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ABSTRACT

The PRINCE materials for undergraduate collegiate students, developed at Syracuse University, were field tested at six higher education institutions for this evaluation study. The materials, consisting of four versions of a simulation, were designed to teach skills for analyzing political situations from a strategic point of view, with the objective of improving political skills. This study evaluated the materials for teaching specific skills to 151 students by measuring posttest improvements over pretests. Open-ended essay questions were used as the evaluation instrument, and answers to the questions by a control group of politically experienced persons were used for determining criteria. The results indicated that students tended to (1) be more likely to define a clear-cut political issue, (2) write fewer words in defining the issue, and (3) make more specific suggestions as to how to deal with more actors in trying to solve a political problem. The findings generally showed that the stipulated educational objectives were being achieved at the campuses tested. (ND)

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An Evaluation of PRINCE Materials for Teaching General Political Strategy Skills

by

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SP 008 333

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INTRODUCTION AND OVERVIEW*

This paper presents the findings of a project supported by the EXXON Foundation for Higher Education to evaluate a set of educational materials whose primary purpose was to develop the ability of undergraduates to analyze a political situation from a strategic point of view. The evaluated materials consist of four versions of a simulation: a paper and pencil version in a book, a board game, a man-computer exercise, and an all computer model. Each item can be used either independently or in conjunction with any of the others. The materials, developed at Syracuse University, were tested at six other institutions by faculty members who agreed to participate in the evaluation study.

The information upon which the findings were based were obtained from an extended response or open-ended essay examination given on a pre-test/post-test basis at the six participating institutions. A total of 151 undergraduate students at the six campuses used at least one form of the materials and took the pre and post tests. A criterion standard against which the student responses could be judged was provided by the responses to the same test from a group of respondents assumed to possess moderate to high political skills because of their vocations.

Analysis of the data yielded findings indicating an improvement in students' political skills, as measured by four indicators (although the improvement in one of the four was not statistically significant at the .05 level). In all cases there was a change in post-test responses by the students such that the answers were more similar to the criterion respondents than were the pre-test responses. Gain was said to have occurred if, on the post-test, the student scored higher in (1) defining political issues described in the scenario as the stimulus for the essay; (2) identifying the political factors that would determine the outcome of a given issue more clearly; and (3) suggesting more complex strategies that might be applied in resolving the issue. The remainder of this paper is organized into three sections: (1) a description of the materials; (2) an explanation of the methodology and sampling procedures; and (3) a presentation of the findings.

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*We wish to thank Lawrence Taulbee, David Ahola, Alfred Arkley, Grant Hammond, George Balch, Jonathon Wilkenfeld, Joseph Spina, Thomas O'Donnell, John Handelman, and Robert Donaldson for conducting the evaluation and offering helpful comments during the preliminary stages of this paper.

DESCRIPTION OF THE MATERIALS USED IN TEACHING THE SKILLS

The educational materials which were evaluated were developed from the PRINCE Project.[1] These materials constitute a multidimensional introduction to politics, with an emphasis on encouraging students to put their knowledge to work in order to accomplish political goals. The materials stress a systematic approach to the study of politics. At the same time, they are easily used by even the most inexperienced students, so they can move to their own desired level of skilled political analysis. The content of the materials is flexible enough to allow for a focus on politics at the international, cross-national, national, or local levels. The materials can be used with differing levels of methodological sophistication--ranging from logical qualitative analysis through systematically structured manual calculation, including statistical and computer simulation methods. The project under which the materials were developed has been supported by the Office of Education, Department of State, National Aeronautics and Space Administration, the National Science Foundation, and the Exxon Foundation of Higher Education. The latter supported the specific research reported in this paper.

The first educational package is a computer simulation model called PRINCE, a programmed international computer environment. PRINCE serves as an educational tool which students use in building a structured image of contemporary international relations. Students use the computer simulation as a man-machine exercise in which they assume the role of United States policy-makers while the computer simulates five other nations and eleven domestic pressures operating on American foreign policy-makers. Students are introduced to the exercise through a participant's guide.[2] After the initial play, the students are introduced to the conceptual structure of the model and required to relate major theoretical and empirical studies in the field to that structure.[3] The major educational aim of PRINCE is to develop decision-

[1] The entire set of research and educational activities associated with the "Educational Research and Policy-Making Activities of the PRINCE Project," Policy Studies Journal, Vol. 2, Summer, 1974, William D. Coplin and Michael K. O'Leary (Urbana, Ill.: University of Illinois Department of Political Science and Institute of Government and Public Affairs).

[2] William D. Coplin, Michael K. O'Leary, Stephen L. Mills, PRINCE Participant's Guide: Concepts, Environments, Procedures, (New York: Learning Resources in International Studies, 1973).

[3] William D. Coplin, Michael K. O'Leary, Stephen L. Mills, John R. Handleman, "A Description of the PRINCE Model," (New York: Learning Resources in International Studies, 1973).

making skills by having [redacted]s interact with a complex foreign policy environment created by the computer.

A second educational component of the project and the one most widely used is a book entitled Everyman's PRINCE: A Guide to Understanding Your Political Problems.[4] The book presents a simple model of the political process using many of the variables contained in PRINCE. It presents that model in the form of a "political accounting system" or tool through which any individual can analyze political situations and generate strategies. Students are introduced to the model as a problem-solving tool and then provided with a series of case studies. The case studies describe historical (e.g., the Constitutional Convention) and hypothetical situations using the basic conceptions and assumptions of the model. Each of the case studies is presented as a simple simulation run of the model. Students are encouraged to follow-up their reading of the book with paper and pencil simulation exercises, applying the application model to a political problem of their choice.

In addition to the PRINCE man-computer international relations simulation and to the book Everyman's PRINCE, a computer analysis program, called PROBE,[5] (Policy Research, Observation and Evaluation) has been developed. The purpose of PROBE is to take information generated by the application of the PRINCE Political Accounting System and predict policy decisions. PROBE is based on a reference group theory of politics.[6] This theory involves the interaction of the output actor with the reference actors. The interaction of the reference actors is crucial in determining the decisions of the output actor and hence, the resolution of the problem.

The fourth educational medium of the PRINCE Project is a

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[4]William D. Coplin, Michael K. O'Leary, Everyman's PRINCE: A Guide to Understanding Political Problems (North Scituate: Duxbury Press, 1973).

[5]Michael K. O'Leary, William D. Coplin, Gary Brey, Sharon Dyer, PROBE User's Manual (New York: Learning Resources in International Studies, 1974).

[6]William D. Coplin, Michael K. O'Leary, "A Reference Group Theory of Politics" (Syracuse International Relations Program, 1974).

board-game called PRINCEDOWN.[7] It can be applied to a wide variety of political problems. Students first do research to collect information on a given set of issues. This information then becomes the scenario for the game. Profiles are likewise prepared for each actor, and students play their roles according to the profiles and the research they have already completed. PRINCEDOWN provides an action framework to explore the strategy implication of the political situations pictured in the accounting system.

Before presenting the evaluation of these materials, three general points about educational objectives should be made. First, while the four types of PRINCE materials were designed to improve the student's ability to think strategically about political situations, each emphasizes different skills. The book, Everyman's PRINCE, is primarily designed to transmit the conceptual framework. PRINCE, the man-machine simulation is intended to improve the student's ability to formulate and implement policy in a complex environment. PROBE provides a framework for forecasting. PRINCEDOWN develops negotiation and bargaining skills. The purpose of this evaluation, however, is to evaluate the general skill of thinking about politics in strategic terms. Our comments throughout will reflect this emphasis, and we will not be concerned with the secondary, although equally important, objectives of each of the four forms of the materials.

The second point concerning our objectives is that we are attempting to provide a set of competencies that can be applied by students in a variety of political contexts ranging from those events and conditions that are described in most newspapers to circumstances that will confront them personally in everyday life. To paraphrase the preface to Everyman's PRINCE, we believe that all citizens should be able to identify how their lives are affected by the collective decisions of formal or informal groups. Furthermore, they should know how to analyze the processes leading to those decisions in order to be able to influence them. These general objectives have been found comprehensible and appealing by both conventional liberal arts undergraduates and by a large variety of other students and professional trainees.

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[7] William D. Coplin, Michael K. O'Leary, Stephen L. Mills, "PRINCEDOWN Student Manual: A Gaming Approach to the Study of Policy Issues (New York: Learning Resources in International Studies, 1972).

Police cadets, civil servants, foreign service officers, salesmen, business executives and community groups like the League of Women Voters and neighborhood associations have been enthusiastic about the materials. We believe that the materials represent diverse social technologies for dealing with an important set of conditions faced by people in all walks of life. It is our belief that the skilled professional in almost every field can profit from development of the political skills which these materials seek to develop.

Part of the evidence for this belief stems from the occasional negative reaction of individuals in positions who possess the basic political skills we seek to impart. On occasion, someone in a training session will criticize the materials for presenting "obvious" and "commonplace" ideas. These critical individuals, as it happens, are almost invariably the most experienced and skillful political practitioners in the group. Our response has been that, indeed, for a sophisticated political practitioner, the material is quite simple and elementary. However, for most people--especially liberal arts students and junior level professionals--the political skills we try to teach are far from obvious. This response of the politically aware to the materials as well as the results of the "criterion respondents" described on page 11 demonstrate, we believe, the general value of this educational objective to a broad range of individuals.

The third general point about objectives is related to the fear that has sometimes been expressed about the educational objectives of the PRINCE materials: it may be socially harmful to train students in the processes of "expedient" thought concerning political strategy in the absence of any concern for normative consequence of proposed courses of action.[8] Quite frankly, however, it is our view that a good deal more value-mongering goes on in political science classes than does teaching in the processes of effective political strategy. In the larger social sense, the objectives we have are: (1) to train students as future citizens to be able to understand the processes used by leaders in making policy and (2) to train those few students who

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[8] John Vasquez, "Toward a Unified Strategy for Peace Education: Resolving the Two Cultures Problem in the Classroom," Paper prepared for the 1975 Annual International Studies Association Meeting, Washington, D.C., February 18-22, 1975, pp. 5-6.

will become leaders in political and professional fields to make politically effective and normatively informed policy. To a large extent, we think that by helping students to think about ways of achieving their political goals, we are contributing to the general goal of many educators in value clarification rather than value acquisition.[9]

METHODOLOGY

At the outset, we will attempt to state as clearly and precisely as possible our criteria for measuring the students' acquisition of skills of political strategy.

We developed these criteria on the basis of our own research in the policy-making process and, more specifically, through the administration of a questionnaire on political strategy to a set of "criterion respondents," people who held elective or appointed political and administrative positions which, by their very nature, suggested the possession of political skills.[10] As a result, we have identified three specific skills which taken together constitute the general political strategy capacity for which we seek to train students.

The first of these skills is the ability, in a direct and concise fashion, to identify political issues in a given situation. Frequently, students (and others who have not had much political experience) tend to comprehend the features of a political situation in an undifferentiated wholistic way, so that they are not able to distinguish among disagreements about forecasts about the consequences of a given policy, the conflicting interests of actors, and their own value preferences. The ability to isolate the political issue, we believe, is the essential first step in political analysis.

The second skill in political strategy is the ability to determine the political factors that shape the bargaining over how the identified issue is to be resolved. Students should be

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[9] E.g., see the discussion by F. M. Newmann and D. W. Oliver, Clarifying Public Controversy (Boston: Little, Brown & Company, 1970), Chapter 1. We are indebted to Professor Alfred Arkley for this comment and the citations in this footnote.

[10] We will discuss this criterion-setting procedure in more detail below.

able to ascertain the set of actors whose interests are at stake and whose behavior will affect the outcome of the issue. This is in part a level of analysis skill since it requires students to separate background factors such as aggregate economic conditions from an analysis of involved individuals and groups. The background factors should be analyzed as they shape the behavior of the group but should clearly be viewed as mediated by the actors.

The third component of political strategy is the appreciation of the use of indirect as well as direct action in order to achieve a goal. Simple admonitory solutions such as "Mr. X should make the most effective decision" do not adequately deal with the politics of the situation. Instead, students should carefully delineate how each of the critical actors might react and how each can be influenced. Dealing as specifically as possible with each of the major actors in any given situation would demonstrate the kind of complex political analysis that we believe is necessary for the formulation and implementation of an effective political strategy. We feel that this formulation of political strategy skills represents one of the minimal capabilities that should be possessed by individuals in their vocational and citizenship roles. It represents a domain of competence possessed by virtually everyone with substantial political experience. Skillful participants in political and bureaucratic battles (whether in the public or private sector) must be able to perform these analyses. We recognize that this is a minimal level of sophistication; more advanced political strategy skills could also be identified. However, at this point we would be satisfied if we could demonstrate that there is a practical way to help students to define political issues, to identify political factors, and to develop relatively complex political strategies for dealing with essential political actors.

The Research Instrument

Our first major decision in developing our instrument was to employ an essay rather than objective test. After some preliminary analysis, we concluded, along with others, that while objective tests are "suitable for testing memory of factual details," they are less suitable for measuring the higher mental processes of logical reasoning, critical evaluation or creative synthesis which are the kinds of information we were seeking.[11]

[11] R. L. Ebel, Measuring Educational Achievement. (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1965). Chapter 4, "The Characteristics and Uses of Essay Tests."

In contrast, we viewed essay tests as providing the student with the opportunity to "originate ideas, to organize and express ideas, and to integrate ideas in a global attack on the problem."[12] It seemed to us that the political skills we have identified require the kinds of activities which can be better measured by an essay test.

Figure 1 and Figure 2 contain the two versions of the tests that were employed in the project. Both are based on a news story taken from the New York Times. They ask the student to identify the political issue and to provide guidance to the relevant political actor on what strategies he might undertake to gain his objectives. The cues provided in the question are purposely ambiguous. We endeavored to avoid any materials-bias in testing the student's ability to define the political issue, to identify the operating political factors, and to suggest strategies that the actor in question might follow. The news story provides a stimulus and the questions provide a generalized opportunity for the student to react to the stimulus.

The coding scheme that appears in Appendix A of this paper was developed for transforming the essay answers into quantitative variables that would allow for statistical analysis. That scheme was applied by undergraduates who were trained with PRINCE material, but were not told the hypotheses being tested. Questions of reliability and validity were explored throughout the data collection period.

Reliability checks between two different coders provided inter-coder agreement scores ranging from 50 to 100 percent depending on the item in the scheme. Because the reliability was not high on a number of the more crucial and ambiguous items, a double coding of each test answer was undertaken and disagreements were settled by a third coder. To make sure that the coders were not biasing their decisions by guessing whether the tests were pre or post, coders were asked to recode a random sample of 20 of their previously coded tests. That recoding resulted in an average inter-coder agreement of 90% or better across items.[13]

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[12] N. E. Gronlund, Measurement and Evaluation in Teaching. (New York: The Macmillan Company, 1971). Chapter 10, "Measuring Complex Achievement: The Essay Test."

[13] Since each coder had coded at least 100 answers, we felt confident that they did not recognize the masked response they were asked to reevaluate.

Article, "Paris Again Balks a Europe Accord: Opposes Common Market Proposal for Consultation with U.S. on Policy," from the New York Times removed to conform with copyright laws.

1. Assume that you are an advisor to an American government official. State for him the main political issue discussed in the article. Make your answer as specific as possible.

2. What strategy would you suggest the American government pursue with respect to this situation? Assume that you are providing recommendations for the American government. Make your response as pointed as possible, and make sure you are clear in what actions you recommend.

S.U.N.Y. Chief Asks Tenure Analysis

Article, "S.U.N.Y. Chief Asks Tenure Analysis: Walking a Tightrope" by Iver Peterson, from The New York Times removed to conform with copyright laws.

After reading the article from The New York Times, please answer the following two questions.

1. Assume you are an advisor to Chancellor Boyer. State for him the main political issue discussed in the article. Make your answer as specific as possible.

2. What strategy would you suggest that Chancellor Ernest L. Boyer pursue in handling the situation? Assume that you are providing recommendations for Chancellor Boyer. Make your response as pointed as possible, and make sure you are clear in what actions you recommend.

Validity questions are less tractible to statistical tests than reliability problems. Our principal effort to solve this problem was to obtain "criterion answers" to our two tests from respondents who had a substantial amount of political experience. Two groups of individuals were used. The first was a set of nineteen political figures primarily from the city of Syracuse and New York State. A few federal officials were also included in this sample. The second group consisted of twenty-one middle-level managers from the Department of Social and Health Services in the state of Washington. This second group was originally scheduled to be a test group. But when we were fully informed of their experiences, it became clear that they were more appropriately considered to be a criterion group. The coding rules and the types of variables employed in the study were in large part developed through analysis of these criterion tests. We assumed that these individuals possessed a high degree of the political skills which we are trying to teach. We hypothesized that after an educational treatment, students' answers would more closely approximate the criterion answers. But we also expected that, if this whole enterprise had validity, the highly experienced respondents would score better than the trained students. This is because the criterion respondents, as a result of their political experiences would establish high standards which the trained students could approach, but rarely achieve, after only a relatively few hours of exposure to the materials.

We will now briefly describe the coding rules to determine the relative performance of the students on each of the three skills. The reader should consult Appendix A for a full description of the coding rules and forms used by the coder.

In determining whether or not the student was defining the political issue in a clear and direct manner, two variables were employed. The variable was produced by the coder's answer to the following questions:

> "Does the respondent state that the issue specifically is the U.S. role in Common Market Consultations"
>
> (for examination #1)

> "Does the respondent state that the issue is specifically the changing of tenure policy"
>
> (for examination #2)

The second variable was the number of words used in answering question one of the test. Since our criterion respondents answered this question with fewer words than students on the pre-test, we hypothesized that there would be fewer words in the post-test than in the pre-test.

The second and third components of political strategy analysis skills were the ability to identify political factors affecting the issue and to suggest political strategies taking into account the interests and capabilities of a number of political actors. These components were measured by what we term "the weighted actor score" of the answer to question 2. This measure involved a number of operations. We have reprinted below a description of the section of the coding scheme dealing with "weighted actors." As the code sheet indicates, there are one of two ways to code each political actor mentioned by the respondent. A "1" is coded if an actor is mentioned generally in the answer; a "2" is entered to indicate cases in which the actor is identified in the context of a specific strategy suggestion. This variable looks at both the frequency and the specificity with which the actors are mentioned. It was assumed that the score based on this operation would differentiate between those students capable of thinking about political issues in strategic terms and those not capable of such analysis. A weighted actor score therefore was dependent upon both the number of different actors identified in the answer and the degree to which specific strategies were related to those actors.

Finally, we created a variable that recorded the weighted actors excluding the most obvious actor in the two tests, France and faculty. This variable is weighted in the same manner as the weighted actors but, when arriving at the total number for one respondent the main or obvious actor is excluded. The rationale behind this procedure is to observe whether students choose the obvious actor, or whether the increase in political sophistication will lead them to choose a wider range of actors. The main intent is to measure whether the PRINCE materials will broaden the students' conception of the range of the possible actors to be dealt with.

Table 1 provides a summary of the variables we examined in terms of the three-component general political strategy skills that we have identified. The hypothesized change in each variable is also indicated.

Table 1: Type of Political Strategy Skill and Indicator Variables Used

TYPES OF SKILL	VARIABLE DESCRIPTION	EXPECTED DIRECTION OF VARIABLE
Define Political Issues	Answer Question #1	Increase in Correct Answers
	Number of Words Used to Answer Question #1	Decrease in Words
Identify Political Factors and Articulate Complex Political Strategies	Number of Weighted Actors	Increase in Score
	Number of Weighted Actor Excluding Main Actor	Increase in Score

Research Design

The collection of data was dependent upon the cooperation of instructors at other colleges who were using the materials in regular classes. Furthermore, both time and financial constraints did not permit a selection of test sites on a random basis. Hence, in our data collection we worked with a small group of instructors who were sufficiently concerned about evaluating the quality of the materials they were using to volunteer their cooperation. Our hope originally was to conduct the test on ten different campuses allowing us to sample a wide variety of post-secondary institutions and to evaluate the use of the four materials in various combinations. Although we originally had received acceptances by ten instructors, data from only six sites reached us in time for this report. Table 2 indicates the six testing sites, the number of students and the form of the material used, at each of the institutions. One hundred and fifty-one students were included in the sample. We would have preferred a larger and more scientifically selected sample of sites. Nevertheless, we believe that the range of institutional settings and the type of data collected contains adequate basis for conducting the evaluation we planned.

Table 2: Information on the Sample

School	Number of Students	Material Used
Emory University	32	PRINCE
Lenior Rhyne College	47	PROBE
Transylvania University	21	Everyman's PRINCE and PRINCEDOWN
University of Illinois	11	Everyman's PRINCE
Washington and Lee University	12	Everyman's PRINCE
Western Washington State College	28	Everyman's PRINCE

An experimental single grouped pre-test/post-test design was employed.[14] Instructors were provided only the instructions contained in Appendix B of this paper. Students were given the pre-test prior to the distribution or use of any of the PRINCE materials. The post-test was given immediately after the class completed the activities associated with the PRINCE materials. Thirty-minute response time was provided for both the pre and post-tests. At no time during the evaluation were the instructors informed how the tests would be coded and analyzed.

FINDINGS

One purpose of our evaluation was to see if there were any differences between the four types of materials. Our small sampling of campuses prevented us from making a definitive judgment in this respect. However, we did discover variations in the findings when we disaggregated the data and looked at the results from each of the six campuses. Figures 3 through 10 display differences between the pre- and post-test for each of the six campuses on the four variables for the two different tests. The

[14] D. T. Campbell, J. C. Stanley, Experimental and Quasi-Experimental Designs for Research. (Chicago: Rand McNally & Company). p. 7.

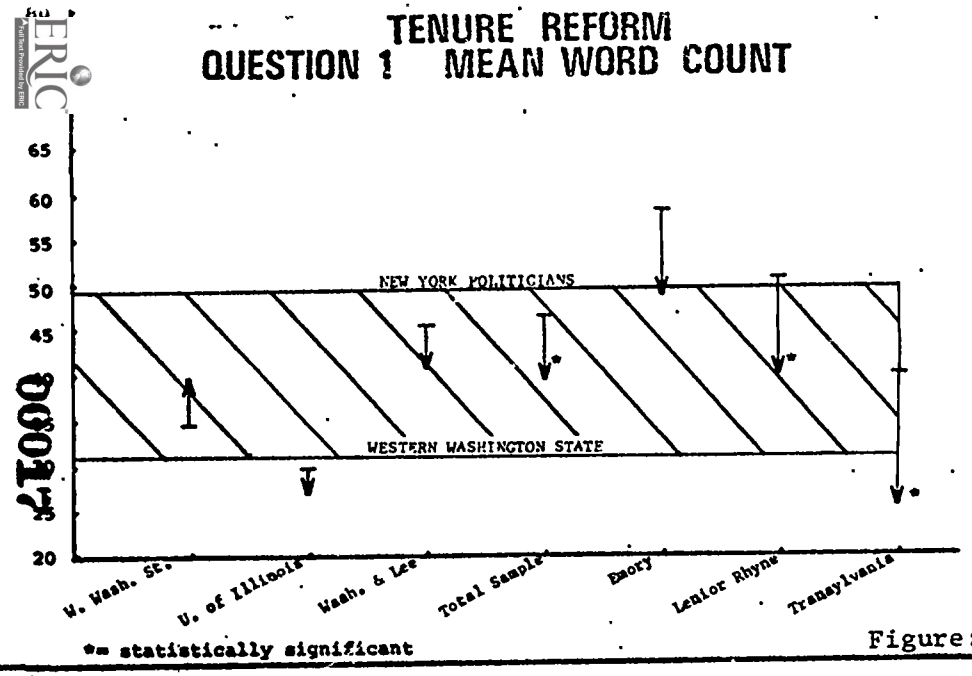
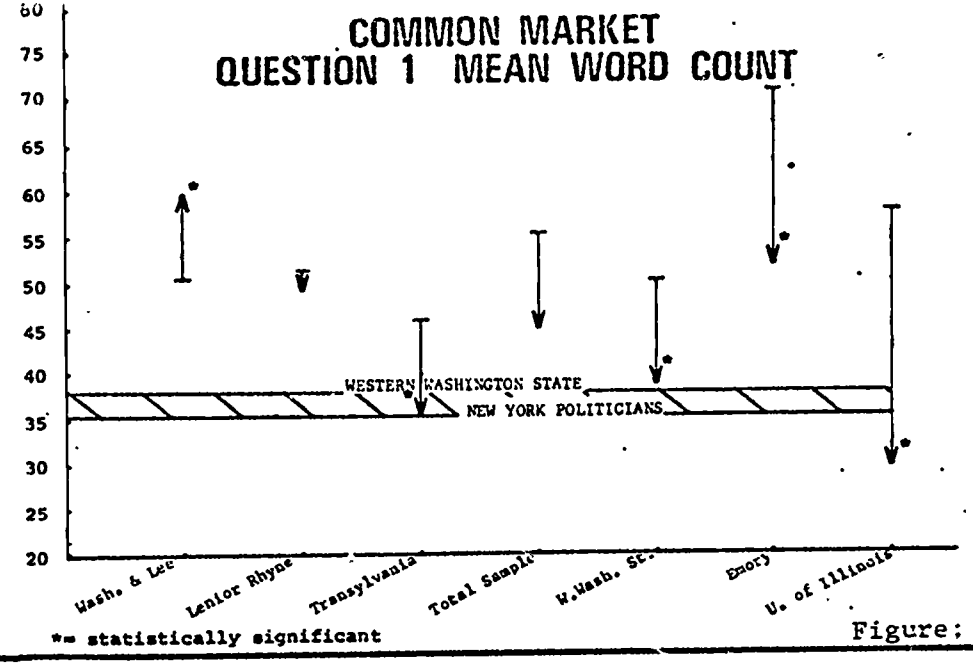


Figure: 3



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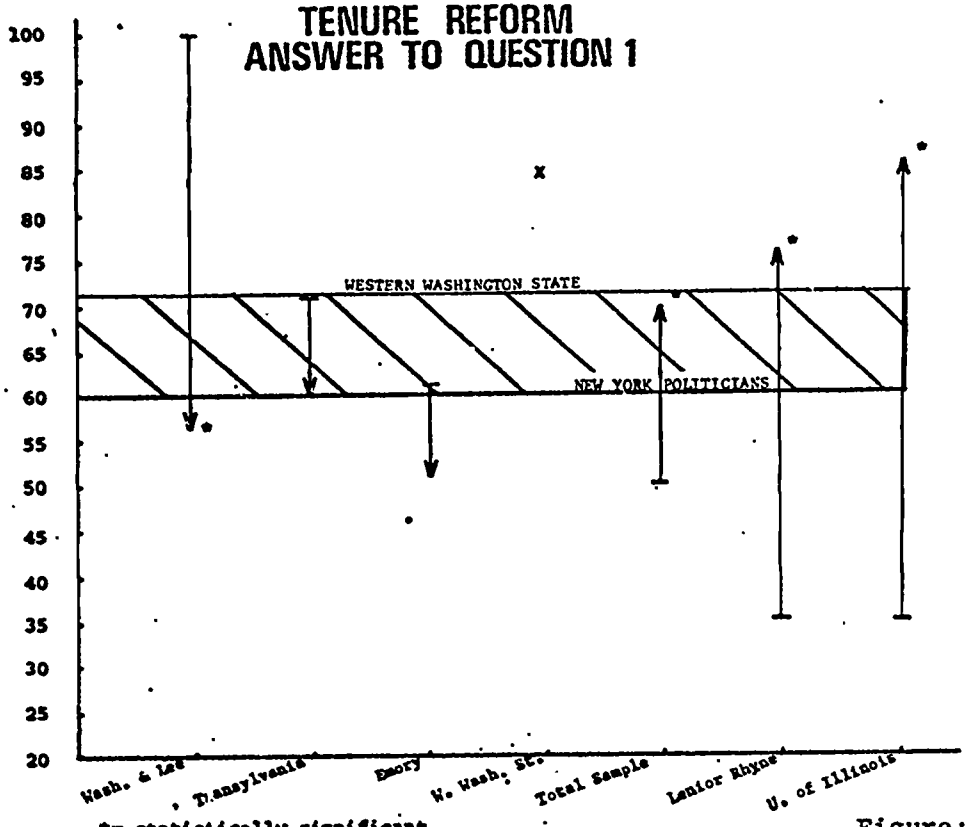

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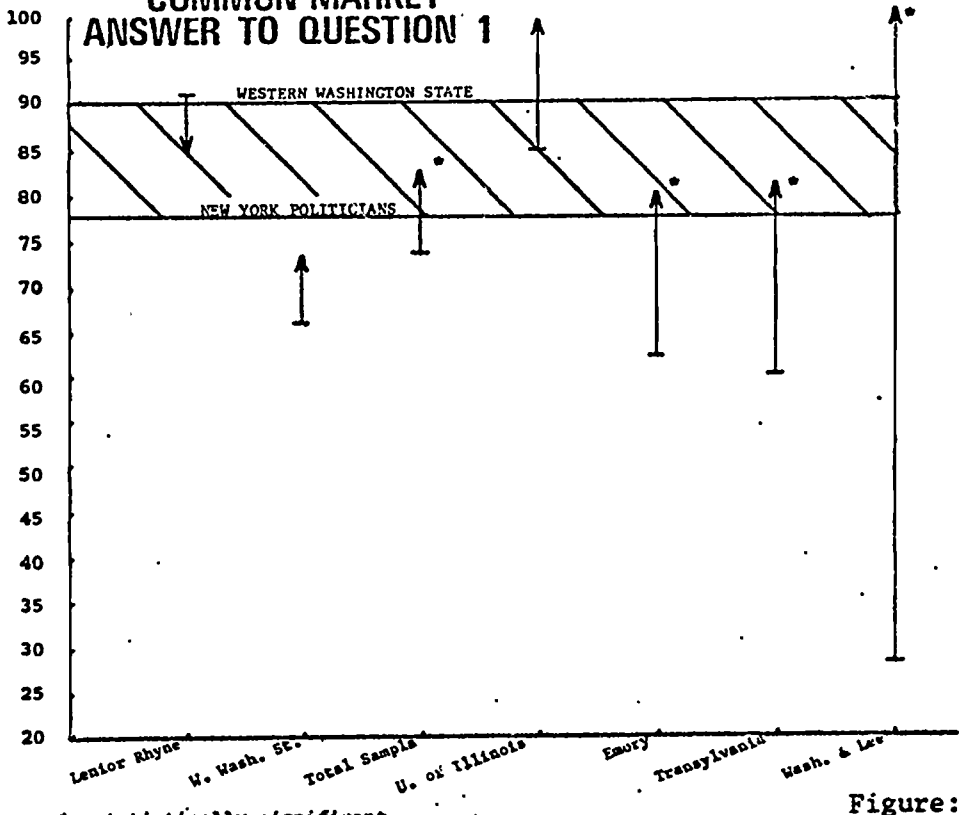
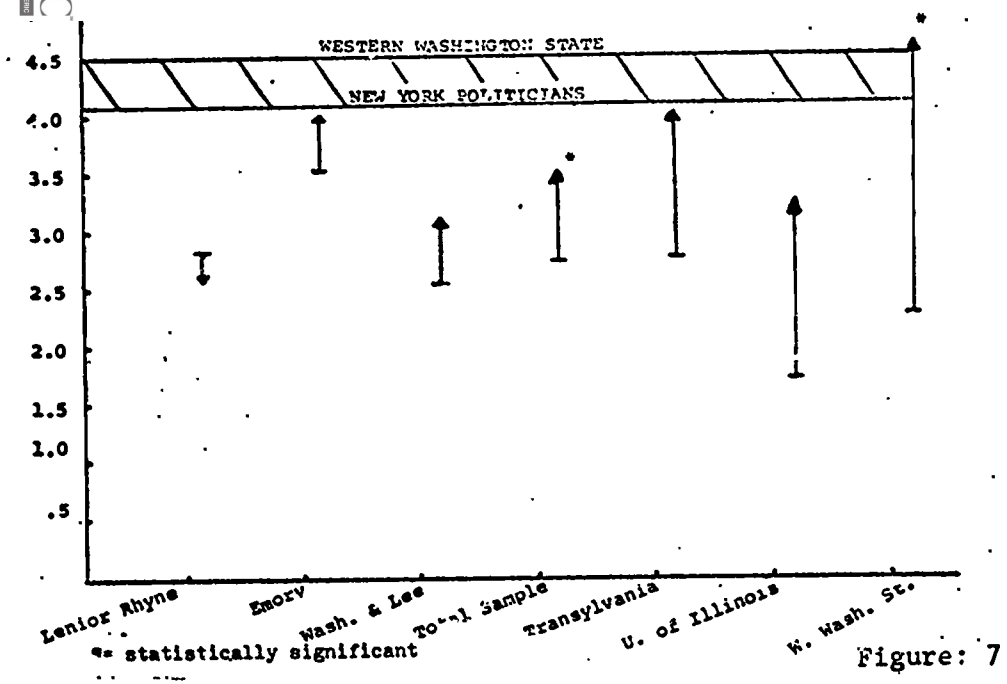


Figure: 6

ERIC

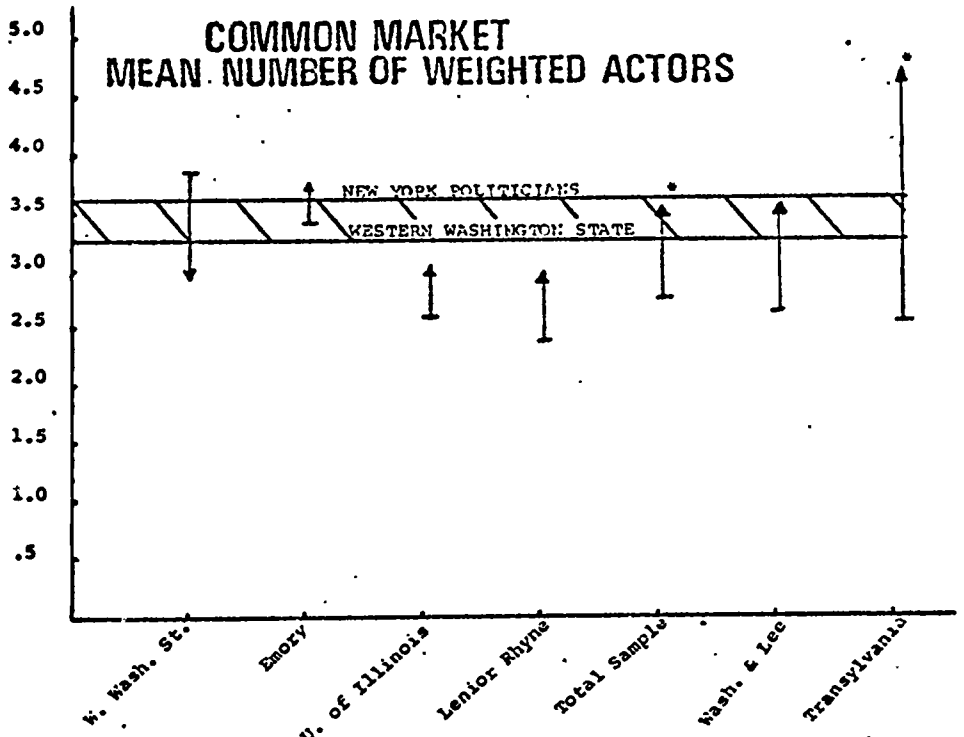
TENURE REFORM: MEAN NUMBER OF WEIGHTED ACTORS



*= statistically significant

Figure: 7

COMMON MARKET MEAN NUMBER OF WEIGHTED ACTORS



*= statistically significant

Figure: 8

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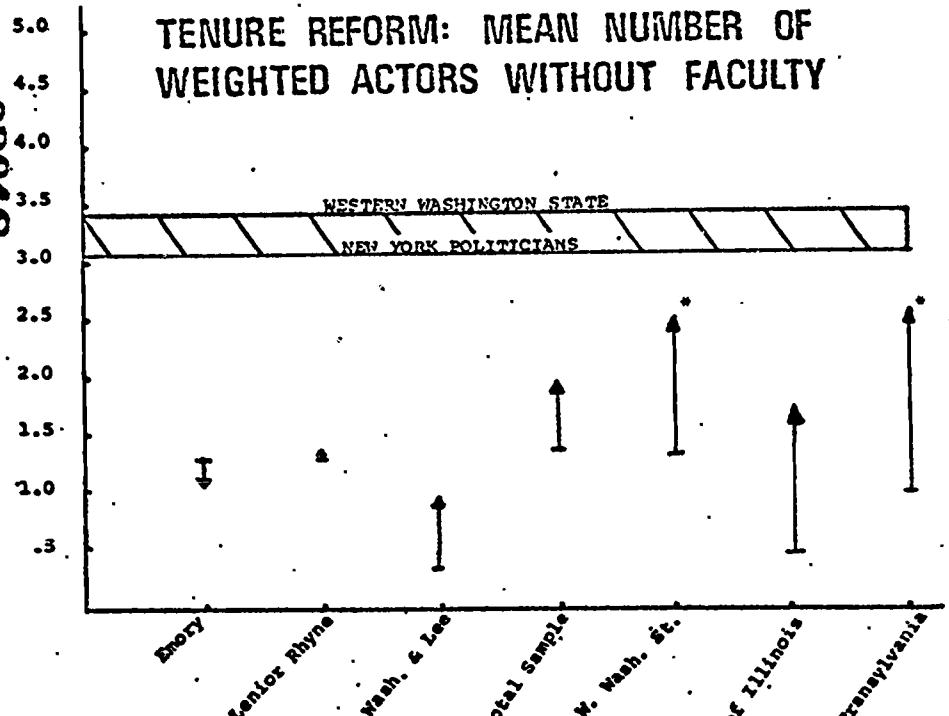
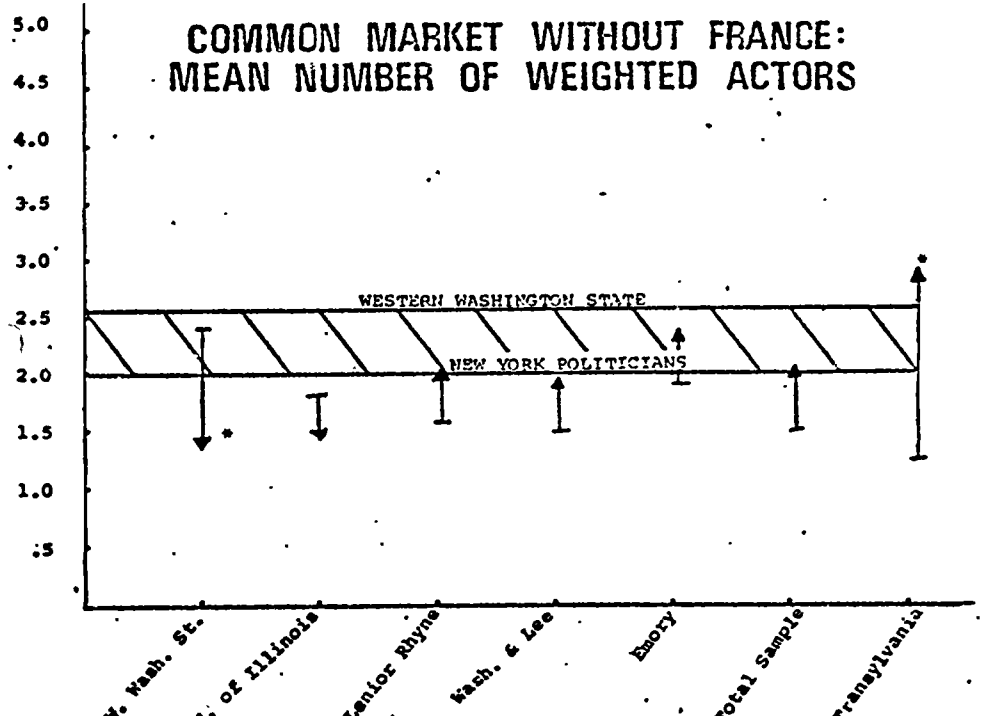
TENURE REFORM: MEAN NUMBER OF WEIGHTED ACTORS WITHOUT FACULTY



COMMON MARKET WITHOUT FRANCE: MEAN NUMBER OF WEIGHTED ACTORS



length of the arrow indicates the magnitude in the change of the means between pre- and post-tests. As can be seen, the general pattern is for the post-test scores to be closer to the two sets of criterion respondents (indicated by the horizontal lines). However, there are some sharp differences between campuses.

Table 3 presents a different dimension of our findings. In that table, each campus site is ranked in descending order of "success," as determined by the change in the mean across all variables. The ranking takes into account both the direction and magnitude of the changes between the pre- and post-tests. The table also indicates the materials used, and the amount of student hours devoted to the materials. Two patterns are suggested by the table. The first is that the non-computer version of the PRINCE materials, Everyman's PRINCE, was used at the sites that were most successful. The other pattern is that the amount of time devoted to the materials appears to be positively correlated with the impact of the materials. Even though there were changes in the correct direction across most of the variables for all of the testing sites, the differences in amount of time spent between the top three and the bottom three are substantial. Those differences appear to be related to both the form of materials used and the amount of time devoted to the material. It should also be noted that at the most successful site, Transylvania University, two forms of the material were employed, and the most amount of time was devoted to the materials.

In general, we feel the evidence indicates that the stipulated educational objectives were being achieved at the campuses tested. Table 4 shows the results of combining all 151 respondents. As that table shows, students responded to an open-ended question after being exposed to PRINCE materials with the following differences:

1) They tended to be more likely to define a clear-cut political issue.

2) They tended to write fewer words in defining the issue.

3) They tended to make more specific suggestions as to how to deal with more actors in trying to solve a political problem.

Table 3. Ranking of Testing Sites - Improvement Across All Variables

	School	Materials	N	Number of Student Hours
1.	Transylvania University	Everyman's PRINCE and PRINCEDOWN	21	12
2.	University of Illinois	Everyman's PRINCE	11	12
3.	Western Washington State University	Everyman's PRINCE	28	5
4.	Washington & Lee University	Everyman's PRINCE	12	3
5.	Emory University	PRINCE	32	3
6.	Lenoir Rhyne College	PROBE	47	2

00020

	Question 1 mean word count	Percentage answering question 1 correctly	Question 2 mean word count	Mean number of weighted actors	Mean number of weighted actors excluding man actor
TENURE REFORM					
Pre-test Score	46.5	50.	85.6	2.9	1.2
Post-test Score	39.3	69.7	92.3	3.5	1.6
Significance*	.02	.01	.30	.04	.07
COMMON MARKET					
Pre-test Score	55.8	73.3	2.9	2.9	1.7
Post-test Score	45.5	82.7	3.4	3.4	2.0
Significance*	.01	.01	.04	.04	.07

*One-tailed tests of significance, except for question 2 mean word count. (See footnote 16.)

4) They tended to be more likely to mention actors other than the most obvious one in trying to solve a political problem.

In each case, the post-treatment students responded in a way as to indicate improved political skills, defined as providing answers which were more similar to the responses of the criterion respondent in Table 5. For three of the four variables the differences were statistically significant, at the .05 level of probability of error, according to a one-tailed test. Inspection of Table 4 will also show that we have provided the results of the word count on question two, the strategy question for the two tests. This was not taken to be an indicator of any substantive variable. It was recorded as a check to see if there were any systematic biases of students' tending to write more or less on either test. For both testing instruments the small differences between pre-test and post-test were not statistically significant.[15]

CONCLUSIONS

At this point in our research, we are left with feelings of both encouragement and curiosity. On the one hand, it does appear to be possible to develop empirical indicators for something reasonably called "political skills" and to teach these skills to students. On the other hand, there are wide variations in the extent to which the students in this sample achieved an improvement on those skills. Several questions occur to us:

To what extent does the type of student affect success in using the materials? (We gathered no data at all on this question.)

To what extent does student improvement vary with the amount of time spent on a given set of materials? (At the most successful campus the most time was spent on the materials.)

To what extent does a combination of two or more of the materials reinforce the improvement of the political skills? (At

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[15] The probability of error reported for the number of words in the second question is calculated according to a two-tailed test, since we are not predicting the direction of the rival hypothesis.

TENURE REFORM

	Western Washington State	Politicians
Question 1 mean word count	31.6	48.1
Question 1 correct answers	72.7%	60.0%
Question 2 mean word count	54.8	131.6
Mean number of weighted actors	4.5	4.2
Mean number of weighted actors without faculty	3.3	3.1

COMMON MARKET

Question 1 mean word count	37.7	35.3
Question 1 correct answers	90.0%	77.8%
Question 2 mean word count	49.8	93.4
Mean number of weighted actors	3.2	3.6
Mean number of weighted actors without France	2.6	2.0

the most successful campus there was likewise multiple use of the materials.)

To what extent does faculty familiarity with, and enthusiasm for, the materials affect their impact? (It has generally been found that faculty attitudes about materials are important determinants in their educational impact. The faculty members in this sample were using the materials voluntarily and were therefore presumably positively inclined. We did not measure this systematically, however. Furthermore, in all but one case the faculty members used the materials without any training or instructions from the authors. The one exception, at the school which showed the most change, was a former graduate student of the authors.)

We are hopeful of being able to test some of these questions in the future research.

We undertook an evaluation of PRINCE materials to determine if the major pedagogical assumption that we have made in designing and using the material is plausible. As mentioned earlier, we see the PRINCE materials as an example of social technology which can help people understand and cope with the social and organizational context of their lives. In constructing and conducting the evaluation we found that the kind of strategic analysis undertaken by experienced political actors is more likely to be advocated by inexperienced individuals after they have used PRINCE materials. There are still a number of questions to be answered concerning the relative merits of the types of materials. Most important is the question of whether a multiple articulation of a set of ideas has a greater impact than a single format. Nevertheless, the basic hypotheses about the impact of the materials that we set out to test are, we believe, supported by the evidence.

APPENDIX A

INSTRUCTIONS TO THE CODER FOR PRINCE EVALUATION

I. In the blank space next to the test location number, the coder should write the two digit number which appears in the top left corner of the questionnaire. If a number does not appear, stop and see Larry Bloom before continuing. (e.g., 01, 02, etc.)

II. In the space next to the respondent identification number, list the three digit number which appears on the top right hand corner of the questionnaire. If a number does not appear, stop and see Larry Bloom before continuing. (e.g., 001, 002, etc.)

III. In the blank space next to the year (at college), record the appropriate code number from the list below:

00-fresh. 01-soph. 02-junior 03-senior 04-all grad. students

05-Mid-career student informal 06-Mid career student formal

07-Academic criterion respondent 08-Politician criterion respondent 09-Business criterion respondent 99-missing data

IV. In the space next to the word sex, place a 0 for Male and a 1 for Female. (e.g., sex ___)

V. In the space provided for G.P.A. write the Grade Point Average rounded off to the nearest tenth. (e.g., 3.56=36) It is important that you omit the decimal point.

VI. In the space provided for S.A.T. write the Scholastic Achievement Test score. It is important that you omit the last number. (e.g., 350=35)

VII. In the space provided for Major, record the appropriate code number from the list below:

1-Political Science
2-Other Social Science
3-Other

VIII. In the space provided for coder number record the number which has been assigned to you. (e.g., coder # 01)

IX. Please make sure that the questionnaire corresponds to the coding sheet that you are using.

X. Questions 1 and 2 are simply the number of words in the respondent's answer. Count the total number of words and record this number in the space provided.

XI. If the respondent states the issue specifically, place a 0 in the space provided. If the respondent does not state the issue specifically, place a 1 in the space provided. (e.g., Common Market-The U.S. role in Common Market Consultation. = 0) (e.g., Common Market-The Respondent does not in any way state the U.S. role in Common Market Consultation = 1) (e.g., Tenure Reform-The Respondent specifically states the change, revision or altering of Tenure Policy = 0) (e.g., The Respondent does not in any way specifically state the change, revision or altering of Tenure Policy = 1)

XII. In the space provided for each actor, record a 0 if the actor is not mentioned.

If the actor is mentioned in the answer to question #2, place a 1 next to the actor's name on the coding sheet. (If the actor's name does not appear on the coder sheet, place a 1 in the space provided next to 'Other' and write the actor's name next to the column number.*)

If the actor is mentioned and a general statement follows, the coder should also place a 1 in the space provided. (Refer to the * above for Actors not mentioned on coding sheet.) (e.g., Secretary of State Kissinger should talk with France.)

If the actor is mentioned and a specific statement follows, place a 2 next to the Actor's name on coding sheet. (Refer to the * above for Actor's name on coding sheet.) (e.g., Secretary of State Kissinger bargains with France to attempt to coerce the French into accepting the U.S. position on the Middle East dilemma.)

XIII. If there are any problems and/or questions, see Larry Bloom immediately.

PRINCE EVALUATION CODING SHEET
FOR TENURE REFORM ARTICLE

Test Location_____ (col.1,2) Respondent #_____(col.3,4,5)
Year_____(col.6,7) Sex____(col.8) G.P.A._____(col.9,10)
S.A.T._____(col.11,12) Major...(col.13) Coder #_____(col.14,15)
Questionnaire # 0 (col.16)

1. Number of words in question #1 ___ ___ ___ (col.17,18,19)
2. Number of words in question #2 ___ ___ ___ (col.20,21,22)
3. Does the respondent state that the issue is specifically the changing of the tenure policy? ___ (col.23)
4. Actors

    1. Board of Trustees ___ (col.24)
    2. SUNY faculty generally ___ (col.25)
    3. Tenured SUNY faculty ___ (col.26)
    4. Untenured SUNY faculty ___ (col.27)
    5. Faculty in high enrollment courses ___ (col.28)
    6. Faculty in low enrollment courses ___ (col.29)
    7. High prestige faculty ___ (col.30)
    8. SUNY Administrators ___ (col.31)
    9. Students ___ (col.32)
    10. Teachers Unions ___ (col.33)
    LL. News Media ___ (col.34)
    12. General Public ___ (col.35)
    13. Legislators ___ (col.36)
    14. Ad Hoc Committee (col.37)
    15. Commission ___ (col.38)
    16. Research Group ___ (col.39)
    17. Other ___ (col.40)
    18. Other ___ (col.41)
    19. Other ___ (col.42)
    20. Other ___ (col.43)
    21. Other ___ (col.44)
    22. Everyman's PRINCE ___ (col.45)
    23. PRINCE ___ (col.46)
    24. PROBE ___ (col.47)
    25. Oral PRINCE ___ (col.48)
    26. Test ___ (col.49)

PRINCE EVALUATION CODING SHEET
FOR COMMON MARKET ARTICLE

Test Location _____ (col.1,2) Respondent #_____(col.3,4,5)
Year _____(col.6,7) Sex ___(col.8) G.P.A._____(col.9,10)
S.A.T._____(col.11,12) Major ___(col.13) Coder #___c___(col.14,15)
Questionnaire #___(col.16)

1. Number of words in question #1 _____(col.17,18,19)
2. Number of words in question #2 _____(col.20,21,22)
3. Does the respondent state the issue specifically in the U.S. role in Common Market Consultations? ___(col.23)
4. Actors

    1. France ___(col.24)
    2. West Germany ___(col.25)
    3. Britain ___(col.26)
    4. All other members of the Common Market ___(col.27)
    5. Other ___(col.28)
    6. Other ___(col.29)
    7. Other ___(col.30)
    8. Other ___(col.31)
    9. Other ___(col.32)
    10. Other ___(col.33)
    11. Columns 34-44 punch zero
    12. Everyman's PRINCE ___(col.45)
    13. PRINCE ___(col.46)
    14. PROBE ___(col.47)
    15. Oral PRINCE ___(col.48)
    16. Test ___(col.49)

APPENDIX B

INSTRUCTIONS FOR ADMINISTERING PRE- AND POST-TESTS FOR EVALUATING STUDENT RESPONSES TO A PROBLEM IN POLITICAL STRATEGY

1. When administering the pre-test, divide the group in half according to some convenient randomizing procedure--seating location (if it is assigned), by alphabet according to student's last name, or some other procedure. However, please note no. 3 below! Students who take one test prior to the exposure to PRINCE materials must take the other test subsequent to their exposure.

2. The time allocated for the test should not exceed 30 minutes, beginning when the students receive the exam.

3. Ask each student to complete the personal information, as well as answering the two questions concerning the New York Times article.

4. After the PRINCE exercise or exercises have been completed, administer the post-test as soon as possible. Be sure that students who took the tenure reform article as the pre-test are given the Common Market article as the post-test, and vice-versa. Students should fill out the personal information on the post-test.

5. As soon as either set of tests is completed, please return them to:

   Michael K. O'Leary
   International Relations Program
   712 Ostrom Avenue
   Syracuse University
   Syracuse, New York 13210

6. Please enclose with the post-tests a brief statement of the nature and extent of the PRINCE-related exercises which the students undertook. The attached form can be checked as appropriate to provide this information.

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