

MINUTES OF MEETING OF THE FACULTY SENATE OF THE UNIVERSITY OF ARIZONA
Monday, January 7, 1963
Room 111, BPA Building

The Faculty Senate convened in regular session at 3:40 P.M. on Monday, January 7, 1963, in Room 111 of the College of Business and Public Administration. Thirty-eight members were present with President Harvill presiding. Dr. M.G. Seeley, Dr. Arthur H. Steinbrenner, Dr. Albert B. Weaver, and Mr. W.W. Shirey also were present.

PRESENT: Bartlett, Blecha, Blitzler, Brewer, Carlson, Delaplaine, Forrester, Gegenheimer, Gillmor, Gustavson, Harvill, Kassander, Kurtz, Lacy, Little, Livermore, Lynn, Lyons, McDonald, McMillan, Martin, Moore, Muir, H. Myers, L. Myers, Nugent, Patrick, Paylore, Powell, Rappeport, H. Rhodes, J.M. Rhodes, Roy, Siegel, Slonaker, Svob, Vavich, Wallrall.

ABSENT: Conley, Ewing, Gaines, Haury, Hillman, Hudson, Kemmerer, Rosaldo, Russell, Simonian, Windsor.

APPROVAL OF MINUTES: The minutes of the meeting of December 3 were approved as published and distributed.

REPORTS OF EXPERIENCE IN WORKING WITH PUBLIC SCHOOLS IN PROGRAMS OF SCIENCE

INSTRUCTION: President Harvill stated that outstanding service is being given by members of the University faculty in the assistance they are furnishing the public schools of Arizona in helping the schools improve the quality of science teaching. Experimentation has been going on for several years under the leadership of University personnel and good results have developed from this, including better articulation between science teaching in the public schools and that at the University level.

Dr. Harvill explained that under the chairmanship of Dr. Albert B. Weaver a special University committee on Science Education has been studying the matter of improving the training of science teachers. This group also is interested in improving the quality of the science teaching in the schools by teachers already in service.

Because the concern of the University in this matter is so great, President Harvill said he had asked some of the individuals involved with it to report to the Senate today on their activities.

The President first introduced Dr. Millard G. Seeley, Professor of Chemistry. Among his various activities in science education, Dr. Seeley has directed a number of institutes for science teachers under the sponsorship of the National Science Foundation and under the provisions of the National Defense Education Act, the President explained.

Dr. Seeley said that he and the other faculty members concerned were grateful for the opportunity to share some of their experiences with the Senate. He said he would simply report some of the "high spots" of the activities of recent years in order that the Senate could have an over-all view. He explained that in 1956 Dr. Harvill had created a Committee on Science Education, the membership of which represented various science disciplines and the College of Education. The first project for the group had been to prepare proposals to the National Science Foundation asking support of an institute for high school science teachers to be

held on this campus during the summer of 1957. The committee recognized that institute programs provide only temporary measure whereby members of the teaching profession may be "brought up to date." The ultimate goal, of course, should be the establishment of a superior curriculum at the University for students preparing to teach science. Actually, the experience of the past six years indicates perhaps institutes are here to stay indefinitely, Dr. Seeley pointed out. After all, the re-training process is an endless one.

It became evident, Dr. Seeley explained, that the training for science teaching that the science teachers participating in the institutes had received in their college courses had been inadequate. It was little short of amazing how poorly prepared in the subject-matter some high school science teachers were. While this might not seem surprising for the older teacher long out of college, it was disconcerting that the teacher just out of college a few years was also inadequately trained. So the institutes were revised and improved. Where in the early institutes too much material was included and the level of the courses was too high, a more modest amount of material was programmed with more reasonable goals indicated. Later the level of the institutes was stepped up and some earlier participants were brought back for a second institute. They did much better work the second time since their background had been so strengthened by their participation in an earlier institute.

Dr. Seeley agreed that the program of institutes might sound like a tremendous job and he reminded the Senate that three hundred institutes like those at the University of Arizona were being conducted in various parts of the United States. It was no small undertaking to improve the quality of science training in schools throughout the land.

Dr. Seeley said that some public school teachers had complained to University faculty members, asking what, after all, did college professors know about high school teaching. "How do you know what you are criticizing in high school classrooms?" they asked. Dr. Seeley decided he had better find out, so for one semester he went to a local high school each day and taught a third period class in Chemistry. "This was almost my Waterloo," he said. "The third period was the hour during which absence reports were picked up. The mere matter of keeping attendance records straight was a chore," he said. In any event, aside from the physical manipulations required in administering the paper work for a class of thirty-two, he found that the students came to realize that unfortunately college professors often fail to share the excitement of their subject with their students. They pass along facts and theories and concepts and laws, but they do not share the thrill and excitement of discovery. This is what is needed to inspire response from the students. Presenting material from the standpoint of discovery and the processes by which knowledge is obtained can result in greatly increased interest and, as a result, greatly increased learning on the part of the student.

Dr. Seeley said that a later experience had been on the level of the elementary school. Dr. Kurtz and he had spent a year working with fifth grade classes. Youngsters at that level can comprehend rather sophisticated scientific concepts, he explained. The difficulty is in communicating with the children because of their limited vocabulary and ability to symbolize. Dr. Seeley told the story of a little boy in his class who could multiply fractions in his head but could not write his answers on paper. He always came up with the correct answers. "I do not know how to write it," he said. His mental processes were more advanced than his ability to symbolize." We do not work hard enough at making our special vocabulary and symbols understandable at a very fundamental level, Dr. Seeley said.

At this point, Dr. Seeley asked Dr. Edwin B. Kurtz, Associate Professor of Botany (and a member of the Senate), to speak to the Senate.

Dr. Kurtz commented that so far as the fifth grade teaching experience was concerned, he was sure he and Dr. Seeley learned more than the students did. He said he would like to point out that experiments such as those he and Dr. Seeley had conducted, as well as those Dr. Steinbrenner of the Department of Mathematics had participated in, were similar to others going on in schools across the country. He called the attention of the Senate to the December 22, 1962 issue of SCIENCE (Sci.138:1307.1962.) This article reports, he explained, that similar studies in other parts of the country, conducted completely independently of the University of Arizona program, or of each other, showed that these other experiments had produced essentially the same findings. This is important to know since although the studies at the University of Arizona are limited and the studies at other institutions are limited, together the several limited studies seem to provide some common answers.

Dr. Kurtz pointed out that the matter of the training of teachers of science had been receiving attention for some years, prior to the activation of the Science Education Committee or the efforts of Dr. Seeley, Dr. Steinbrenner, and himself. Faculty members of the College of Education - Dr. Blecha, for instance - had long been interested in this subject. Dr. Kurtz explained that to think about elementary school teachers is to think about a vast group of individuals. At present the number of elementary school teachers in the United States is 1,200,000. To maintain an adequate flow of new teachers into the profession, to provide the numbers needed for the growing population, is a gigantic problem in itself, he pointed out, without considering the task of re-training teachers already in the field. In Tucson, he explained, there are fifty elementary schools located over a large geographic area, with an average enrollment in excess of 400 students, some schools having well over 600. The classrooms for many of these students are in temporary buildings that have no gas outlets or running water, thus making it very difficult to give proper science teaching.

Dr. Kurtz said that as a group elementary school teachers are a fascinating group to work with. He said that over the years he had worked with some very good University students, both graduate and undergraduate, "but if you want sheer enthusiasm and a genuine desire to get more information and more knowledge, then work with a group of elementary teachers," he said.

Referring again to the fifth grade program, Dr. Kurtz referred to a reprint from the Arizona Administrator 1:2, 1962, entitled "Experimental Science Program - Phase I", written by Dr. Seeley and himself, which had been distributed to Senate members. A copy of this article is appended to these minutes. The article simply stresses the limitations which must be faced in an elementary classroom, he explained.

Dr. Kurtz said that in the past he had been highly critical of education college faculties and educators, blaming them for the poor quality of teaching in the schools. He said he now has a different view of the problem. It is very difficult to teach and do all the other things teachers are expected to do, he said, for example, (in addition to keeping complicated attendance records), dismissing certain students at a certain time to take their posts on street patrol, or leading your class outside when an unannounced fire drill is suddenly held. These sorts of activities cut sharply into the allotted thirty minutes of time an elementary school teacher has each day for science instruction. The lack of facilities presents still greater problems. Many rooms do not have sinks or running water. Desks are slanted rather than flat so that work projects slide into the student's lap. Rooms

cannot be darkened. Some teachers are intolerant of the uncontrolled chaos in a room which normally has to accomplish the conducting of certain types of scientific experiments. Because of a rabies scare, live vertebrates cannot be taken into classrooms and work that should be done with rats or mice must be done with fish or frogs. In short, he said, the public school science teacher is working under a great variety of handicaps.

Dr. Kurtz said that he thought the University of Arizona should exercise leadership in developing teacher workshops and in developing a teacher consulting service. The high schools need this kind of help from the University and want it. The Arizona Academy of Science has shown some leadership in this area, he explained. Another approach is to bring selected teachers to the campus for conferences, providing them with materials they can take back and use in their classrooms. These teachers can share what they have learned at the University conference with other teachers. University personnel can also help arrange field trips for school science teachers. Dr. Kurtz referred also to the course he and Dr. Seeley are giving called "Experimental Chemistry and Biology for Elementary School Teachers." Teachers from the public schools voluntarily are taking this course, he explained, to improve the quality of their teaching. Dr. Kurtz reminded the Senate also that the University cooperates in the sponsoring of science fairs. He said he believed that all of these activities are beginning to "feed back" to the college level already. Enthusiasm has been aroused and relations between University personnel and high school teachers have been much improved.

Dr. Harvill then called upon Dr. Arthur H. Steinbrenner, Associate Professor of Education and Mathematics. Dr. Steinbrenner said he would limit his remarks in the main to National Science Foundation Institutes. The University now has sponsored a number of such institutes for teachers of mathematics, some being held in the summer and some on Saturday mornings or late afternoons. About \$210,000 has been spent on institutes for mathematics teachers and about a half million dollars on those for science teachers. Certainly we should have some worthwhile results from this sort of expenditure, he said. The institutes for elementary schools have been held only in the last two years, he explained. While much attention has been given to improving the teaching of mathematics on the high school and college levels, much attention also has been given to mathematics teaching in the grades. One national program called the "School Mathematics Study Group" has limited its work to the elementary level. In Tucson, twenty-one elementary schools are participating in this program. What is desired is a study of the effects of the program over a period of five years so that a student's performance in mathematics in Grades 5,6,7,8 and 9 (if he starts participating in the new program in grade 4) can be carefully analyzed.

Another program is giving attention to improving the teaching of mathematics in kindergarten through Grade 3. The first task is to determine what the children are like, he said. Then attention is given to the actual classroom experience of the teachers. "We want to train the teachers properly while they are in college so that we will not have to retrain them after they graduate," he explained. The University of Arizona Department of Mathematics is participating in a special study sponsored by a group of Minnesota educators, giving special attention to the teaching of mathematics in kindergarten through third grade. Elementary school teachers are genuinely interested in this matter, Dr. Steinbrenner explained. They are enthusiastic participants and are willing to give up their own time after their school hours to work in the institute program. They have to prepare a large amount of work in preparation for this course, in addition to the preparation they must do for their classes. As an indication of the extent of interest, Dr. Steinbrenner pointed out three years ago fifteen participants registered in this institute. This has now grown to fifty-five. Teachers are

replanning their teaching programs in accordance with the new five-year program.

So far as teaching on the secondary school level is concerned, he said, he would predict summer institutes for these teachers would continue indefinitely.

Dr. Steinbrenner explained that the goal of these programs has not been necessarily to attract the superior teacher but rather the average teacher and then strengthen his understanding of the subject-matter as well as his ability to teach it effectively.

At this point Dr. Harvill called on Dr. Albert B. Weaver, Chairman of the University Committee on Science Education to see if he wished to make any comments. Dr. Weaver said he would like to comment on the role of the Science Education Committee. It is an ad hoc committee appointed by the President to coordinate and expedite the work of scientists interested in science education and the work of members of the faculty of the College of Education. "Perhaps it took Sputnik to emphasize the importance of the situation," he said. "In any event, real efforts have been made now for several years to bridge the gap between the science disciplines as taught in the colleges and universities and the teaching of science in the schools. Scientists and educators are now jointly analyzing just what are the problems of education and what has been the cause of the lack of communication between Education and Science."

Dr. Weaver explained that the Science Education Committee has been studying the whole area of National Science Foundation Institutes, trying to see how the retraining job of teachers already in the field might be made most effective and also to recommend how present curricula of teacher training programs might be improved so that science teaching might be better in the schools on all levels - elementary, junior high, and secondary. One result of the work of the committee has been the development of a sequence of new science courses in physics, chemistry, geology, and biology, which students planning to become elementary school teachers will study in the future in addition to a special course in mathematics. Dr. Weaver said the Science Education Committee also desired to widen interest in the Advanced Placement program whereby able students could complete college freshman level science courses while they were still in high school.

Upon completion of Dr. Weaver's remarks, Dr. Harvill said it was in order for members of the Senate to ask questions of the speakers. He said he had a question of his own and that was whether or not there seems to be a tendency toward standardization in the teaching of high school science because of the fact that standard state textbooks in scientific subjects are selected for use in the high schools. Dr. Seeley said he felt that teachers would like standardization in that they would like to be furnished with some sort of printed material which page by page would tell them how to accomplish effective teaching - for instance, the sort of thing that is being discovered through some of the experimentation being conducted locally in science education. Dr. Kurtz said that he felt that standard textbooks in many courses were considered little more than guides and the teachers felt free to go any direction they wanted to so far as the manner in which material was presented was concerned.

Dr. Blitzer asked if anyone knew how successful were the efforts of the Russians to teach science and foreign language at elementary grade levels. Dr. Gustavson said he had visited Russia as a member of the Exchange Group of the State Department to study science education and research in Russia. He had done some school visiting as a member of this program. He said he was impressed by the quantity and quality of equipment the schools had been furnished. He said there was no doubt that an important factor of this entire matter is how good and how

complete the equipment is that the teacher is provided for his or her use in the teaching effort. In a way this is just as important as the teacher's training, he said.

Dean Roy asked Dr. Steinbrenner how the new program for teachers of mathematics differs from traditional training. Dr. Steinbrenner replied that it is largely a difference between concepts and skills. In the old program, he said, drill on skills was emphasized, whereas in the present program, while skills are still included, the aim is to explain basic concepts of mathematics, with the idea that once these ideas are understood, the student will do independent thinking. He also is likely not so often to forget. This is where the difficulty comes in training teachers, since it is not always easy to "get concepts across" to the teachers.

Specifically, Dean Roy asked, what difference would it make in the student when he reached his first high school year? Dr. Steinbrenner said he would hope that the student would have received an improved introduction to independent thinking, not only in mathematics, but in other situations involving quantitative applications.

Dr. Patrick said he had understood several speakers to imply that the typical teacher in both the elementary grades and the high schools lacks a fundamental understanding of the spirit and methods of science. If the teacher has been graduated from college where the science requirement has been at least 8 units and maybe 16, why should this be? Dr. Seeley said that the introductory courses in the sciences traditionally have been designed to provide a foundation for the major in the subject. In the beginning courses in science too often the course has not resulted in the student's discovering the nature and objectives of science. Of course, a major will experience this later. The answer then, Dr. Seeley continued, in training the teacher, is to require him to take as much course work as is required to bring him to the point where he is touched by the exciting spirit of science and enjoys it. This may well require specially designed courses. He said he did not mean watered-down courses.

Dr. Kurtz said there was another point he would like to make. Suppose the teacher in his training has studied 8 units of Botany or 4 units of Botany and 4 units of Zoology. What does she do when a child brings her a rock? What is needed is a broader approach covering the several science disciplines, he said.

Dr. Melvin Rhodes said members of the Senate might be interested in the book, THE PROCESS OF EDUCATION by Jerome Seymour Bruner of Harvard, published by the National Academy of Science in 1959. This book concerns itself with the topics being discussed today and is available in the University Library.

Dr. McDonald said that he understood some of the speakers had concluded that part of the problem was that teachers in the schools did not have enough knowledge of the subject they were teaching. "Are the new courses in science which students preparing to be public school teachers will take to be taught by individuals well trained in the science subject concerned?" he asked.

Dr. Weaver answered, "Yes, indeed, the individuals are well trained. These courses will be taught by respected scientists who also are well acquainted with the problems of the school teacher. Dr. Seeley, for instance, will teach the chemistry course and Dr. Kurtz will teach the course in biology designed for elementary school teachers."

Dean Moore pointed out, in response to earlier comments about equipment, that the State of Arizona was the only state in the union which has not participated

in the program of the National Defense Education Act which provides money to buy scientific equipment for the public schools. Dr. Harvill commented that Dean Moore was correct. Federal money is available for this purpose when matched by state funds, but the Arizona legislature to date has not chosen to participate in this program. The State Board of Education on only one occasion went on record recommending such action to the legislature. Since that time the Superintendent of Public Instruction has not placed the matter on the Agenda of the Board of Education meetings. Dr. Harvill said in his judgment it was unfortunate that the schools in Arizona are the only ones in the nation not receiving the benefit of federal assistance which would provide equipment to improve both the teaching of languages and science under the provisions of the NDEA.

Dr. Harvill thanked Dr. Seeley, Dr. Kurtz, Dr. Steinbrenner, and Dr. Weaver for their worthwhile reports to the Senate.

REPORT OF ad hoc SENATE COMMITTEE TO STUDY FEASIBILITY OF PROFICIENCY EXAMINATION IN ENGLISH: President Harvill reminded the Senate that Professor Huggins had been made Chairman of a special committee to study the feasibility of establishing a proficiency examination in English for the students at the University of Arizona, at some point subsequent to the freshman year. A copy of the report is attached.

Dr. Harvill explained that Professor Huggins could not be present because of illness and the matter would be presented to the Senate by Senator Muir, head of the Department of English, and a member of the special ad hoc committee.

Dr. Muir said that he felt that it was not necessary for him to read the report since Senate members had been furnished copies of it in advance of the meeting. He suggested that the matter be discussed by means of questions and answers.

Dean Livermore asked if consideration had been given to administering the proficiency examination at any point earlier than the beginning of the junior year.

Dr. Muir said he believed that matter had not come up. He thought the committee had commonly understood that the examination should be given after the student had completed his sophomore year.

Dr. Blitzer asked why students who had made a "3" in English 3 should be forced to take the proficiency examination. Would they not have developed adequate proficiency by earning a grade of "3" in that course? Dr. Muir replied that the committee had wanted to make reasonable allowance for those students likely to be well enough trained in English as freshmen to maintain their competence to the junior year but the committee had felt that all students who had received a grade of "3" in English 3 would not necessarily continue to perform as good writers and, therefore, would need more training in English by the time they had become juniors.

Dr. Lacy asked if the passing of a proficiency examination could not become a prerequisite to the passing of English 3? Dr. Muir replied that a proficiency examination could perhaps be made part of the final examination in English 3. He pointed out that one important reason for recommending the proficiency examination was that it would be given to transfer students who had not taken English 3 at Arizona. Dr. Lacy said he could see some reason for requiring a proficiency examination for students who transferred their freshman English courses from other institutions. Some other colleges and universities may teach English more competently than we do and some may teach it at a less competent level. He thought it would be desirable, however, to establish any proposed proficiency examination for our own students of English simply as one of the hurdles needed to pass English 3. This

would serve two purposes, he said. It would stimulate the students to work harder, and it would provide a challenge to the instructors to do a better job of teaching.

Dr. Muir said that there did seem to be a considerable amount of irregularity of quality among the English training that students transferring to the University of Arizona from other institutions have received. Further, there is a great tendency for students to forget basic rules of composition, "to become careless or at least to neglect carefulness" in their writing, and the proficiency examination at the beginning of the junior year should encourage them, perhaps even force them, to continue practicing what they have learned earlier.

Dean Forrester reported that the faculty of the College of Mines had discussed this matter at length. Questions had been raised as to the validity of requiring students who had completed English 3 at the University of Arizona with a satisfactory grade to take a proficiency examination in English later. A different approach might be to suggest that major departments could recommend that students in their courses who are deficient in their English competency be referred to the English Department for special training. Dr. Muir pointed out that this last suggestion has been recommended in the past. In any event, he pointed out, these proposals were simply recommendations of the special committee and they were now before the Senate for discussion.

Dr. Patrick commented that there was possibly an admission in the proposal that could not be proven. He said, "I do not always write as well as I know how to write because I do not care enough about a particular situation or because I am too hurried. I could pass a proficiency examination because I would realize that this was necessary and I would give attention to it. The very next day I could go back to my careless ways." Dr. Patrick said he would like to know what would be accomplished by putting people over the hurdle of a proficiency examination. He said he would like to see it established that it is the responsibility of the entire faculty "to keep after students to write good English." "It should be the responsibility of the English Department to teach students enough English so they can respond to the faculty's demands to put good English on paper," he stated.

So far as transfer students are concerned, Dr. Patrick suggested that a procedure be established whereby credit in freshman English could be transferred only upon passing a University of Arizona examination in English at the time of transfer.

Dr. Muir said that the matter was an administrative one. He said perhaps something similar to what Dr. Patrick was proposing could be established whereby a student transferring from Harvard would, the same as one transferring from a remote rural college, be required to undergo the same testing procedure to establish credit in his English. Dr. Muir added that he was not present at this meeting particularly as an advocate for this report. He said he had served on the ad hoc committee, the committee had been asked to prepare recommendations, and the committee had complied with this request to the best of its ability. Naturally there are many legitimate questions which must be asked and answered.

Dr. Harvill stated that Dr. Muir's point was well taken. He said he was aware that some members of the committee had stated that they did not know just what was the proper solution to the problems of inadequate ability in English, although much work had gone into the preparation of this report. He said he was sure the committee was not claiming that their recommendation was the only approach to the problem.

Dr. Gegenheimer said it seemed to him it would be politically unfeasible to establish any kind of test that would apply only to transfer students. This would

amount to an announcement that the University of Arizona did not accept anyone else's work in English without our examining the transferring student. We do not follow such a practice in any other subject field, he pointed out. "Do we want to look down our noses at everybody who has not taken our English courses?" he asked.

Commenting on Dr. Patrick's earlier remarks, Dr. Gegenheimer said that although we all do not do our best writing on occasion, the mere fact that one knows he is going later to be challenged by the demands of a proficiency examination should keep one more alert than he otherwise would be. He reminded the Senate that for many years there was a statement in the University catalogue to the effect that students found to be noticeably deficient in English in the performance of their work in any course could be referred to the Department of English for corrective work. To his knowledge, Dr. Gegenheimer said, only one member of the faculty had availed himself of this prerogative, namely, Dr. Edwin Carpenter. The statement carried in the catalogue had not been effective since it had not provided adequate enforcement machinery. Dr. Gegenheimer reminded the Senate that the question of a proficiency examination had originally been raised on the Senate floor because some Senate members had felt that some students, although they had "squeaked through" freshman English, later forgot what they had learned.

Dean Livermore said he had a feeling that students should not be permitted to take the proficiency examination until after they had completed fifty-six units of degree credit. To be allowed to take the test immediately following completion of English 3 would be a mistake. He felt the test should not be given until after the student had completed the course in Humanities. The privilege of taking the examination should be circumscribed, he said, and he would urge that both the completion of fifty-six units of degree credit and completion of the course "Introduction to Humanities" be made prerequisites to the privilege of taking the proficiency examination. Dr. Muir responded that the intent of the committee had been similar to that of Dean Livermore except that no reference had been made to the Humanities prerequisite since this course is not required in the curricula of some colleges of the University. Professor Myers pointed out that a number of students do not enroll in the Humanities course until their junior year.

Dean Roy asked Dean Livermore when the proposed new required course in English for students in the College of Business and Public Administration would be taken. Dean Livermore explained that this was a new course for juniors in the College of Business and Public Administration to be required in addition to the present freshman English requirement and the course would not be taken until the student had completed Humanities.

Dean Roy asked Dr. Muir how the committee had reached its estimate that 800 students (one-third of the junior class of 2400) would fail the proficiency examination and would, therefore, be required to take special training in the English workshop. Dr. Muir replied that he had missed the meeting of the committee when that matter had been discussed but he would assume that the figure was an informed guess. Professor Myers said that he believed Mr. Huggins had arrived at the figure through previous experience he had had with students taking the Purdue English test. Dean Roy said in his judgment the estimate was quite high in consideration of the number of students who, having entered the University as freshmen, would have dropped out of the University before the junior year. Dr. Muir said he felt the figure was an arbitrary one. What was desired here was to provide for any students needing it, the necessary training to insure that the students can survive to graduation. You could simply estimate how many juniors need additional English training. It would be difficult to determine this specific figure, however.

Dean Brewer said it might be worth while for one year to require all juniors to take the proficiency examination and then analyze the results before

considering the expenditure of \$50,000 to establish the new English workshop. Dr. Muir agreed this might be one plan. He pointed out that in the operation of the workshop if, in the case of a given student, a low score on the examination and a poor performance on the theme writing exercise prove not to have been valid measures of the student's ability, the workshop staff certainly would certify the student immediately as not needing further training. Dean Brewer asked if the workshop would provide individual attention similar to tutoring service. "Just how would it be different from a regular freshman English class?" Dr. Muir replied that the workshop would be operated with flexibility. The supervisor would maintain records on each student. When a group of particular students required a particular type of work, they would be taught as a group. There would be considerable individual conference activity especially in the writing and criticism of themes. A large room with a large number of desks and chairs would be needed with files for the records of students. Of course adequate stenographic help would be needed.

Dean Brewer asked if the workshop instructors would be specialists in remedial English work. Dr. Muir replied that so far as he knew that point had not been discussed. The problem of funds for salaries is, of course, a serious one, he said. Graduate assistants, if they could be provided, could provide staff at less cost. He personally questioned whether enough able graduate assistants in English beyond the number now being employed in the teaching of regular English courses could be obtained. Dr. Muir said he was not sure that enough full-time regular English instructors, at a salary of \$5,000, could be obtained at present. It would be difficult to expand the staff of the English Department to take care of this proposed new program, he said.

Dr. Siegel asked if there was information on experience at other institutions on how well students performed in an English proficiency examination taken at the end of the regular freshman course, compared with student performance if the taking of the proficiency examination were delayed until the junior year. Dr. Muir said he knew of no such information from other institutions. He said the fact remains that the University of Arizona grades students in the present English course work 1,2,3,4,5. A student who receives a "2" in English 4 is assumed to have adequate proficiency in English. A student who receives a "4" in English 3 is not nearly so well trained.

Dr. Blitzer said that while he was somewhat sympathetic to the idea of requiring the proficiency examination, he did have doubts whether or not sending students to a workshop would be worthwhile. He said he had in mind the experience of his own youngster who brought home English themes bearing the comments of the instructor who had graded them, such comments being merely "trite" or "vague." These comments seemed not to be helpful to the student so far as showing him how to improve his writing was concerned. Dr. Muir explained that in a workshop situation if the student were required to consult with the supervisor, he would be likely to receive specific explanations of what his deficiencies were. This certainly should be more helpful than an explanation furnished by an instructor when he corrects themes before returning them to his class.

Dr. Lacy said it seemed to him that faculty members would be transferring their responsibility for enforcing the continuing use of good English to the shoulders of the English Department by the adoption of the proposed procedures. This responsibility, he felt, does properly belong in the various departments. He said that a case could be made for requiring students to pass a proficiency examination in mathematics at some point in their university careers for the same reasons that had been presented for requiring the examination in English.

Dr. Kurtz said that there seemed to be two problems, one involving transfer students and one involving University of Arizona students. So far as our own students are concerned, he said, if you award a student a grade of "4" and then tell him he really has not passed English until he has later passed a proficiency examination, you are simply giving him a proficiency grade.

Mr. Shirey referred to paragraph 5 in the committee report. He pointed out that the administration of the withholding of credit would be extremely difficult since the number of units a student has completed governs his class standing for registration as well as for a number of other purposes, including determining the grade average he must attain in order not to be subject to probation or disqualification.

Professor Myers pointed out that another way to approach the question of determining a man's proficiency would be to establish an additional course in English and any student who could not pass it could not qualify for a University degree.

Dr. Harvill said that he had some questions about the financing of the proposal. He said he, of course, was interested in obtaining whatever funds were necessary to improve the proficiency of our students in English. Certainly students should be required to meet a minimum standard. However, he said the University already is subject to some criticism because of the amount of money being spent in administering the program in sub-collegiate English (English X), a program that the other two state institutions no longer maintain. To obtain funds to finance still a further English training program might be difficult indeed. Dr. Harvill explained that if a means could be found within the existing machinery to improve the proficiency of our students in English this certainly would be desirable.

Professor Myers explained that one reason the committee thought the workshop arrangement might be desirable was that not all students would require the same amount of remedial work and where some students might need to spend several months in workshop training, others might attain an adequate level of ability in a few weeks.

Dr. Harvill commented that the sense of the Senate seemed to be that the matter should be carefully studied further before formal action was taken.

APPOINTMENTS TO BOARD OF REGENTS, REFERENCE TO: President Harvill referred to the appointment to the Board of Regents of Mr. Arthur B. Schellenberg of Phoenix, and Mr. Wesley P. Goss of Superior, both of whom had been appointed by Governor Fannin for eight-year terms. He pointed out that Mr. Schellenberg and Mr. Goss would replace Mr. Lynn Laney and Mr. Samuel Morris respectively. The President mentioned the distinguished service both Mr. Morris and Mr. Laney had rendered the state and the University through their long service on the Board of Regents.

The Senate agreed to hold a special meeting on Monday afternoon, January 14, to consider proposed changes for the biennial catalogue for 1963-64, 1964-65.

The meeting adjourned at 5:40 P.M.

Warren W. Shirey, Secretary pro tem