Available online www.jocpr.com

Journal of Chemical and Pharmaceutical Research, 2013, 5(12):668-674

Research Article

ISSN : 0975-7384
CODEN(USA) : JCPRC5

Study on the Instructional Communication Process to Multimedia Assisted College English Teaching

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ABSTRACT

Instructional communication is a process in which the teacher selects and arranges what the students are to learn the content, decides how best to help them learn the instructional strategies, and determines how success in learning will be determined and how the students' progress will be communicated by and to them based on the theory of Constructivism. This paper elaborates on some aspects of the instructional communication process and suggests ways in which teachers can establish and nurture both effective and affective communication relationships that maximize their students' opportunity to achieve the optimum of success under the multi-media environment. According to the study result, the paper made a relevant adaptive conclusion.

Key words: Instructional communication, instructional Strategy, learning tactic, multi-media technology

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INTRODUCTION

Instructional communication is a process in which the teacher selects and arranges what the students are to learn (the content), decides how best to help them learn (the instructional strategy), and determines how success in learning will be determined and how the students' progress will be communicated by and to them. There is a dynamic interplay among the various elements of the process -- what works for a teacher, with one group of students. This process takes place within a given context, or environment. The teacher must also take into account the influence of external factors in making process-related choices.

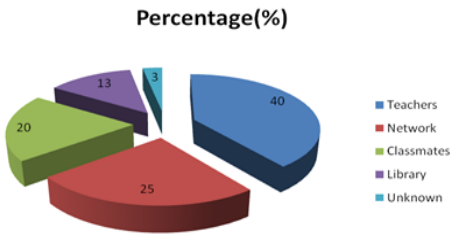

Fig.1: Learning Environment / Context

1.1. The Teacher

The teacher directs the instructional communication process. Her or his affective orientation toward the content, the instructional strategies, the students, and simply being a teacher influences the effectiveness of the process -- and the effectiveness of the process, in turn, affects the teacher's affective orientation. Teachers will probably not be effective if they do not have sufficient knowledge of the subject areas in which they teach or of the appropriate methods for teaching those subjects; however, they also need to like what they are doing. Their ability to communicate effectively contributes to the frequency with which they see those light bulbs come on in students'

eyes, which, in turn, contributes to job satisfaction. Teachers -- and the content, strategy, and evaluation/feedback decisions they make are a primary influence on students' affect toward a subject.

1.2. The Content

1956, Bloom, Engelhart, Furst, Hill, and Krathwohl published their first volume examining how to assess learning in the college classroom with their book Taxonomy of Educational Objectives: The Classification of Educational Goals, Handbook I: Cognitive Domain. In this book, Bloom et al. discussed that there were three domains of learning important for educational researchers to understand: cognitive, affective, and psychomotor. In any content area, what the teacher teaches should be selected with attention to both cognitive and affective learning outcomes. Depending on the subject, there may also be psychomotor learning goals.

Cognitive-Learning. According to Bloom et al (1956), the cognitive domain includes those objectives which deal with the recall or recognition of knowledge and the development of intellectual abilities and skills (p. 7). The researchers noted that most of the research in educational psychology, curriculum development, and workplace learning has centered this domain of learning. For this reason, the focus of the first handbook published by the Bloom research team focused on the cognitive domain completely. Bloom et al. believed that cognitive learning could be organized into six major categories existing on a continuation from the lowest level of learning (knowledge) to the highest level of learning (evaluation).

Table 1: Cognitive learning levels

Highest Level of Learning

1 Evaluation	Appraise, assess, or judge the value of information based on knowledge and not opinion.
2 Synthesis	Assembling a new whole from parts of existing knowledge.
3 Analysis	Analyzing, comparing, questioning, or disassembling knowledge.
4 Application	Using, demonstrating, or applying what has been previously learned in a new situation.
5 Comprehension	Understanding and explaining a sent message using one's own words.
6 Knowledge	Remember/recalling/defining terms, facts, etc…

Lowest Level of Learning

These are listed in order from the most basic to the more difficult. Knowledge and comprehension provide an essential foundation for "knowing" a subject, while the higher level abilities contribute to owning the subject. In the preceding example, Spike was hooked on learning the piano because he was taught to apply, analyze, and synthesize what he was learning each week.

Affective-Learning. The second handbook examining the taxonomy of educational objectives was written by Krathwohl, Bloom, and Basia (1964) to examine the affective domain of learning. Krathwohl et al. defined the affective domain of learning as one "objectives which emphasize a feeling tone, an emotion, or a degree of acceptance or rejection. Overall, affective learning is learning about "interests, attitudes, appreciations, values, emotional sets or biases" (p. 7). Just like cognitive learning, Krathwohl et al. created taxonomy of educational objectives for the affective domain.

Table 2: Affective learning levels

Highest Level of Learning

1 Receiving	Willing to attend to certain phenomena or stimuli.
2 Responding	Willing to seek out and gain satisfaction from a certain phenomena or stimuli
3 Valuing	Belief that a phenomena, or behavior has worth.
4 Organization	Placing new values into systems and ranking them in order of importance.
5 Characterization	The individual acts consistently with the values he or she has internalized

Lowest Level of Learning

The affective learning levels vary in terms of degree of internalization; for example, from the point at which a student is aware that poetry exists, to being willing to read poetry, to reading poetry and liking it, to making an effort to seek out poetry, and, finally, to adopting a poetic outlook on life. Spike's piano teacher, knowing of his previous experience with learning to play, strategically linked Spike's practice exercises to the jazz sound he already liked; and thus, addressed affective as well as cognitive learning goals, the achievement of which were interdependent.

Psychomotor-Learning. The final domain of learning originally discussed by Bloom et al. (1956) was psychomotor learning, or the manipulative or motor-skill aspect of learning. Krathwohl et al. (1964) defined psychomotor learning as learning that emphasizes "some muscular or motor skill, some manipulation of material objects, or some act which requires neuromuscular co-ordination". Specifically, psychomotor or behavioral learning focuses on an

individual's ability to enact the physical parts of specific behaviors. While both Bloom et al. (1956) and Krathwohl et al. (1964) list psychomotor learning as a domain of learning, they do not focus much attention on psychomotor learning because as Bloom et al. While Bloom et al. (1956) and Krathwohl et al. (1964) did not find much use in the psychomotor domain of learning, individuals in workplace learning have spent a great deal of time investigating the instructional process of skills-based learning. Rothwell and Kazanas (1994) developed taxonomy of learning objectives in the psychomotor domain of learning.

Table3: Psychomotor learning levels

Highest Level of Learning

1 Complex Over Response	Performance of a physical task automatically and habitually with competence.
2 Mechanism	Performance of a physical task without the assistance of another person or a job aid.
3 Guided Response	Performance of a physical task with some form of assistance (either a person or a job aid)
4 Set	Preparing for the performance of a specific physical task
5 Perception	Observing the specific behaviors involved with a physical task.

Lowest Level of Learning

Because of the repetition and rehearsal necessary in learning psychomotor skills, attention to affective goals is important. Grady learned the technique of playing the piano, but his being forced to practice without variation contributed to his dislike of the skill he acquired and diminished his likelihood of using it any more than absolutely necessary.

Workplace Learning Note. Workplace learning and performance professionals regularly evaluate and discuss the three domains of learning under different terms. As noted by Biech (2005) and Biech, Piskurich, and Hodell (2006), the three domains as described by Bloom et al. (1956) and Krathwohl et al. (1964) are a little technical and academic sounding. For this reason, workplace learning and performance professionals use the following alternative names for the three domains: cognitive (knowledge), affect (attitude), and psychomotor (skill). Ultimately, the word used to describe the domain of learning isn't important at all. What is important is realizing that the three domains of learning must be addressed when examining the content within one's classroom.

THE INSTRUCTIONAL STRATEGY

Instructional strategies are the ways in which teachers design their communication to teach the objectives to students. Some teachers, particularly those at the college level, seem to be totally unaware that there is any instructional strategy other than lecturing, and some do not do that well. Students learn in different ways (this is discussed in Chapter Six), and they are likely to have the greatest affect for things that are taught in the way they learn best. Varying instructional strategies is necessary to accomplish different levels of learning. Most students enjoy learning more when there are regular changes in class routine; younger children find it impossible to pay attention without frequent shifts in what they are doing.

2.1. The Student

Students come into learning situations with different affective orientations. Spike's bad experience with his first piano teacher created a specific set of circumstances with which his second teacher had to deal. Some students will lack confidence in dealing with any subject, some in particular subjects, and some not at all. Some students will be better equipped than others to make sense of course concepts. Some will have more fragile egos than others. Teachers teach individual students, not classes of students. Thus, the collective affective atmosphere in a classroom will be determined by each individual student's response.

2.2. The Feedback/Evaluation

Feedback is the response of teachers and students to messages from each other. It serves three primary functions: (1)assisting teachers in determining whether the instructional process choices they have made are appropriate; (2) assisting students in determining whether or not their interpretation of what they think the teacher has communicated is correct; and (3) increasing the likelihood of understanding. Feedback from students to teachers lets teachers know they are accomplishing their goals, and lets them correct problems before affect is diminished. Feedback from teachers to students accomplishes the same goals. When evaluating students' performance (on some sort of graduated scale, such as grades) is necessary, teachers will want to be attentive to whether their students' interpretation of what is meant by an individual grade matches the intended message. Roxanne's piano teacher told her that she was a very good student, meaning that she was prompt, pleasant, and enthusiastic. Roxanne interpreted her teacher's praise as an evaluation of her ability and skill. Thus, she eagerly sought an opportunity to perform in the city wide recital. Affect will be severely compromised if students are placed in a situation where they are evaluated on their ability to perform behaviors we have not effectively taught them, as was the case in Roxanne's recital.

2.3. The Learning Environment/Instructional Context

The instructional context refers to the physical and/or psychological circumstances in which learning takes place. There have been numerous studies which have demonstrated the effect of physical surroundings on people's affective responses to what happens within those surroundings. For example, diners eating the same meal, prepared at an independent location, will evaluate the food as tastier when it is served in a fine restaurant than when it is served in a school cafeteria. Similarly, the degree to which students feel comfortable and in control of their destiny contributes to their affective response to instruction.

KIBLER'S MODEL OF INSTRUCTION

Teachers with a communication-oriented view of instruction draw on the principles of learning that have been proposed as a result of studies in behavioral and educational psychology. Learning is seen as behavioral change; as such, it can be fostered by teacher communication which reinforces desired behaviors, punishes undesirable behaviors, models, coaches (actively intervening during a student's performance of a behavior to give suggestions for modification) Communication-oriented instruction is based on teachers' developing a systematic process for assessing students' entry level cognitive, affective, and behavioral base lines, structuring activities that build on that assessment, and evaluating learning outcomes during and after instruction if learning is not taking place communication oriented teachers' look for ways to change the communication process.

Table4: Kibler's Model of Instruction

Feedback Loop	Instructional Objectives
	Pre-assessment
	Instructional Procedures
	Evaluation

Robert Kibler, one of the first specialists in instructional communication, and his associates proposed a communication-oriented model of instruction based on four elements: Instructional Objectives, Pre-assessment, Instructional Procedures, and Evaluation. In following this model, teachers engage in an essentially rhetorical process.

3.1. Instructional Objectives

They begin by carefully and clearly specifying their goals as instructional objectives, a task which is discussed elsewhere in this book. In doing so, they consider what students are able to do before the unit, what they should be able to do in subsequent units and at the end of their education, their own capabilities as teachers, and available instructional resources. They examine these objectives to make sure that they are of the level and type actually desired -- for example, by classifying the desired cognitive outcomes as relating to knowledge, comprehension, application, analysis, synthesis, or evaluation -- and think carefully about the behaviors that will indicate that students have achieved the objective.

3.2. Pre-assessment

Having determined these instructional goals, teachers move on to assessing the students' existing knowledge and behavioral capabilities and determining appropriate instructional activities. At this stage in the process, objectives may be modified to omit instruction in areas in which students are already proficient or to add prerequisite instruction to develop skills students will need to enable them to fully participate in the planned instructional activities.

3.3. Instructional Procedures

The instructional procedures are then implemented through selecting available materials, developing new materials, and developing a sequential plan that appears to be the most efficient means of achieving the desired objectives. Feedback is provided to let students know how they are doing throughout the instruction.

3.4. Evaluation

At the end of the unit, the students' success in achieving the stated goals is evaluated. If all, or almost all, of the students have not been successful in mastering the objectives possible, reasons are considered: Were the objectives unrealistic? Were additional skills training necessary prior to beginning the unit? Did the unsuccessful students need more motivation to master the material? Would different instructional procedures be more effective? Did the students need more time? Was the measurement of success appropriate? Based on these considerations, appropriate modifications in the objectives, pre-assessment procedures, instruction, or post instruction evaluation are made.

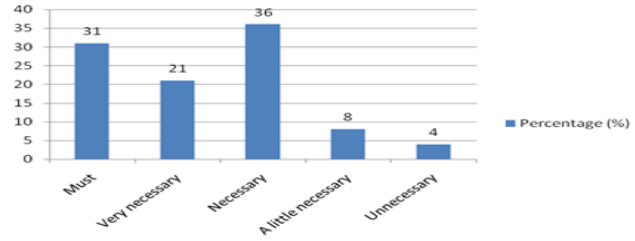

Fig.2: The necessity of evaluating the students' success in achieving the goals

3.5. Feedback Loop

This model of the instructional process views instruction much as a communication campaign. The goal is set, the audience is analyzed, the strategies are determined, the strategies are implemented, the results are assessed, if strategies need to be revised they are revised, the revised strategies are implemented, and so on. Instruction, then, is seen as applied instance of normal effective communication systems (McCroskey, 1998). A communication-oriented approach to instruction assumes that teachers are able to logically and dispassionately analyze their instructional goals and that they are willing to take considerable responsibility for the outcomes of instruction. At the heart of this model is the perspective that, when objectives are not accomplished, it is the instruction (the set of communication strategies), rather than the students or the teacher that failed. At its extreme, this approach can be criticized for being overly mechanistic because it requires that all intended learning outcomes must be reduced to observable behaviors, and for ignoring the personalities at each end of the instructional communication process. It is, however, oriented toward accountability and challenges teachers to examine their responsibility in structuring their communication to maximize learning outcomes.

THE ADDIE MODEL

In 1975, a group of researchers at Florida State University developed the ADDIE (Analysis, Design, Development, Implementation, & Evaluation) Model of instructional design for the US Armed Services (Branson, Rayner, Cox, Furman, King, & Hannum, 1975). At the time, the term "ADDIE" was not used, but rather "SAT" (Systems Approach toTraining), which ultimately became "ISD" (Instructional Systems Design). Watson (1981), another Florida State University professor, later updated the ADDIE model to make it more generalisable across instructional situations. Currently, the ADDIE Model is probably the most widely utilized and discussed model of instructional design and contains many of the same components of the Kibler Model. Probably the biggest difference between the two models is the location and purpose of the pre-assessment. Where the Kibler Model starts with the development of instructional objectives, the ADDIE Model starts with an assessment of learner's needs and current knowledge related to the topic of interest. The rest of this section is going to break down the five parts of the ADDIE Model.

4.1. Analysis

According to Biech, Piskurich, and Hodell (2006), the analysis phase of the ADDIE Model "is the process of gathering data to identify specific needs –who, what, where, when, and why of the design process" (p. 30). The analysis phase helps teachers and instructional designers determine three basic aspects of learning: knowledge level, learning needs, and appropriateness of instruction. First, during the analysis phase, the teacher or instructional designer attempts to determine the current level of knowledge target learners have about a specific topic. One of the biggest missteps teachers and instructional designers can make is to under or overestimate the knowledge target learners possess. All teachers have found themselves in instructional situations where the learners were either completely not prepared for the content of the lesson or the lesson was too basic for the learners. In addition to determine knowledge level, another fundamental aspect of the analysis phase is to ascertain what the learning needs actually are. Often people know that there is a problem, but are not sure where the disconnection is occurring. For this reason, teachers and instructional designers are often called upon to determine what the learning need actually is. For example, one of the authors has a grade school teacher friend who recently found out that a student failed the reading portion of a major standardized test. At first thought, some suspected that the student may not be able to actually read. After analyzing the student in various situations, it was determined that the student could read perfectly and had no problem with word recognition or recall. The disconnection occurred when the student was asked to analyze what he had read. In essence, the student could read the words but was then unable to do anything with what he had read. Going back to Bloom's taxonomy of cognitive learning, the student had knowledge of reading but could not comprehend the reading. For this reason, spending a lot of energy focusing on the knowledge aspects of reading with this student would not help the student progress and increase his comprehension. The last part of the analysis phase of the ADDIE Model is determining whether or not instruction is the appropriate response. Whether it's in a traditional classroom or the corporate learning environment, there are some individuals who will ascribe every problem to a lack of instruction without seeing if there other systematic causes of problems. For

example, many organizations will mandate diversity training programs after a discrimination lawsuit is filed against the organization. However, if the organization's culture permits and encourages workplace discrimination, then a simple training session may not effectively fix the problem. Often problems arise for many reasons that have nothing to do with actual instruction. Unfortunately, organizations (both corporate and academic) often like to fix problems with learning thinking that learning will be a quick fix. However, if the problem is caused by a non-learning source, instruction may not fix the problem or even exacerbate the problem further. Solid analysis can often determine if the underlying problem is related to instructional or other issues.

4.2. Design

Once a teacher or instructional designer has determined that instruction is the appropriate method for handling a problem, the second step in the ADDIE Model is examined. Whether designing a specific instructional module (a sequence of instruction centered around one content area) or an entire course (a longer sequence of learning containing multiple modules), the design step is very important. The Design step of the ADDIE Model is the part of the instructional process where a teacher or instructional designer determines the objectives of learning, how learning will eventually be evaluated, and establish a learning design plan. In the next chapter, we will discuss the creation of instructional objectives in a lot more detail. Thinking about evaluation during the design phase is very important because it establishes an end-point or target for the instructional process. Whether you are focusing on cognitive, affective, or psychomotor learning, knowing how you will measure specific learning endpoints is very important. For example, if your instructional objective is to increase affective learning, evaluating your learners using a multiple-choice test, which really only measures cognitive recall, is not the most appropriate evaluation method. Lastly, during the design step of the ADDIE model, teachers and instructional designers create a design plan. A design plan is a blueprint for developing the content of the course. A good design plan starts with the basic objectives of the instructional module and any additional materials that may be needed. Some possible materials that may be listed in a design plan are "printed materials; scripts and storyboards for computer-based projects; evaluation materials including tests, quizzes, and other formal evaluations; lesson plans; staff assignments and responsibilities; and a project management plan that includes milestones and deadlines" (Biech et al., 2006, p. 33).

4.3. Development

Once teachers and/or instructional designers have completed the design plan, the actual process of building an instructional module begins. Whether the design phase is more theoretical, the development phase is the theory in practice. It's one thing to know that you need to address a specific content issue (design), and another thing to develop a game that helps learners understand the content issue (development). Whether a teacher and/or instructional designer is designing learning for a physical classroom or an online classroom, everything that learners will come in contact with are developed and tested during this phase of the ADDIE Model. Often during this phase of the ADDIE Model, teachers and/or instructional designers will actually create learning materials and then pilot test the materials by seeing how they work with actual learners. Pilot testing can provide much needed feedback for teachers and instructional designers because they can determine whether or not the instructional materials and strategies are effective before deploying the materials and strategies to a larger audience.

4.4. Implementation

The fourth phase of the ADDIE Model involves the implementation of the learning module or course with our actual learners. In an ideal world, we would all be able to pilot test our instructional strategies before implementing them in a classroom during the development phase, but quite often piloting materials, modules, and courses gets skipped because either there is no participant pool for piloting materials or because of time factors. More often than not actual learners become the first guinea pigs for our newly developed instructional materials and strategies.

4.5. Evaluation

In the ADDIE model, the final phase of instructional development is the evaluation phase. In the evaluation phase, teachers and instructional designers have two basic goals –measure the effectiveness of the learning materials and determine participant learning. While feedback has been a constant along the instructional design process, the evaluation phase is all about feedback. First, teachers and instructional designers can ascertain whether or not a specific instructional material or strategy doesn't work. We've all had instructional materials and strategies that have just bombed in the classroom. Ultimately, teachers and instructional designers must determine if a specific material or strategy isn't working because it is faulty or the specific audience had problems. For this reason, we always recommend trying something twice with two different groups. If you find a specific instructional material or strategy, but it doesn't work with both groups, chances are you need to rethink the material or strategy or drop them from the learning module altogether. In addition to determine if our instructional materials and strategies are working, the evaluation phase also is when we determine if cognitive, affective, and psychomotor learning have actually occurred. While the evaluation strategies were determined during the design phase, the implementation of those evaluation strategies occurs during the evaluation phase of the ADDIE Model.

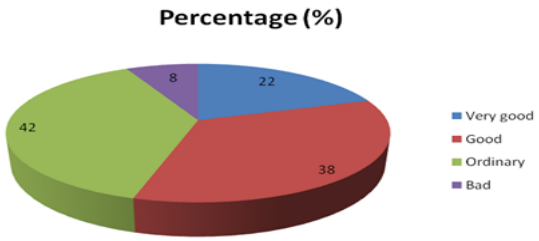

Fig.3: The evaluation of the effectiveness of the materials and determine participant learning

CONCLUSION

Instructional communication is a process in which the teacher selects and arranges what the students are to learn (the content), decides how best to help them learn (the instructional strategy), and determines how success in learning will be determined and how the students' progress will be communicated by and to them. In the study we elaborate on some aspects of the instructional communication process and suggest ways in which teachers can establish and nurture both effective and affective communication relationships that maximize their students' opportunity to achieve the optimum of success in the instructional environment. According to the study result, the paper makes a relevant adaptive conclusion. Thus, the study strengthened the cognitive tactic of learners, made qualitative learning targets for learners, reflected the learning plan of learners constantly, and made a good evaluation system for learners based on the theory of Constructivism.

REFERENCES

[1] Flavel,l J. H, Cognitive Psychology, vol.1, no.4, pp. 23-25, **1970**.
[2] Benson, P, Teaching and Researching Autonomy in Language Learning, Person Education Press, China, **2001**.
[3] Scott G. Paris& Linda R. Ayres, Becoming Reflective Students and Teacher, American Psychological Association, USA, **1994**.
[4] Biech, E. (**2005**). Training for dummies: A reference for the rest of us! Hoboken, NJ: Wiley.
[5] Biech, E., Piskurich, G., & Hodell, C. (**2006**). Designing learning: ASTD learning system module 1. Alexandria, VA: ASTD Press.
[6] Bloom, B. S., Englehart, M. D., Furst, E. J., Hill, W. H. & Krathwohl, D. R. (**1956**). Taxonomy of educational objectives--the classification of educational goals, handbook I: Cognitive Domain. New York: David McKay.
[7] Hurt, H. T., Scott, M. D., & McCroskey, J. C. (**1978**). Communication in the classroom. (Chapters 1, 2 and 3). Reading, MA: Addison-Wesley.
[8] Kibler, R.J., Cegala, D.J., Watson, K.W., Barker, L.L. & Miles, D.T. (**1981**). Objectives for instruction and evaluation, 2nd edition. Boston: Allyn and Bacon
[9] Richmond, V. P., & McCroskey, J. C. (**1992**). Power in the classroom: Communication, control, and concern. (Eds.). Hillsdale, NJ: Lawrence Erlbaum Associates.
[10] Rothwell, W., & Kazanas, H. (**1994**). Human resource development: A strategic approach (rev. ed.). Amherst, MA: Human Resource Development Press. Rothwell, W., & Kazanas, H. C. (**2008**). Mastering the instructional design process: A systematic approach (4th ed.). San Francisco, CA: Pfeiffer.
[11] Krathwohl, D.R., Bloom, B.S. Masia,， B.B. (19**6**4). Taxonomy of educational objectives--the classification of educational goals, handbook II: Affective domain. New York: David McKay
[12] Wilson, Brent G. & Myers, Karen Madsen, "Situated Cognition in Theoretical and Practical Context", In Theoretical Foundations of Learning Environments, pp.185-192, **2000**.
[13] Chen Liping, Tactic training and foreign language teaching, Hehai University Press, China, **2004**.
[14] Anderson, T & Elloum, F, Theory and Practice of Online Learning, Athabasca University Press, Canada, **2005**.
[15] Zhou Yangen, Sang Qingsong, *Foreign Language Teaching and Study*, vol. 9, no.2, pp. 43-49, **2003**.
[16] Benson, P, Teaching and Researching Autonomy in Language Learning, Person Education Press, China, **2001**.