

**Proposed Additions to the UCAP Report on Instruction:  
Learning to Understand and Apply Knowledge**

Knowledge on its own is useless and it can only be useful if it has meaning to an individual (Alfred North Whitehead, 1927).

1. Focus on Learning for Understanding and Application

A major purpose of this university is to help students learn. Therefore, any efforts in improving teaching must also focus on students' learning. Why is it necessary to make such an obvious statement? The reason is that much instruction at this university and many others does not aid students in understanding and applying knowledge. All too often courses focus on content coverage and memorization without guiding students to make sense of ideas, grasp connections among them, and see their application in the real world. Refocusing our attention to students' learning with emphasis on understanding and application of knowledge is an essential first step in improving the effectiveness of our teaching.

2. Change Assessment Procedures

In order to foster students' learning for understanding and application of knowledge, it will be necessary to give careful thought to changing assessment practices. Assessment based on responses to multiple choice, machine-scored tests has several inherent limitations in fostering learning for understanding and application of knowledge. Multiple choice tests work quite well in assessing students' recall of factual information. However, it is very difficult to write items that assess understanding and application of knowledge in an authentic, valid way. Moreover, multiple choice items rarely provide a requirement that students construct logical arguments, or show connections, that relate to understanding of conceptual frameworks or their application.

Assessment also should serve a formative function in guiding students and their instructors along the pathway toward understanding and application of knowledge which are part of course and program goals. There is ample research that shows that students often hold naïve understandings and/or misconceptions on instructional topics, which impede development of valid understanding. When instructors are aware of these impediments through the use of formative assessment as part of instruction, then appropriate instructional actions can be taken to guide students toward the desired instructional ends.

3. Clarify Course and Program Goals

Instructional effectiveness can be improved if instructors are clear about their course and program goals. Instructors need to be clear about both the topic of instruction and what students are to understand and be able to do with the knowledge that is presented. When instructors make their goals more explicit to themselves, they tend to plan and deliver instruction more effectively. When instructors make their goals more explicit to their students, learning is improved because students have a better grasp of expectations and purposes of learning.

4. Require Departmental or Program Capstone Courses that Help Each Student Integrate Knowledge across the Major

Learning can be greatly enhanced by the use of capstone courses that help students integrate subject matter content from different courses and experiences. Many programs and departments already use capstone courses for this purpose. Further development of these courses is recommended to deepen students' understanding and application of subject matter knowledge. Faculty should be encouraged to consider the value of such experiences for students. Department Chairs and Deans should consider providing load time and resources for faculty to develop such courses.

5. Use Student Orientation Program to Foster Vision of College Life as Learning for Understanding and Application of Knowledge

Our Student Orientation Program should advance a vision of college life as that is multidimensional including learning for understanding and application of knowledge. Many

entering students have a limited vision of learning and academic life. For many, college life is viewed as a social event. For most, learning is viewed as memorizing information for reproduction on a test. Conceptual understanding and application of knowledge in real world or academic contexts are remote ideas that have little meaning. These are not grounded in the experiential background of most of our students. Orientation could begin to lay the groundwork and expectations for a new vision about learning that will be developed in courses and other academic experiences of students.

6. Faculty Foster Vision of Programs, Courses and Assessment as Learning for Understanding

Following on the previous recommendation, faculty members, in their courses and through lectures, assignments and assessments can advance the goals of learning for understanding and application of knowledge. It will require some re-thinking of the content, course requirements and presentation in many courses. It will also require revision of assessments. The outcome promises to benefit our students and the society we serve. However it will not come without a struggle as the vision of teaching as presenting content and learning as memorization is very deeply ingrained in our society and in our educational system from elementary school through college. As faculty we must change the deep misunderstanding equates learning, knowing and understanding with popular TV quiz shows and games such as Trivial Pursuit.

7. Provide Professional Development for Faculty, Teaching Assistants, and Residence Assistants in Teaching for Understanding and Application of Knowledge.

Faculty, teaching assistants, and other university staff understand the need for the change in vision about teaching and learning. However, most are uncertain about how to proceed as teaching and learning for understanding and application of knowledge requires new techniques and skills that are not commonplace in universities. also requires re-casting some of the content we teach. Teaching and learning for understanding definitely requires serious modification of assessment procedures. Therefore, it will be essential to provide professional development opportunities for many of the staff who are engaged in delivering instruction and supporting learning on our campus. Creation of intergenerational teams consisting of administrators, senior and junior faculty, graduate assistants and undergraduates to define and implement teaching and learning for understanding and application at the program, departmental, and course level

8. Support and expand the small group seminars that lead to formation of learning communities of students and faculty members about academic life. These will benefit faculty, students and the academic environment of MSU generally, if they support learning for understanding and application.