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Academic Administrators' Decisions About Resource Allocation:

Do Disciplinary Differences Matter?

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Abstract

This study examined differences across disciplines in resource allocation decisions on the part of a national sample of 1,690 academic administrators at doctoral-research universities. Forty versions of a web-based survey asked participants to make resource allocation decisions in scenarios reflecting Biglan's (1973a, 1973b) disciplinary taxonomy of hard versus soft and pure versus applied disciplines. A randomized, balanced block research design posed positively- and negatively-phrased summaries of academic program reviews to participants in "increased resources" and "shrinking resources" scenarios. Mechanical engineering, an example of a hard-applied discipline, was evaluated significantly more favorably than physics (hard-pure), English (soft-pure), or elementary education (soft-applied). Decisions varied significantly with participants' home disciplines; hard-applied disciplines were rated more highly than all others by participants with backgrounds in the hard-pure and soft-applied disciplines. Decisions were not significantly different based upon participants' longevity academe or in administration. Disciplines were evaluated significantly more favorably in an "increased resources" scenario than in a "shrinking resources" scenario, and significantly more so for participants with a background hard-pure and hard-applied disciplines. Participants' agreement with statements about the disciplines under consideration differed significantly by the disciplinary group being considered. Seven themes were developed to categorize participants' responses to an open-ended question about their resource allocation decisions. Limitations and implications for research and practice are included.

Academic Administrators' Decisions About Resource Allocation:
Do Disciplinary Differences Matter?

This is a difficult time to be an administrator in American higher education. Assessment of student learning, recruitment and retention of students and faculty members, fundraising, engagement with external communities, promotion of diversity, ensuring high quality scholarship, and dealing with accountability pressures are just some of the issues that academic administrators face on a daily basis (Andersen, 2002). Another critically important and increasingly difficult task for department chairs, college deans, and chief academic officers is resource allocation (Andersen, 2002; Guskin & Marcy, 2002; Lambert, 2002; Wolverton and Gmelch, 2002; Wolverton, Gmelch, Montez, & Nies, 2001). Many factors could play a role in making decisions about resources, such as whether an institution wanted to increase concentration on traditional areas of basic scholarship, or whether it wanted to grow student enrollments in applied disciplines in accord with workforce pressures.

The nature of colleges and universities as organizations further complicates many of these concerns. Keller (1998) discusses the effects of special interest groups in academic decision making. Cohen and March (1974) describe the academic decision environment as “organized anarchy” that uses the “garbage can” model of decision making. Birnbaum (1988) describes colleges and universities as loosely coupled systems; various parts of the system are connected in complex and indirect ways that make it difficult for decision makers to have the direct effects that they desire. Baldrige, Curtis, Ecker and Riley (1978, p. 9) note that “. . . the organizational characteristics of

academic institutions are so different from other institutions that traditional management theories do not apply to them.”

Many higher education organizations have called for better and bolder academic leadership (Eckel, Hill, & Green, 1998; Kellogg Commission, 1999, 2001; Kellogg Foundation, 1999). Some authors have characterized the importance of innate traits among higher education leaders. Wells (1980, p. 147) notes that deans must be

. . . born with the physical charm of a Greek athlete, the cunning of Machiavelli, the wisdom of Solomon, the courage of a lion, if possible; but, in any case, be born with the stomach of a goat.

If one accepts the premise that good leaders are not simply born to the task but can benefit from professional development, however, then it is incumbent upon the academy to do all that it can to promote leadership effectiveness.

Gmelch and his colleagues (Gmelch, Wolverson, Wolverson, & Sarros, 1999; Wolverson & Gmelch, 2002) have extensively researched leadership effectiveness and professional development for academic deans and department chairs. Gmelch (2002a, 2002b) describes entry into the deanship using a rites of passage model that includes separation from one's previous role (as a department chair, faculty member, etc.), transition between roles, and incorporation of the new role. The fact that 65% of department chairs return to the faculty rather than continuing in academic administration serves as one indicator that they have not made the role transition successfully. He discusses differences in expectations and preparation of K-12 school administrators and college and university academic administrators. The majority of K-12 administrators planned to be principals before entering teaching, which they view as a transitional role.

They also must go through a formal training and certification process before they can assume their roles as administrators. College department chairs, deans, and provosts, however, typically planned to be teachers and scholars in their disciplines, do not receive formal training to assume administrative roles, and are highly socialized to their roles as faculty members. The average academic dean has had 16 years of socialization into his or her discipline before entering administration (Gmelch, 2002a).

One of the leadership development tasks for academic leaders is the ability to consider multiple perspectives within the institution. Colleges and universities need chairs and deans who can both advocate for their units as well as appreciate broader institutional goals, as well as senior academic leaders who can understand the multiple perspectives of their constituencies even while they move forward an institutional agenda (Bright & Richards, 2001; Chu, 2006; Lambert, 2002; Leaming, 2007). Describing the politics and pragmatics of resource allocation in particular, Chu (2006, p. 36) notes:

Politics is most generally defined as social relations involving authority or power.

Given the contemporary economic fact that there never seem to be enough resources to go around, allocation decisions need to be made. Decisions that occur in public venues, such as on campuses, invariably require political calculation. The fact that the department chair operates at a middle level of management requires that chairs look at the dynamics of the social relations of faculty, staff, and students in the departments and the college and greater campus in which the department is embedded.

The literature on the psychology of judgment and decision making, however, highlights the difficulties leaders have in effectively considering multiple perspectives

when making decisions. The way that people exercise judgment and make decisions is affected by many factors, including selective perception, cognitive dissonance, memory and hindsight biases, and context dependence (Baron, 2000; Dawes, 1998; Hastie & Dawes, 2001; Plous, 1993). The principle of “satisficing” holds that people make decisions that satisfy their most important needs, even though those choices might not be optimal (Simon, 1956). Prospect theory suggests that people make decisions depending on how problems are framed; people are more risk adverse when dealing with gains and more risk seeking when dealing with losses (Kahneman & Tversky, 1979).

One dimension of the academy that has been shown to under gird differences in scholarship, teaching, faculty development, and academic administration is differences across academic disciplines. Braxton and Hargens (1996) discuss a number of frameworks for viewing differences among disciplines and summarize research on the disciplinary differences in numerous academic contexts. For example, academic discipline has been related to differences in article publication rates (Baird, 1991); faculty members’ political orientations (Stoecker, 1993); faculty members’ time spent on research (Stoecker, 1993); faculty productivity and work related stress and social support (Neumann & Finaly-Neumann, 1990); planning, resource management, and representing departments to administration (Carroll & Gmelch (1994); and students’ time to degree completion (Baird, 1990). Biglan’s (1973a, 1973b) disciplinary taxonomy has been used particularly often in empirical studies. This approach classifies academic disciplines into hard vs. soft and pure vs. applied dimensions. Combining the two dimensions leads to a two-by-two matrix of disciplinary groupings that include hard-pure (e.g., sciences and

mathematics), hard-applied (agriculture, architecture, computer science, engineering, and health sciences), soft-pure (arts, social sciences, and humanities), and soft-applied (business, education, and law) disciplines. Biglan's third dimension of life- vs. non-life-related disciplines has not often been associated in empirical studies with significant differences in academic functions (Braxton & Hargens, 1996).

Do disciplinary differences, both in terms of units under consideration for decision making as well as the home disciplines of academic administrators who are making decisions, relate to leadership effectiveness? Do effective academic administrators take into account disciplinary differences in their decision making, moving beyond their own disciplinary backgrounds? Crawford (2001, p. 67) emphasized the importance of doing so in the context of preparing for the academic deanship:

Well before beginning the search process, the would-be dean must initiate a metamorphosis in professional identity. Shedding your wholly disciplinary identity and emerging as a university-wide leader is the essential evolutionary process . . . Search committees and the faculty at large will scrutinize candidates for indications that their future dean has a perspective broader than any single discipline . . .

This study was designed to empirically investigate these questions. It was originally conceived during a series of discussions between two of its authors, a provost and a dean, who debated central administrators' appreciation of disciplinary differences in making resource allocation decisions. The other authors helped to frame these discussions into a research study that was designed to answer the following research questions:

1. Do academic administrator's decisions about resource allocation vary significantly across units characterized, using Biglan's disciplinary categories, as hard-pure, hard-applied, soft-pure, and soft-applied,?
2. How do the home disciplines of academic administrators, their longevity in academe, and their longevity in administration relate to resource allocation decisions?
3. Do resource allocation decisions vary significantly when framed as increasing and shrinking resource scenarios? Further, are there significant interactions between the two scenarios and the disciplines described in them and between the two scenarios and the home disciplines of the participants?
4. What explanations are offered by participants for resource allocation decisions?

Method

Research Design and Procedure

Participants assumed the role of external reviewers at a fictitious institution, evaluating two departments in a web-based survey. Participants were randomly assigned to conditions in a balanced block design, reading first the summary results of an academic department's program review and scoring its worthiness to receive enhancement funds (the increasing resources scenario), then reading the summary program review results for a second department and scoring its worthiness for exemption from across-the-board budget cuts (the shrinking resources scenario). They then indicated the reasons for their resource allocation decisions, first by responding to nine Likert scale statements about the disciplines, which were developed based upon the analysis of the disciplinary differences literature provided by Braxton and Hargens

(1996), and then by responding to an open-ended question about their resource allocation decisions. Finally, participants recorded their home discipline, years in academe, and years in administration. The departments under consideration in the two scenarios included physics (hard-pure as per Biglan, 1973a, 1973b), mechanical engineering (hard-applied), English (soft-pure), and elementary education (soft-applied). Participants' home disciplines were also categorized into these same four categories as per Biglan (1973a, 1973b).

The survey provided summaries of academic program reviews for each of the four departments. Forty ($2^5 P_2 = 2^5 (5-1) = 2^5 \cdot 4 = 40$) versions of the surveys were created in order to provide the sample of participants with the full set of each of the five program review summary statements, each either positive or negative, and each used in either the increasing resources or shrinking resources scenarios. The program review summary statements are shown in Table 1.

Participants were asked to rate, on five scales of 0 through 10, corresponding to the five program review statements, their support for either providing more resources to the given discipline or exempting it from resource cuts. The five scores for each participant were summed into a total scale score, with a range of possible values from 0 to 50, which served as the dependent variable for all of the quantitative analyses.

The surveys were pilot tested by department chairs at the researchers' institution. The instrument and research design were also reviewed by a national expert who has published extensively in the area of differences among academic disciplines.

Participants

The survey population consisted of 9,187 chief academic officers, deans, department chairs, and directors at doctoral-granting universities in the United States, whose contact

information was purchased from a commercial agency. Participants were included in the study if their institutions were listed as Research I or II or Doctoral I or II in the 1994 Carnegie Foundation classification or as Research Extensive or Research Intensive in the 2000 Carnegie Foundation classification. An email message inviting participants to complete the survey was sent, along with two follow-up messages to nonrespondents. Data were collected during March through September 2006. After correcting for incorrect email addresses and participants who indicated that they had left their positions, the response rate was 18%, yielding a sample of 1,690. Twenty-one percent of the participants listed home academic disciplines that were classified as hard-pure; twenty-four percent were in hard-applied disciplines, thirty percent in soft-pure, and twenty-four percent in soft-applied.

Analyses

Data analyses consisted of a one-way analysis of variance (ANOVA) for the first research question, factorial ANOVAs for the second question, and a repeated measures ANOVA for the third question. The fourth research question was addressed through two different analyses. First, responses to Likert scale statements about the disciplines represented in the surveys were crosstabulated with the disciplines under discussion. Second, themes were developed to categorize responses to an open-ended question about participants' resource allocation decisions.

Results

Results in response to the first research question revealed that hard-applied disciplines (i.e., mechanical engineering, $M = 32.84$, $SD = 8.56$) received significantly higher mean scores than did other disciplines (i.e., hard-pure, $M = 30.89$, $SD = 8.43$; soft-pure, $M = 30.15$, $SD = 9.28$; soft-applied, $M = 30.61$, $SD = 9.28$; see Table 2 and Figure 1). Effect sizes were moderate.

Concerning the second research question, there was a significant interaction effect between participants' own disciplinary groups and their ratings of disciplines in the survey (see Tables 3 and 4 and Figure 2). Hard-applied disciplines were rated more highly than all others by participants with backgrounds in the hard-pure and soft-applied disciplines. Effect sizes were moderate. There were no significant differences in scores based upon participants' longevity in academe or as academic administrators (see Tables 5 and 6).

The repeated measures ANOVA results for the third research question showed that mean scores for the "increasing resources" scenario ($M = 26.69$, $SD = 10.34$) were significantly higher than for the "shrinking resources" scenario ($M = 25.79$, $SD = 10.37$). The effect size was quite small, however ($\eta^2 = 0.09$). There was not a significant interaction between the two scenarios and the disciplines described within them. There was, however, a significant interaction between the two scenarios and participants' home discipline groups: participants from hard-pure and hard-applied disciplines gave significantly higher scores in the "increasing resources" scenario than in the "shrinking resources" scenario. Effect sizes were moderate. See Tables 7 and 8 and Figure 3 for details.

In the first analysis related to the fourth research question, responses to Likert scale statements about the disciplines represented in the surveys were crosstabulated with the disciplines under discussion. Statistically significant differences were found between disciplinary groups for each of the nine statements shown in Table 9. Hard-pure and hard-applied disciplines were seen as having a higher level of consensus concerning appropriate scholarly topics and methods. Participants more often agreed that hard-

applied and soft-applied disciplines are concerned with practical as opposed to theoretical problems. Significantly fewer participants agreed that scholarly awards in soft-pure disciplines are based on merit rather than individual prestige. Also, soft-pure disciplines were less often associated with agreement with the statement that scholars in these disciplines often collaborate. Participants more often agreed that there are *fewer* external funding opportunities in soft-pure and soft-applied disciplines. Soft-pure disciplines were less often associated with the statement that scholars in these disciplines cite more recent literatures. There was a higher level of agreement that hard-pure and hard-applied disciplines had overhead return rate on grants. Hard-pure and hard-applied disciplines were more often seen as associated with research productivity, while faculty members in soft-pure and soft-applied disciplines were more often seen as spending more time in instruction than research.

In the second analysis related to the fourth research question, themes were developed to categorize responses to an open-ended question about participants' resource allocation decisions. As shown in Table 10, the most prevalent category of response (provided by 105 of the participants) was that hard-pure disciplines (e.g., physics) are "research-based," while soft-applied disciplines (e.g., elementary education) are not. Examples of responses included: "Physics is essentially a research discipline.", "Education is focused more on pedagogy rather than research.", "Physics profs don't teach much, and the ones who do are not very good at it.", "elementary education is a jargon-ridden, nonscholarly discipline", and "This [Elementary Education] is a discipline full of interesting theories which come and go like the wind."

The second most common category of responses (provided by 73 of the participants) was that hard-pure and soft-pure disciplines are more "core" or central to the mission of the university and offer service courses. Some examples of responses in this category included: "Physics is a fundamental science discipline core to many scientific fields.", "Physics department at most universities often offer service courses to the rest of the university.", "Elementary education is not as central to a university's mission.", and "English departments are critical to the university as all students take their courses."

The next two categories of open-ended responses were very similar to statements provided in the survey and shown in Table 9. They included the ideas that hard-pure and hard-applied disciplines enjoy greater external funding opportunities (noted by 57 of the participants) and that hard-pure and hard-applied disciplines have a greater degree of consensus about core concepts (suggested by 19 of the participants). Example responses included: "Hard sciences attract money.", "A liberal arts department has less opportunity for external funding.", "Physics is fairly standard in composition and goals at most institutions.", and "As a professional field with complex constituencies, Education has trouble defining itself."

Another theme that emerged from participants responses is that soft-applied and soft-pure disciplines, or at least Elementary Education and, to a lesser extent, English, are simply poorly regarded by colleagues in other areas. These responses were provided by eight of the participants. Some of the responses comprising this category included: "Elementary education requires only common sense and content knowledge.", "Elementary education is one of many areas within schools of education that could use some beefing up.", and "Departments of English at most universities have lost their way."

A sixth theme was that some disciplines (e.g., Elementary Education) traditionally have large numbers of majors and should be expected to have high student credit hour productivity, while other “hard” disciplines have fewer majors and lower SCHs. Sample statements included: “Elementary education teacher prep programs have a very large number of students.” and “Mechanical Engineering is a highly technical field likely to have fewer students and thus lower SCH.” These responses were provided by seven of the participants.

A final theme was judged by the authors to be critically important even though it was offered by only five of the participants. This theme was that resource allocation decisions depend on the institutional mission. Scholarship, even for a traditionally research-heavy discipline, would be less important in a liberal arts institution and more important in a research-oriented institution.

Discussion

It is important to acknowledge limitations to the study. In order to maintain confidentiality to the greatest extent possible, participants’ institutions, job titles, and demographic characteristics were not collected. This prevented the authors from determining the distribution of participants according to these characteristics, the representativeness of the sample, and the ability to generalize the results. Further, data were not collected from academic administrators at other institutions such as masters, baccalaureate, and community colleges, so the results do not generalize there.

Despite these limitations, some clear results emerged from the study. First, disciplinary differences matter in resource allocation decisions by academic administrators. A hard-applied discipline (i.e., mechanical engineering) was more likely

to receive additional resources and to be less vulnerable to resource cuts. This may be due to the more tangible and practical nature of results of scholarship and service in these disciplines or that they are seen as contributing more to economic development.

Second, hard-applied disciplines were rated more highly than all others by participants with backgrounds in the hard-pure and soft-applied disciplines. It is particularly important that academic administrators whose home disciplines are in these categories be aware of this predisposition and attempt to overcome it.

Third, there were no significant differences in resource allocation decisions based upon participants' longevity in academe or as academic administrators. Experience alone does not mitigate predispositions toward favoring hard-applied dispositions in resource allocations, particularly for academic administrators with backgrounds in hard-pure and soft-applied disciplines. Awareness of this predisposition and attempt to overcome it remains important across academic administrators' career spans.

Fourth, academic administrators are more willing to make hard decisions about resource allocation in a "more resources" scenario than in a "resource cuts" scenario. This validates the notion that the desire to build and support programs over a long term is protected by administrators and it supports Prospect Theory (Kahneman & Tversky, 1979) among academic administrators. Further, this result was more likely to occur among those with a background in hard-pure and hard-applied disciplines.

Finally, academic administrators can identify differences between disciplines that relate to resource allocation decisions. Some of these perceived differences include centrality to the institutional mission, external funding opportunities, and emphasis on teaching versus scholarship. It is important for academic administrators to examine

whether these perceptions fit the strategic initiatives of their institutions or whether they represent unwarranted preconceptions.

Future research might replicate this study in masters and baccalaureate institutions and community colleges, although the range of disciplines represented in these would be fewer. Second, it might be fruitful to examine how results break out by institutional type, participants' positions (i.e., chief academic officer, dean, chair), and participants' demographic characteristics (e.g., gender). Qualitative research might also lend richness of understanding of this issue. Implications for practice suggested by the current study include emphasizing these findings in professional development efforts for academic administrators.

It is also interesting to speculate whether these findings relate to the larger societal ethos in which American higher education finds itself today. Presumably the results of this study would have been quite different if conducted among academic administrators in the Antebellum colleges than among their colleagues following the passage of the Morrill Acts and the G.I. Bill (Thelin, 2004). What might we find if the study is replicated in the future? Some current arguments about the role of liberal education suggests possible differences (American Association of Colleges and Universities, 2002). Ultimately, our decisions are rooted in what we value.

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Table 1.

Program Review Summary Statements Used In the Survey

Positive Phrasing

Negative Phrasing

Centrality of Department Mission to the Institution

The department’s mission is consistent with that of the institution in that it clearly focuses its activities across the areas of teaching, research, and service; its activities serve a multitude of constituencies throughout the institution.

The department’s mission is unclear and out of sync with the expectations of the institution; this calls into question the appropriate fit of the unit.

Faculty Scholarship

Faculty scholarship is consistently strong in terms of both quality and quantity; it is consistent with the mission of the department and the University.

Faculty scholarly productivity is inadequate in both quality and quantity given the staffing, workload, and mission of the department and the expectations of the University.

Credit Hour Productivity

Credit hour productivity is high and consistent with benchmarks with disciplinary peers.

The number of classes/credit hours taught is low compared to similar departments at other universities and calls the unit’s long-term viability into question.

Assessment of Student Learning

Faculty in the unit have taken assessment seriously and used it to generate tangible improvements in teaching and learning; outcomes, measures, and use of results are all strong.

Assessment of student learning needs significant improvement; learning outcomes could be stronger, measures are episodic and of questionable reliability, and few, if any, improvements in teaching and learning can be related to assessment.

Service Activities

The department has a strong record of service activities that is appropriate given its role and mission.

The department seems to devote little to no attention to service activities in its day-to-day operations or in its faculty evaluation procedures; this is unacceptable given the expectations of the discipline and the institution.

Table 2.

One-Way Analysis of Variance Summary for Disciplinary Groups in Scenarios

Source	df	SS	MS	F
Between groups	3	1708.41	569.47	7.37***
Within group	1674	129383.16	77.29	
Total	1677	131091.57		

** $p < .001$. $\eta^2_{H_A-H_P} = 0.23$. $\eta^2_{H_A-S_P} = 0.31$. $\eta^2_{H_A-S_A} = 0.26$.

Table 3

Summary of Two-Way Analysis of Variance for Disciplinary Groups in Scenarios and
Participants' Home Disciplinary Group

Source	df	SS	MS	F
<u>Scenario</u>				
Disciplinary Group (S)	3	1880.23	626.74	8.20***
<u>Participants'</u>				
Disciplinary Group (P)	4	200.39	50.09	0.66
S x P	12	2444.78	203.73	2.67**
Residual	1658	126759.99	56.45	
Total	1678	1755700.00		

** $p < .01$. *** $p < .001$.

Table 4

Means and Standard Deviations for Participants' Home Disciplinary Groups and Discipline Groups in Scenarios

	Participants' Home Disciplinary Group			
	Hard-pure	Hard-applied	Soft-pure	Soft-applied
Hard-pure				
In Scenario				
M	30.30	33.15	29.56	30.59
SD	8.14	7.61	8.79	8.45
Hard-applied				
In Scenario				
M	33.10	32.39	31.49	34.71
SD	7.79	8.89	9.33	7.71
Soft-pure				
In Scenario				
M	30.03	29.50	31.01	29.76
SD	8.96	8.44	8.87	9.17
Soft-applied				
In Scenario				
M	29.89	30.83	32.00	31.24
SD	8.76	8.65	9.38	8.84

Note: For the Hard-pure participants $\eta^2_{H_A-H_P} = 0.36$. $\eta^2_{H_A-S_P} = 0.36$. $\eta^2_{H_A-S_A} = 0.41$.

For the Soft-applied participants $\eta^2_{H_A-H_P} = 0.53$. $\eta^2_{H_A-S_P} = 0.64$. $\eta^2_{H_A-S_A} = 0.45$.

Table 5

Summary of Two-Way Analysis of Variance for Discipline Groups in Scenarios and Participants' Years Employed in Academe

Source	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F</u>
Disciplinary Group (D)	3	818.91	272.97	3.55*
Years Academe (Y)	4	267.70	66.94	0.87
D x Y	12	1345.95	112.16	1.46
Residual	1646	126425.86	76.81	
Total	1666	1743889.00		

* $p < .05$.

Table 6

Summary of Two-Way Analysis of Variance for Discipline Groups in Scenarios and Participants' Years Employed in Academic Administration

Source	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F</u>
Disciplinary Group (D)	3	994.73	331.58	4.90**
Years Administration (Y)	4	136.60	34.15	0.44
D x Y	12	588.42	49.05	0.63
Residual	1626	125664.02	77.28	
Total	1646	1721829.00		

** $p < .01$.

Table 7

Summary of Repeated Measures ANOVA Results for Participants' Home Disciplinary Group and Disciplinary Groups in Scenarios

Source	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F</u>
Between subjects				
Participants' Home				
Disciplinary Group (P)	3	33.63	11.21	0.12
Scenario				
Disciplinary Group (S)	1	211.91	211.91	2.35
P x S	3	655.79	218.60	2.42
Error 1	1597	144163.72	90.27	
Within Subjects				
Scenario	1	1085.54	1085.54	9.00**
Scenario x P	3	1393.04	464.35	3.85**
Scenario x S	1	80.05	80.05	0.66
Scenario x P x S	3	170.35	56.78	0.47
Error 2	1597	192591.45	120.60	

** $p < .01$.

Table 8

Means and Standard Deviations for Participants' Home Disciplinary Groups and TwoScenarios

Scenario	Hard-pure	Hard-applied	Soft-pure	Soft-applied
Scenario 1: Increased Resources				
M	27.31	27.64	25.79	26.48
SD	9.80	9.71	10.51	10.70
Scenario 2: Shrinking Resources				
M	25.38	25.06	26.58	25.64
SD	10.19	10.44	10.42	10.22
η^2	0.20	0.27		

Table 9

Responses to Statements About Disciplines

Statement	Discipline Group				χ^2 (9)
	HP	HA	SP	SA	
There is a high level of consensus concerning appropriate scholarly topics and methods in these disciplines.					287.73***
Strongly Agree	35%	27%	11%	6%	
Agree	52%	55%	40%	45%	
Disagree	11%	18%	40%	43%	
Strongly Disagree	2%	1%	10%	6%	
These disciplines are concerned with practical as opposed to theoretical problems.					527.05***
Strongly Agree	3%	20%	2%	22%	
Agree	28%	54%	18%	63%	
Disagree	60%	23%	64%	14%	
Strongly Disagree	9%	3%	17%	2%	
Scholarly awards in these disciplines are based on merit rather than individual prestige.					104.91***
Strongly Agree	13%	12%	3%	6%	
Agree	67%	70%	52%	68%	
Disagree	19%	18%	41%	25%	
Strongly Disagree	1%	1%	4%	2%	

Scholars in these disciplines often collaborate. 598.51***

Strongly Agree 33% 21% 3% 12%

Agree 49% 64% 20% 72%

Disagree 17% 15% 64% 15%

Strongly Disagree 1% 1% 13% 1%

There are fewer external funding opportunities in these disciplines. 845.98***

Strongly Agree 2% 3% 51% 9%

Agree 13% 10% 38% 40%

Disagree 50% 55% 8% 44%

Strongly Disagree 35% 33% 3% 8%

Scholars in these disciplines cite more recent literatures. 212.53***

Strongly Agree 25% 8% 7% 5%

Agree 59% 61% 39% 67%

Disagree 15% 29% 51% 28%

Strongly Disagree 1% 2% 3% 1%

The overhead return rate on grants is higher in these disciplines. 506.03***

Strongly Agree 12% 8% 1% 1%

Agree 54% 46% 6% 14%

Disagree 30% 41% 58% 69%

Strongly Disagree 5% 5% 35% 16%

Department chairs in these disciplines concentrate on

research productivity as a department goal. 509.12***

Strongly Agree	37%	20%	7%	2%
Agree	56%	65%	48%	34%
Disagree	6%	14%	30%	57%
Strongly Disagree	1%	1%	5%	8%

Faculty members in these disciplines spend more time on

instruction rather than research. 578.48***

Strongly Agree	2%	2%	10%	13%
Agree	12%	17%	60%	65%
Disagree	69%	69%	28%	21%
Strongly Disagree	18%	12%	1%	2%

Note. HP = Hard-pure. HA = Hard-applied. SP = Soft-pure. SA = Soft-applied.

Note. Percentages may not sum to 100 due to rounding.

*** $p < .001$.

Table 10

Themes Developed From Responses to the Statement “Please comment upon the reasons for the scores you gave in the scenarios as they relate to the disciplines identified.”

Theme	Number of Associated Statements
Hard-pure disciplines (e.g., physics) are "research-based," SA disciplines (e.g., elementary education) are not.	105
Hard-pure and Soft-pure disciplines are more "core" or central to the mission of the university and offer service courses.	73
Hard-pure and Hard-applied disciplines enjoy greater external funding opportunities.	57
Hard-pure and Hard-applied disciplines have a greater degree of consensus about core concepts.	19
Soft-applied and (to a lesser extent) Soft-pure disciplines are simply poorly regarded.	8
Soft-applied disciplines have large numbers of majors and produce a large number of student credit hours.	7

Figure 1. Mean Scale Scores by Disciplinary Groups in the Scenarios.

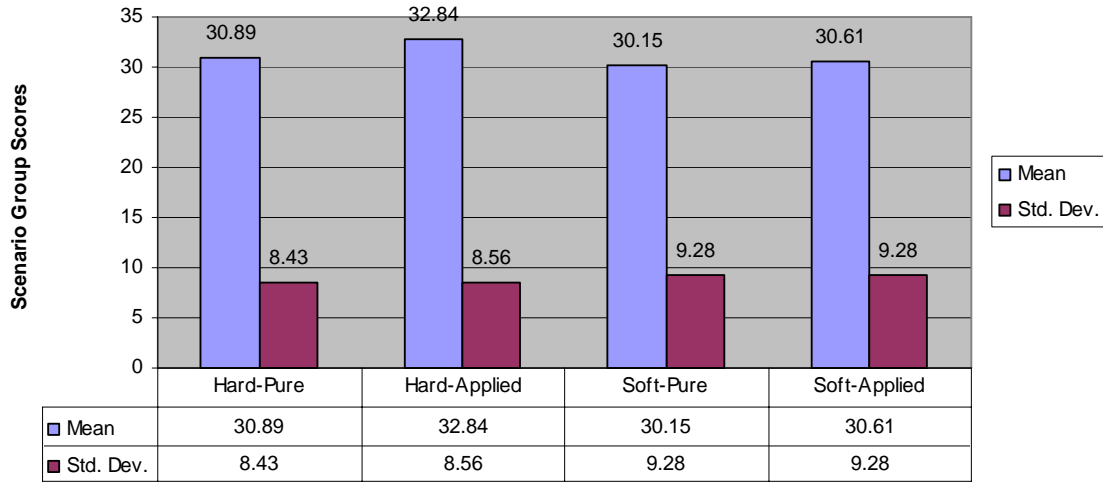


Figure 2. Interaction of Disciplinary Groups in Scenarios and Participants' Home Disciplinary Groups.

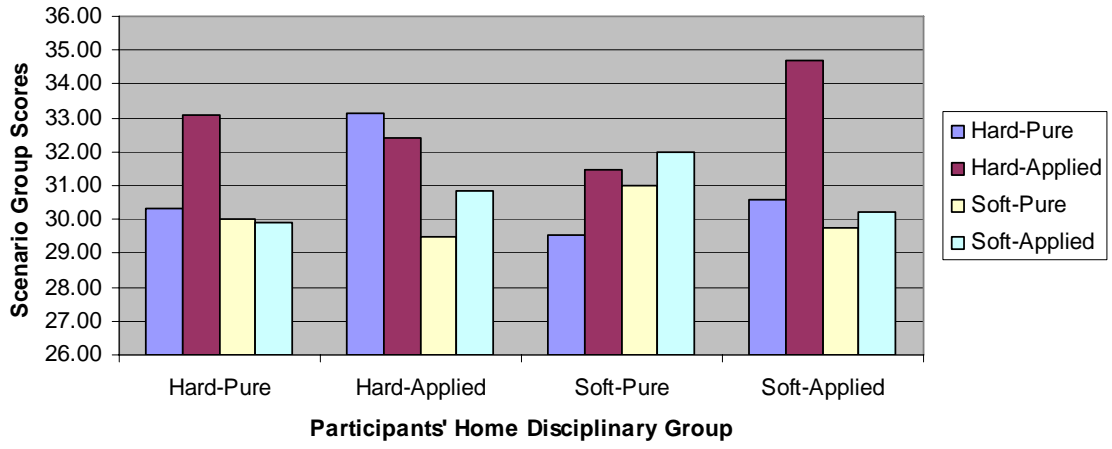


Figure 3. Interaction of Disciplinary Groups in Scenarios and Participants' Home
Disciplinary Groups

