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ABSTRACT

Multi-media instruction needs to be adapted to assist students in achieving objectives of instruction. Multi-media approaches need to stress quality sequence, and also need to provide a meaningful context for student learning. The developers of multi-media class resources should provide for diverse styles of learning and need to develop materials which motivate students. Multi-media instruction can be developed for group or individual instruction. Theories in the psychology of learning also help teachers implement multi-media materials well. Student achievement with multi-media materials may be evaluated in numerous ways. (PM)

Problems in Multi-Media Use in the Reading Curriculum.

by Marlow Ediger

PROBLEMS IN MULTI-MEDIA USE IN THE READING CURRICULUM

Much is written in educational literature and emphasized in teacher education conventions about multi-media in the school curriculum. Multi-media during the 1970s and selected earlier decades consisted of using slides, filmstrips, films, print materials, and cassettes in planning and implementing teaching and learning situations. This has changed considerably whereby multi-media presently updates include DVDs, VDS, video tapes, and digital cameras, among other recent innovations. Updating the curriculum is needed to stay abreast in curricular trends.

There are selected educational innovations which need to be incorporated into multi-media approaches of instruction. These innovative ideas and philosophies are worthwhile to consider for incorporation into the multi-media curriculum.

Innovations and Multi-Media

Multi-media instruction needs to be adapted to assisting pupils to achieve objectives of instruction. The objectives of instruction come first, be they state mandated, teacher chosen, and/or district wide ends. The issue of the separate subjects versus the integrated curriculum needs thorough consideration. The question to be raised, for example, involves, "Should multi-media use be available for teaching a single subject area such as literature or should literature be integrated with the social sciences, science, and mathematics, among others?" The advantages for emphasizing a separate subjects curriculum include the following:

* more depth study is possible within the literature curriculum.
* more focus is provided for one academic area.

Advantages for implementing an integrated literature curriculum include the following:

* students have increased opportunities to notice how academic disciplines may be related
* students may learn subject matter in an interrelated curriculum (Rajendran, 2001, Chapter Two).

Multi-media approaches need to stress quality sequence. Poor sequence is one reason students do not achieve as well as possible. Thus, the content studied moves forward too rapidly or too slowly. Or it may not follow the order of the involved disciple(s) such as in narrative content. An increased amount of

planning needs to occur prior to implementation of the multimedia program. Students need to perceive that what has been learned is related to the ensuing new content. Otherwise, the subject matter will appear fragmented to the learner(s). The sequence desired may be easier to obtain in a

* single subject centered curriculum. Within that one academic area, curriculum developers may zero in on the problem of obtaining improved sequence.
* logical order of subject matter to be acquired by the learner. A logical curriculum emphasizes that the curriculum planners determine the order of learnings for students.

Students may perceive sequence differently other than an adult determined logical curriculum. Thus

* a psychological curriculum would harmonize more with selected student's achievement and progress.
* a psychological curriculum stresses students raising an increased number of questions in context to determine needed answers. The student then is involved to perceive order or sequence in what is learned (Ediger and Rao, 2003, Chapter Two).

Multi-media programs need to provide meaningful content for student learning. They need to provide content which makes sense to the student. An adequate number of visuals, audios, explanations, print media on the developmental level of the learner, appropriate animation, sound, and background music needs to be in the offing. Multi-media program developers then should

* determine ways of adapting the curriculum to the learner, not the learner to the curriculum.
* meet the vocabulary needs of individual learners.

Multi- media may be developed which truly challenges students and assists them to attain state mandated objectives, regardless of ability levels. Schools need to achieve state mandated ends in order to remain as accredited institutions. Thus, multi-media producers need to

* provide materials which highly motivate students to achieve state mandated objectives. The materials are devised to reinforce students with sound and animation when successful in achievement.
* provide opportunities for drill and practice to prepare learners for mandated testing (Ediger and Rao, 2003, Chapter Five).

Multi media developers should provide for diverse styles of learning for students. Students learn best under different conditions. One size does not fit all, but different procedures of instruction need to be in the offing. The materials are diverse in multi-media to provide for individual differences among students. Thus, multi-media should provide for the following:

* selected students may learn best in cooperative learning or group endeavors.
* they might also prefer a quiet environment for learning. Here, selected peripherals may be turned down such as sound in an ongoing presentation so it does not interfere with the learning opportunities of others in the classroom (See Lookatch, 1995).

For other students, multimedia should provide for a different learning environment such as

* individual activities for those learners who prefer this style of learning.
* a busy environment where students are learning by doing in a workshop atmosphere of achievement. The getting of and using as well as returning materials to their proper place makes for a somewhat positive noisy environment. The noise is not due to misbehavior, but rather to the working atmosphere provided by busy students engaged in attaining objectives of instruction (Rajendran, 2001, Chapter Three).

Multi-media producers need to develop materials which secure the attention of students for learning. If students fail to attend, perhaps little learning, if any, will accrue. Attending and sustaining the attention are musts in curriculum development. Thus, multi-media needs to

* develop and keep the interests of students for learning. The interests of students, here, are of primary importance in curriculum development.
* intrinsic motivation is a key element in multi-media procedures of instruction.

Somewhat opposite is extrinsic motivation as a way of encouraging learning. To encourage learning here, reinforcers need to be used to optimize student achievement. Extrinsic devices used for reinforcement in motivating students to learn include

* inexpensive prizes given to students for achieving a predetermined set of objectives. What students are to receive for achieving a certain objective needs to be clearly announced so

that learners know what to do to receive an award or prize.

* verbal rewards given consistently for doing well such as, "that's good," "fine," "excellent," among others (Ragan and Shepherd, 1982).

Multi-media developers need to include in their materials of instruction the different intelligences pupils possess, such as verbal, spacial, logical thought, objective thinking, artistic, and/or neuromuscular skills. Thus, multi-media curriculum developers need to

* include ample learnings pertaining to one intelligence largely such as verbal (reading and writing activities). This is done to strengthen the intelligence already possessed.
* depth teaching and learning is then quite possible .

Toward the other end of the continuum, multi-media developers may stress

* relating the academic areas of study.
* have students experience diverse intelligences, rather than a very limited number. This means reinforcing the dominant intelligence possessed as well as increasing the strength of the other intelligences. The well educated person then has experienced a broad range of intelligences in general education (Rajendran, 2001, Chapter Four).

Selected educators emphasize inductive learning for students. Students then are lead to make discoveries after background information has be developed. Multi-media may be used to develop the prerequisite knowledge. Learners then perceive gaps in information and raise related questions. The questions developed provide opportunities for seeking answers through multi-media sources. Inductive learning is stressed. Multi-media then needs to provide opportunities for students to

* query ideas contained in the presentation.
* obtain needed information in answer to questions.

For students who prefer, as a learning style, that sequence has largely been worked out by multi-media developers may experience deductive learning through

* a carefully designed sequence by the authors of multi-media. Students still use and apply the information in diverse ways.
* an increased stress being placed upon lecture and explanations in the ongoing learning activity. In this way, information moves from the presenter to the receiver or student.

This might well be followed by the level of application (See, Traynor, 2003).

Principles of Learning in Multi-Media

The psychology of learning has much to offer in multimedia learning for students. Thus, if one media does not stimulate leaning, a different one might capture student attention. Selected students, as a learning style, prefer to learn from visuals while others prefer printed script. Multi-media presents opportunities to learn in different ways, not with the use of one media largely or only.

Second, student interests need to be developed. Passive students tend to learn minimally. Multi-media has capabilities to secure and maintain learner interests. Interest is a powerful factor in learning. People tend to pursue that which is of interest. There is much of which is distracting to students. A classroom may be filled with that which distracts such as student misbehavior and excessive noise. To assist students to focus on the salient in order to achieve objectives, multi-media presentations must capture the attention of learners. Hopefully, the interests will be intrinsic or come from the student. If they are not intrinsically motivated, perhaps, extrinsic means need to be used to capture learner attention. The teacher needs to use multi-media to develop these interests.

Third, individual differences need adequate provision. Thus, students are at diverse levels of achievement. Selected students learn more slowly; others achieve much more rapidly. Multi-media developers need to design materials which have built n features of assisting each learner to achieve optimally, regardless of ability levels. Slower learners may need to experience more of the semi-concrete or visuals plus hands on experiences as compared to those preferring more of abstract experiences. Abstract experiences emphasize more of reading and writing. Multi-media then need to provide concrete, semi-concrete, and abstract experiences. The concept "virtual reality" has been coined to substitute in part for semi-concrete activities.

Fourth, balance in the curriculum needs to be stressed in multi-media. Balance here refers to adequate emphasis being placed upon the separate categories of knowledge, skills, or attitudinal ends. Knowledge objectives are not adequate by themselves. Knowledge must be used in diverse ways making skills ends salient. As a by product of learning, quality attitudes need development as a third category of objectives. Multi-media

developers must inherently stress the above named three categories of objectives. Subject matter knowledge is important to acquire, but it needs to be used in school and in society. Knowledge and skills alone are not adequate but need to include the affective or attitudinal dimension of achievement. Good attitudes are appropriate and necessary in school and in society.

Fifth, evaluation of student achievement must be an important part of multi-media learning. The lay public, educators, and others desire to know if multi-media increases student achievement more so than do traditional ways of learning. A quality evaluation system then needs to be in evidence (Ediger and Rao, 2003. Chapter Seven).

Evaluating Student Achievement

How should student achievement be appraised when multi-media are used? A variety of procedures should be used. Teacher observation can be a good approach. Proper criteria need to be used in evaluation. Teacher observation can be rather continuous. Diagnosing student achievement is a must. The observer needs to notice problems faced by students and determine what kinds of assistance are needed to remediate problematic situations.

Teacher written tests may be used to ascertain student achievement. These tests generally are multiple choice items and cover what has been taught. Content validity is then in evidence. What has been taught in multi-media is then measured to determine how much each student has learned. The teacher obtains feedback in terms of how much has been learned by students and how well the curriculum was taught.

Multi-media preparers also need to receive feedback on the quality of their products. Their tests, pilot tested to take out weaknesses, must be highly valid in that the test covers what has been inherent in the multi-media program. Statistical figures should be available to notice the validity of the test as well as its reliability. Teachers need to continually assess the quality of the multi-media programs used. Desired criteria may be developed, cooperatively with other teachers, and used in the assessment process. A rubric, carefully designed, might result in which all teachers using the multi-media approach may compare their assessments and notice inter-scorer or interater reliability. Inservice education for evaluators may be necessary (Ediger, 1997, Chapter Eight).

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