A Brief Summary of the Best Practices in College Teaching

Intended to Challenge the Professional Development of All Teachers
Compiled by Tom Drummond
North Seattle Community College

Introduction/Overview:

I have collected here, without examples or detailed explanations, a collection of practices that constitute excellence in college teaching. These elements represent the broad range of effective actions teachers take, and requisite conditions that teachers establish, to facilitate learning. I have tried to make this listing intentionally brief and can be scanned to serve more as a reference to the scope of excellent teaching techniques than as a source of enlightenment. For information on items that are unfamiliar, either post an email or refer to the citations.

Recognizing that teaching is both art and science, I advance this list of dimensions of excellence as a starting point for discussions about the performances that we as teachers strive for and may help each other obtain. While the skills of teaching are widely researched and described, they are rarely rewarded, mostly, I think, because we don't share this common language about best practices. Instead of directly addressing learning to teach well, we often erroneously assume new teachers know how to teach because they used to be students.

Becoming an excellent college teacher is a continuing life-long professional challenge, the dimensions of which often go unrecognized. In the general mind, doctors and lawyers are professionals, teachers are not. I believe we could change our semi-professional status if we could agree upon a list of Best Practices such as this one and help each other achieve them. It would help us achieve three goals:

1. College teachers could find consensus on an ever-evolving definition of what constitutes best practices in this amorphous and complex endeavor.
2. Senior faculty could assume a responsibility to develop additions and modifications to the best practices list and actively transmit those practices to new faculty.
3. We all could ensure that our colleagues and institutions apply the set of best practices for the ultimate welfare of the learners. If faculty could ever come to agree upon a performance list such as this one, our institutions could marshal the resources to accelerate its attainment, clarify the objectives for acquiring tenure, and offer salary rewards for an individual's continued reflective review of teaching practice.

The Best Practices chosen here focus on those aspects of classroom teaching competence that are visible to oneself and to others and thus become useful for formative evaluation. When components of excellence can be defined in language that details teaching actions that are confirmable performances, that is, neither minutely technical nor remotely abstract, we could investigate those actions in practice, either collaboratively or individually. For if a component can be self-perceived near the time it occurs, it can be modified or strengthened. That's how professionals, who must engage themselves in reflective practice, get better. In this spirit I offer a list of what I have struggled to learn to do in my 20+ years of college teaching about teaching. Even though classrooms vary in content and goals, I believe this core set of Best Practices does apply to most adult education environments, in both vocational and academic areas, albeit in differing degrees. It is my attempt to specify which of the myriad things and relations in teaching deserve close study. I have endeavored to learn to do each of these things in my college teaching. Have your colleagues? Have you? I have organized them under twelve headings.

1. **Lecture Practices:** effective ways to present new information orally to fit differences in learning styles. At times information must be transmitted orally to a passive listening audience. But research has shown that after 10 to 20 minutes of continuous lecture, assimilation falls off rapidly. If the teacher must rely on the oral presentation of material, these techniques enhance learner retention.
    - *Lecture/Rhetorical Questioning:* Talk in 7 to 10 minute segments, pause, ask pre-planned rhetorical questions; learners record their answers in their notes.
    - *Surveys with Exemplifier:* Pause, ask directly for a show of hands: 'Raise your hand if you agree... disagree... etc.' or 'Raise your hand if you have encountered an example of that.' Ask for a volunteer to speak for the response group whose hands are raised.
    - *Turn To Your Partner And Pause*, ask each to turn to the person next to them and share examples of the point just made or complete a given phrase or sentence.
      Halting Time (4): Present complex material or directions and then stop so learners have time to think or carry out directions. Visually check to see whether the class appears to understand. If they do, continue.
    - *Explication de Texte:* By reading and analyzing passages from the text aloud, learners can see higher-order thinking skills and that 'criticism' is a participatory intellectual exercise.
    - *Guided Lecture:* Students listen to 15-20 minutes of lecture without taking notes. At the end, they spend five minutes recording all they can recall. The next step involves learners in small discussion groups reconstructing the lecture conceptually with supporting data, preparing complete lecture notes, using the instructor to resolve questions that arise.
    - *Immediate Mastery Quiz:* When a regular immediate mastery test is included in the last few minutes of the period, learners retain almost twice as much material, both factual and conceptual.
    - *Story Telling:* Stories, metaphor, and myth catch people deeply within, so no longer are listeners functioning as tape recorders subject to the above information overload limits. What human beings have in common is revealed in myth; stories allow the listener to seek an experience of being alive in them and find clues to answers within themselves. The 10 to 20 minute limit no longer applies.

2. **Group Discussion Triggers:** effective ways to present a common experience to engage a group in a discussion. Awareness of complexity and enhanced understanding result when learners discuss the meaning of events with each other. But to be successful, groups need a common experience to draw them into participation, establish a personal connection with the content, and provide a shared referent from which to exemplify their ideas. There are many kinds of triggers, but all are designed to precede group discussion. Participants, therefore, become connected with both a concrete example of the content and each other.
    - *Short Readings:* Brief assignments to read in class (especially effective are contrasting viewpoints).
    - *First Person Experience:* Works written in a personal voice, autobiographies, biographies, oral histories, diaries, and memoirs, when used as counterpoints to abstract texts, bridge the gap between their own lives and the content under study. Students more readily take part in discussions when they can personally relate to the material.
    - *Individual Task with Review:* Problems to solve that apply the concepts presented. Students complete a worksheet or other task and compare the results with their neighbors before the whole class discusses the answers.
    - *Self-assessment Questionnaires:* Short surveys of learner attitudes and values.
    - *Total Group Response:* Human Graph: Learners literally take a stand on an imaginary graph or continuum. The first few volunteers justify their choice of position, and then the remainder of the class joins them without comment.
    - *Case Studies:* A case study is the factual account of human experience centered in a problem or

issue faced by a person, group or organization. It can raise a variety of complex issues and stimulate discussions of alternative viewpoints. Typically, case studies are written objectively and include a brief overview of the situation, its context, and the major decisions that must be made. Rather than expecting learners to have a right answer, learners develop their ability to articulate their thoughts, frame problems, generate solutions, and evolve principles that may apply to other situations.

- *Visual Studies:* Seeing first hand creates a common ground. Photographic essays, video programs, and personally made video recordings are examples of ways to bring into the classroom direct depictions of the concepts being discussed.
- *Role Play:* Learners explore human relations problems by enacting problem situations and then discussing the enactments. Together learners can explore feelings, attitudes, values, and problem solving strategies. It attempts to help individuals find personal meaning within their social world and resolve personal dilemmas with the assistance of the social group.

3. **Thoughtful Questions:** effective ways to formulate questions that foster engagement and confidence. What does it mean to think? Some people would like to be able to think better, or, more usually, want other people's thinking to improve. But research shows that everyone is capable of thinking. The problem is to stop teachers from precluding the chance for it to happen. The right kind of questions opens the door to student's participation. The right questions focus the learner's attention upon applying their current understanding to the content or problem. The right questions are discoverable, that is, have follow-up avenues that a teacher can follow to lead a student to find an adequate answer using resources available (Socratic). Each success on one of these problems is a lesson to the learner that he or she knows how to think. (And each failure, a lesson in the opposite.) Note that none of these tutorial questions asks for recall of facts or information (didactic questions).
    - *Discoverable Tutorial Questions:* These eleven question formulations meet the criteria of being both perceptually based and discoverable. The responses to these questions lie shared experience, so all learners, who may not at first answer acceptably, can be led back to available evidence to find adequate answers.
        - Description: What did you see? What happened? What is the difference between....?
        - Reflection: What was interesting? What was surprising?
        - Analogy: What else does it remind you of? What else does it look like?
        - Common Purpose: What is the purpose of.....? What is the usual function of.....?
        - Procedures: How does one normally do.....? How was this done? What is the normal (non-creative) next step?
        - Possibilities: What else could .....? How could we.....? If we didn't have, or couldn't use, ...,what could.....?
        - Prediction: What will happen next? What will you see? What will be the effect?
        - Justification: How can you tell? What evidence led you to.....?
        - Theorizing: Why is it that way? What is the reason for it?
        - Generalization: What is the same about ..... and .....? What could you generalize from these events? What principle is operating?
        - Definition: What does ..... mean? Define the word .....
    - *Wait Time:* After posing one of these tutorials, learners need at least 5 seconds in order to process it and begin the formulation of an answer.

4. **Reflective Responses to Learner Contributions:** effective ways to establish mutually beneficial communication by reflective listening. When a learner contributes to the discussion or asks a question,

taking the initiative to learn, what is the best way to respond? To facilitate self-discovery and self-appropriated learning, effective teachers respond without changing the topic to share their own information or perspective from a posture of mutual respect, without domination. These three reflective responses, when used in sequence, constitute a responding convention, a standard way to develop habits of talking that release the potentialities of the learner and promote mutually significant sharing by both the teacher and the learner. Used in this order they sequence the amount of teacher control, starting with the lightest level.

- *Paraphrase:* While remaining alert to both the intellectual and emotional aspects of learner contributions, rephrase the underlying message the learner is sending in one's own words, not the learner's words. This especially applies when the learner says something new, something more than the commonplace. Avoid 'parroting' the learnerÕs words or routinely beginning, 'I hear you saying.....' Both are irritating and condescending. Example: Student says, 'I am confused. I still don't know what you want from me.' Paraphrase: 'You see no way to start, huh?'
- *Parallel Personal Comment:* Without changing the topic or bending it in the slightest, talk about one's own current feelings or a past experience that matches exactly what the learner has said. The intention is to convey parallel aspects of yourself that validate the other's perspective or confirm your understanding of what the other is talking about. Usually statements start with 'I....' 'I was confused about that myself when I first read it.' 'I want to hear more about that.'
- *Leading Query on Learner's Topic:* Ask for clarification of aspects of the comment. Dig deeper into the student without bending or shifting it away to one's own agenda. Such responses include, 'Where does it break down?' 'Could you elaborate or give an example?' and references to others, 'Who can build on what she is saying?'

5. **Rewarding Learner Participation:** effective ways to support learner actions with well-timed, encouraging positives. All teaching moves learners into areas of risk and incompetence. So often the job of a teacher is to find nascent deftness when it is easier to notice the maladroit. The methods chosen to administer those positives, however, send messages about what is important to achieve. Are learners supposed to work toward external approval..... or their own intrinsic betterment? Are grades the true reward..... or are learners supposed to learn to enjoy the quest itself? Teachers answer these questions through the manner in which they support improvement. The best rewards are not contrived, foster personal reflection and independence, and actually work, that is, learners maintain new abilities or do better. Effective teachers support emerging initiative, cooperation and perseverance with well-timed positives in these forms:
   - *Avoid Praise:* Praise, the expression of judgment, is less successful in rewarding learner performance than the techniques listed below. It tends to foster approval seeking rather than independence.
     - 'I like how complete this is.' (Implies pleasing me is important)
     - 'Good question.' (Implies some other learner's questions are not good)
     - 'That's a great welding job.' (Implies a learner should seek the teacher's approval versus 'a correct weld,' which is feedback, not praise)
   - *Description:* Describe objectively those aspects of learner performance needing support. To avoid making a personal evaluation, state a culturally accepted conclusion a group of dispassionate observers would concede:
     - 'You have addressed each item.'
     - 'That question is probably shared by many here today.'
     - 'That weld is just like the book.'
   - *Narration:* Detail the action a learner takes immediately as it occurs. Narrations usually begin with 'You .....'
     - 'You're raising an issue that needs discussion.'

- 'You're obviously trying to fit the pieces together.'
- 'You remembered the first step.'

- *Self-Talk:* Talk about your own thoughts or prior personal experience.
  - 'I have wondered that, too.'
  - 'Questions like that have always intrigued me.'
  - 'It took me four months to achieve a weld like that one.'
- *Nonverbal:* Communicate your recognition through body language and facial expressions.
  - Smile broadly.
  - Thumbs up.
  - Move to convey excitement and enjoyment.
- *Personal Feelings:* Describe your emotional reactions as a participant learner, a member of the group, expressing deep, genuine, personal feeling.
  - 'What a joy for me to listen to this discussion!'
  - 'I am amazed by what you have done.'
  - 'I wish I could wave a magic wand to make everyone do that well.'
- *Intrinsically-Phrased Reward Statements:* Positive expressions about emerging learner performance and achievement highlight internal feelings of self-worth and self-satisfaction. (Praise is an extrinsic judgment.)
  - Enjoyment-'That was fun!' 'What a pleasure it must have been to do.'
  - Competence-'You did it!' 'An accomplishment.'
  - Cleverness-'That was tricky.' 'Intelligent.' 'Unique.'
  - Growth -'You've taken a step forward.' 'What changes have occurred?'

6. **Active Learning Strategies:** effective ways to foster active, constructive participation
   All research on people, and on their brains, shows we learn by doing. Learning is a Constructing process. Here are the choices available in the literature on teaching. The problem lies selecting the type of activity to match the purpose the teacher has in mind.
   - *Construction Spiral:* Pose problem questions in a three-step learning cycle-(1) each individual writes down their thoughts, (2) all share in a small groups of three, and (3) compile the answer on the board in front of the whole class avoiding any evaluation or changes to what the class offers. Let the group correct itself. If weaknesses appear or more sophisticated understanding is needed, pose a second problem in the same manner. First questions usually begin at a reflex level to engage the students. Used to construct understandings and concepts.
   - *Round:* Each person has a 2 or 3 minute opportunity to express his or her point of view on a given topic, or passes, while others listen. Used to elicit a range of viewpoints and build a sense of safe participation.
   - *Brainstorm:* Solicit, and compile for all to see, alternative possibilities without judgments. Used to generate ideas, encourage creativity, involve the whole group, and demonstrate that people working together can create more than the individual alone.
   - *Writing in Class:* Focus questions, in-class journals, lecture or reading summaries and in-class essays can improve the learning of the subject matter and, with clear objectives and feedback, improve writing skills, too. See also Classroom Assessment Techniques.
   - *Concept Models:* Given handouts that ask a series of leading questions, students work in small groups to figure out how something works or build a conceptual model. They make their own diagrams and record their own observations. Workshop Biology Project, for example.
   - *Simulations and Games:* By creating circumstances that are momentarily real, learners can practice

coping with stressful, unfamiliar or complex situations. Simulations and games, with specific guiding principles, rules, and structured relationships, can last several hours or even days.

- *Peer Teaching:* By explaining conceptual relationships to others, tutors define their own understanding.
- *Question Pairs*-learners prepare for class by reading an assignment and generating questions focused on the major points or issues raised. At the next class meeting pairs are randomly assigned. Partners alternately ask questions of each other and provide corrective feedback as necessary.
- *Learning Cells:* Each learner reads different selections and then teaches the essence of the material to his or her randomly assigned partner.
- *Examinations* (18): Scheduling an exam stimulates learners to study. Completion, true-false, and multiple choice force memorization of facts and statements. Essay examinations force an overall general concept of the material. It is a rather obvious way to involve learners in doing something and getting them to think about what they are doing.

7. **Cooperative Group Assignments:** ways to assign formal cooperative tasks. One form of active learning deserves special attention because it overtly places the learners as workers, demands that each process beliefs and construct expression with co-workers, and forces the achievement of a group goal. That interdependence affects three broad and interrelated outcomes: effort exerted to achieve, quality of relationships among participants, and psycho-social adjustment. Ninety years of research and 600 studies show cooperative learning tasks that have clear goals and performance measures result in more high-level reasoning, more frequent generation of new ideas and solutions, and greater transfer of what is learned within one situation to another. Cooperative learning groups embrace five key elements:
   - positive interdependence
   - individual accountability
   - group processing
   - social skills
   - face-to-face interaction

   Typically three to five learners work in heterogeneous groups. All cooperative designs have specific objectives, performance criteria and reward systems. In order for them to be successful, teachers must expect to spend time building cooperative skills and enforcing group self-assessment of them.
   - *Team Member Teaching:* Knowledge Outcomes: Like a jigsaw puzzle, each member of the team is assigned a portion of the whole. Ultimately responsible for knowing all, each group member teaches the others about his/her piece. Learners need explicit preparation in how to effectively communicate information to others.
   - *Team Effectiveness Design:* Cooperative Skills and Knowledge Outcomes: Whatever material is to be learned is presented to teams in the form of a manuscript or text followed by a multiple choice test requiring conclusions or inferences, not locating information in the readings. After completing the test, learners join teams of five to discuss the questions and arrive at consensus as to the most valid answer to each question, without consulting the reading. Then a key is distributed and learners score individual answers as well as the team's.
   - *Student Teams-Achievement Divisions:* Knowledge Outcomes: Learners study the material in heterogeneous groups as above, but instead of taking a test, learners play academic games to show their individual mastery of the subject matter. At a weekly tournament, learners are matched with comparably performing learners from other teams. Assignments to the tournament tables change weekly according to a system that maintains the equality of the competition.
   - *Performance Judging Design:* Skill Outcomes: Here learners first study how to develop and apply

appropriate criteria for judging performance on a skill, such as writing an essay, giving a speech, or constructing a tool chest. They test their cooperatively developed criteria on a product produced anonymously by someone else. Then the learners are assigned the task of creating their own product for other members of the team to review.

- *Clarifying Attitudes Design:* Attitude Outcomes: The teacher prepares an attitude questionnaire, usually a multiple choice inventory. Each learner selects from the range of alternatives those that most accurately represent his or her views. Next, teams meet to reach agreement on which of the alternatives represents the soundest action in a particular circumstance. They examine the differences between previous attitudes and discuss together how each may want to be consistent with the agreed-on description of the soundest attitude.
- *Poster Sessions:* Groups of three to five students each complete a poster or stand-alone display that conveys the group's work in (a) identifying and clarifying a controversial issue, (b) locating appropriate information and resources concerning their issue, and (c) critically evaluating the evidence they find. The posters are displayed in a public area of the college, so that not only can the students in the course learn from each others' work, students from other classes and other faculty can see it, too.

8. **Goals to Grades Connections:** establish a logical agreement of goals and objectives, flowing to measures of performance, criteria, and grading. A formidable obstacle every teacher faces is how to analyze the content of a course, predetermine the outcomes desired, and communicate the necessary performance expectations to the learners in a detailed, congruous syllabus that logically connects goals to the measures for grades. That is, the objectives follow from the goals, the requirements are demonstrations of performance of those objectives, and the evaluation methods reflect attainment of the objectives to measurable criteria. This is rarely simple. At times teachers need their own cooperative learning groups in order to solve the myriad problems in coordinating course goals, uncovering the traditional discontinuities between goals and grading, and achieving assessment clarity. These are the basic criteria for the task:
   - *Goals Stated as Outcomes, Not Processes* (25): Goals for the course are agreed to by the other faculty in the instructional unit to achieve outcomes desired from an integrated program of study. Process statements, such as 'students will participate in....' or 'students will undertake...' are avoided. Outcomes say that, at the end, students will be capable of doing 'x.'
   - *Objectives are Performances* (26): Performances are actual behaviors or classes of behaviors that indicate the presence of the alleged ability that generally are agreed upon by the faculty of the instructional unit. These are the abilities that constitute each goal. Each is formulated using active, measurable verbs from Bloom's Taxonomy (knowledge, comprehension, application, analysis, synthesis, evaluation) and placed at the level of the taxonomy that reflects the amount of time allocated.
   - *Requirements are Detailed in Writing:* All desired learner outputs, including the criteria for success and relative weights, are clearly specified to learners in advance.
   - *Grades are Referenced to Criteria* (27): Learner achievement is measured with respect to a specified standard of quality, on a continuum from zero to perfection, not a percentage comparison to other learner's achievements.

9. **Modeling:** represent openness, continuous learning, and trust. As a paragon of personal development, a teacher faces interpersonal challenges in every action he or she takes to engage, facilitate, catalyze, and give life to the opportunity to learn. Great teachers teach by example. It is the authentic life that instructs. These attitudinal qualities of being connected to learning in delight, illumination, and even rapture have been

described in many ways, but none clearer perhaps than by Carl Rogers. (28)

- Openness to Experience in the Here and Now: Being truthful, personally in touch with one's own feelings and current experience.
- Incorporation into Oneself of the Process of Change: Openness to learning opportunities, belief in oneself as an effective learner, and modeling learning, and its accompanying mistakes, visibly to learners.
- Unconditional Positive Regard for Others: Deep trust in the underlying goodness of each person, despite how they appear, and the explicitly expressed belief in each learner's ability to learn and grow.

10. **Double Loop Feedback:** facilitating mutual awareness of how one learns to learn

The times when the teacher should correct performance are often the most difficult as well as the most significant. It is easier to identify errors and deficiencies in the actions of others than to communicate them in a way that continues their willing engagement in correcting them. Because people rarely produce actions that do not make sense to them (they act intentionally), they naturally tend to become defensive, confused, or ashamed when criticized or given advice. Yet individualized correction is often the key to improved performance. An effective feedback procedure should enable reflection and self-correction without fostering hostility or defensiveness. Double loop feedback (29) is a method of providing correctives in a way that maintains the learner's continued engagement in the process of acquiring competence and self-confidence. It sequences the statements teacher's make by starting with least inferential and examining both the learner's performance and the evaluator's assumptions at each stage. In double loop learning an open-ended cycle is created where the teacher and the learner cooperatively examine both the learner's performance and the underlying perspectives the teacher brings to regard that performance. Optimal correction is possible when both parties responsibly work for error detection at each level of inference before proceeding to the next. In other words, get the facts right first; then work to agree upon what 'most people' would agree those facts to mean. As opposed to the natural tendency to think of judgments and opinions first, this procedure holds them in abeyance.

- ***Step 1. Objective Description of Physical Reality:*** **State the facts as you see them:**
  - 'There are 14 misspelled words here.'
  - 'Since I assigned the class the task, you have asked me four questions.'
  - 'You pointed your finger at the person you addressed.'

  Get agreement before proceeding any further, for correcting errors may not be possible unless both parties agree to a common set of facts.

- ***Step 2. Culturally Accepted Meaning: Describe*** **what a jury or group of informed spectators observing the event would conclude and check that generalization:**
  - 'It hasn't been spell-checked. That true?'
  - 'You are using me as the first resource not the handouts or your friends, huh?'
  - 'Wouldn't most people conclude that your non-verbal gesture implies an adversarial rather than cooperative stance?'

  Again, get agreement. Usually the learner will either justify or correct when the behavior is recognized as holding an accepted meaning. This level of inference is the same used by journalists and anthropologists to describe events and actions as viewed from a culturally specific viewpoint. That viewpoint, too, is also suspect and, to be fair, should be examined simultaneously----thus the term

double loop.

- ***Step 3. Judgments and Personal Reality:*** After the above have been discussed and agreed upon, the judgments of both parties can be stated without inducing animosity or defensiveness. People naturally attach meaning to events in accord with their own life experiences. Nothing is wrong with this, but these opinions are unreliable. By keeping them out of the feedback discussion, both parties can attach meaning to events with greater reliability, often without judgments ever entering into the discussion. At times it may be wise to check first with the recipient before moving into this stage: 'Would you like my opinion?'
  - 'That many mistakes imply you don't care if it is ever read.'
  - 'I would like to see you find more answers independently.'
  - 'Your message is more likely to be heard if you speak about yourself instead of attacking others.'

11. **Climate Setting:** regulate the physical and mental climate. A large portion of teaching effectiveness involves setting the stage. The task of getting everyone comfortable enough to learn comes with the territory. Solve comfort issues first and the learning path is smoother. Research shows that successful teachers spend 10% of classroom time optimizing the arrangement of the physical setting as well as the psychological setting-a climate of collaboration, support, openness, pleasure, and humanity:
    - *Meet the Learner's Needs for Physical Comfort and Accessibility:* Insure a comfortable environment where basic needs for all learners are met: lighting, heat, seating, quiet, etc.
    - *Define Negotiable and Non-negotiable Areas:* Clearly specify those aspects of class performance that are the instructor's responsibility, such as essential procedures, external constraints, performance requirements (such as attendance, assignments), and summative evaluation - and those parts of the course that have mutual and negotiable responsibility (such as seating arrangements, breaks, groupings).
    - *Clarify the Instructor's Role:* Impart the explicit assumption that the teacher is here to facilitate learning by providing resources, tasks, and support. The teacher is not the fount of all knowledge. The teacher trusts the learners to want to learn and therefore will take responsibility for their own learning. Students answer the question, "In order to make this learning opportunity the best for me, what would I like to see the instructor do?" The task is to achieve consensus on what role the instructor will take.
    - *Clarify the Learner's Role as Members of a Learning Community:* Clarify expectations the learners have for the instructor and expectations they have for establishing constructive relationships with each other. Students answer the question, "In order to make this learning opportunity best for me, what would I like to see my classmates do?" The class arrives at consensus on what obligations and responsibilities are expected by others.

12. **Fostering Learner Self-Responsibility:** allow learners to plan and evaluate much of their learning. Effective teachers offer ways for the learners to take an active role, for at least a portion of the course, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate strategies, and evaluating the outcomes. (31)
    - *Involve Learners in Mutual Planning:* People tend to feel committed to any decision in proportion to the extent to which they have participated in making it.
    - *Involve Learners in Diagnosing Their Own Needs for Learning:* A problem to solve is meshing the needs the learners are aware of (felt needs) with the needs their organizations, vocation, or society

has for them (ascribed needs). One method is to present a model of competencies, which reflects both personal and organizational needs, so that the learners can identify the gaps between their current performance and where the model specifies they need to be. Another method is to compile the totality of learner understandings (and misunderstandings) about the current topic, have them represent their experience in some tangible form, and then develop questions that come to mind. These questions then can guide further inquiry.

- *Involve Learners in Formulating Their Learning Objectives:* Promote attainment of at least a portion of the course requirements through flexible contracts by which the learner:
    1. translates a diagnosed learning need into a learning objective,
    2. identifies, with help, the most effective resources and strategies for accomplishing each objective,
    3. specifies the evidence that will indicate accomplishment, and
    4. specifies how this evidence will be judged or evaluated.
- *Involve Learners in Evaluating Their Learning:* Teachers and learners together work to find out what learning occurs within the unique context every course presents. Classroom Assessment Techniques gather information to guide the adjustments both teachers and learners need to make to improve learning. (32) I2n the end, if people are to become independent, lifelong learners, they must learn to take full responsibility for their learning.

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tdrummon@sccd.ctc.edu

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