting, C-U-See Me, Lotus Notes, etc.)?		
Response	**1998**	**2001**
At least once a month	12.1% (11)	11.2% (8)
Less than once a month but at least in three months	3.3% (3)	4.2% (3)
Less than once in three months but at least once a year	3.3% (3)	4.2% (3)
Less than once a year	2.2% (2)	12.6% (9)
Never	79.1% (72)	67.6% (48)

Table 22. 1998 and 2001 technology survey data, question 19. (Chi-square, p=0.1175)

To what extent do you use research resources (CD-ROM or on-line resources)?		
Response	**1998**	**2001**
At least once a month	68.9% (62)	75.3% (55)
Less than once a month but at least in three months	12.2% (11)	9.5% (7)
Less than once in three months but at least once a year	7.8% (7)	2.7% (2)
Less than once a year	1.1% (1)	4.1% (3)
Never	10.0% (9)	8.2% (6)
Missing	1 (-)	-

Table 23. 1998 and 2001 technology survey data, question 20. (Chi-square, p=0.4121)

To what extent do you require your students to use word processors?		
Response	**1998**	**2001**
At least once a month	53.3% (48)	57.5% (42)
Less than once a month but at least in three months	24.4% (22)	19.1% (14)
Less than once in three months but at least once a year	5.6% (5)	9.5% (7)
Less than once a year	1.1% (1)	-
Never	15.6% (14)	13.6% (10)
Missing	1 (-)	-

Table 24. 1998 and 2001 technology survey data, question 21. (Chi-square, p=0.657)

To what extent do you require your students to use spreadsheets?		
Response	**1998**	**2001**
At least once a month	5.6% (5)	9.7% (7)
Less than once a month but at least in three months	6.7% (6)	9.7% (7)
Less than once in three months but at least once a year	7.8% (7)	2.7% (2)
Less than once a year	8.9% (8)	6.9% (5)
Never	71.1% (64)	70.8% (51)

Table 25. 1998 and 2001 technology survey data, question 22. (Chi-square, p=0.4945)

To what extent do you require your students to use presentation software?		
Response	**1998**	**2001**
At least once a month	14.4% (13)	15.0% (11)
Less than once a month but at least in three months	10.0% (96)	6.8% (5)
Less than once in three months but at least once a year	12.2% (11)	10.9% (8)
Less than once a year	3.3% (3)	5.4% (4)
Never	60.0% (54)	61.6% (45)
Missing	1 (-)	-

Table 26. 1998 and 2001 technology survey data, question 23. (Chi-square, p=0.9125)

To what extent do you require your students to use Web publishing software?		
Response	**1998**	**2001**
At least once a month	3.4% (3)	1.3% (1)
Less than once a month but at least in three months	5.6% (5)	2.7% (2)
Less than once in three months but at least once a year	2.2% (2)	4.1% (3)
Less than once a year	2.2% (2)	2.7% (2)
Never	86.5% (77)	89.0% (65)
Missing	2 (-)	-

Table 27. 1998 and 2001 technology survey data, question 24. (Chi-square, p=0.7471)

To what extent do you require your students to use software for collaborative work (NetMeeting, C-U-See Me, Lotus Notes, etc.)?		
Response	**1998**	**2001**
At least once a month	6.7% (6)	8.2% (6)
Less than once a month but at least in three months	1.1% (1)	5.4% (4)
Less than once in three months but at least once a year	7.9% (7)	1.3% (1)
Less than once a year	1.1% (1)	2.7% (2)
Never	83.1% (74)	82.1% (60)
Missing	2 (-)	-

Table 28. 1998 and 2001 technology survey data, question 25. (Chi-square, p=0.1598)

To what extent do you require your students to use research resources (CD-ROM or On-line resources)?		
Response	**1998**	**2001**
At least once a month	37.1% (33)	41.0% (30)
Less than once a month but at least in three months	15.7% (14)	21.9% (16)
Less than once in three months but at least once a year	14.6% (13)	16.4% (12)
Less than once a year	4.5% (4)	2.7% (2)
Never	28.1% (25)	17.8% (13)
Missing	2 (-)	-

Table 29. 1998 and 2001 technology survey data, question 26. (Chi-square, p=0.5211)

I _____ use e-mail as a part of classroom instruction.		
Response	**1998**	**2001**
Frequently	24.7% (22)	31.5% (23)
Occasionally	20.2% (18)	24.6% (18)
Seldom	15.7% (14)	20.5% (15)
Never	38.2% (34)	23.2% (17)
Missing	2 (-)	-

Table 30. 1998 and 2001 technology survey data, question 27. (Chi-square, p=0.2248)

I _____ use bulletin boards as a part of classroom instruction.		
Response	**1998**	**2001**
Frequently	5.6% (5)	12.1% (9)
Occasionally	7.9% (7)	12.1% (9)
Seldom	10.1% (9)	14.8% (11)
Never	75.3% (67)	60.8% (45)
Missing	1 (-)	-

Table 31. 1998 and 2001 technology survey data, question 28. (Chi-square, p=0.1919)

I _____ use list servers as a part of classroom instruction.		
Response	**1998**	**2001**
Frequently	5.7% (5)	4.1% (3)
Occasionally	10.2% (9)	13.8% (10)
Seldom	78.4% (69)	5.5% (4)
Never	5.7% (5)	76.3% (55)
Missing	3 (-)	-

Table 32. 1998 and 2001 technology survey data, question 29. (Chi-square, p=0.000)**

I _____ use chat lines as a part of classroom instruction.		
Response	**1998**	**2001**
Frequently	1.1% (1)	5.4% (4)
Occasionally	5.7% (5)	6.7% (5)
Seldom	87.5% (77)	6.7% (5)
Never	5.7% (5)	81.0% (60)
Missing	3 (-)	-

Table 33. 1998 and 2001 technology survey data, question 30. (Chi-square, p=0.000)**

What is your first preference for receiving training in the use of computer technology?		
Response	**1998**	**2001**
Workshops provided by designated faculty/professional trainer	53.3% (48)	56.5% (39)
Self-paced tutorial	20.0% (18)	18.8% (13)
One-on-one instruction	26.7% (24)	24.6% (17)
Missing	1 (-)	-

Table 34. 1998 and 2001 technology survey data, question 31. (Chi-square, p= 0.92)

To what extent are you interested in incorporating computer technology in your classes?		
Response	**1998**	**2001**
Very much	64.8% (57)	56.5% (39)
Somewhat	23.9% (21)	24.6% (17)
A little	9.1% (8)	14.4% (10)
Not at all	2.3% (2)	4.3% (3)
Missing	3 (-)	-

Table 35. 1998 and 2001 technology survey data, question 32. (Chi-square, p=0.5834)

Do you receive encouragement from your institution to integrate computer technology into classroom instruction?		
Response	**1998**	**2001**
Yes	89.8% (79)	83.5% (60)
No	10.2% (9)	16.6% (12)
Missing	3 (-)	-

Table 36. 1998 and 2001 technology survey data, question 33. (*t* test, p=0.23)

My gender is		
Response	**1998**	**2001**
Male	51.7% (46)	45.7% (32)
Female	48.3% (43)	54.2% (38)
Missing	2 (-)	-

Table 37. 1998 and 2001 technology survey data, question 34. (*t* test, p=0.4546)

The number of years I have been in college teaching is		
Response	**1998**	**2001**
0	5.6% (6)	2.6% (2)
1-5	31.5% (28)	20.0% (15)
6-10	22.5% (20)	26.6% (20)
11-15	11.2% (10)	28.0% (21)
16-20	12.4% (11)	9.3% (7)
21-25	7.9% (7)	2.6% (2)
Over 25	9.0% (8)	10.6% (8)
Missing	2 (-)	-

Table 38. 1998 and 2001 technology survey data, question 35. (Chi-square, p= 0.0696)*

My primary teaching area is		
Response	**1998**	**2001**
Social & Behavioral Sciences	7.0% (6)	10.7% (7)
Humanities	25.8% (22)	33.8% (22)
Science/Mathematics	48.8% (42)	40.0% (26)
Business	2.3% (2)	4.6% (3)
Education	4.7% (4)	3.0% (2)
Not listed above	11.6% (10)	7.6% (5)
Missing	5 (-)	-

Table 39. 1998 and 2001 technology survey data, question 36. (Chi-square, p= 0.62)

What area, if any, is your secondary teaching area?		
Response	**1998**	**2001**
Social & Behavioral Sciences	2.3% (2)	2.8% (2)
Humanities	9.3% (8)	1.4% (1)
Science/Mathematics	4.7% (4)	10.1% (7)
Business	3.5% (3)	1.4% (1)
Education	7.0% (6)	5.7% (4)
Not listed above	16.3% (14)	4.3% (3)
I do not have a secondary teaching area.	57.0% (49)	73.9% (51)
Missing	5 (-)	-

Table 40. 1998 and 2001 technology survey data, question 37. (Chi-square, p= 0.0413)*

Survey category and question	**Mean score***
Homework assignments were helpful in understanding how to:	
Write a research proposal	5.89
Analyze data	5.95
Develop an experimental hypothesis	5.97
Formulate operational definitions	5.82
Develop research designs	5.87
Summarize experimental procedures	6.24
Summarize past research	6.16
Summarize experimental data or results	6.08
The research proposal assignment, in particular, was helpful in understanding how to:	
Conduct a literature review	5.82
Develop an experimental hypothesis	6.18
Formulate operational definitions	5.92
Develop a research design	5.84
Summarize past research	6.13
Explain operational definitions of independent and dependent variables	6.03
Summarize experimental data or results	6.05

Table 41. Survey responses from 61 students in a Psychology Laboratory course. *Scale of 1-7 with 1 being “strongly disagree” and 7 being “strongly agree.”

Survey category and question	*t* test result*
Confidence in ability to:	
Conduct a literature review	t (29) = -3.525, p = .001
Analyze research data	t (30) = -2.182, p = .037
Code data	t (30) = -2.420, p = .0225
Collect data from subjects	t (30) = -2.257, p = .0315
Present results at a conference	t (30) = -3.248, p = .003
Develop an appropriate research design	t (26) = -3.323, p = .003
Analyze data using *t*-tests	t (26) = -2.749, p = .011

Table 42. Survey responses from 42 students in a Psychology Laboratory course. Scale of 1-7 with 1 being "strongly disagree" and 7 being "strongly agree." * The *t* test statistic is reported as follows: t(df) = t value, p = significance.

Course activity	Average pre-test score	Average post-test score	Change (approx.)
Case Study #1 (35 points maximum)	23	32.3	+ 9.3 (71% increase)
Case Study #2 (50 points maximum)	27	42.6	+ 15.6 (63% increase)

Table 43. Pre- and post-test scores for two case studies used in teaching course concepts.

Survey category and question	Score
As concerns Plato's *Apology*	
Level of difficulty	2.82*
Level of my interest in the work	3.84*
Value to my education.	3.89*
As concerns God (Anselm, Aquinas, Paley, Gould, *etc.*)	
Level of difficulty	3.55*
Level of my interest in the work	4.05*
Value to my education	3.97*
As concerns Knowledge (Descartes, Locke, Hume, *etc*.)	
Level of difficulty	3.68*
Level of my interest in the work	3.87*
Value to my education	3.66*
As concerns Free Will (Holbach, Campbell, Stace)	
Level of difficulty	3.11*
Level of my interest in the work	4.05*
Value to my education	3.97*
As concerns Justice (Plato, Rawls, MLK)	
Level of difficulty	3.29*
Level of my interest in the work	3.84*
Value to my education	4.03*
Please rank the four philosophical problems we have examined in the order in which you enjoyed them.	
God	1.89
Knowledge	3.11
Free Will	2.06
Justice	2.94
On a scale of 1-5 (1 being almost none, 5 being almost everything), how much of the reading for this class did you actually do?	3.58
Did you attend the Reading Seminar offered at the beginning of the semester?	
Yes	23
No	15
If so, how much did the seminar help you improve your reading skills (1 being almost none, 5 being very much)?	3.26
As concerns assignments:	
Difficulty of tests	3.39*
Difficulty of essay assignments	3.72*
Instructor's grading of essays	3.94*
Amount of required reading	3.14*

As concerns the instructor:	
Quality of the classroom discussion	4.42*
Quality of instructor's lectures/presentations	4.56*
Helpfulness of study guides for tests	4.44*
Helpfulness of instruction offered outside of class	4.47*
Organization of the course content	4.50*
Pacing of the course	4.33*
As concerns the impact of the course on students' basic intellectual skills	
Impact on your reading skills	3.69*
Impact on your critical thinking skills	4.50*
Impact on your writing skills	4.27*

Table Table 44. Survey responses from students in two Philosophy courses. *Scale of 1-5 with 1 being "low" and 5 being "high."

Student aptitude	Pre-test measure of adequate aptitude (% of students)	Post-test measure of adequate aptitude (% of students)	Change
Critical sophistication	23%	67%	44% increase
Recognition of concepts	34%	62%	28% increase

Table 45. Assessment of two elements of student aptitude important in Creative Writing courses.

Independent Variable	Grade (*p* value)
Constant	1.98 (.3023)
Internet	2.12 (.0013)
Gender	0.67 (.0340)
Age	0.34 (.0771)
GPA	3.22 (.0002)
Regression Statistics	
Observations	43
Adjusted R^2	0.76
SE	5.31
F	19.51

Table 46. Regression analysis for performance on grade.

Evaluation of instructor	[a]Difference	[b] *p* value
The clarity and audibility of the instructor's speech are excellent	0.62	0.0067
The contents of the assignments contribute to my understanding of the subject	0.70	0.0003
The requirements of the course were adequately explained	0.61	0.0025
The instructor's presentation often causes me to think in depth about this subject	0.42	0.0177
The instructor has adequate means for evaluating my learning	0.43	0.0169
The methods being used for evaluating my work (such as tests, projects, *etc*.) are reasonable	0.48	0.0033
Adequate opportunities are provided by the instructor for me to ask questions	0.37	0.0012
The instructor seems to be well prepared	0.63	0.0002
The instructor seems to care about my learning	0.29	0.0011
The course appears to have been carefully planned	0.22	0.0022
Course objectives are being achieved	0.37	0.0023
During the term, I looked forward to attending this class	0.34	0.0055
Compared with other courses on this level carrying an equal amount of credit, the effort I put into this course is as much as in other courses	0.36	0.0044
Course objectives have been expressed clearly	0.66	0.0003
The instructor demonstrates a personal commitment to high standards professional competence	0.77	0.0051
The instructor provides useful feedback on student progress (identifying strengths and weaknesses)	0.76	0.0012
The out-of-class assignments are challenging	0.34	0.0002
The instructor relates underlying theory to practice	0.15	0.0055
Overall I would rate this teacher a good teacher	0.33	0.0041
Examinations cover material or skills emphasized in the course	0.77	0.2355
The course is practical and useful to those students for whom it was specifically planned.	0.81	0.0003

Table 47. Student perceptions of instructor effectiveness. [a] Difference between the Internet group mean and control group mean; [b] *p* value associated with *t* test. The data were collected from two groups of students—those enrolled in the course in summer 2000 and spring 2000 when the Internet was not used, and those enrolled in the course in fall 2000 and spring 2001 when the Internet was incorporated into the teaching and learning process.

Variable	Coefficient	SE	*t*
Excel	0.145	0.007	20.57
Gender	0.622	0.128	4.87
Age	0.440	0.435	1.03
GPA	0.159	0.026	5.34
Level	0015	0.0025	0.067
Constant	-8.440	1.435	-5.88

Table 48. Regression analysis for effects on student grades. R2 =0.68. Excel was not used in the course during the fall 2000 semester, while it was used in the course during the spring 2001 semester.

	Academic Year 1998-1999	Academic Year 1999-2000	August 2000-February 2001	Total
Teaching Communities	28 faculty 4 students	28 faculty 18 students	23 faculty 2 students	79 faculty 24 students
Research Communities	14 faculty 6 students	9 faculty 0 students	15 faculty 4 students	38 faculty 10 students
Technology Communities	31 faculty 25 students	18 faculty 12 students	0 faculty 0 students	49 faculty 37 students
Total	73 faculty 35 students	55 faculty 30 students	38 faculty 6 students	166 faculty 71 students

Table 49. Communities of Faculty and Students.

2000-2001
Dr. Barbara Green (Biology), Ms. Megan Hill (Biology student), and Ms. Carmen Echols (Biology student) presented a poster session entitled, "Learning by Doing: Using Case Studies Written by Students" at the February 2001 conference of The Collaboration for the Advancement of College Teaching and Learning.
Dr. Jerry Farmer (Theology), Dr. Fred Humphrey (Philosophy), Dr. Brian Fitch (UW-Stout, English), and Dr. Alec Kirby (UW-Stout, Political Science) presented a session entitled, "Promoting Greater Student Responsibility Through Synchronous and Asynchronous Learning Methodologies" at the February 2001 conference of The Collaboration for the Advancement of College Teaching and Learning.
“Euphoria," a poem by Mr. Major Jackson (English), was published in "The New Yorker" (November 6, 2000). The poem will also be published in the 8th edition of the college textbook anthology, "Reading and Writing the Human Experience." Another of Mr. Jackson's poems, "How to Listen," also appeared in "The New Yorker" (December 25, 2000). Mr. Jackson also received a prestigious Writing Fellowship from the Fine Arts Work Center in Provincetown, MA. He is in residency there during the 2000-2001 academic year.
Dr. Deany Cheramie (English) wrote "Resources for Teaching English Core Curriculum Classes." The book is on-line at http://webusers.xula.edu/dmcheram/Handbook/toc.html.
Dr. Paul McCreary (Mathematics) presented a paper at the Twenty-second Annual Meeting of The North American Chapter of the International Group for the Psychology of Mathematics Education in October 2000 titled "Apprenticeship in a Technology-rich Classroom."
Dr. Nancy Martino (Communications) presented a workshop, "Why Can't This Child Understand? Adjusting Language Through Three Continuums," at a meeting of the New Orleans Chapter of the National Black Association for Speech, Language, and Hearing.
Drs. Bill Serban (Political Science) and Chris Doumen (Biology) gave a presentation at the 7th HBCU Faculty Development Symposium titled "Collaborating through Educational Technology: The Development of XULAneXUS, the Interdisciplinary Electronic Journal of Xavier University Students."
Drs. Cirecie Olatunji (Education), Todd Stanislav (Biology, Center for the Advancement of Teaching), and Pamela Waldron-Moore (Political Science) gave a presentation at the "Creating Partnerships – Creating Scholarship: Strengthening Research, Teaching, and Learning with Effective Use of Electronic Resources" workshop titled "Promoting and Incorporating the Use of Electronic Databases." Dr. Stanislav also participated in a panel discussion on "Action Planning and Evaluation."
Dr. Joseph Ross (Biology) presented a paper titled "A Recipe for a Conversation, or How I Stopped Worrying and Learned to Love the New Economy" at New York University's national symposium, "Defining the Liberal Arts Institutional Mission."
Dr. David Lanoue (English) delivered a paper, "Beyond Haibun: the Haiku Novel" at the Haiku Society of America Conference in San Francisco. Dr. Lanoue also read from his novel, Haiku Guy.

(table continues)

1999-2000
Dr. Ashish Chandra (College of Pharmacy) presented a paper titled "A Critical Look at Web-based Distance Learning" at the Winter 2000 Conference of The Collaboration for the Advancement of College Teaching and Learning.
Mr. Terrance Hayes (English) attended the Associated Writing Programs Annual Conference and presented original poetry that is also included in an anthology titled American Poetry: The Next Generation.
Dr. Biljana Obradovic (English) attended the Associated Writing Programs Annual Conference where she participated in the Creative Writing Poetry Pedagogy Forum and presented original poetry from her new books.
Dr. Lisa Schulte (Psychology) presented a paper titled "Incorporating Use of the World Wide Web in College Courses" at the Sixth National HBCU Faculty Development Symposium.
Dr. Charles Sevick (Education) gave a presentation titled "Electronic Conferencing During Student Teaching" at the annual Association of Teacher Educators conference.
Dr. Susan Spillman (Languages) gave a presentation titled, "Vive la Louisiane, un Etat pas comme tous les autres" at the Lilly Texas Conference sponsored by the International Alliance of Teachers.
Mr. Mark Whitaker (English) attended the Associated Writing Programs Annual Conference where he
participated in the Associated Writing Programs Pedagogy Forum.
1998-1999
Drs. David Lanoue (English) and Todd Stanislav (Biology, Center for the Advancement of Teaching) gave a presentation titled "A Collaborative Assessment Project: World Literature and Biology Courses" at the "Creating and Sustaining Learning Communities" conference at the University of South Florida.
Drs. David Lanoue (English), Michele Levy (English), and Todd Stanislav (Biology, Center for the Advancement of Teaching) presented a poster titled "Xavier University of Louisiana, its Campus Culture, and the Common Ground of Scholarship" at the "Creating and Sustaining Learning Communities" conference at the University of South Florida.
Drs. David Lanoue (English), Michele Levy (English), and Todd Stanislav (Biology, Center for the Advancement of Teaching) gave a presentation titled "Course Portfolio Working Group: A Peer Review of Teaching Project at Xavier University of Louisiana" at the "Creating and Sustaining Learning Communities" conference at the University of South Florida.
Dr. John F. Humphrey (Philosophy), Ms. Melissa Evans (Biology student), and Dr. Todd Stanislav (Biology, Center for the Advancement of Teaching) presented "The Black Aesthetic and Beyond" at the "Creating and Sustaining Learning Communities" conference at the University of South Florida.

(table continues)

In addition to the works of student scholarship noted above, several students have published their writing in XULAneXUS, the Internet journal by and for Xavier University students. XULAneXUS is a direct outcome of this faculty development grant. The first issue of XULAneXUS is on-line at http://www.xula.edu/xulanexus/ and features the following student articles:
“Pack My Bag and Mount My Horse: A Feminist Critique of Imani Coppolaís’ "Legend of a Cowgirl" by TaKeshia Brooks (Communications)
“An Archetypal Analysis of Three Plays by Federico G. Lorca” by Tandra Clay (English)
“A Series of Book Reviews from US History since 1945” by Michael Olds (History)
“Gay Rights: Are There Constitutional Protections of Suspect Classifications?” by Tamara Binns (Political Science)
“Understanding Brain Specialization Through Split-Brain Research” by Bridget Dauphin (Psychology)
“The Historical and Methodological Relationship of Science & Theology” by Shantae James (Theology).

Table 50. In supporting faculty and student teaching, technology, and research projects, this faculty development grant has also provided rich opportunities for faculty and student scholarship.

1	2	3	4	5	*No Response*
1. Value of the workshop (from 1 “low value” to 5 “high value”)					
1	2	7	23	57	0
1.1%	2.2%	7.8%	25.8%	64%	0%
2. Rate the workshop leaders (from 1 “low rating” to 5 “high rating”)					
0	2	10	21	56	0
0%	2.2%	11.2%	23.5%	62.9%	0%
3. Usefulness of the information (from 1 “not useful” to 5 “very useful”)					
0	5	30	34	18	0
0%	5.6%	33.7%	38.2%	20.2%	0%
4. Content coverage (from 1 “not enough” to 5 “too much”)					
1	2	16	28	41	0
1.1%	2.2%	17.9%	31.4%	46%	0%
5. Importance of this topic for your work (from 1 “low importance” to 5 “high importance”)					
0	1	6	19	62	0
0%	1.1%	6.7%	21.3%	69.6%	0%
6. Did the workshop meet your expectations? (from 1 “definitely no” to 5 “definitely yes”)					
2	3	11	27	43	0
2.2%	3.3%	12.3%	30.3%	48.3%	0%
7. Effect of this workshop on your participation in future Center events (from 1 “less likely to participate” to 5 “more likely to participate”)					
1	2	35	34	16	0
1.1%	2.2%	39.3%	38.2%	17.9%	0%
8. Was the length of this workshop adequate? (from 1 “too short” to 5 “too long”)					
1	1	17	17	51	1
1.1%	1.1%	19.1%	19.1%	57.3%	1.1%

Table 51. Pooled workshop data obtained from participants’ surveys of the following workshops:

- Using Case Studies to Promote Meaningful Discussions and Active Learning in the Classroom, February 20, 1999
- Teaching and Learning at the Synapses of the Brain, October 23, 1999
- Writing a Comprehensive Plan for Professional Development, September 9, 2000
- Course Portfolio Workshop, September 23, 2000
- Fostering Critical Thinking and Mature Valuing Across the Curriculum, February 17, 2001
- With Minds Wide Open, March 10, 2001

APPENDIX II:

IMPACT OF THE CENTER
ON TEACHING
AND STUDENT LEARNING

NOTE: This survey was administered to Xavier faculty who participated in Center activities over the past three years. The survey itself is presented here first, followed by the response data.

Center for the Advancement of Teaching
July 2001 Survey

Please read each statement and indicate the degree of change, if any, that you have experienced after participating in Center events, including grant funded opportunities. There are three sections to this survey. Please fill in a bubble for each statement.

Explanation of response options:

More than before	I have increased (or noticed an increase in) the use of practice or behavior referred to in the statement
Less than before	I have decreased (or noticed a decrease in) the activity, practice or behavior referred to in the st
No change	No increase or decrease in the use of the activity behavior referred to in the statement
Not at all	I do not include the activity, practice or behavio in the statement

Survey codes are in blue

Teaching Methods

As a direct or indirect result of my participation in a Center activity:	More than before	Less than before	No Change	Not at all
Teach1 **I revise courses**	O	O	O	O
Teach2 I require students to do research	O	O	O	O
Teach3 I require students to write research or term papers	O	O	O	O
Teach4 I require service learning projects	O	O	O	O
Teach5 I use case studies in courses	O	O	O	O
Teach6 I use short writing activities followed by class discussion	O	O	O	O
Teach7 I use problem-based learning activities	O	O	O	O
Teach8 I use the lecture as a teaching tool	O	O	O	O
Teach9 I promote class discussion	O	O	O	O
Teach10 I communicate with students via e-mail, chat, or a listserv	O	O	O	O
Teach11 I require students to work collectively to do group projects	O	O	O	O
Teach12 I use peer grading as a means of assessing student learning	O	O	O	O
Teach13 I use out-of-class assignments such as projects, homework, study problems, writing assignments, etc.	O	O	O	O
Teach14 I use mid-term student evaluations (or a comparable evaluation other than the formal end-of-semester student evaluation)	O	O	O	O

As a direct or indirect result of my participation in a Center activity:	More than before	Less than before	No Change	Not at all
Teach15 Students use student-generated test questions for review of course material	O	O	O	O
Teach16 I lecture, pausing every 15 or so minutes to allow students to write, reflect, or discuss their grasp of course content	O	O	O	O
Teach17 I use short in-class assessment techniques such as the minute paper, muddiest point, concept maps, etc.	O	O	O	O
Teach18 I use performance-based assessment of student learning (e.g., student portfolios presentations, demonstrations, works of art, performances, internships)	O	O	O	O
Teach19 I use spread sheets and presentation software such as PowerPoint	O	O	O	O
Teach20 I use simulations	O	O	O	O
Teach21 I use and require students to use on-line resources such as CD-ROMS and databases (e.g., JSTOR, Lexis-Nexis, InfoTrac)	O	O	O	O
Teach22 I use and require students to use on-line systems such as Blackboard, WebBoard, eCollege etc.	O	O	O	O
Teach23 I use the World Wide Web in courses	O	O	O	O
Teach24 omit from stats Other (please specify)	O	O	O	O
Teach25 omit from stats Other (please specify)	O	O	O	O

Student Learning

As a direct or indirect result of my participation in a Center activity:	More than before	Less than before	No Change	Not at all
STUDE1 Students take increased responsibility for their own learning	O	O	O	O
STUDE2 Students demonstrate higher levels of analytical thinking or problem solving skills	O	O	O	O
STUDE3 Students participate in class discussions	O	O	O	O
STUDE4 Students read outside the context of a course	O	O	O	O
STUDE5 Students perform better on exams or quizzes	O	O	O	O
STUDE6 Students demonstrate improved writing skills	O	O	O	O
STUDE7 Students demonstrate improved verbal communication skills	O	O	O	O
STUDE8 Students are able to recall course concepts, principles, and procedures	O	O	O	O
STUDE9 Students are able to apply course concepts, principles, and procedures	O	O	O	O
STUDE10 omit from stats Other (please specify)	O	O	O	O
STUDE11 omit from stats Other (please specify)	O	O	O	O

Teaching

As a direct or indirect result of my participation in a Center activity:	More than before	Less than before	No Change	Not at all
TEACH26 I understand the barriers to students' learning in courses	O	O	O	O
TEACH27 I understand students' different learning styles	O	O	O	O
TEACH28 I receive positive comments from students on my student evaluations	O	O	O	O
TEACH29 I reflect on my effectiveness as a teacher	O	O	O	O
TEACH30 I have knowledge of current institutional issues and resources, as they relate to teaching and research	O	O	O	O
TEACH31 I am conscious of and confident about my teaching	O	O	O	O
TEACH32 I conduct classroom research	O	O	O	O
TEACH33 I discuss or develop plans that will improve or strengthen my department	O	O	O	O
TEACH34 I have produced peer reviewed scholarly work	O	O	O	O
TEACH35 I receive negative comments from students on my student evaluation forms	O	O	O	O
TEACH36 I give presentations at symposia, conferences, *etc.*	O	O	O	O
TEACH37 I have a deeper or better understanding of course-related content	O	O	O	O
TEACH38 I discuss teaching strategies, course content, and curricular and student learning issues with my departmental colleagues (and students, if applicable)	O	O	O	O

As a direct or indirect result of my participation in a Center activity:	More than before	Less than before	No Change	Not at all
TEACH39 I discuss teaching strategies, course content, and curricular and student learning issues with colleagues (and students, if applicable) outside my department	O	O	O	O
TEACH40 I write grant proposals	O	O	O	O
TEACH41 I am satisfied with the results of my student evaluations	O	O	O	O
Other (please specify) TEACH42 omit from stats	O	O	O	O
Other (please specify) TEACH43 omit from stats	O	O	O	O

COMMENTS:

T-Tests for All Variables (except those labeled "other...")
Includes Values 1, 0, -1; Test value = 0; Value -9 treated as "missing"

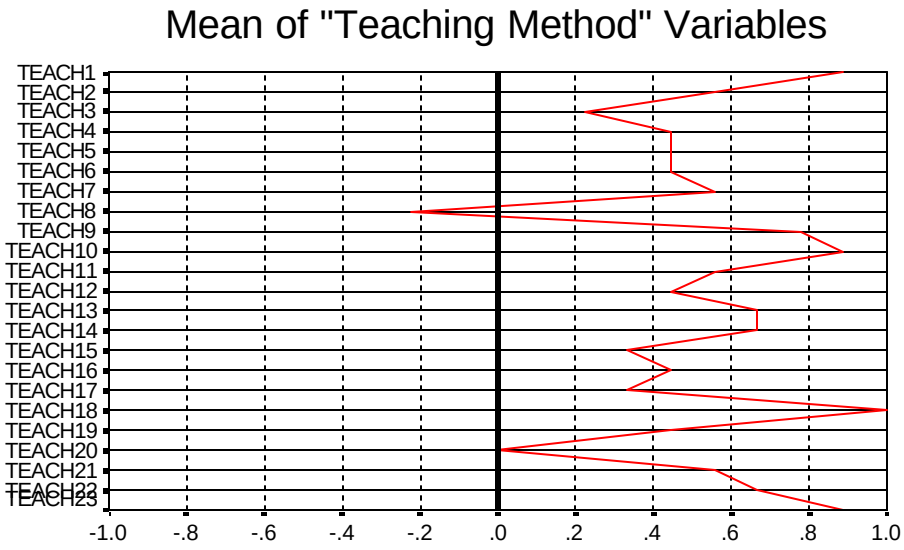
One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
TEACH1 Revised courses	56	.84	.371	.050
TEACH2 Require student research	54	.43	.499	.068
TEACH3 Require research/term papers	51	.18	.434	.061
TEACH4 Require service learning projects	29	.31	.471	.087
TEACH5 Use of case studies	42	.50	.506	.078
TEACH6 Short writing activity then class discussion	43	.58	.545	.083
TEACH7 Use of problem-based learning activities	54	.61	.492	.067
TEACH8 Use of lecture as teaching tool	54	-.07	.723	.098
TEACH9 Promote class discussion	56	.77	.426	.057
TEACH10 Use of e-mail, chat, or listserv	49	.73	.446	.064
TEACH11 Require group projects	48	.58	.539	.078
TEACH12 Use peer grading in assessment	26	.31	.471	.092
TEACH13 Use out-of-class assignments/projects	55	.53	.504	.068
TEACH14 Use mid-term student evaluations	44	.48	.505	.076
TEACH15 Use student-generated test questions for review	32	.34	.483	.085
TEACH16 Lecture with frequent pauses for student activity	45	.40	.580	.086
TEACH17 Use short in-class assessment techniques	34	.56	.504	.086
TEACH18 Use performance-based assessment of student learning	39	.64	.486	.078
TEACH19 Use software in class (e.g. presentation)	39	.56	.552	.088
TEACH20 Use simulations	36	.25	.439	.073
TEACH21 Require students to use on-line resources	44	.64	.487	.073
TEACH22 Use and require student use of on-line systems	34	.74	.448	.077
TEACH23 Use WWW in courses	49	.80	.407	.058
STUDE1 Students take responsibility for their own learning	56	.59	.496	.066
STUDE2 Students demonstrate higher levels of thinking	55	.56	.536	.072
STUDE3 Students participate in class discussions	56	.70	.464	.062
STUDE4 Students read outside context of course	53	.34	.517	.071
STUDE5 Students perform better on texts/quizzes	54	.48	.504	.069
STUDE6 Students demonstrate improved writing skills	56	.46	.503	.067
STUDE7 Students demonstrate improved verbal skills	54	.41	.496	.067
STUDE8 Students able to recall concepts/procedures	54	.48	.504	.069
STUDE9 Students able to apply concepts/procedures	55	.55	.538	.073
TEACH26 Understand barriers to students' learning	54	.76	.432	.059
TEACH27 Usderstand students' different learning styles	55	.71	.458	.062
TEACH28 Receive positive comments from students	56	.63	.524	.070
TEACH29 Reflect on my effectiveness as a teacher	56	.88	.334	.045
TEACH30 Have knowledge of current institutional issues	56	.71	.494	.066
TEACH31 Conscious of and confident about my teaching	56	.75	.437	.058
TEACH32 Conduct classroom research	49	.49	.505	.072
TEACH33 Develop plans to strengthen my department	55	.69	.505	.068
TEACH34 Produce peer reviewed scholarly work	41	.32	.521	.081
TEACH35 Receive negative comments from students	48	-.35	.526	.076
TEACH36 Give presentations at conferences	48	.33	.559	.081
TEACH37 Deeper understanding of course-related content	56	.59	.496	.066
TEACH38 Discuss learning and teaching issues with department colleagues	55	.89	.369	.050
TEACH39 Discuss learning and teaching issues with non-department colleagues	56	.63	.524	.070
TEACH40 Write grant proposals	46	.33	.598	.088
TEACH41 Satisfied with the results of my student evaluations	55	.47	.573	.077

One-Sample Test

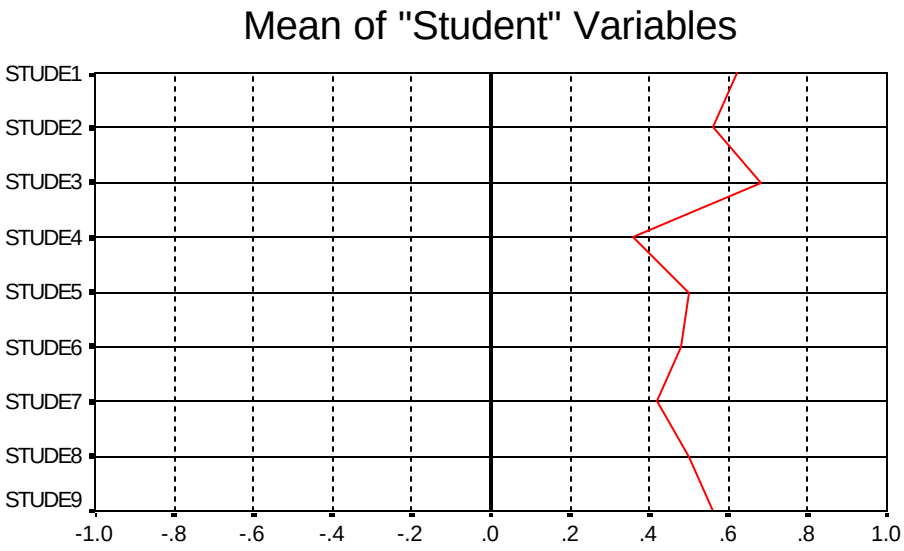
	Test Value = 0					
					95% Confidence Interval of the	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
TEACH1 Revised courses	16.948	55	.000	.84	.74	.94
TEACH2 Require student research	6.271	53	.000	.43	.29	.56
TEACH3 Require research/term papers	2.905	50	.005	.18	.05	.30
TEACH4 Require service learning projects	3.550	28	.001	.31	.13	.49
TEACH5 Use of case studies	6.403	41	.000	.50	.34	.66
TEACH6 Short writing activity then class discussion	6.998	42	.000	.58	.41	.75
TEACH7 Use of problem-based learning activities	9.126	53	.000	.61	.48	.75
TEACH8 Use of lecture as teaching tool	-.753	53	.455	-.07	-.27	.12
TEACH9 Promote class discussion	13.488	55	.000	.77	.65	.88
TEACH10 Use of e-mail, chat, or listserv	11.529	48	.000	.73	.61	.86
TEACH11 Require group projects	7.495	47	.000	.58	.43	.74
TEACH12 Use peer grading in assessment	3.333	25	.003	.31	.12	.50
TEACH13 Use out-of-class assignments/projects	7.761	54	.000	.53	.39	.66
TEACH14 Use mid-term student evaluations	6.266	43	.000	.48	.32	.63
TEACH15 Use student-generated test questions for review	4.030	31	.000	.34	.17	.52
TEACH16 Lecture with frequent pauses for student activity	4.627	44	.000	.40	.23	.57
TEACH17 Use short in-class assessment techniques	6.465	33	.000	.56	.38	.73
TEACH18 Use performance-based assessment of student learning	8.238	38	.000	.64	.48	.80
TEACH19 Use software in class (e.g. presentation)	6.379	38	.000	.56	.39	.74
TEACH20 Use simulations	3.416	35	.002	.25	.10	.40
TEACH21 Require students to use on-line resources	8.675	43	.000	.64	.49	.78
TEACH22 Use and require student use of on-line systems	9.574	33	.000	.74	.58	.89
TEACH23 Use WWW in courses	13.682	48	.000	.80	.68	.91
STUDE1 Students take responsibility for their own learning	8.883	55	.000	.59	.46	.72
STUDE2 Students demonstrate higher levels of thinking	7.795	54	.000	.56	.42	.71
STUDE3 Students participate in class discussions	11.233	55	.000	.70	.57	.82
STUDE4 Students read outside context of course	4.784	52	.000	.34	.20	.48
STUDE5 Students perform better on texts/quizzes	7.015	53	.000	.48	.34	.62
STUDE6 Students demonstrate improved writing skills	6.904	55	.000	.46	.33	.60
STUDE7 Students demonstrate improved verbal skills	6.036	53	.000	.41	.27	.54
STUDE8 Students able to recall concepts/procedures	7.015	53	.000	.48	.34	.62
STUDE9 Students able to apply concepts/procedures	7.517	54	.000	.55	.40	.69
TEACH26 Understand barriers to students' learning	12.929	53	.000	.76	.64	.88
TEACH27 Usderstand students' different learning styles	11.473	54	.000	.71	.59	.83
TEACH28 Receive positive comments from students	8.919	55	.000	.63	.48	.77
TEACH29 Reflect on my effectiveness as a teacher	19.621	55	.000	.88	.79	.96
TEACH30 Have knowledge of current institutional issues	10.818	55	.000	.71	.58	.85
TEACH31 Conscious of and confident about my teaching	12.845	55	.000	.75	.63	.87
TEACH32 Conduct classroom research	6.788	48	.000	.49	.34	.63
TEACH33 Develop plans to strengthen my department	10.156	54	.000	.69	.55	.83
TEACH34 Produce peer reviewed scholarly work	3.893	40	.000	.32	.15	.48
TEACH35 Receive negative comments from students	-4.669	47	.000	-.35	-.51	-.20
TEACH36 Give presentations at conferences	4.134	47	.000	.33	.17	.50
TEACH37 Deeper understanding of course-related content	8.883	55	.000	.59	.46	.72
TEACH38 Discuss learning and teaching issues with department colleagues	17.914	54	.000	.89	.79	.99
TEACH39 Discuss learning and teaching issues with non-department colleagues	8.919	55	.000	.63	.48	.77
TEACH40 Write grant proposals	3.696	45	.001	.33	.15	.50
TEACH41 Satisfied with the results of my student evaluations	6.122	54	.000	.47	.32	.63

Graphs of the Mean of All Variables (Excluding "Other..." Variables)



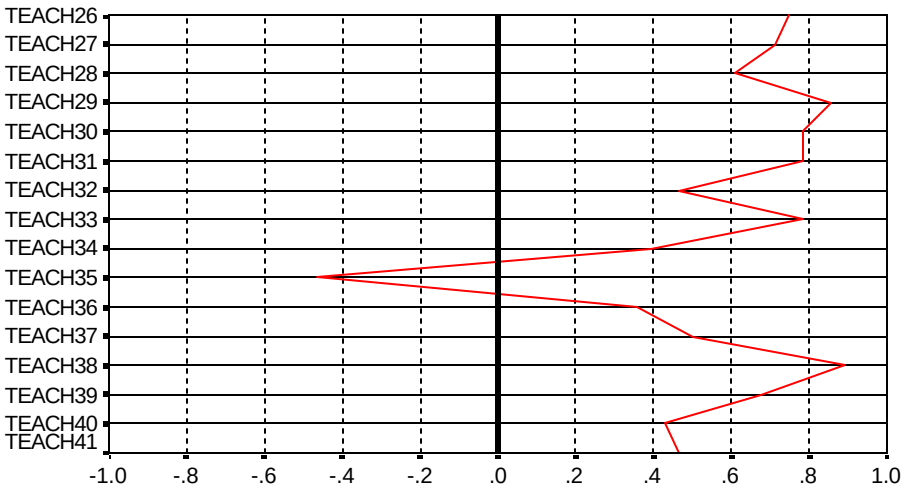
"Activity not used" responses (coded as -9) omitted

from August 2001 survey for Bush Grant



"Activity not used" responses (coded as -9) omitted

from August 2001 survey for Bush Grant



"Activity not used" responses (coded as -9) omitted

from August 2001 survey for Bush Grant

TABLE FOR QUESTION 2 (Relationships among "Student" and "Teach..." Variables)

Comments on the number of statistically significant correlation coefficients from the 54 variables

Set the alpha level of significance	5%
Total number (no.) of variab	54
No. of variables minus the 8 listed as "Othe	46
No. of pairs in correlation matrix for the 46 varia	2116
Expected no. of statistically SIGNIFICANT corr. just by cha	105.8

However, we do not need to consider all 2116 correlat

No. of unique (unordered) pairs from 46 variables (46 cho	1035
Expected no. of statistically SIGNIFICANT corr. just by cha	51.75

However, if our interest is ONLY in the relationships among the "Student" variables with the "Teach..." var

No. of "Student" variables (excluding the two "otl	9
No. of "Teaching Method" variables (excluding the two "o	23
No. of "Teaching (issues)" variables (excluding the two "o	15
Total no. of "Teach..." variables (excluding the four "o	38
No. of unique (unordered) pairs (and thus the no. of correlation coefficients) considering only correlations bet	
"Student" variables and the 38 "Teach..." varia	342
Expected no. of statistically SIGNIFICANT correlations just by cha	17.1

We could use a Bonferroni type adjusted alpha l

Adjusted alpha level for an "experiment-wide" 5%	0.00014

From the following SPSS correlation output, only ONE correlation (TEACH9 "Promote class discussion" with STUDE3 "Students participate in class discussions") reaches the adjusted alpha level.

Nonparametric Correlations: Note only one correlation (shaded) reaches 0.000146 (adjusted) alpha level

			STUDE1 Students take responsibility for their own learning	STUDE2 Students demonstrate higher levels of thinking	**STUDE3 Students participate in class discussions**	STUDE4 Students read outside context of course	STUDE5 Students perform better on texts/quizzes	STUDE6 Students demonstrate improved writing skills	STUDE7 Students demonstrate improved verbal skills	STUDE8 Students able to recall concepts/procedures	STUDE9 Students able to apply concepts/procedures
Spearman's rho	TEACH1 Revised courses	Corr. Coeff.	.326*	.211	.346**	-.089	.232	.115	.270*	.232	.290*
		Sig. (2-tailed)	.014053	.122667	.009094	.523950	.091329	.399089	.048602	.091329	.031771
		N	56	55	56	53	54	56	54	54	55
	TEACH2 Require student research	Corr. Coeff.	.457**	.130	.181	.173	.267	.144	.335*	.383**	.237
		Sig. (2-tailed)	.000519	.352146	.191056	.224087	.055991	.297684	.015331	.005070	.086834
		N	54	53	54	51	52	54	52	52	53
	TEACH3 Require research/term papers	Corr. Coeff.	.074	.103	.072	-.038	.116	.233	.224	.168	.056
		Sig. (2-tailed)	.606324	.478467	.617436	.798941	.428613	.099632	.117654	.243174	.694704
		N	51	50	51	48	49	51	50	50	51
	TEACH4 Require service learning projects	Corr. Coeff.	-.086	.182	.330	.351	.113	.155	.091	.272	.311
		Sig. (2-tailed)	.656383	.343713	.080560	.073000	.566185	.421928	.644089	.161850	.100269
		N	29	29	29	27	28	29	28	28	29
	TEACH5 Use of case studies	Corr. Coeff.	.000	.022	.422**	.268	-.024	.144	.317*	.175	.243
		Sig. (2-tailed)	1.000000	.893448	.005419	.090064	.882531	.364573	.043754	.273615	.121722
		N	42	41	42	41	41	42	41	41	42
	TEACH6 Short writing activity then class discussion	Corr. Coeff.	.033	.214	.058	.253	.272	.159	.399**	.304	.285
		Sig. (2-tailed)	.834530	.168402	.712291	.110369	.085454	.307744	.008888	.050498	.064122
		N	43	43	43	41	41	43	42	42	43
	TEACH7 Use of problem-based learning activities	Corr. Coeff.	.235	.228	.231	.092	.256	.160	.087	.256	.239
		Sig. (2-tailed)	.087539	.100460	.092718	.522632	.066786	.246309	.540826	.066786	.084532
		N	54	53	54	51	52	54	52	52	53
	TEACH8 Use of lecture as teaching tool	Corr. Coeff.	-.247	-.137	.139	-.176	-.036	-.163	-.068	-.064	-.153
		Sig. (2-tailed)	.071350	.329551	.317538	.217597	.798998	.239899	.633082	.650298	.273417
		N	54	53	54	51	52	54	52	52	53
	TEACH9 Promote class discussion	Corr. Coeff.	.057	.124	**.649****	.309*	.369**	.088	.171	.248	.317*
		Sig. (2-tailed)	.677537	.367657	**.000001**	.024368	.006003	.519751	.215695	.071014	.018203
		N	56	55	**56**	53	54	56	54	54	55
	TEACH10 Use of e-mail, chat, or listserv	Corr. Coeff.	.281	.436**	.234	.355*	.389**	.287*	.065	.278	.226
		Sig. (2-tailed)	.050706	.001960	.105785	.014489	.006820	.045310	.660859	.055410	.118736
		N	49	48	49	47	47	49	48	48	49
	TEACH11 Require group projects	Corr. Coeff.	.197	.000	.153	.283	.069	-.009	.317*	.364*	.502**
		Sig. (2-tailed)	.180576	1.000000	.298649	.059730	.647073	.952399	.032108	.012986	.000325
		N	48	47	48	45	46	48	46	46	47
	TEACH12 Use peer grading in assessment	Corr. Coeff.	-.030	.097	.217	.519**	.194	.184	.373	.421*	.564**
		Sig. (2-tailed)	.882689	.639092	.287463	.007836	.353214	.366997	.066058	.036187	.002708
		N	26	26	26	25	25	26	25	25	26
	TEACH13 Use out-of-class assignments/projects	Corr. Coeff.	.193	.267	.234	.086	.322*	.240	.137	.434**	.376**
		Sig. (2-tailed)	.157410	.051351	.086141	.542389	.018554	.077513	.326909	.001151	.005021
		N	55	54	55	52	53	55	53	53	54
	TEACH14 Use mid-term student evaluations	Corr. Coeff.	.060	-.056	.164	-.039	.000	-.046	.159	.208	.075
		Sig. (2-tailed)	.697918	.716265	.286550	.807909	1.000000	.769303	.309424	.180229	.630549
		N	44	44	44	42	42	44	43	43	44
	TEACH15 Use student-generated test questions for review	Corr. Coeff.	-.080	-.030	.014	.295	.091	-.108	.189	.189	.307
		Sig. (2-tailed)	.663995	.869229	.940594	.106597	.624872	.557166	.317231	.317231	.093251
		N	32	32	32	31	31	32	30	30	31
	TEACH16 Lecture with frequent pauses for student activity	Corr. Coeff.	.248	.311*	.278	.134	.407**	.184	.241	.058	.299*
		Sig. (2-tailed)	.100825	.040055	.064425	.391021	.006726	.225736	.118782	.713879	.048541
		N	45	44	45	43	43	45	43	43	44
	TEACH17 Use short in-class assessment techniques	Corr. Coeff.	.154	.189	.272	.119	.344*	.178	.210	.100	.135
		Sig. (2-tailed)	.384036	.283464	.118983	.516262	.049655	.314675	.240041	.579786	.445219
		N	34	34	34	32	33	34	33	33	34
	TEACH18 Use performance-based assessment of student learning	Corr. Coeff.	.244	.050	.244	.245	.191	-.119	.090	.196	.296
		Sig. (2-tailed)	.134975	.760897	.134975	.138246	.251790	.471138	.594647	.245839	.071651
		N	39	39	39	38	38	39	37	37	38
	TEACH19 Use software in class (e.g. presentation)	Corr. Coeff.	.163	.250	-.006	.399*	.273	.261	.210	.248	.387*
		Sig. (2-tailed)	.321167	.124258	.972314	.014468	.097426	.109101	.211375	.139502	.016289
		N	39	39	39	37	38	39	37	37	38
	TEACH20 Use simulations	Corr. Coeff.	.104	.008	.244	.151	.146	-.192	.066	.353*	-.016
		Sig. (2-tailed)	.544366	.965114	.152044	.386017	.401931	.260801	.711942	.040448	.928517
		N	36	35	36	35	35	36	34	34	35
	TEACH21 Require students to use on-line resources	Corr. Coeff.	.176	.306*	.280	.098	.185	.283	.000	.135	-.075
		Sig. (2-tailed)	.251980	.046108	.065970	.531964	.241416	.062228	1.000000	.394553	.633763
		N	44	43	44	43	42	44	42	42	43
	TEACH22 Use and require student use of on-line systems	Corr. Coeff.	.155	.098	.247	.217	.163	.236	.186	.025	-.037
		Sig. (2-tailed)	.381169	.582309	.159241	.225286	.365640	.179609	.300950	.890026	.836924
		N	34	34	34	33	33	34	33	33	34
	TEACH23 Use WWW in courses	Corr. Coeff.	-.071	.220	.352*	.213	-.071	.192	.342*	-.071	.139
		Sig. (2-tailed)	.629094	.133752	.013048	.146305	.635631	.185696	.018520	.635631	.346184
		N	49	48	49	48	47	49	47	47	48
		Corr. Coeff.		**			**	*		*	*
		Corr. Coeff.	**		*	*	**	**			**
		Corr. Coeff.		*			*			*	*
		Corr. Coeff.		*			**		*	*	**
		Corr. Coeff.	**	**	*	**		**		**	**
		Corr. Coeff.	*	**			**		**	*	

Nonparametric Correlations: Note only one correlation (shaded) reaches 0.000146 (adjusted) alpha level

			STUDE1 Students take responsibility for their own learning	STUDE2 Students demonstrate higher levels of thinking	**STUDE3 Students participate in class discussions**	STUDE4 Students read outside context of course	STUDE5 Students perform better on texts/quizzes	STUDE6 Students demonstrate improved writing skills	STUDE7 Students demonstrate improved verbal skills	STUDE8 Students able to recall concepts/procedures	STUDE9 Students able to apply concepts/procedures
Spearman's rho		Corr. Coeff.				*		**		*	
		Corr. Coeff.	*		*	*	**	*	*		**
		Corr. Coeff.	*	**	*	**	**			**	
	TEACH26 Understand barriers to students' learning	Corr. Coeff.	.262	.043	.178	.101	.187	.155	.294*	.200	.022
		Sig. (2-tailed)	.056013	.757741	.198124	.482085	.179292	.263180	.034279	.155151	.878246
		N	54	53	54	51	53	54	52	52	53
	TEACH27 Usderstand students' different learning styles	Corr. Coeff.	.376**	.109	-.082	-.029	.223	.183	.252	.174	.060
		Sig. (2-tailed)	.004682	.431050	.552211	.836742	.108128	.181798	.068640	.212359	.666317
		N	55	54	55	52	53	55	53	53	54
	TEACH28 Receive positive comments from students	Corr. Coeff.	.195	.312*	.382**	.201	.286*	.106	-.009	.328*	.320*
		Sig. (2-tailed)	.149324	.020196	.003694	.149473	.036293	.435745	.950057	.015610	.017300
		N	56	55	56	53	54	56	54	54	55
	TEACH29 Reflect on my effectiveness as a teacher	Corr. Coeff.	.233	.218	.455**	.160	.262	.027	.208	.262	.203
		Sig. (2-tailed)	.083649	.110126	.000426	.253478	.056084	.843033	.131634	.056084	.137869
		N	56	55	56	53	54	56	54	54	55
	TEACH30 Have knowledge of current institutional issues	Corr. Coeff.	.161	.152	.141	.243	.272*	.302*	.321*	.403**	.190
		Sig. (2-tailed)	.237297	.269049	.301627	.079700	.046745	.023554	.018043	.002525	.164380
		N	56	55	56	53	54	56	54	54	55
	TEACH31 Conscious of and confident about my teaching	Corr. Coeff.	.272*	.124	.336*	.195	.232	.289*	.114	.283*	.271*
		Sig. (2-tailed)	.042222	.367657	.011262	.160675	.091694	.030505	.410627	.038447	.045217
		N	56	55	56	53	54	56	54	54	55
	TEACH32 Conduct classroom research	Corr. Coeff.	.149	.128	.168	.058	.319*	.060	.148	.404**	.231
		Sig. (2-tailed)	.306308	.380845	.249044	.699876	.028936	.681650	.322045	.004861	.113934
		N	49	49	49	46	47	49	47	47	48
	TEACH33 Develop plans to strengthen my department	Corr. Coeff.	.302*	.018	.276*	.284*	.123	-.046	.226	.161	.227
		Sig. (2-tailed)	.025018	.895157	.041198	.041669	.380713	.736086	.104065	.250310	.098610
		N	55	54	55	52	53	55	53	53	54
	TEACH34 Produce peer reviewed scholarly work	Corr. Coeff.	.313*	.120	.494**	-.176	-.024	.015	-.038	.104	-.030
		Sig. (2-tailed)	.046676	.460144	.001043	.278253	.885270	.927003	.817238	.530610	.854854
		N	41	40	41	40	40	41	39	39	40
	TEACH35 Receive negative comments from students	Corr. Coeff.	-.356*	-.305*	-.279	-.069	-.251	-.315*	-.378**	-.230	-.010
		Sig. (2-tailed)	.013027	.035014	.054473	.651009	.092360	.029399	.008779	.119893	.944938
		N	48	48	48	45	46	48	47	47	48
	TEACH36 Give presentations at conferences	Corr. Coeff.	.187	.255	.442**	.108	.164	.028	.128	.459**	.335*
		Sig. (2-tailed)	.204019	.084046	.001645	.469294	.269858	.851081	.396648	.001344	.021546
		N	48	47	48	47	47	48	46	46	47
	TEACH37 Deeper understanding of course-related content	Corr. Coeff.	.262	.379**	.238	.150	.305*	.268*	.104	.155	.056
		Sig. (2-tailed)	.050929	.004277	.077036	.282611	.024746	.046053	.452271	.261661	.682660
		N	56	55	56	53	54	56	54	54	55
	TEACH38 Discuss learning and teaching issues with department colleagues	Corr. Coeff.	.373**	.098	.204	.220	.190	.039	.143	.190	.343*
		Sig. (2-tailed)	.005071	.482986	.135398	.116901	.173258	.776703	.306173	.173258	.011226
		N	55	54	55	52	53	55	53	53	54
	TEACH39 Discuss learning and teaching issues with non-department colleagues	Corr. Coeff.	.269*	.272*	.144	.253	.361**	.325*	.068	.100	.173
		Sig. (2-tailed)	.044760	.044196	.289481	.067482	.007398	.014399	.623279	.471281	.206985
		N	56	55	56	53	54	56	54	54	55
	TEACH40 Write grant proposals	Corr. Coeff.	-.006	-.105	.013	.013	.096	.026	.021	.227	.251
		Sig. (2-tailed)	.970011	.490734	.931442	.930783	.536890	.863882	.891253	.138666	.095933
		N	46	45	46	44	44	46	44	44	45
	TEACH41 Satisfied with the results of my student evaluations	Corr. Coeff.	.373**	.363**	.255	.340*	.482**	.223	.051	.339*	.361**
		Sig. (2-tailed)	.005000	.006932	.060206	.013583	.000258	.101890	.715910	.012998	.007241
		N	55	54	55	52	53	55	53	53	54

*. (Unadjusted) Correlation is significant at the .05 level (2-tailed).

**. (Unadjusted) Correlation is significant at the .01 level (2-tailed).

Frequency Distributions for "Teaching Method" Variables (TEACH1 - TEACH23)

TEACH1 Revised courses

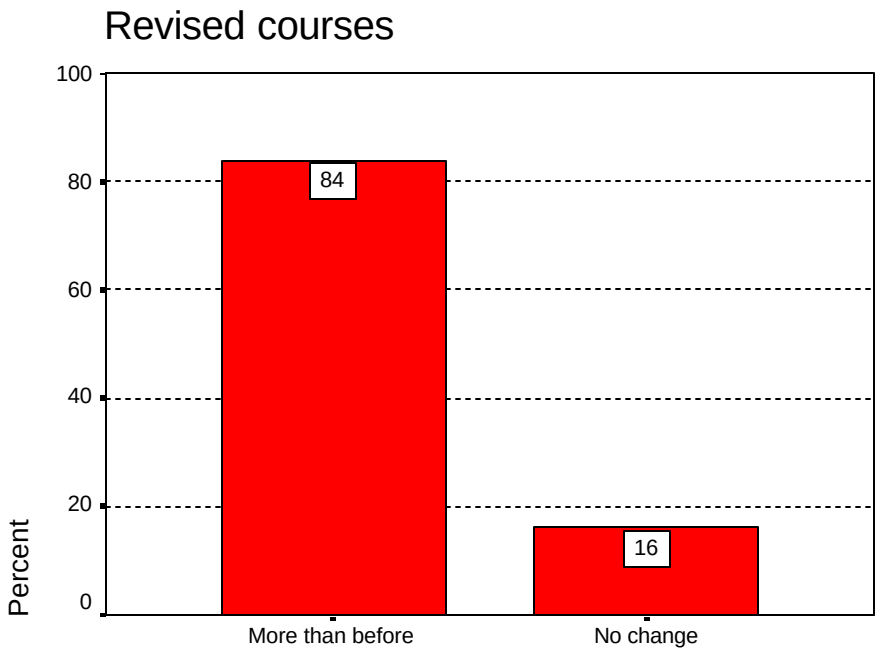
Statistics

TEACH1 Revised courses

N	Valid	56
	Missing	0

TEACH1 Revised courses

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	47	83.9	83.9	83.9
	0 No change	9	16.1	16.1	100.0
	Total	56	100.0	100.0	



TEACH2 Require student research

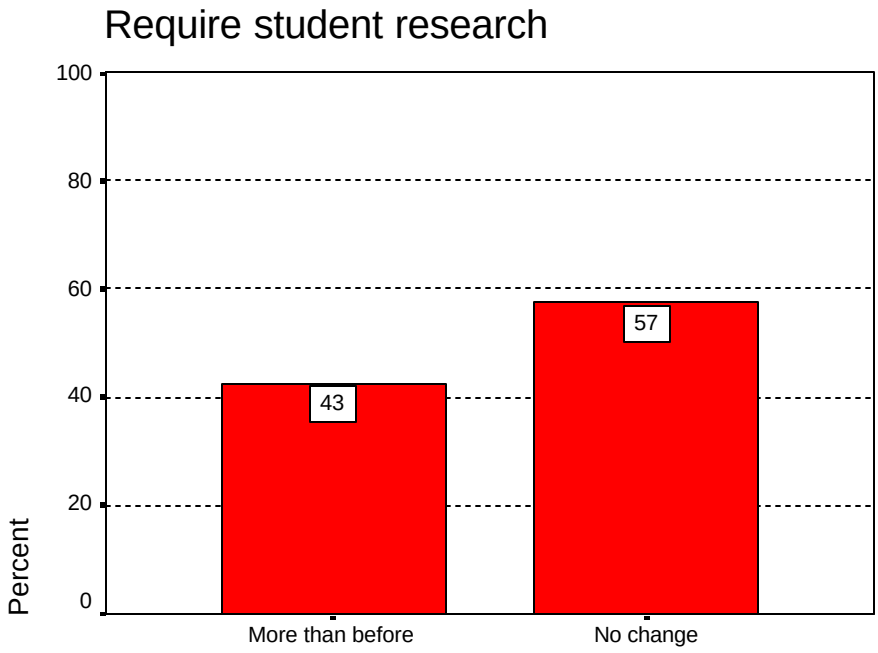
Statistics

TEACH2 Require student research

N	Valid	54
	Missing	2

TEACH2 Require student research

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	23	41.1	42.6	42.6
	0 No change	31	55.4	57.4	100.0
	Total	54	96.4	100.0	
Missing	System	2	3.6		
Total		56	100.0		



Require student research

TEACH3 Require research/term papers

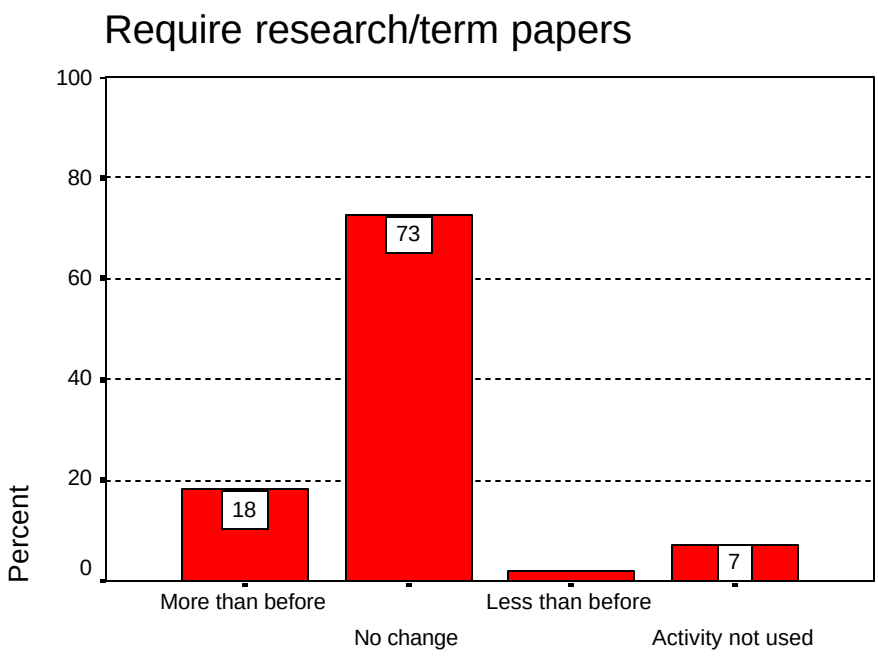
Statistics

TEACH3 Require research/term papers

N	Valid	55
	Missing	1

TEACH3 Require research/term papers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	10	17.9	18.2	18.2
	0 No change	40	71.4	72.7	90.9
	-1 Less than before	1	1.8	1.8	92.7
	-9 Activity not used	4	7.1	7.3	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		



Require research/term papers

TEACH4 Require service learning projects

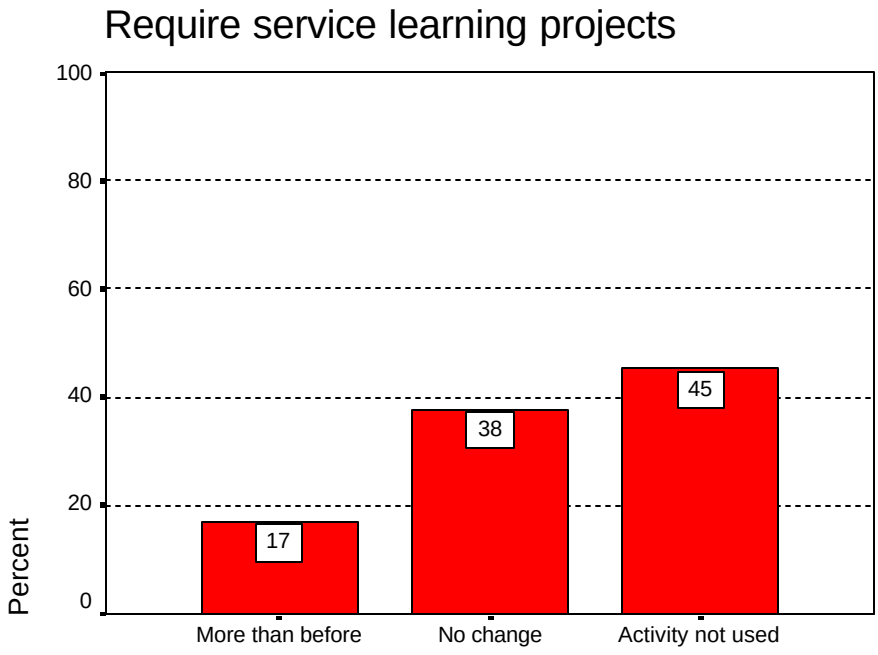
Statistics

TEACH4 Require service learning projects

N	Valid	53
	Missing	3

TEACH4 Require service learning projects

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	9	16.1	17.0	17.0
	0 No change	20	35.7	37.7	54.7
	-9 Activity not used	24	42.9	45.3	100.0
	Total	53	94.6	100.0	
Missing	System	3	5.4		
Total		56	100.0		



Require service learning projects

TEACH5 Use of case studies

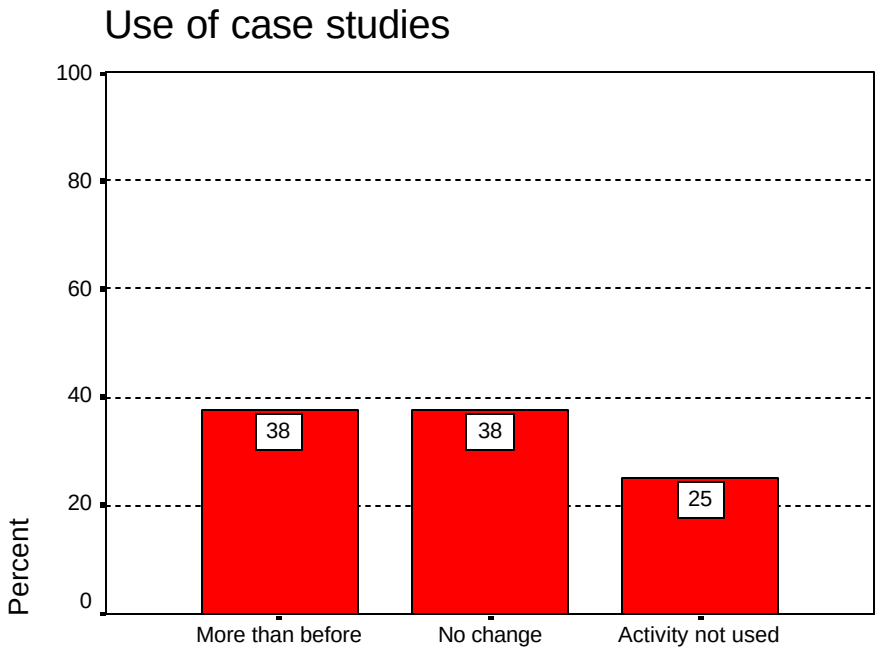
Statistics

TEACH5 Use of case studies

N	Valid	56
	Missing	0

TEACH5 Use of case studies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	21	37.5	37.5	37.5
	0 No change	21	37.5	37.5	75.0
	-9 Activity not used	14	25.0	25.0	100.0
	Total	56	100.0	100.0	



Use of case studies

TEACH6 Short writing activity then class discussion

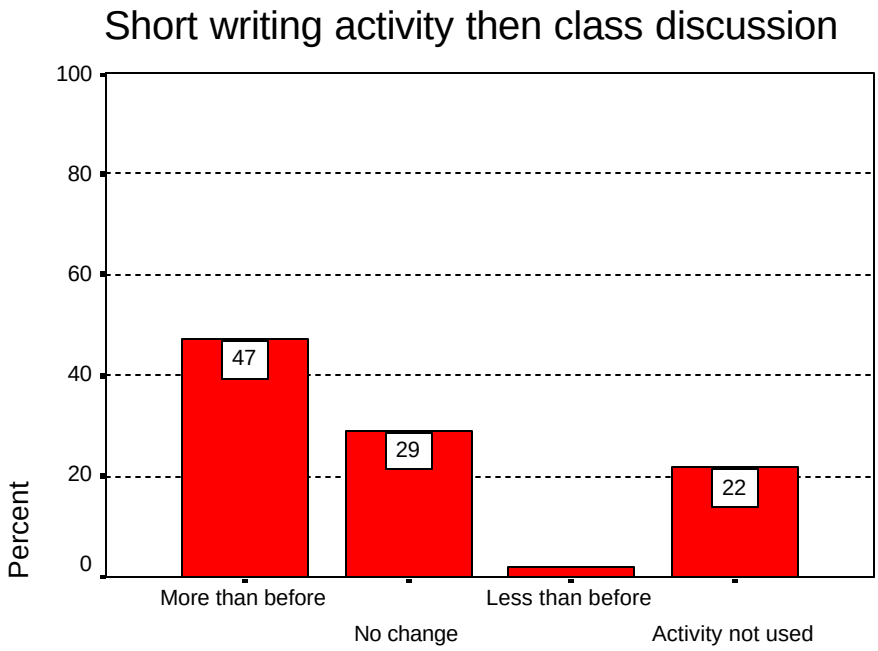
Statistics

TEACH6 Short writing activity then class discussion

N	Valid	55
	Missing	1

TEACH6 Short writing activity then class discussion

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	26	46.4	47.3	47.3
	0 No change	16	28.6	29.1	76.4
	-1 Less than before	1	1.8	1.8	78.2
	-9 Activity not used	12	21.4	21.8	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		



Short writing activity then class discussion

TEACH7 Use of problem-based learning activities

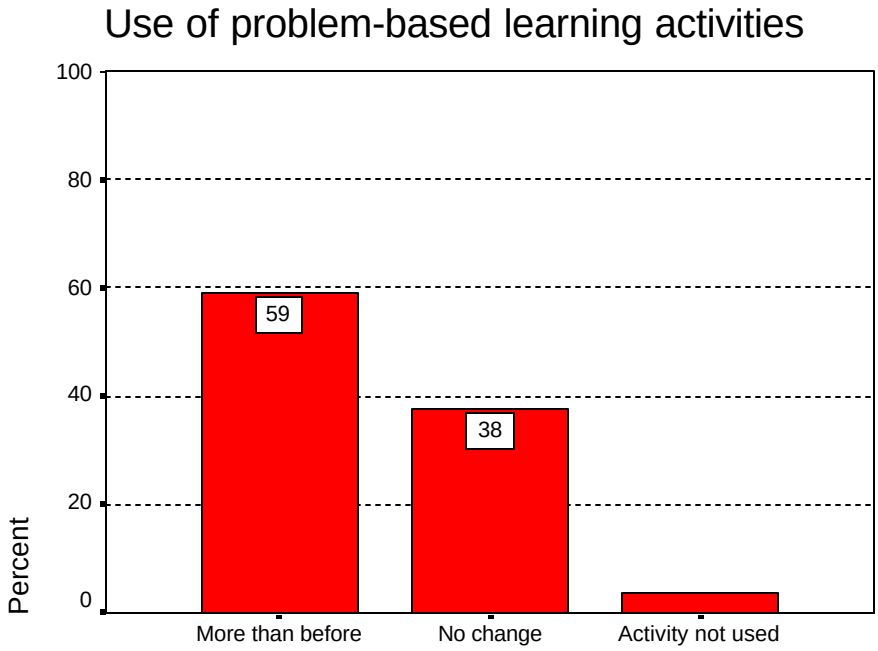
Statistics

TEACH7 Use of problem-based learning activities

N	Valid	56
	Missing	0

TEACH7 Use of problem-based learning activities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	33	58.9	58.9	58.9
	0 No change	21	37.5	37.5	96.4
	-9 Activity not used	2	3.6	3.6	100.0
	Total	56	100.0	100.0	



Use of problem-based learning activities

TEACH8 Use of lecture as teaching tool

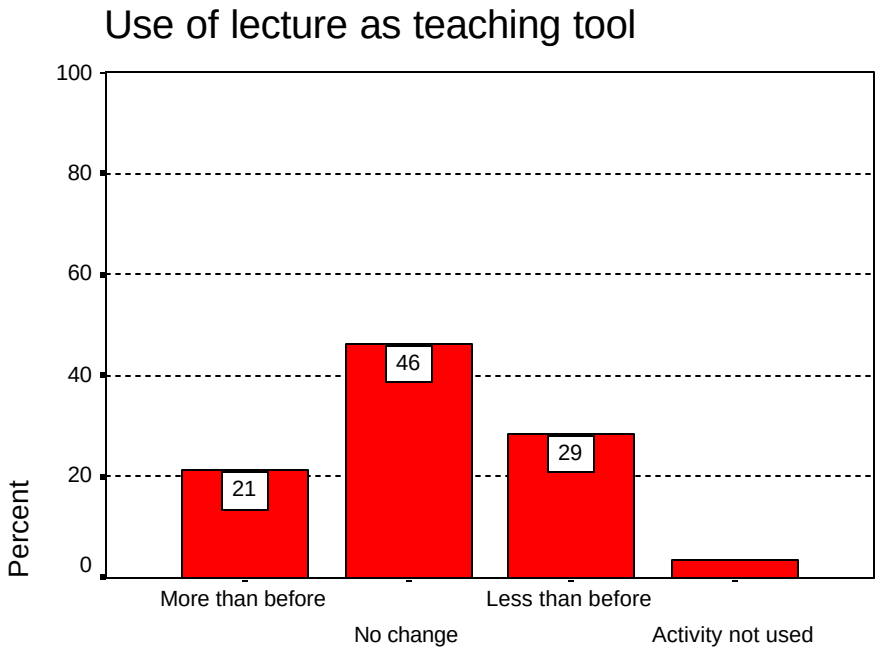
Statistics

TEACH8 Use of lecture as teaching tool

N	Valid	56
	Missing	0

TEACH8 Use of lecture as teaching tool

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	12	21.4	21.4	21.4
	0 No change	26	46.4	46.4	67.9
	-1 Less than before	16	28.6	28.6	96.4
	-9 Activity not used	2	3.6	3.6	100.0
	Total	56	100.0	100.0	



Use of lecture as teaching tool

TEACH9 Promote class discussion

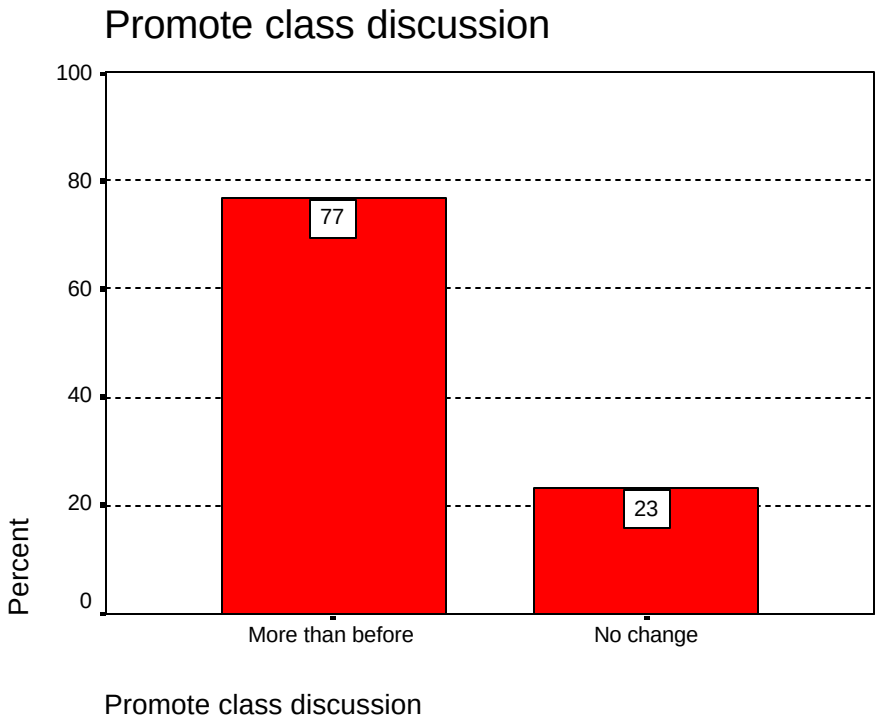
Statistics

TEACH9 Promote class discussion

N	Valid	56
	Missing	0

TEACH9 Promote class discussion

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	43	76.8	76.8	76.8
	0 No change	13	23.2	23.2	100.0
	Total	56	100.0	100.0	



TEACH10 Use of e-mail, chat, or listserv

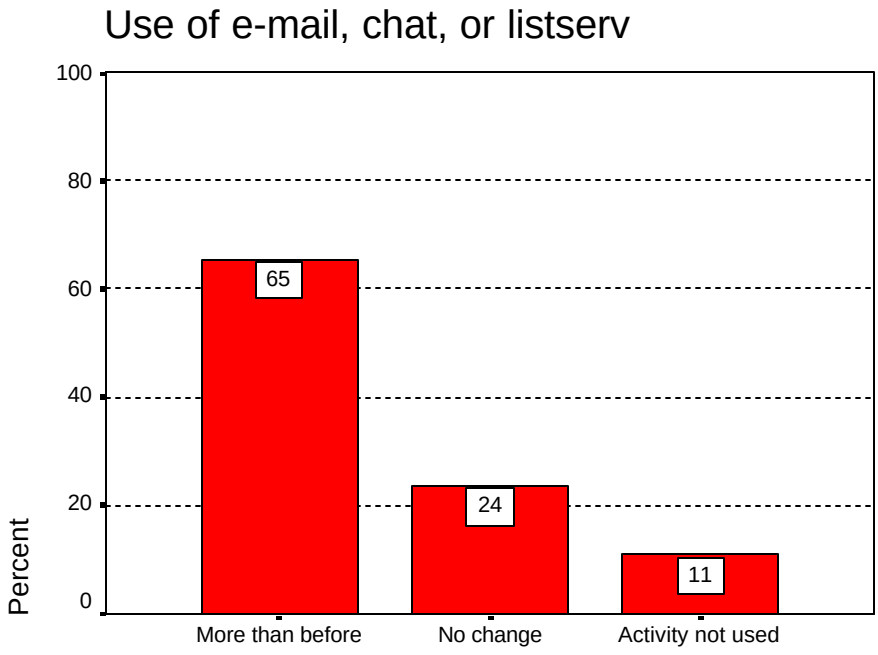
Statistics

TEACH10 Use of e-mail, chat, or listserv

N	Valid	55
	Missing	1

TEACH10 Use of e-mail, chat, or listserv

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	36	64.3	65.5	65.5
	0 No change	13	23.2	23.6	89.1
	-9 Activity not used	6	10.7	10.9	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		



Use of e-mail, chat, or listserv

TEACH11 Require group projects

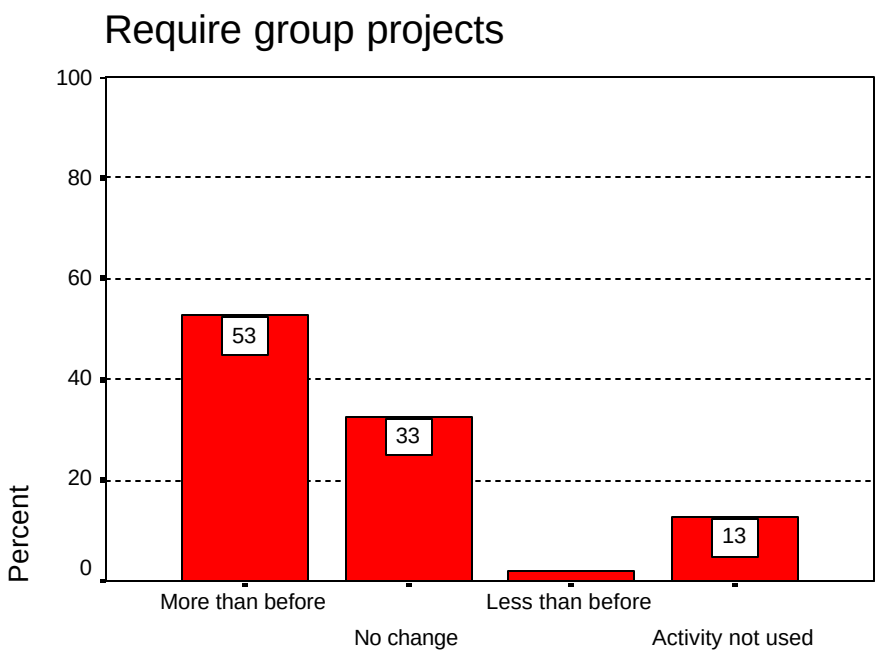
Statistics

TEACH11 Require group projects

N	Valid	55
	Missing	1

TEACH11 Require group projects

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	29	51.8	52.7	52.7
	0 No change	18	32.1	32.7	85.5
	-1 Less than before	1	1.8	1.8	87.3
	-9 Activity not used	7	12.5	12.7	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		



Require group projects

TEACH12 Use peer grading in assessment

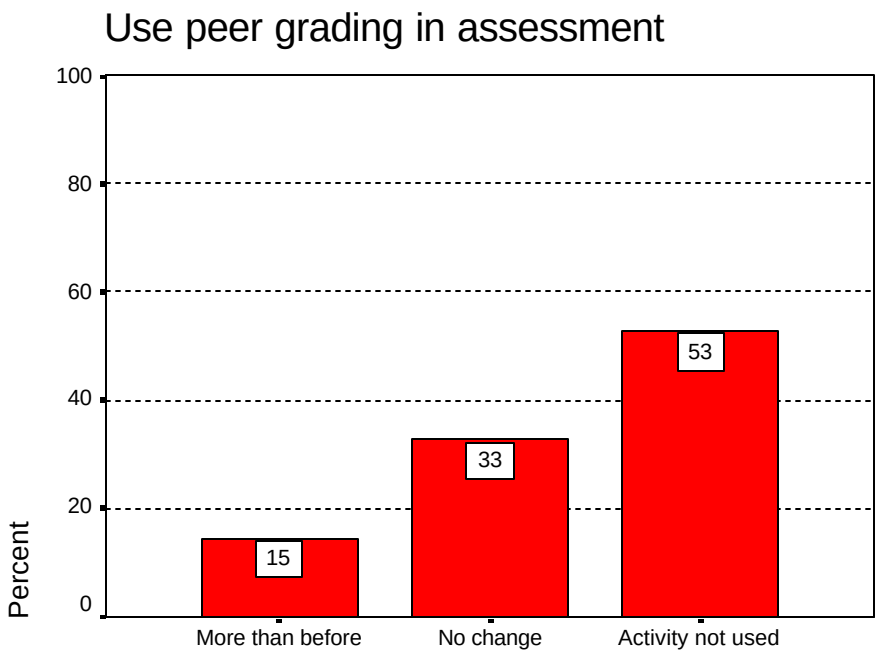
Statistics

TEACH12 Use peer grading in assessment

N	Valid	55
	Missing	1

TEACH12 Use peer grading in assessment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	8	14.3	14.5	14.5
	0 No change	18	32.1	32.7	47.3
	-9 Activity not used	29	51.8	52.7	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		



Use peer grading in assessment

TEACH13 Use out-of-class assignments/projects

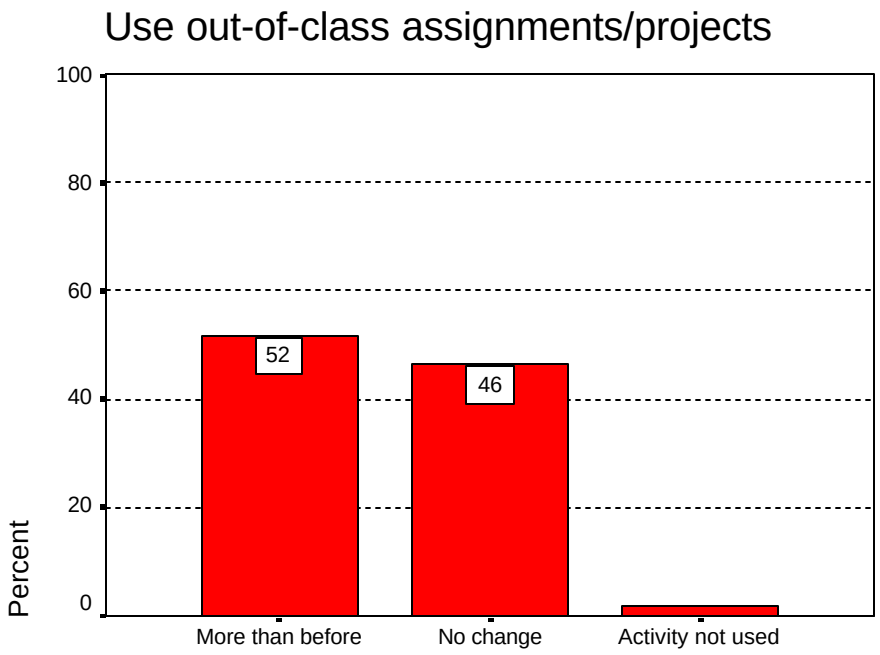
Statistics

TEACH13 Use out-of-class assignments/projects

N	Valid	56
	Missing	0

TEACH13 Use out-of-class assignments/projects

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	29	51.8	51.8	51.8
	0 No change	26	46.4	46.4	98.2
	-9 Activity not used	1	1.8	1.8	100.0
	Total	56	100.0	100.0	



Use out-of-class assignments/projects

TEACH14 Use mid-term student evaluations

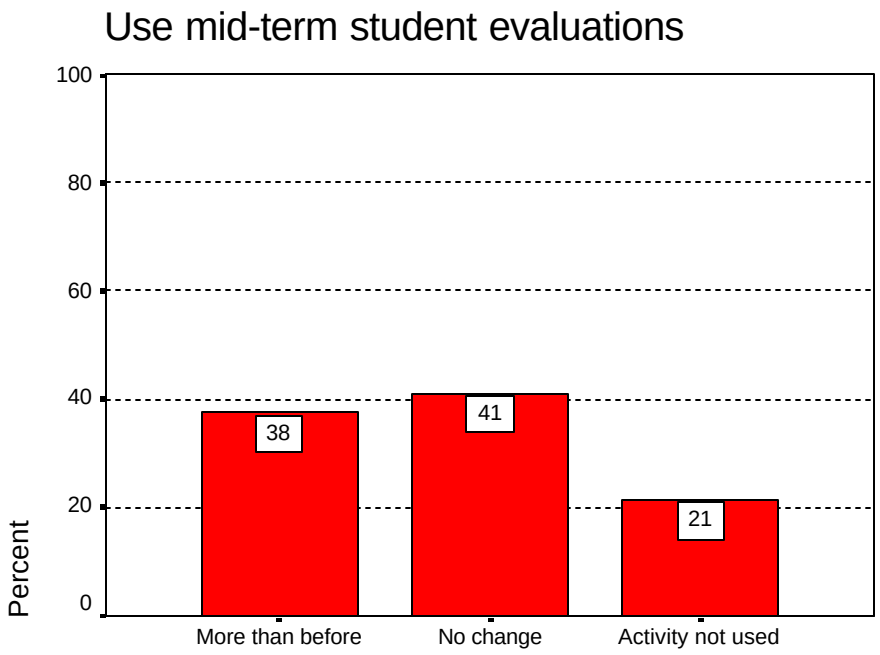
Statistics

TEACH14 Use mid-term student evaluations

N	Valid	56
	Missing	0

TEACH14 Use mid-term student evaluations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	21	37.5	37.5	37.5
	0 No change	23	41.1	41.1	78.6
	-9 Activity not used	12	21.4	21.4	100.0
	Total	56	100.0	100.0	



Use mid-term student evaluations

TEACH15 Use student-generated test questions for review

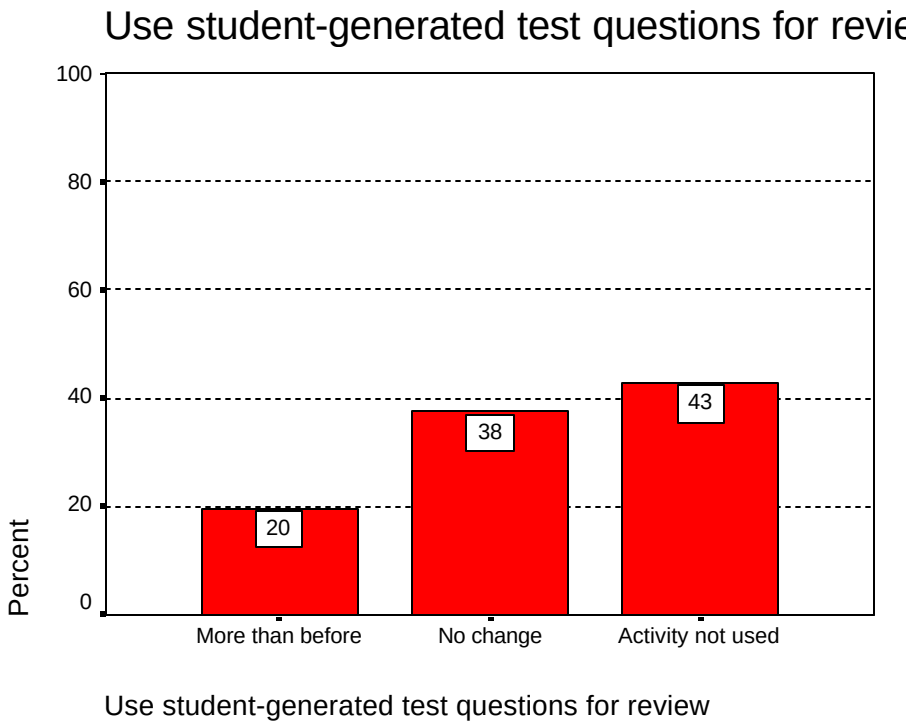
Statistics

TEACH15 Use student-generated test questions for review

N	Valid	56
	Missing	0

TEACH15 Use student-generated test questions for review

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	11	19.6	19.6	19.6
	0 No change	21	37.5	37.5	57.1
	-9 Activity not used	24	42.9	42.9	100.0
	Total	56	100.0	100.0	



TEACH16 Lecture with frequent pauses for student activity

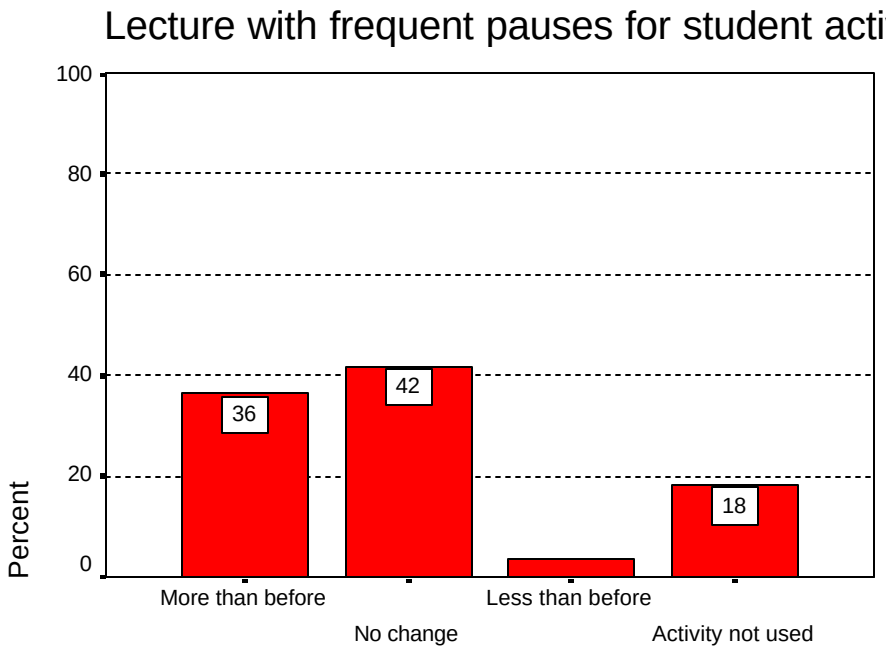
Statistics

TEACH16 Lecture with frequent pauses for student activity

N	Valid	55
	Missing	1

TEACH16 Lecture with frequent pauses for student activity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	20	35.7	36.4	36.4
	0 No change	23	41.1	41.8	78.2
	-1 Less than before	2	3.6	3.6	81.8
	-9 Activity not used	10	17.9	18.2	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		



Lecture with frequent pauses for student activity

TEACH17 Use short in-class assessment techniques

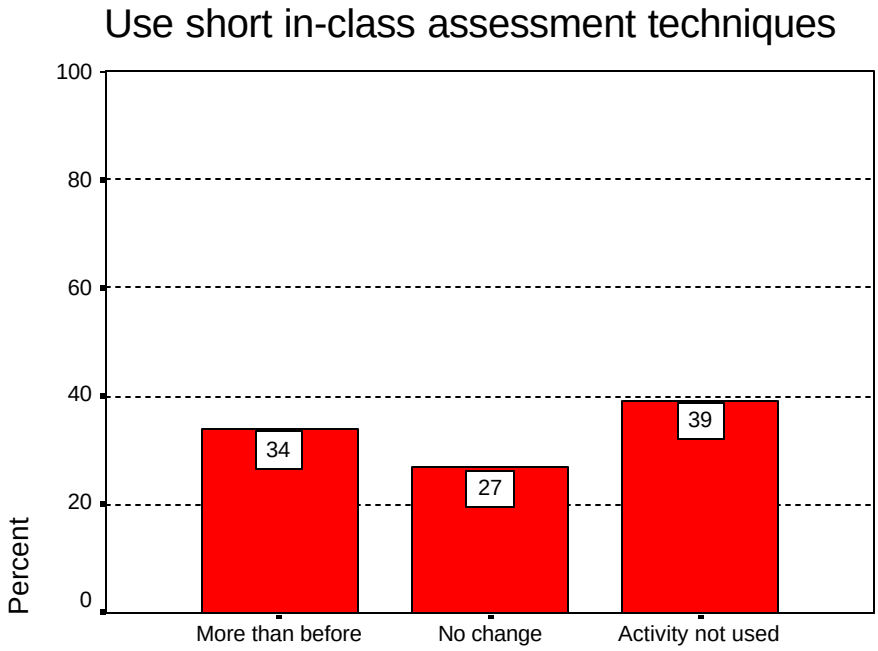
Statistics

TEACH17 Use short in-class assessment techniques

N	Valid	56
	Missing	0

TEACH17 Use short in-class assessment techniques

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	19	33.9	33.9	33.9
	0 No change	15	26.8	26.8	60.7
	-9 Activity not used	22	39.3	39.3	100.0
	Total	56	100.0	100.0	



Use short in-class assessment techniques

TEACH18 Use performance-based assessment of student learning

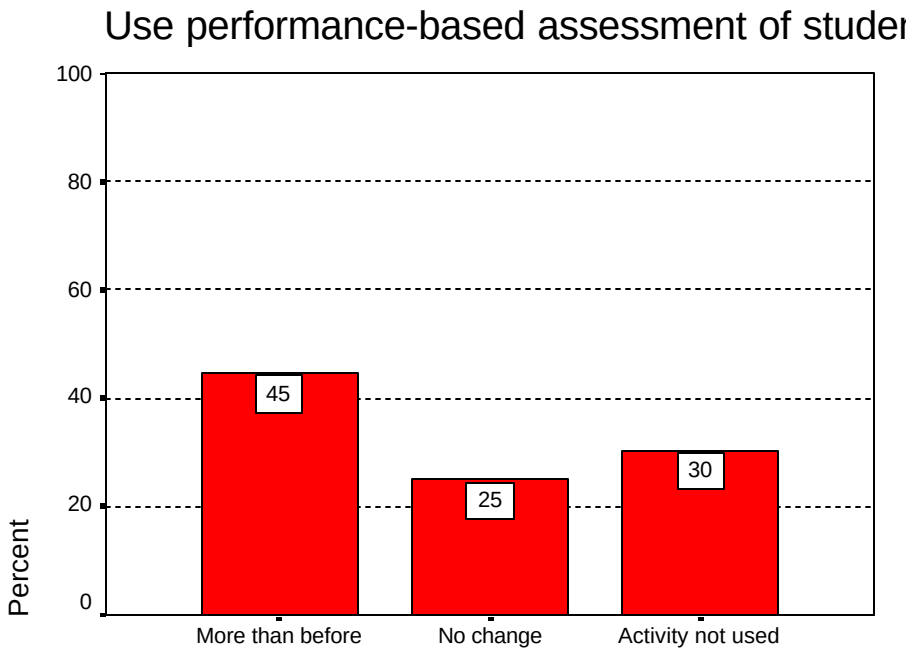
Statistics

TEACH18 Use performance-based assessment of student learning

N	Valid	56
	Missing	0

TEACH18 Use performance-based assessment of student learning

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	25	44.6	44.6	44.6
	0 No change	14	25.0	25.0	69.6
	-9 Activity not used	17	30.4	30.4	100.0
	Total	56	100.0	100.0	



Use performance-based assessment of student learning

TEACH19 Use software in class (e.g. presentation)

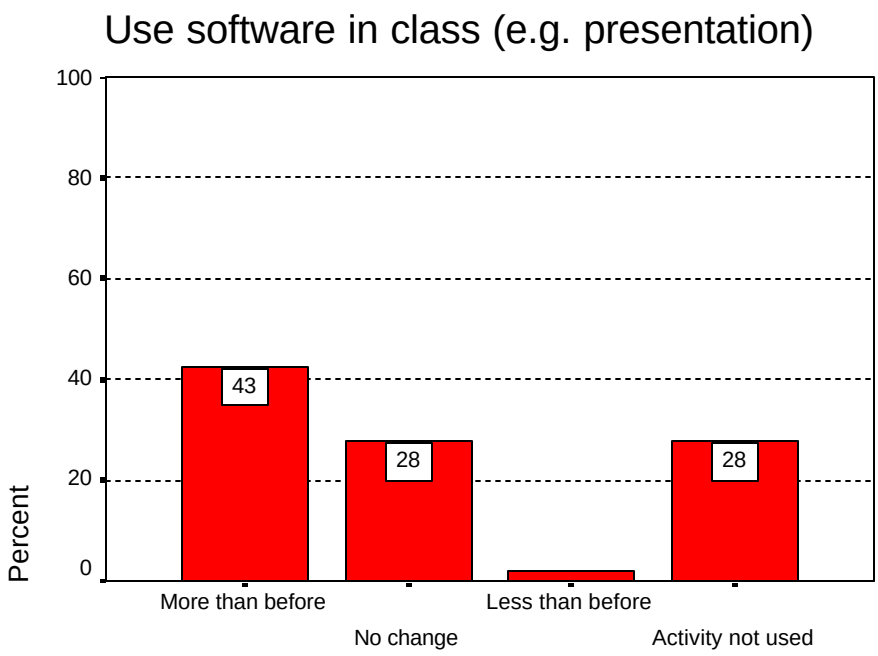
Statistics

TEACH19 Use software in class (e.g. presentation)

N	Valid	54
	Missing	2

TEACH19 Use software in class (e.g. presentation)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	23	41.1	42.6	42.6
	0 No change	15	26.8	27.8	70.4
	-1 Less than before	1	1.8	1.9	72.2
	-9 Activity not used	15	26.8	27.8	100.0
	Total	54	96.4	100.0	
Missing	System	2	3.6		
Total		56	100.0		



Use software in class (e.g. presentation)

TEACH20 Use simulations

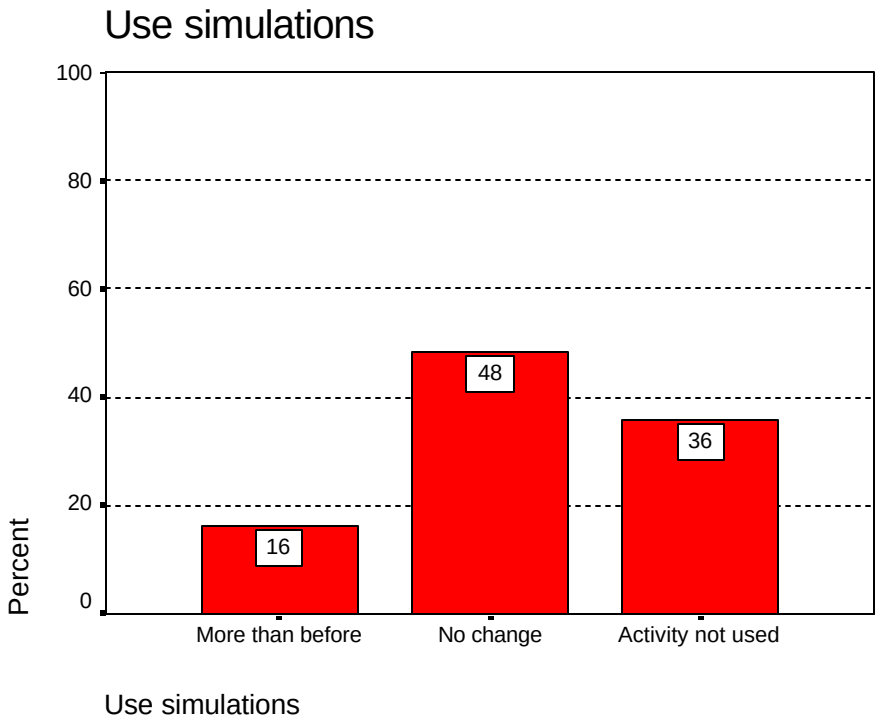
Statistics

TEACH20 Use simulations

N	Valid	56
	Missing	0

TEACH20 Use simulations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	9	16.1	16.1	16.1
	0 No change	27	48.2	48.2	64.3
	-9 Activity not used	20	35.7	35.7	100.0
	Total	56	100.0	100.0	



TEACH21 Require students to use on-line resources

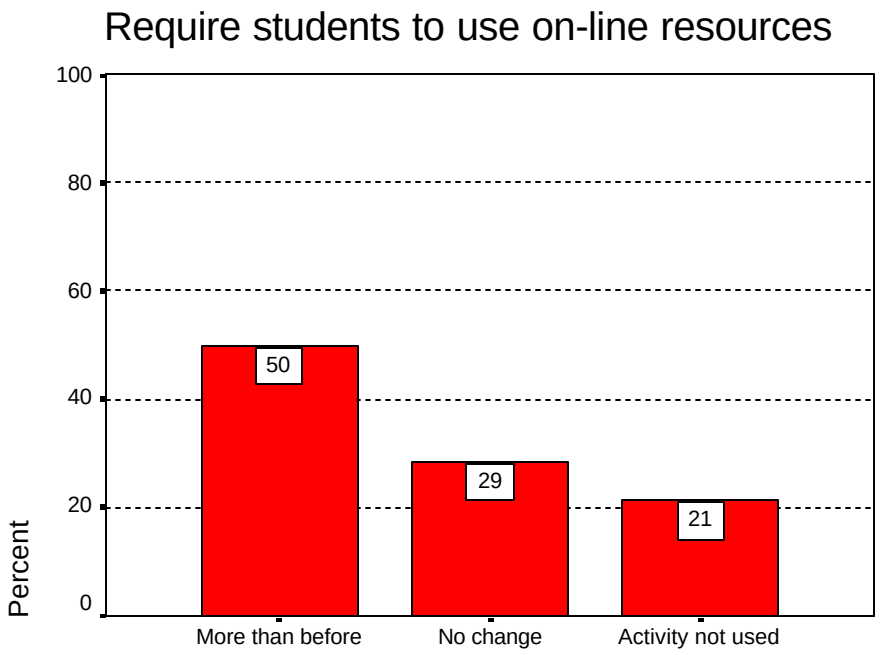
Statistics

TEACH21 Require students to use on-line resources

N	Valid	56
	Missing	0

TEACH21 Require students to use on-line resources

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	28	50.0	50.0	50.0
	0 No change	16	28.6	28.6	78.6
	-9 Activity not used	12	21.4	21.4	100.0
	Total	56	100.0	100.0	



Require students to use on-line resources

TEACH22 Use and require student use of on-line systems

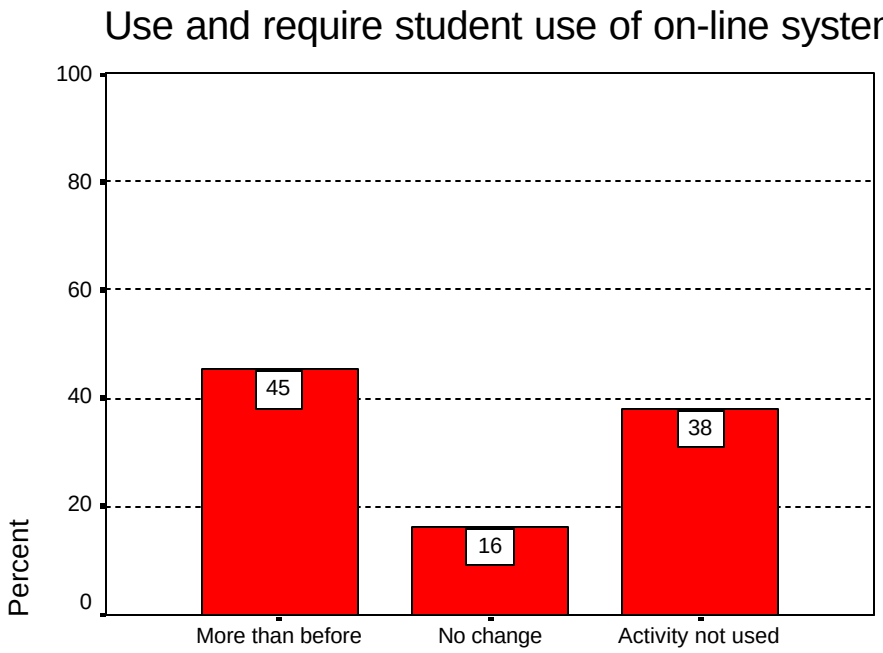
Statistics

TEACH22 Use and require student use of on-line systems

N	Valid	55
	Missing	1

TEACH22 Use and require student use of on-line systems

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	25	44.6	45.5	45.5
	0 No change	9	16.1	16.4	61.8
	-9 Activity not used	21	37.5	38.2	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		



Use and require student use of on-line systems

TEACH23 Use WWW in courses

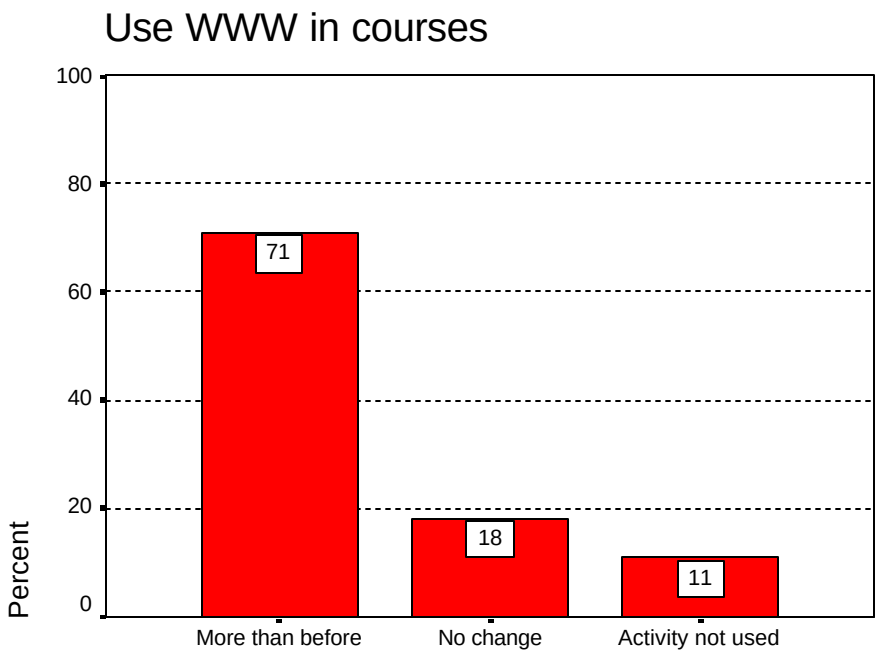
Statistics

TEACH23 Use WWW in courses

N	Valid	55
	Missing	1

TEACH23 Use WWW in courses

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	39	69.6	70.9	70.9
	0 No change	10	17.9	18.2	89.1
	-9 Activity not used	6	10.7	10.9	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		



Use WWW in courses

Frequency Distributions for "Student" Variables (STUDE1 - STUDE9)

STUDE1 Students take responsibility for their own learning

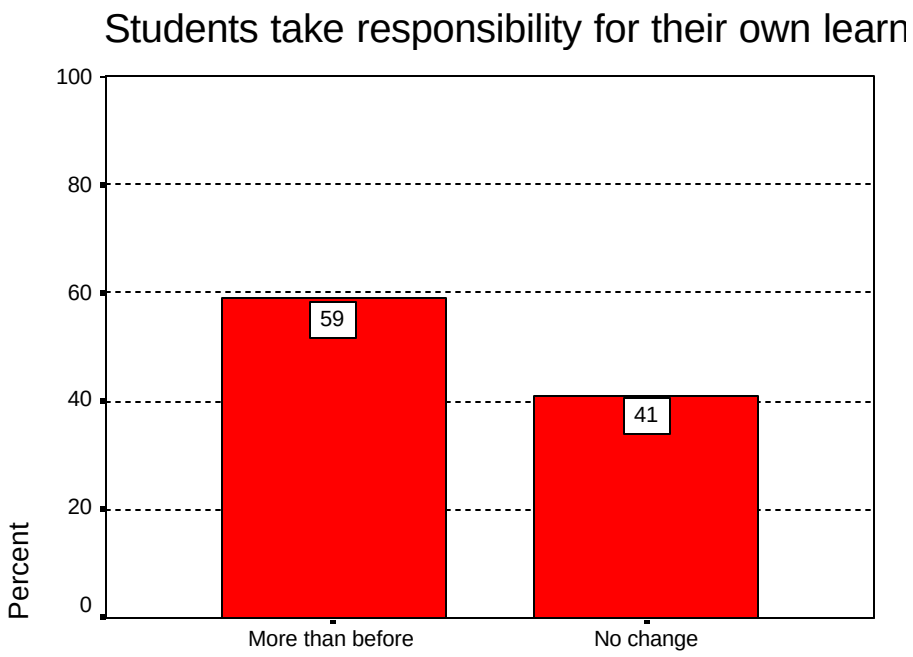
Statistics

STUDE1 Students take responsibility for their own learning

N	Valid	56
	Missing	0

STUDE1 Students take responsibility for their own learning

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	33	58.9	58.9	58.9
	0 No change	23	41.1	41.1	100.0
	Total	56	100.0	100.0	



Students take responsibility for their own learning

STUDE2 Students demonstrate higher levels of thinking

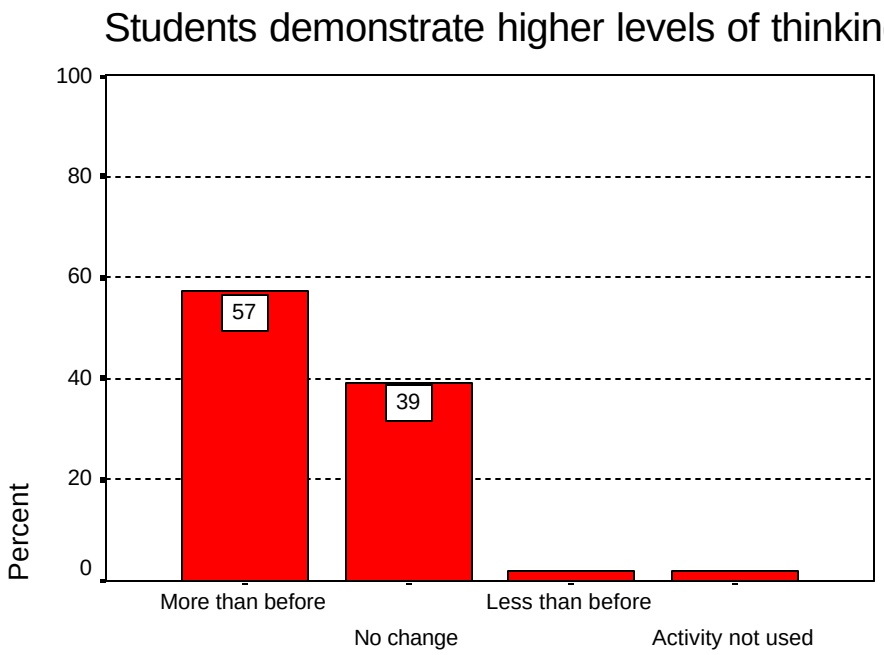
Statistics

STUDE2 Students demonstrate higher levels of thinking

N	Valid	56
	Missing	0

STUDE2 Students demonstrate higher levels of thinking

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	32	57.1	57.1	57.1
	0 No change	22	39.3	39.3	96.4
	-1 Less than before	1	1.8	1.8	98.2
	-9 Activity not used	1	1.8	1.8	100.0
	Total	56	100.0	100.0	



Students demonstrate higher levels of thinking

STUDE3 Students participate in class discussions

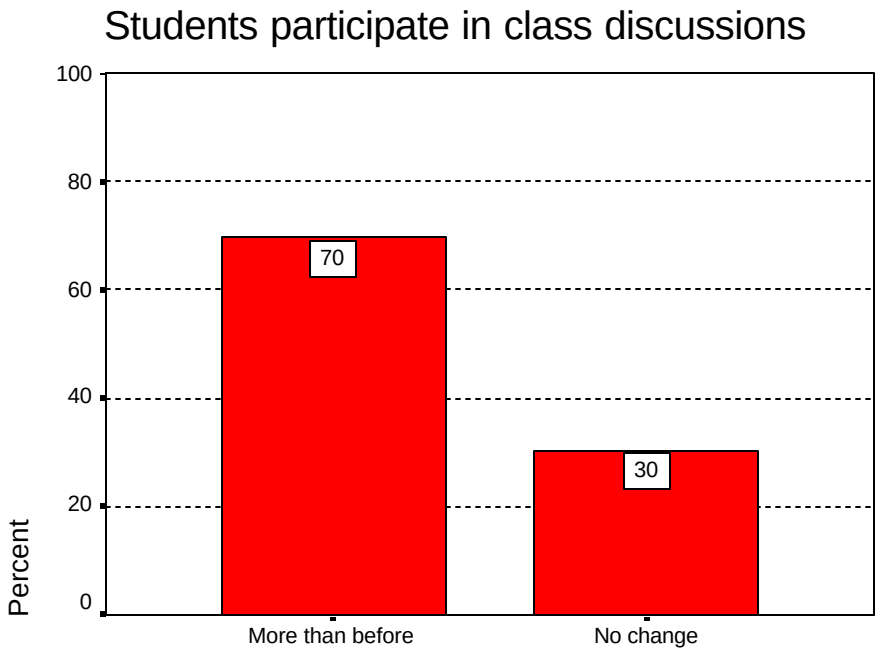
Statistics

STUDE3 Students participate in class discussions

N	Valid	56
	Missing	0

STUDE3 Students participate in class discussions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	39	69.6	69.6	69.6
	0 No change	17	30.4	30.4	100.0
	Total	56	100.0	100.0	



Students participate in class discussions

STUDE4 Students read outside context of course

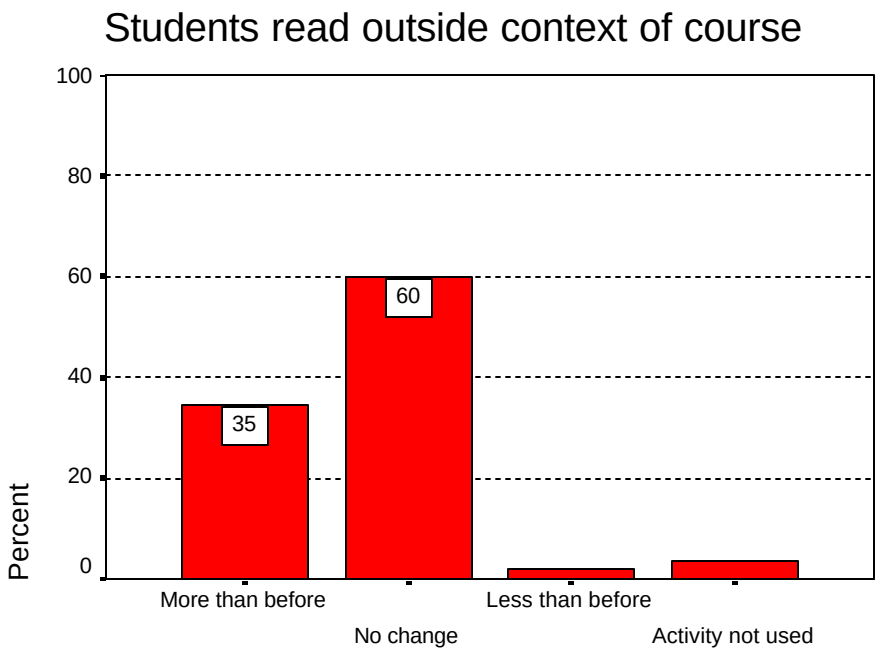
Statistics

STUDE4 Students read outside context of course

N	Valid	55
	Missing	1

STUDE4 Students read outside context of course

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	19	33.9	34.5	34.5
	0 No change	33	58.9	60.0	94.5
	-1 Less than before	1	1.8	1.8	96.4
	-9 Activity not used	2	3.6	3.6	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		



Students read outside context of course

STUDE5 Students perform better on texts/quizzes

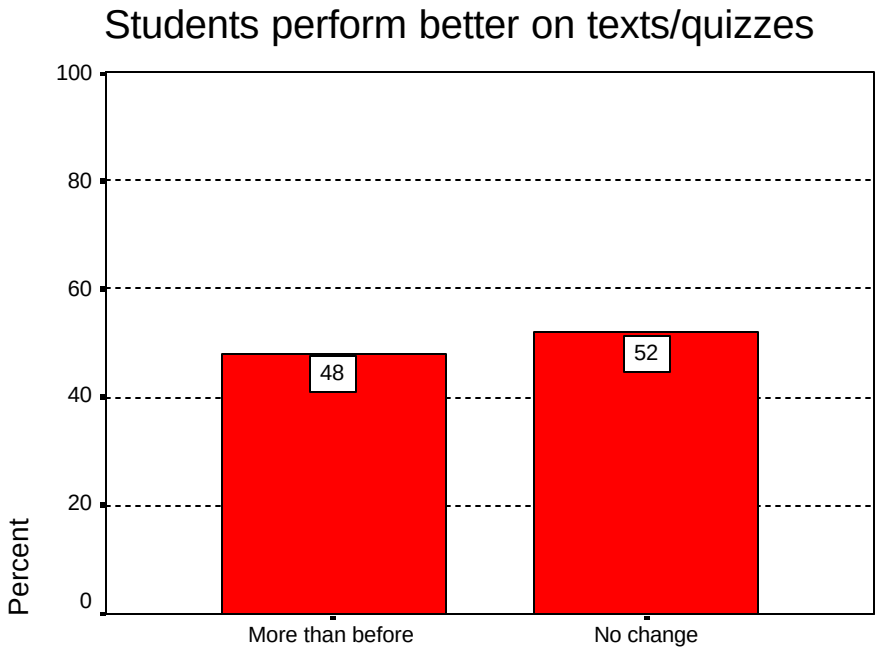
Statistics

STUDE5 Students perform better on texts/quizzes

N	Valid	54
	Missing	2

STUDE5 Students perform better on texts/quizzes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	26	46.4	48.1	48.1
	0 No change	28	50.0	51.9	100.0
	Total	54	96.4	100.0	
Missing	System	2	3.6		
Total		56	100.0		



Students perform better on texts/quizzes

STUDE6 Students demonstrate improved writing skills

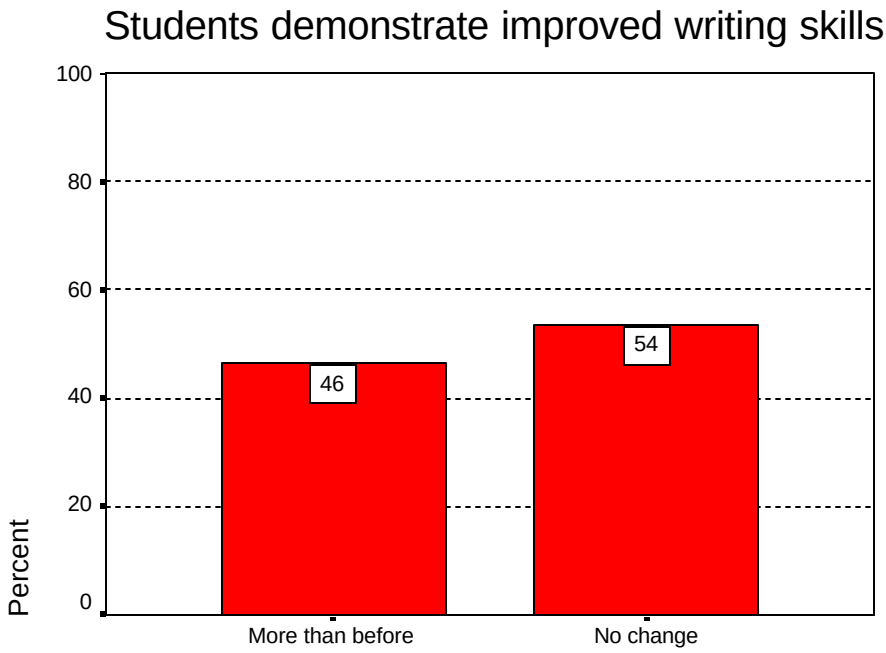
Statistics

STUDE6 Students demonstrate improved writing skills

N	Valid	56
	Missing	0

STUDE6 Students demonstrate improved writing skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	26	46.4	46.4	46.4
	0 No change	30	53.6	53.6	100.0
	Total	56	100.0	100.0	



Students demonstrate improved writing skills

STUDE7 Students demonstrate improved verbal skills

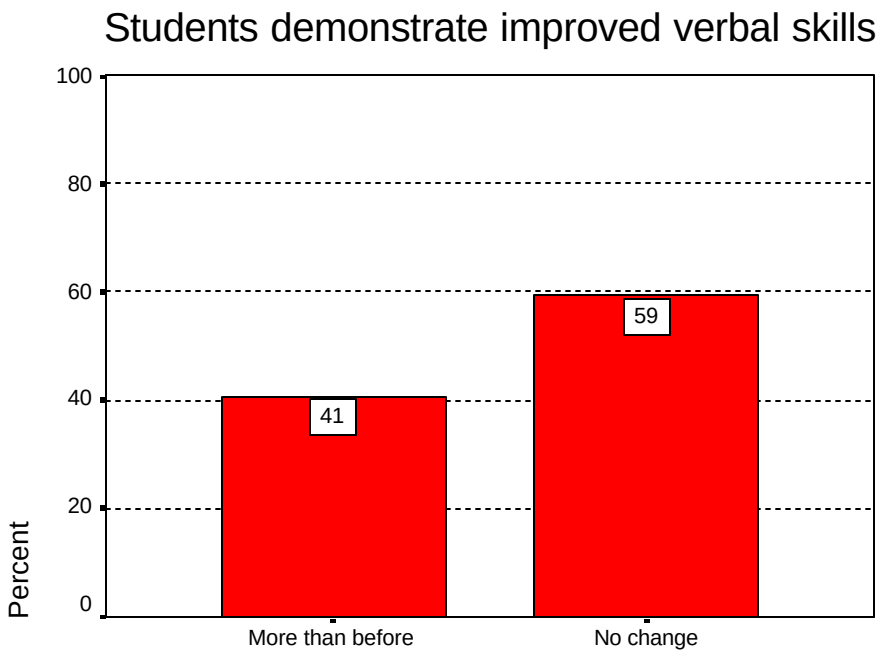
Statistics

STUDE7 Students demonstrate improved verbal skills

N	Valid	54
	Missing	2

STUDE7 Students demonstrate improved verbal skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	22	39.3	40.7	40.7
	0 No change	32	57.1	59.3	100.0
	Total	54	96.4	100.0	
Missing	System	2	3.6		
Total		56	100.0		



Students demonstrate improved verbal skills

STUDE8 Students able to recall concepts/procedures

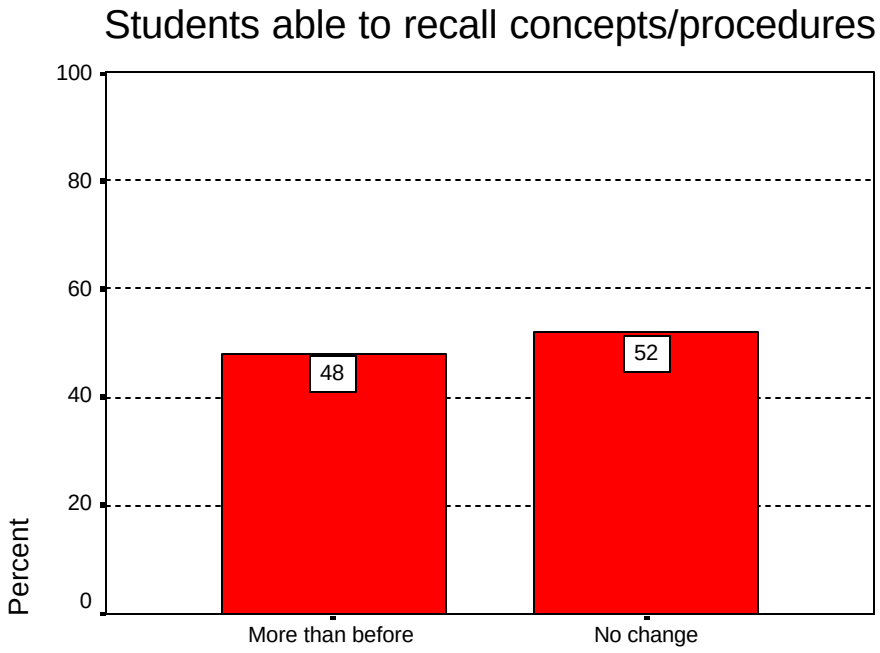
Statistics

STUDE8 Students able to recall concepts/procedures

N	Valid	54
	Missing	2

STUDE8 Students able to recall concepts/procedures

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	26	46.4	48.1	48.1
	0 No change	28	50.0	51.9	100.0
	Total	54	96.4	100.0	
Missing	System	2	3.6		
Total		56	100.0		



Students able to recall concepts/procedures

STUDE9 Students able to apply concepts/procedures

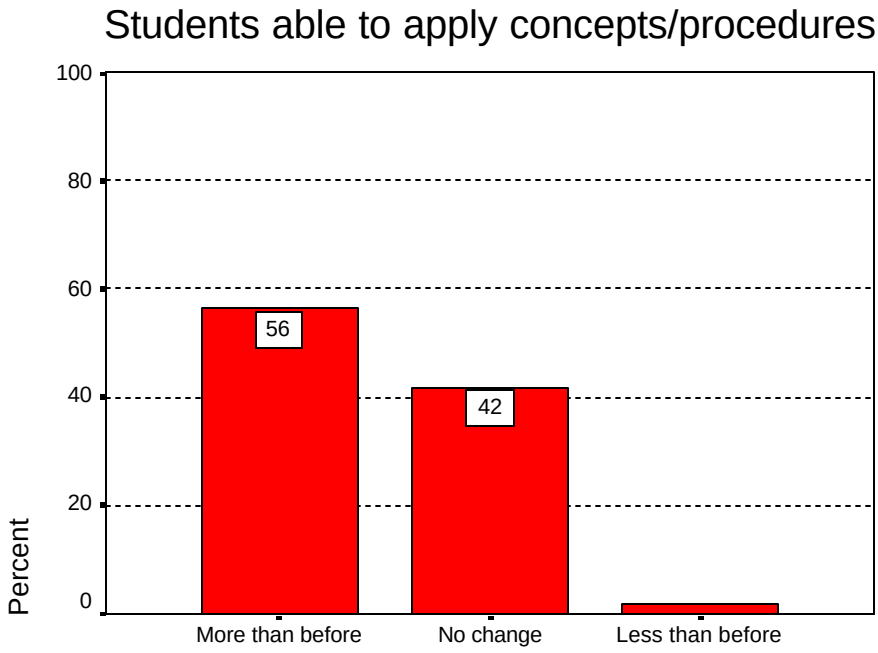
Statistics

STUDE9 Students able to apply concepts/procedures

N	Valid	55
	Missing	1

STUDE9 Students able to apply concepts/procedures

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	31	55.4	56.4	56.4
	0 No change	23	41.1	41.8	98.2
	-1 Less than before	1	1.8	1.8	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		



Students able to apply concepts/procedures

Frequency Distributions for "Teaching Issue" Variables (TEACH26 - TEACH41)

TEACH26 Understand barriers to students' learning

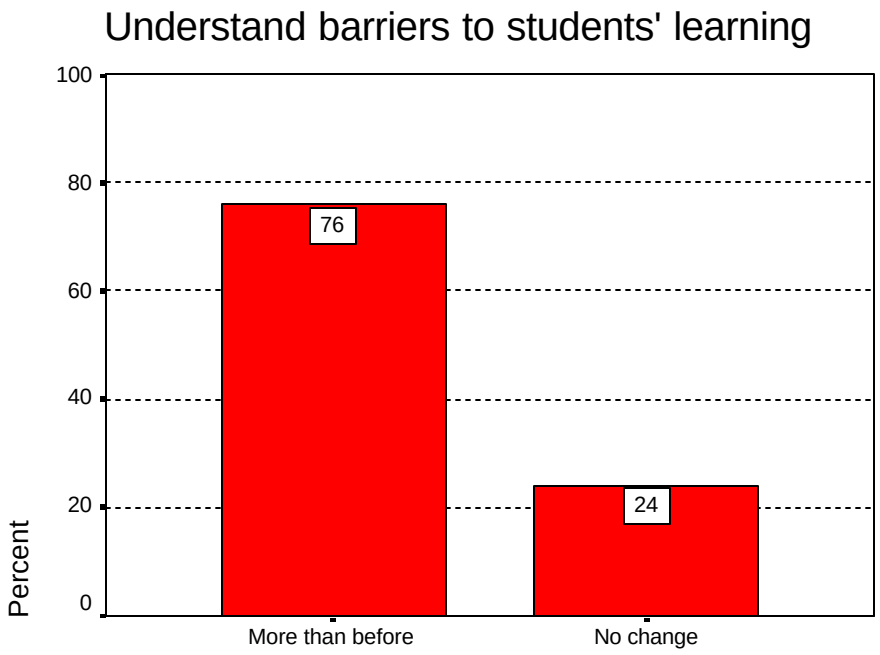
Statistics

TEACH26 Understand barriers to students' learning

N	Valid	54
	Missing	2

TEACH26 Understand barriers to students' learning

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	41	73.2	75.9	75.9
	0 No change	13	23.2	24.1	100.0
	Total	54	96.4	100.0	
Missing	System	2	3.6		
Total		56	100.0		



Understand barriers to students' learning

TEACH27 Usderstand students' different learning styles

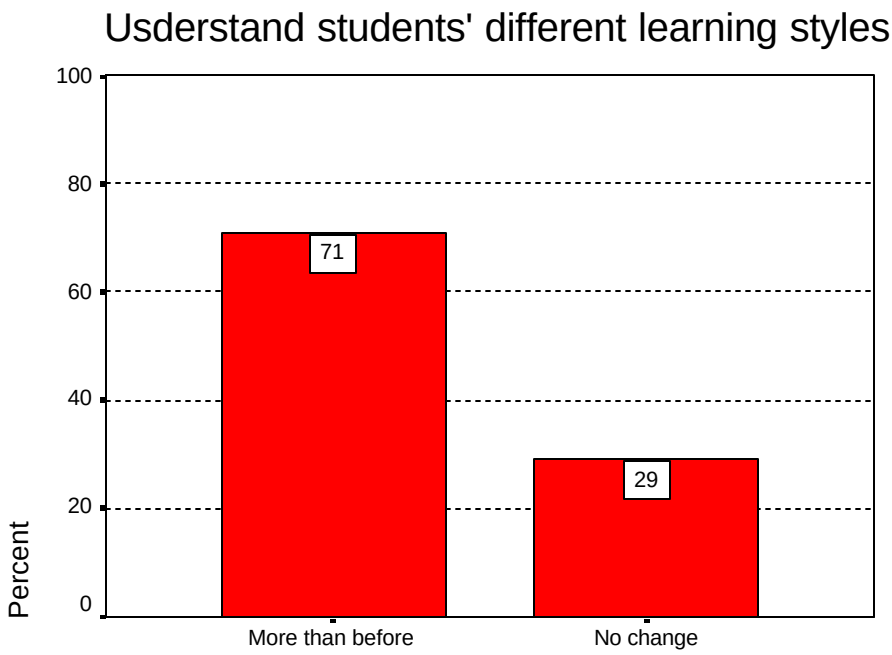
Statistics

TEACH27 Usderstand students' different learning styles

N	Valid	55
	Missing	1

TEACH27 Usderstand students' different learning styles

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	39	69.6	70.9	70.9
	0 No change	16	28.6	29.1	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		



Usderstand students' different learning styles

TEACH28 Receive positive comments from students

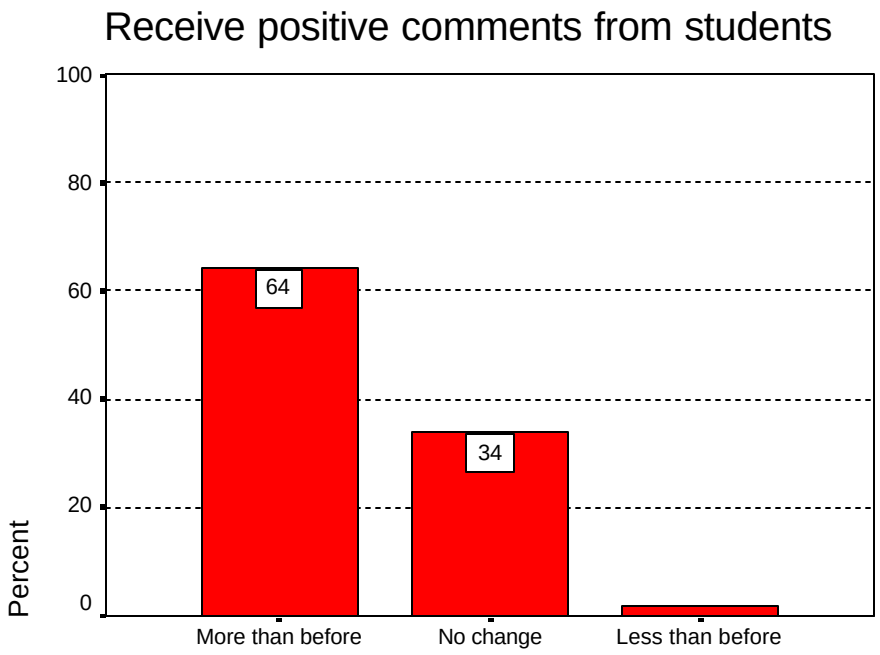
Statistics

TEACH28 Receive positive comments from students

N	Valid	56
	Missing	0

TEACH28 Receive positive comments from students

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	36	64.3	64.3	64.3
	0 No change	19	33.9	33.9	98.2
	-1 Less than before	1	1.8	1.8	100.0
	Total	56	100.0	100.0	



Receive positive comments from students

TEACH29 Reflect on my effectiveness as a teacher

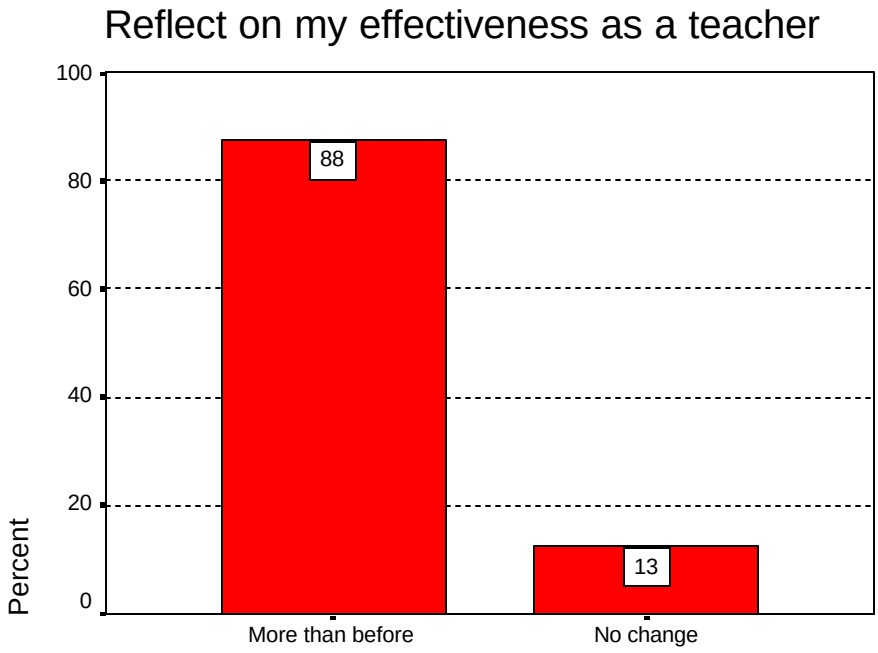
Statistics

TEACH29 Reflect on my effectiveness as a teacher

N	Valid	56
	Missing	0

TEACH29 Reflect on my effectiveness as a teacher

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	49	87.5	87.5	87.5
	0 No change	7	12.5	12.5	100.0
	Total	56	100.0	100.0	



Reflect on my effectiveness as a teacher

TEACH30 Have knowledge of current institutional issues

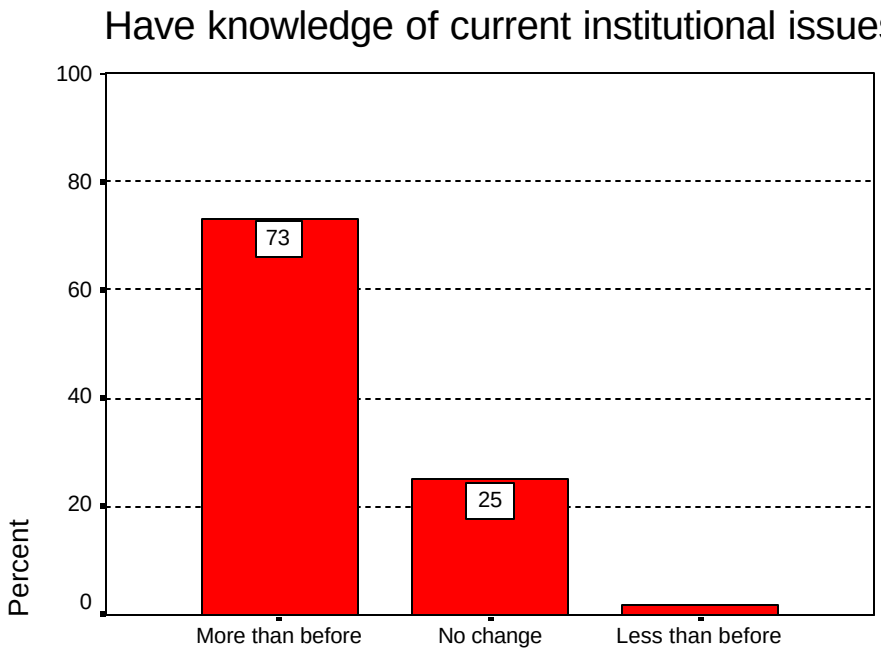
Statistics

TEACH30 Have knowledge of current institutional issues

N	Valid	56
	Missing	0

TEACH30 Have knowledge of current institutional issues

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	41	73.2	73.2	73.2
	0 No change	14	25.0	25.0	98.2
	-1 Less than before	1	1.8	1.8	100.0
	Total	56	100.0	100.0	



Have knowledge of current institutional issues

TEACH31 Conscious of and confident about my teaching

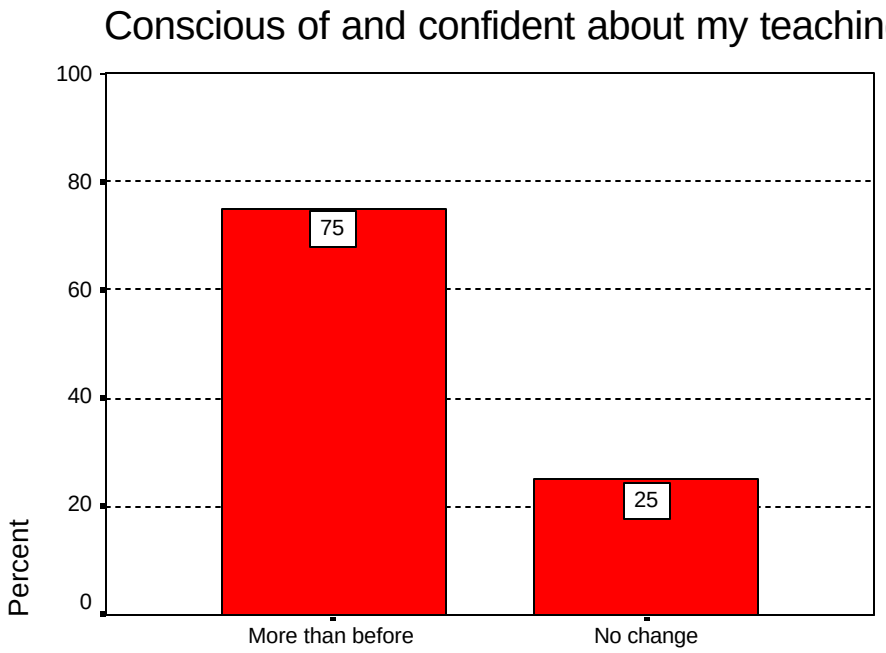
Statistics

TEACH31 Conscious of and confident about my teaching

N	Valid	56
	Missing	0

TEACH31 Conscious of and confident about my teaching

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	42	75.0	75.0	75.0
	0 No change	14	25.0	25.0	100.0
	Total	56	100.0	100.0	



Conscious of and confident about my teaching

TEACH32 Conduct classroom research

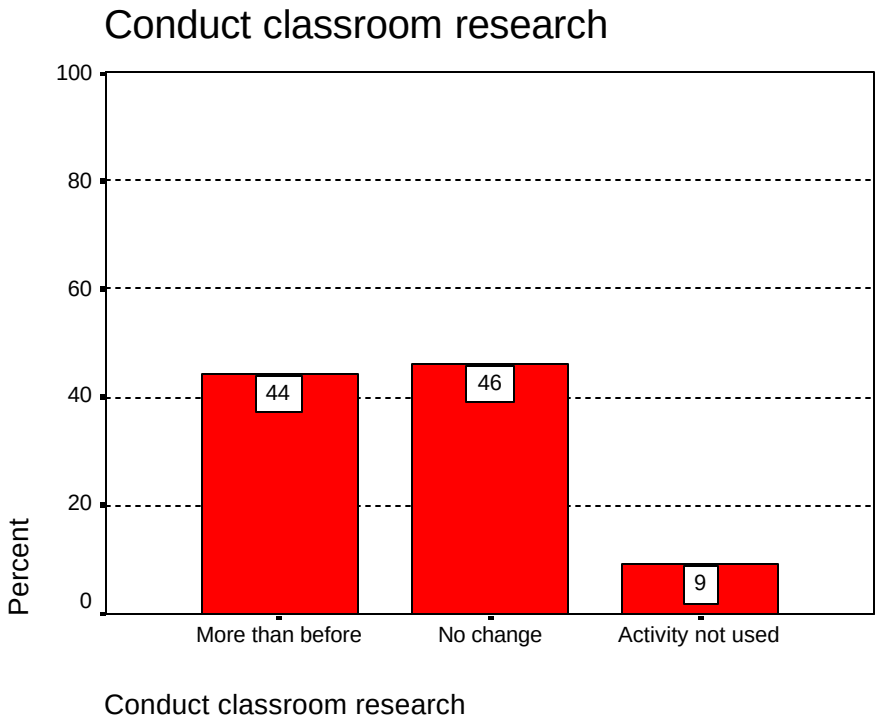
Statistics

TEACH32 Conduct classroom research

N	Valid	54
	Missing	2

TEACH32 Conduct classroom research

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	24	42.9	44.4	44.4
	0 No change	25	44.6	46.3	90.7
	-9 Activity not used	5	8.9	9.3	100.0
	Total	54	96.4	100.0	
Missing	System	2	3.6		
Total		56	100.0		



Conduct classroom research

TEACH33 Develop plans to strengthen my department

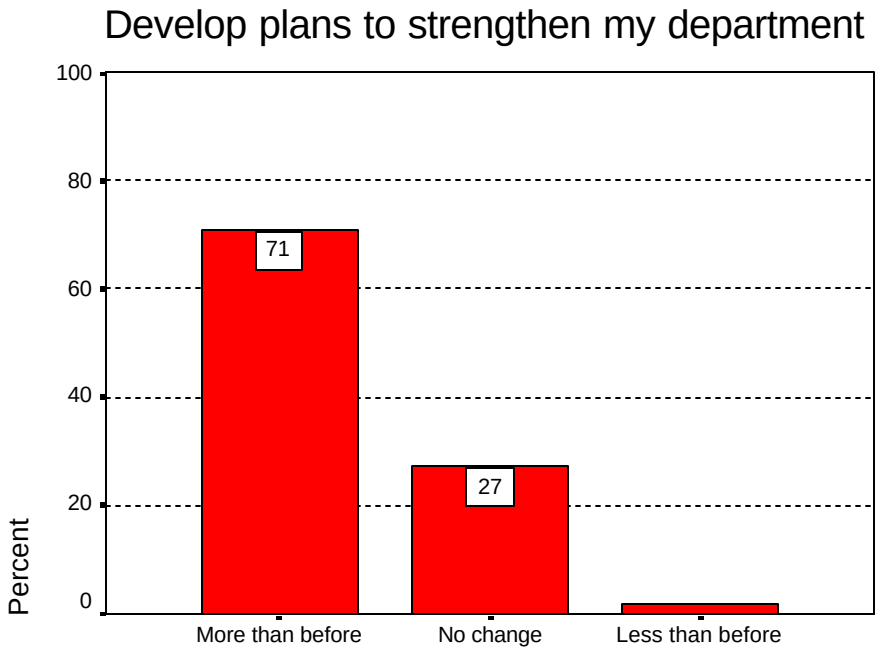
Statistics

TEACH33 Develop plans to strengthen my department

N	Valid	55
	Missing	1

TEACH33 Develop plans to strengthen my department

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	39	69.6	70.9	70.9
	0 No change	15	26.8	27.3	98.2
	-1 Less than before	1	1.8	1.8	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		



Develop plans to strengthen my department

TEACH34 Produce peer reviewed scholarly work

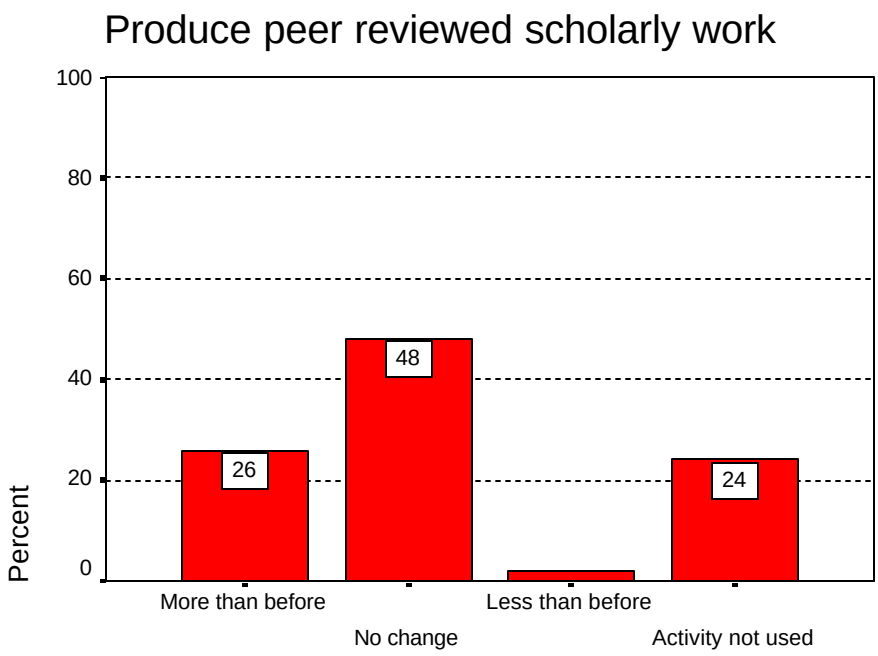
Statistics

TEACH34 Produce peer reviewed scholarly work

N	Valid	54
	Missing	2

TEACH34 Produce peer reviewed scholarly work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	14	25.0	25.9	25.9
	0 No change	26	46.4	48.1	74.1
	-1 Less than before	1	1.8	1.9	75.9
	-9 Activity not used	13	23.2	24.1	100.0
	Total	54	96.4	100.0	
Missing	System	2	3.6		
Total		56	100.0		



Produce peer reviewed scholarly work

TEACH35 Receive negative comments from students

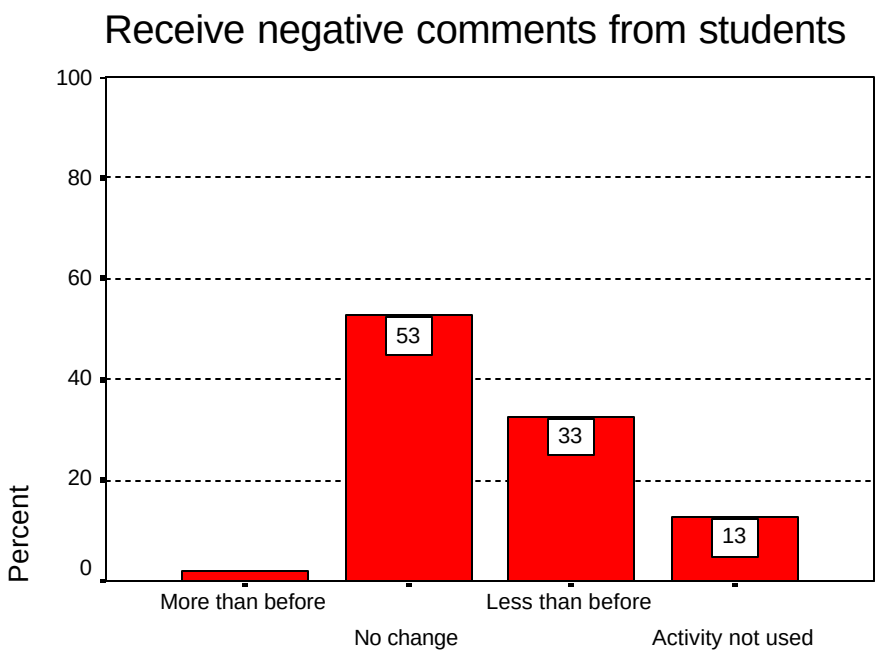
Statistics

TEACH35 Receive negative comments from students

N	Valid	55
	Missing	1

TEACH35 Receive negative comments from students

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	1	1.8	1.8	1.8
	0 No change	29	51.8	52.7	54.5
	-1 Less than before	18	32.1	32.7	87.3
	-9 Activity not used	7	12.5	12.7	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		



Receive negative comments from students

TEACH36 Give presentations at conferences

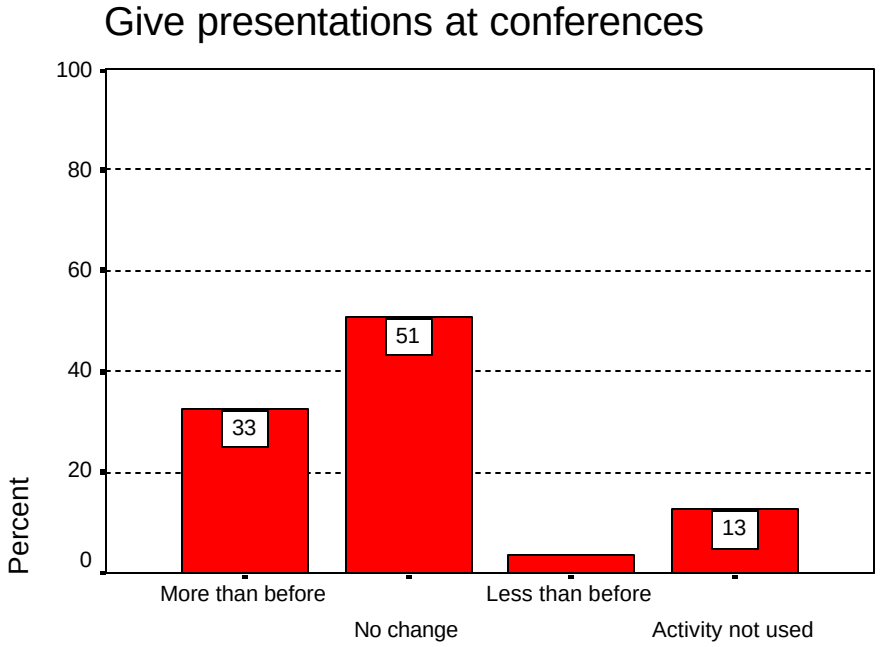
Statistics

TEACH36 Give presentations at conferences

N	Valid	55
	Missing	1

TEACH36 Give presentations at conferences

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	18	32.1	32.7	32.7
	0 No change	28	50.0	50.9	83.6
	-1 Less than before	2	3.6	3.6	87.3
	-9 Activity not used	7	12.5	12.7	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		



Give presentations at conferences

TEACH37 Deeper understanding of course-related content

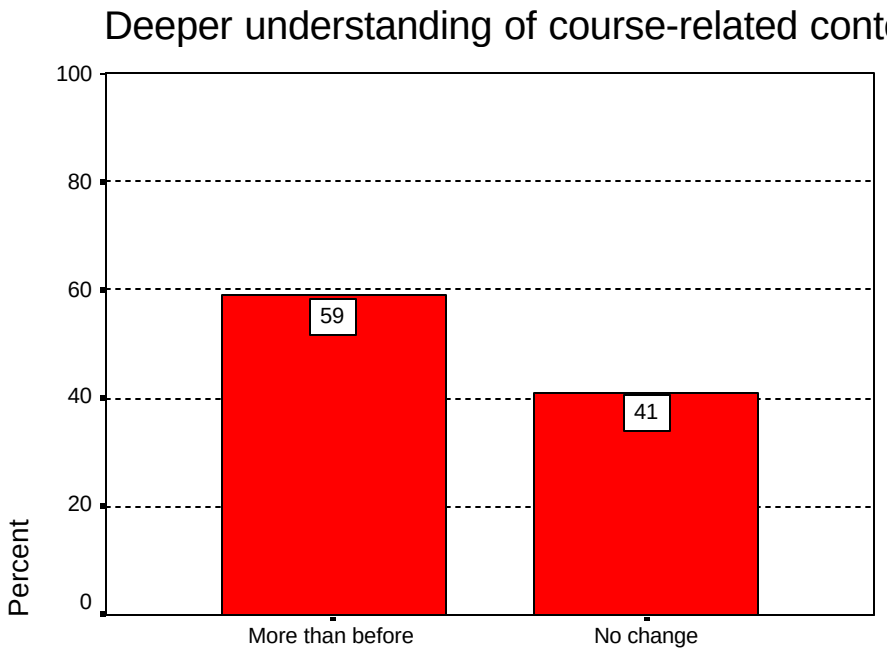
Statistics

TEACH37 Deeper understanding of course-related content

N	Valid	56
	Missing	0

TEACH37 Deeper understanding of course-related content

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	33	58.9	58.9	58.9
	0 No change	23	41.1	41.1	100.0
	Total	56	100.0	100.0	



TEACH38 Discuss learning and teaching issues with department colleagues

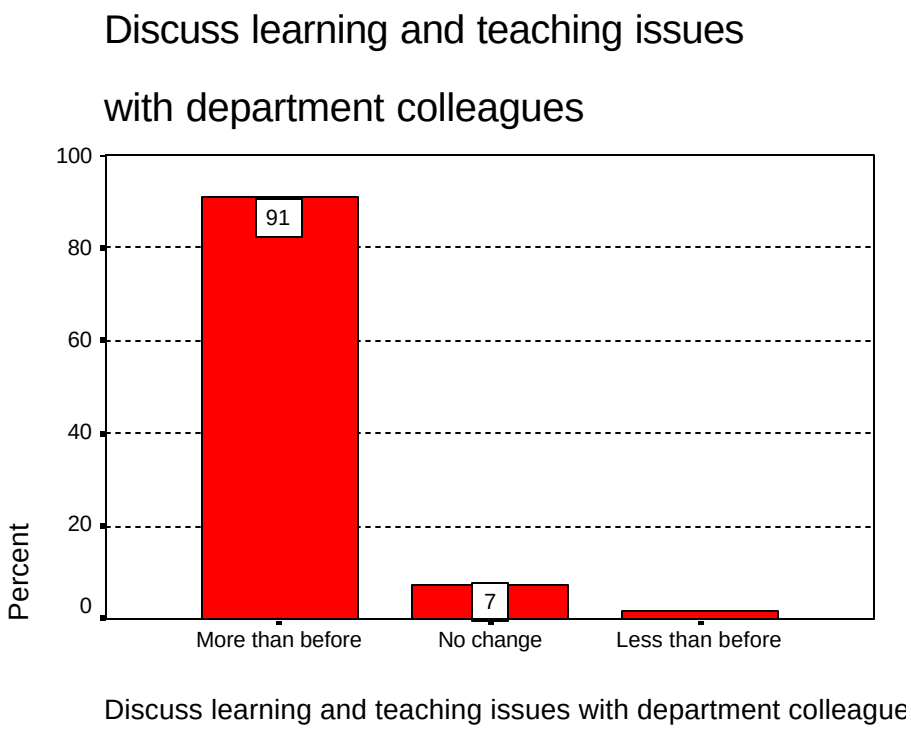
Statistics

TEACH38 Discuss learning and teaching issues with department colleagues

N	Valid	55
	Missing	1

TEACH38 Discuss learning and teaching issues with department colleagues

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	50	89.3	90.9	90.9
	0 No change	4	7.1	7.3	98.2
	-1 Less than before	1	1.8	1.8	100.0
	Total	55	98.2	100.0	
Missing	System	1	1.8		
Total		56	100.0		



Discuss learning and teaching issues with department colleague

TEACH39 Discuss learning and teaching issues with non-department colleagues

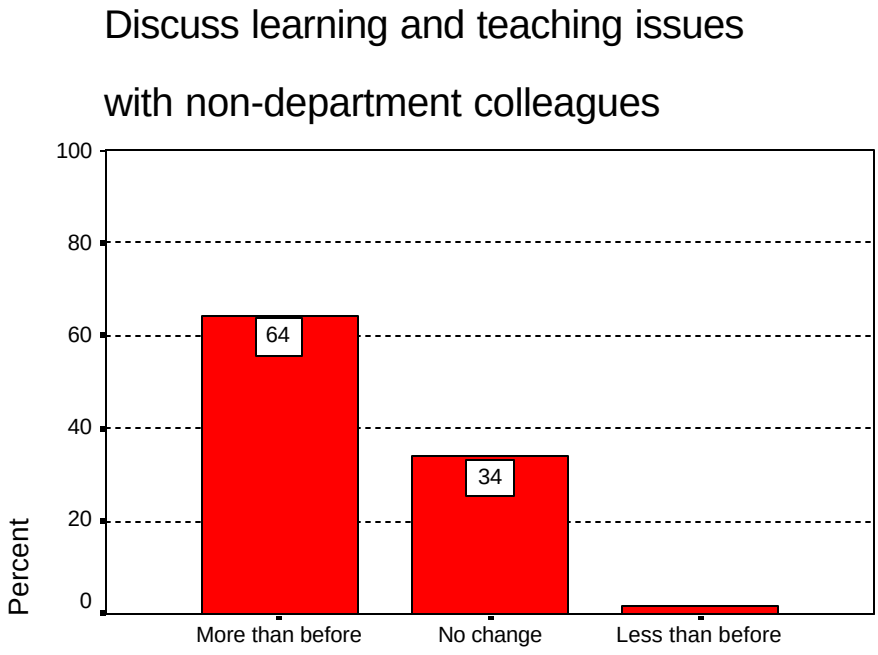
Statistics

TEACH39 Discuss learning and teaching issues with non-department colleagues

N	Valid	56
	Missing	0

TEACH39 Discuss learning and teaching issues with non-department colleagues

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	36	64.3	64.3	64.3
	0 No change	19	33.9	33.9	98.2
	-1 Less than before	1	1.8	1.8	100.0
	Total	56	100.0	100.0	



Discuss learning and teaching issues with non-department colle

TEACH40 Write grant proposals

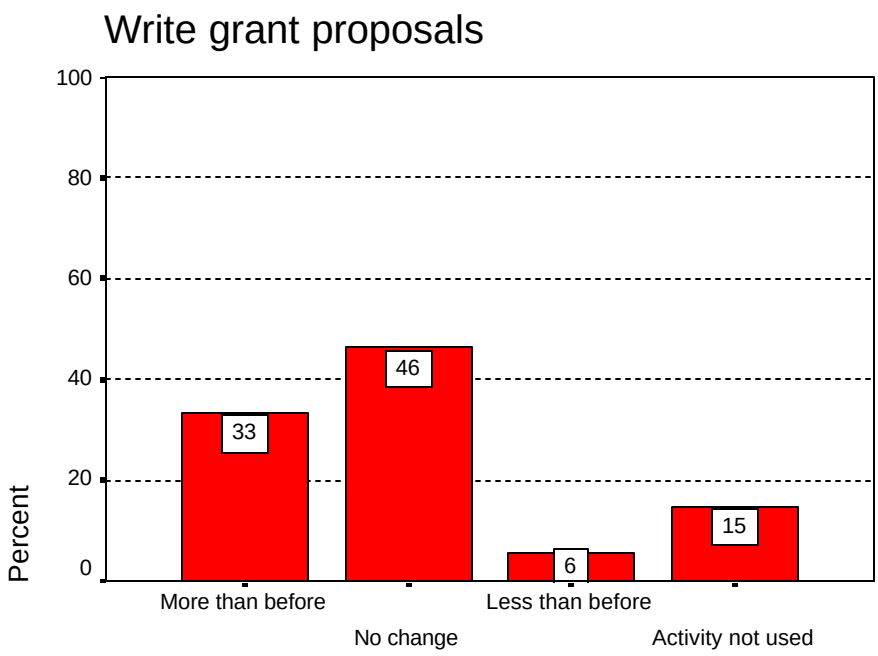
Statistics

TEACH40 Write grant proposals

N	Valid	54
	Missing	2

TEACH40 Write grant proposals

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	18	32.1	33.3	33.3
	0 No change	25	44.6	46.3	79.6
	-1 Less than before	3	5.4	5.6	85.2
	-9 Activity not used	8	14.3	14.8	100.0
	Total	54	96.4	100.0	
Missing	System	2	3.6		
Total		56	100.0		



Write grant proposals

TEACH41 Satisfied with the results of my student evaluations

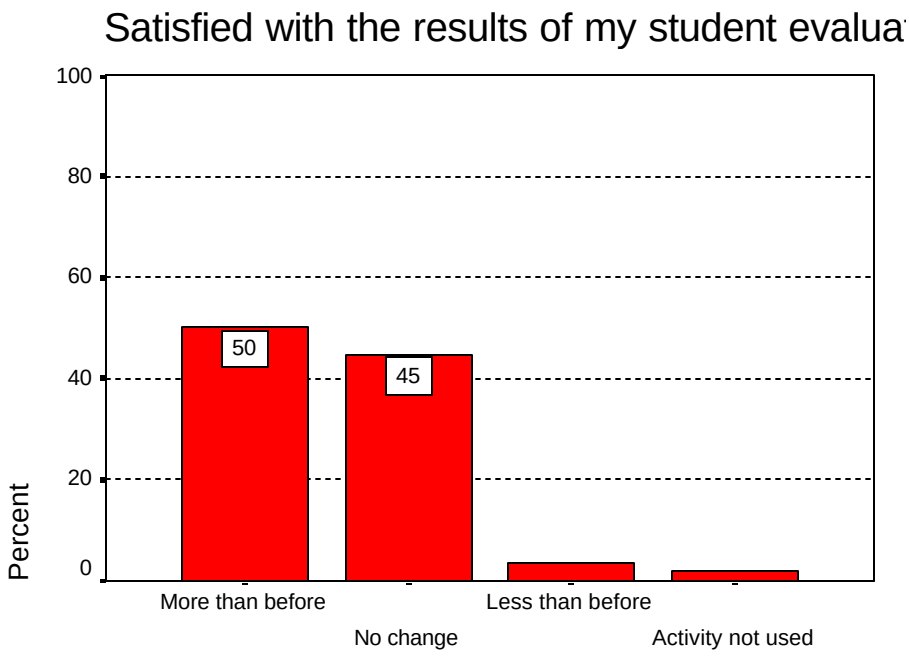
Statistics

TEACH41 Satisfied with the results of my student evaluations

N	Valid	56
	Missing	0

TEACH41 Satisfied with the results of my student evaluations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 More than before	28	50.0	50.0	50.0
	0 No change	25	44.6	44.6	94.6
	-1 Less than before	2	3.6	3.6	98.2
	-9 Activity not used	1	1.8	1.8	100.0
	Total	56	100.0	100.0	



Satisfied with the results of my student evaluations

APPENDIX III:

BUSH-HEWLETT
FACULTY SURVEY
RESULTS

The community aspect to faculty development is an approach that I had experienced before.			
Response	Frequency	Percent	Cumulative Percent
Strongly Agree	7	14.00	14.00
Agree	15	30.00	44.00
Neutral	2	4.00	48.00
Disagree	14	28.00	76.00
Strongly Disagree	11	22.00	98.00
Missing	1	2.00	100.00
Total	**50**	**100**	

The community aspect to faculty development is a more effective approach than is an individualized approach.			
Response	Frequency	Percent	Cumulative Percent
Strongly Agree	18	36.00	36.00
Agree	22	44.00	80.00
Neutral	10	20.00	100.00
Disagree	0	0.00	100.00
Strongly Disagree	0	0.00	100.00
Total	**50**	**100**	

My participation in the community enhanced my professional development.			
Response	Frequency	Percent	Cumulative Percent
Strongly Agree	19	38.00	38.00
Agree	25	50.00	88.00
Neutral	4	8.00	96.00
Disagree	1	2.00	98.00
Strongly Disagree	0	0.00	98.00
Missing	1	2.00	100.00
Total	**50**	**100**	

Which of the following would you consider to be strengths of the community?		
Response	Freq.	%
A forum for shared ideas	43	86.00
The interdisciplinary nature of the group	31	62.00
Development of relations — personal and professional	32	64.00
Students and faculty were able to form a sense of community	24	48.00
Greater success in meeting personal or professional goals	19	38.00
Intellectual inspiration	33	66.00
Student feedback on course related issues	17	34.00

Which of the following would you consider to be a weakness of the community?		
Response	Freq.	%
Group perspective or focus was often too narrow	7	14.00
Lack of leadership in the group	9	18.00
Irrelevant issues were often presented	12	24.00
Too much time was wasted in the meetings	10	20.00
Lack of time devoted to the project	15	30.00
Lack of faculty commitment	8	16.00
Lack of student commitment	14	28.00
Other	2	4.00

The goal(s) of this project could have been achieved without the involvement of other faculty (and students, if applicable).			
Response	Frequency	Percent	Cumulative Percent
Strongly Agree	2	4.00	4.00
Agree	5	10.00	14.00
Neutral	6	12.00	26.00
Disagree	19	38.00	64.00
Strongly Disagree	17	34.00	98.00
Missing	1	2.00	100.00
Total	**50**	**100**	

The community, in some shape or form, will continue after the grant period.			
Response	Frequency	Percent	Cumulative Percent
Strongly Agree	8	16.00	16.00
Agree	26	52.00	68.00
Neutral	6	12.00	80.00
Disagree	8	16.00	96.00
Strongly Disagree	1	2.00	98.00
Missing	1	2.00	100.00
Total	**50**	**100**	

The presence of students enhanced the group meetings.			
Response	Frequency	Percent	Cumulative Percent
Strongly Agree	7	14.00	14.00
Agree	17	34.00	48.00
Neutral	14	28.00	76.00
Disagree	0	0.00	76.00
Strongly Disagree	1	2.00	78.00
Not Applicable	11	22.00	100.00
Total	**50**	**100**	

The students contributed as equals to the group.			
Response	Frequency	Percent	Cumulative Percent
Strongly Agree	2	4.00	4.00
Agree	12	24.00	28.00
Neutral	13	26.00	54.00
Disagree	8	16.00	70.00
Strongly Disagree	3	6.00	76.00
Not Applicable	12	24.00	100.00
Total	**50**	**100**	

The goal(s) of the project was (were) achieved.			
Response	Frequency	Percent	Cumulative Percent
Strongly Agree	8	16.00	16.00
Agree	36	72.00	88.00
Neutral	3	6.00	94.00
Disagree	2	4.00	98.00
Strongly Disagree	0	0.00	98.00
Missing	1	2.00	100.00
Total	**50**	**100**	

The Center should take an active role in establishing and supporting communities of faculty and students.			
Response	Frequency	Percent	Cumulative Percent
Strongly Agree	27	54.00	54.00
Agree	18	36.00	90.00
Neutral	4	8.00	98.00
Disagree	0	0.00	98.00
Strongly Disagree	0	0.00	98.00
Missing	1	2.00	100.00
Total	**50**	**100**	

The grant was administered effectively.			
Response	Frequency	Percent	Cumulative Percent
Strongly Agree	22	44.00	44.00
Agree	21	42.00	86.00
Neutral	5	10.00	96.00
Disagree	1	2.00	98.00
Strongly Disagree	0	0.00	98.00
Missing	1	2.00	100.00
Total	**50**	**100**	

Information regarding opportunities for support was easily available.			
Response	Frequency	Percent	Cumulative Percent
Strongly Agree	20	40.00	40.00
Agree	23	46.00	86.00
Neutral	5	10.00	96.00
Disagree	1	2.00	98.00
Strongly Disagree	0	0.00	98.00
Missing	1	2.00	100.00
Total	**50**	**100**	

Information regarding opportunities for travel was easily available.			
Response	Frequency	Percent	Cumulative Percent
Strongly Agree	10	20.00	20.00
Agree	17	34.00	54.00
Neutral	17	34.00	88.00
Disagree	5	10.00	98.00
Strongly Disagree	0	0.00	98.00
Missing	1	2.00	100.00
Total	**50**	**100**	

Information regarding opportunities for purchases of resources were easily available			
Response	Frequency	Percent	Cumulative Percent
Strongly Agree	8	16.00	16.00
Agree	18	36.00	52.00
Neutral	14	28.00	80.00
Disagree	7	14.00	94.00
Strongly Disagree	1	2.00	96.00
Missing	2	4.00	100.00
Total	**50**	**100**	

The support I received from Center staff was helpful.			
Response	Frequency	Percent	Cumulative Percent
Strongly Agree	20	40.00	40.00
Agree	23	46.00	86.00
Neutral	5	10.00	96.00
Disagree	0	0.00	96.00
Strongly Disagree	0	0.00	96.00
Not Applicable	1	2.00	98.00
Missing	1	2.00	100.00
Total	**44**	**100**	

If grant support such as that from the Bush and Hewlett foundation were unavailable, the most dispensable component of the Center's faculty development program is:			
Response	Freq	Percent	Cumulative Percent
Projects involving communities of faculty and students	5	10.00	10.00
Workshops	8	16.00	26.00
Travel grants	19	38.00	64.00
Staff support	4	8.00	72.00
Missing	14	28.00	100.00
Total	**50**	**100**	